



AT&T 555-230-653
Issue 1, July 1993

DEFINITY® Communications System

Generic 3 V2 Implementation
Volumes 1 & 2



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Issue 1, July 1993

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Generic 3 V2 Implementation
Volume 1

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Issue 1, July 1993

Published by
GBCSysystems Product Documentation Development Group
AT&T Bell Laboratories
Middletown, NJ 07748-0076

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About this Document

This manual is solely concerned with the completion of paper records and forms that are later used to initialize and administer the DEFINITY® Communications System Generic 3 Version 2 system (referred to as the "System" throughout this manual). The completed hard-copy forms are used later along with instructions contained in *DEFINITY Communications System Generic 3V2 System Management*, 555-230-500, to implement the System. All forms and features described in this manual apply to Generic 3V2 only.

This manual provides a description of each form required to implement the various System and voice terminal features, as well as instructions on how to complete each form. For a description of how to use the completed forms (paper records) to initialize and administer the System, refer to *DEFINITY Communications System Generic 3V2 System Management*, 555-230-500.

To implement a System, obtain all associated information drafted in the planning process, where the System requirements were identified by the AT&T Account Team and the customer. Those requirements were converted into orderable System hardware when the Account Team configured the System.

To complete this manual, you must:

- Have hardware and feature knowledge (consult *DEFINITY Communications System Generic 3V2 System Description and Specifications*, 555-230-203, and *DEFINITY Communications System Generic 3V2 Feature Description*, 555-230-204).
- Know what System and terminal hardware has been ordered.

Organization

This manual is organized as follows:

Communications Survey — describes the Communications Survey that consists of gathering information about the System, its users, their job functions, and their communication needs. This information is essential before beginning System implementation.

Administration Commands — describes the various types of commands that can be used when administering the system's features, functions, and services. The use of an abbreviated command structure is discussed as are special command line functions and the display screen format.

System Features, Functions, and Services — provides the instructions required to implement the System and voice terminal features. A complete alphabetical coverage of each System feature or service is included in this chapter. Descriptions of each feature or service and associated tables listing the forms or fields on forms that must be completed or considered when implementing the feature are also provided. The table lists the chapter and/or page numbers where form instructions and associated blank forms can be found.

Forms for Network Features and Services — lists the network-type forms and associated instructions required to implement the network features and services.

Forms for System Features and Services — contains an alphabetical listing of the System forms and associated instructions for completing each field on the forms. The forms in this chapter provide an accurate representation of the screen forms displayed on the System's administration terminal during System initialization and on-going administration.

SPID Installation — provides the procedures for entering the SPID in AT&T 7500 and 8503T voice terminals.

Application Notes — provides information concerning hardware configuration and administration of a Generic 3V2 system in each supported country.

System Hardware and Software Capacity Limits — provides a table of the maximum limits allowed for each Generic 1 and Generic 3 configuration.

Abbreviations and Acronyms — contains a listing and definition of abbreviations and acronyms used in this and other related documentation.

Glossary — contains a description of terms used in this and other related documents.

Index — contains a permuted index.

In addition, a separate Blank Forms Package, which contains a complete set of blank forms, accompanies this manual. Reproduce these forms as needed to obtain a set of hard copy forms for the System.

The information in Chapters 3, 4, and 5 of this manual may be used as a reference source when adding and changing features after the System has been initialized. This manual is the only source of detailed descriptions of the screen forms and the forms required to be completed when implementing a System feature.

The following items should be considered:

1. Certain data entered on paper forms (such as group numbers) is used as part of the administrative input command when entering form data into the System. The group number is then displayed on the form as associated data from the paper record is being entered. Typically, in this manual, these types of fields are referred to as display-only fields although the data is required to be entered on the paper form when first making assignments. For example, assume a paper record for Hunt Group 4 is established during implementation. The *add hunt-group 4* command is then used to access the appropriate screen form for adding the hunt group. The "4" is stored in translations for that hunt group. Subsequent updates to the hunt group require that the *change hunt-group 4* administrative command be used to make changes. (A complete list of administrative commands is provided in Chapter 2 and the commands associated with each screen form are provided with each form's coverage in Chapter 4 and Chapter 5.)
2. Some of the forms listed in Chapter 5 should not be changed on a routine basis. Specifically, the Dial Plan Record, Feature Related System Parameters, and Feature Access Codes forms do not normally require changes after initialization. When making additions or changes to the System, verify that the required forms and/or fields on the forms have been completed. Specify the additional data needed to add or change a feature.

Many of the System forms that are displayed on the administration terminal contain dynamic fields. Dynamic fields are either displayed or not displayed, depending on how another field on the form or the System's optional features are administered. In this manual, dynamic fields are identified by Implementation Notes shown below the form.

How to Use

The procedural checklist in the following steps should be followed to complete the forms in this manual.

1. Become familiar with the contents of this manual.
2. Conduct a Communications Survey. Instructions for completing a Communications Survey are in Chapter 1.
3. Review the various administration commands that are available for implementation purposes as shown in Chapter 2.
4. Use Chapter 3 of this manual to identify each form or fields on forms that require completion or consideration when implementing System features and services. Complete the associated forms as shown in Chapters 4 and 5. Blank forms are provided in the accompanying Blank Forms Package and are to be used for reproduction of working copies of the forms. After these forms have been completed, they should be used with the administration commands in Chapter 2 and the information in *DEFINITY Communications System Generic 3V2 System Management*, 555-230-500, to administer the features in the System. After initialization, all completed forms should be maintained as a hard-copy record of the initialization.

Communications Survey

1

The Communications Survey consists of gathering information about the System, its users, their job functions, and their communications needs. After this information is identified, it is then matched with available features and hardware to design a System that fulfills customer requirements.

Basically, the survey:

- Identifies the appropriate features and calling privileges for each user
- Assigns appropriate data on hard-copy forms that subsequently become part of the System's software database

Survey Steps

Complete each of the survey steps in the order given. Some steps are best performed by a cooperative effort between the account team and the customer or customer's representative. Where applicable, these steps are so indicated.

Before actually beginning the survey, review the information provided in Chapters 3, 4, and 5. Chapter 3 contains a brief description of each System feature, function, or service. The associated forms and the fields to be completed on each form are given. Hardware and software requirements are noted where applicable. You will be required to complete various forms based on the features to be provided. Chapters 4 and 5 contain forms and instructions for completing each field on a form. Blank forms suitable for reproduction are provided in the "Blank Forms Package."

Review Chapters 3, 4, and 5 several times until you become familiar with the features, the forms required, and the data to be entered on the forms. The following documents provide additional information:

- *DEFINITY Communications System Generic 3 V2 System Description and Specifications*, 555-230-206
- *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204
- *DEFINITY Communications System Generic 3 V2 Planning and Configuration*, 555-230-601
- *DEFINITY Communications System Generic 3 V2 Installation and Test*, 555-230-104

Step 1 — Equipment and Feature List

Obtain a list of equipment (including number and type) that has been ordered for the System. Identify the System cabinets ordered.

Find out what features and services are to be provided.

Step 2 — Port Assignment and Circuit Pack Forms

Refer to *DEFINITY Communications System Generic 3 V2 Planning and Configuration*, 555-230-601, for information regarding the completion of the port assignment forms for the System. Refer to "Circuit Pack Administration" in Chapter 5 of this manual for information regarding the completion of the Circuit Pack forms. This data will be needed to complete the feature and network forms covered in this manual.

Step 3 — Trunk Groups

A complete list of all trunk groups supported by the System is provided below. For each trunk group to be provided, review the associated trunk group description contained in Chapter 4, "Forms for Network Features and Services." Identify the associated trunk group forms required and the fields on the form(s) to be completed, and determine the number of forms required. Complete the appropriate fields on all forms as required.

- Access
- Advanced Private Line Termination (APLT)
- Central Office (CO)
- Customer-Provided Equipment (CPE)
- Digital Multiplexed Interface (DMI)
- Direct Inward Dialing (DID)

- Direct Inward Outward Dialing (DIOD)
- Foreign Exchange (FX)
- Integrated Services Digital Network — Primary Rate Interface (ISDN-PRI)
- Personal Central Office Line Groups (PCOLG)
- Release Link
- Tandem
- Tie
- Wide Area Telecommunications Service (WATS)

Step 4 — Optional Feature Software

Each of the following features and forms are optional and may or may not be provided with the System. For each feature to be provided, review the associated feature description contained in Chapter 3, "System Features, Functions, and Services." Identify the associated System forms and the fields on the forms to be completed, and determine the number of forms required. (The forms and associated instructions are included in Chapter 5, "Forms for System Features and Services.") Complete the appropriate fields on the duplicated forms as required. Refer to *DEFINITY Communications System Generic 3 V2 Installation and Test*, 555-230-104, for information regarding what optional features may be enabled on the System-Parameters Customer-Options form.



NOTE:

This form is implemented during the installation of the System and is not administrable by a customer.

Forms or fields on forms associated with an optional feature that is not provided (activated) cannot be implemented.

Step 5 — Remaining System Features and Services

For each feature to be assigned, review the associated feature description in Chapter 3, "System Features, Functions, and Services." Identify the associated System forms and the fields on the forms to be completed, and determine the number of forms required. Complete the fields on the duplicated forms as required. Refer to *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of each feature, when required.

As you proceed, there will be times when the data for a field on a form has not yet been identified. For those cases, note the fields requiring completion and then proceed. Later, complete the form when the applicable data is identified.

Step 6— End User Survey

Establish contact with a representative from each department, section, or work group that will be using the System. Each person selected must have the authority to make some decisions about the new communications System. You will need to interview these contacts as you go about the process of completing the System forms.

Identify each System user name, terminal type, and extension number to be assigned.

If required, enter each user name, terminal type, and extension number on a floor plan, or equivalent drawing. The floor plan will help you visualize various work groups and make later group assignments such as call answering groups or call pickup groups easier. This drawing, or an equivalent, can then be used by the installation technicians when installing voice terminals and associated equipment.

For all terminal types and quantities of each type identified, remove the applicable blank station forms from the Blank Forms Package and duplicate as many times as necessary.

On each duplicated station form, enter the applicable terminal type, user name, extension number, and port number.



NOTE:

Refer to *DEFINITY Communications System Planning and Configuration*, 555-230-601, for information on assigning a port and obtaining an equivalent port number for entry on the station form.

Step 7— Group Forms

For each of the following features to be provided, review the associated description contained in Chapter 3, identify the associated forms and the fields on the forms to be completed, and determine the number of forms required. (The forms and associated instructions are included in Chapter 5, "Forms for System Features and Services.") Remove the applicable blank forms from the Blank Forms Package and duplicate as many times as necessary. Complete each field on the duplicated form as required.

- Abbreviated Dialing — System List
- Abbreviated Dialing — Group List
- Abbreviated Dialing — Personal List
- Abbreviated Dialing — Enhanced List
- Call Coverage
- Hunt Groups (see Hunting feature description)
- Intercom Groups — Automatic and Dial

- Malicious Call Trace
- Pickup Groups
- Terminating Extension Group

Step 8 — Voice Terminals/BCTs

Complete the various fields on the previously obtained station forms. Before actually assigning features on the forms, review the features that can be assigned to each terminal type, the recommended button nomenclature, and the abbreviated feature name that must be entered on the form. The maximum number of buttons that can be assigned to a feature or function must also be considered. Information on each voice terminal type is provided in chapter 5, "Forms for System Features and Services." The maximum number of buttons that can be assigned features (administrable buttons) is shown for each terminal type. You must not exceed this number when assigning feature buttons to the terminal. Voice terminal figures in Chapter 5 show each terminal that can be assigned, their associated button positions, and a suggested standard button arrangement.

The recommended button nomenclature is also used in the System's *DEFINITY Communications System Generic 3 V2 Console Operation*, 555-230-700, *DEFINITY Communications System Generic 3 V2 Voice Terminal Operation*, 555-230-701, and related User Instructions. If different nomenclature is used than that recommended, the related documentation for the System should be marked to reflect the changes, and that nomenclature then used in all System assignments. When the terminal is installed, the button nomenclature is then entered on a label and inserted next to the button that is assigned the feature. A set of preprinted labels comes with each voice terminal.

Step 9 — Review

Review all features and services listed in Chapter 3, "System Features, Functions, and Services" and ensure that a form has been completed for all features and services to be provided.

Retain all completed forms for use during System initialization.

Administration Commands

2

The following provides a description of the System's Command Line feature and a summary of the *administration* commands that support the feature. A user, via entry of a single command line on the DEFINITY Communications System Generic 3 Management Terminal (G3-MT), can easily communicate with the system to perform various tasks associated with the administration and implementation of the System.

The Command Line feature is divided into the following four categories:

- Administration — Used to administer data associated with terminals, facilities, and system parameters.
- Maintenance — Used to perform maintenance on objects such as trunks, terminals, ports, and system control modules. Also used to obtain displays of error and alarm logs. Refer to *DEFINITY Communications System Generic 3 V2 Maintenance*, 555-230-105, for information associated with maintenance commands.
- Measurements — Used to obtain displays of measurement reports for trunk groups, hunt groups, attendants, etc. Refer to *DEFINITY Communications System Generic 3 V2 System Reports*, 555-230-511, for information associated with measurement commands.
- System — Used to change passwords and administer the command authorization structure. Refer to *DEFINITY Communications System Generic 3 V2 System Management*, 555-230-500, for information associated with system commands.

You must be logged on the system via the G3-MT before an administration command can be entered. Procedures on how to log onto and log off the system and descriptions of the various management tasks that can be performed are provided in *DEFINITY Communications System Generic 3 V2 System Management*, 555-230-500.

Command Structure

An administrative command is made up of multiple words that instruct the System to do a specific task. The command is made up of Action, Object, and, depending on the command type, Qualifier words.

The Action word is the first word entered on the command line and specifies the operation to be performed (such as, "add", "change", "delete"). The Object word is the second phrase entered on the command line and specifies the specific object to be operated on, for example, a station, trunk group, or hunt group. Finally, the qualifier can be one or more key words or digits used to further identify or complete the object. The qualifier can be mandatory or optional, depending on the command or system configuration.

Only one command line can be entered at a time. For example, the command required to add a station with extension number 1212 is shown below:

add station 1212

In the above example, *add* is the Action word, *station* is the Object word, and *1212* is the Qualifier word.

Spaces must be used to separate the Action, Object, and Qualifier words on the command line.

The System provides an on-line Help function (by pressing the Help key) which can be used to obtain a list of commands or to provide information for completing commands. As stated earlier, maintenance, measurement, and system commands and their associated add/object/qualifier words are not covered here. Refer to the appropriate manual for that information.

Action Commands

Action commands are used to administer the System's features, functions, and services. The following provides a summary of the action words and their associated object words.

Add Commands

The associated object being added, such as "attendant", must not exist in the System for the *add* command to be accepted. The following object words are available for use with the *add* command. They can be displayed by pressing the Help key after entering the action word "add".

■ abbreviated-dialing 7301 A-buttons	■ attendant	■ personal-CO-line
■ abbreviated-dialing enhanced	■ cabinet*	■ pri-endpoint
■ abbreviated-dialing group	■ coverage answer-group	■ p gate *
■ abbreviated-dialing personal	■ coverage path	■ pickup-group
■ abbreviated-dialing system	■ data-module	■ second-digit
■ access-endpoint	■ ds1	■ signaling-group
■ administered-connection	■ fiber-link*	■ station
■ agent-loginID	■ hunt-group	■ term-ext-group
	■ intercom-group	■ test-schedule
	■ modem-pool	■ trunk-group
		■ vdn

Note:

* G3r V2 only.

Change Commands

The associated object being changed, such as circuit packs, must be currently administered in the System before the *change* command can be accepted. The *change* command cannot be used to identify a new object or to remove an existing object. The following object words are available for use with the *change* command. They can be displayed by pressing the Help key after entering the action word "change".

■ aar analysis	■ communication- interface hop- channels	■ node-routing
■ aar digit- conversion		■ paging code- calling-ids
■ abbreviated- dialing 7103A- buttons	■ communication- interface processor- channels	■ paging loudspeaker
■ abbreviated- dialing enhanced	■ console- parameters	■ password
■ abbreviated- dialing group	■ cor	■ permissions
■ abbreviated- dialing personal	■ cos	■ personal-CO-line
■ abbreviated- dialing system	■ coverage answer-group	■ pgate
■ access-endpoint	■ coverage path	■ pickup-group
■ adjunct- controlled-agent	■ data-module	■ pri-endpoint
■ adjunct-names*	■ dialplan	■ remote access
■ administered- connection	■ digit-absorption	■ report-scheduler
■ agent-loginID	■ display- messages	■ rhnpa
■ alias station	■ ds1	■ route-pattern
■ alphanumeric- dial-table	■ enp-number-plan	■ second-digit
■ alternate-frl	■ feature-access- code	■ signaling-group
■ announcements	■ fiber-link	■ sit-treatment
■ ars analysis	■ hunt-group	■ site-data
■ ars digit- conversion	■ intercom-group	■ sit-treatment
■ ars toll	■ intra-switch-cdr	■ station
	■ isdn cpn-prefix	■ synchronization
	■ isdn network- facilities	■ system- parameters features
		■ system- parameters hospitality

■ attendant	■ ixc-codes	■ term-ext-group
■ authorization-code	■ listed-directory-numbers	■ test-schedule
■ cabinet*	■ mct-group-extensions	■ time-of-day
■ call-screening	■ meas-selection	■ toll
■ circuit-packs	■ modem-pool	■ trunk-group
■ communication-interface links	■ mst	■ trunk-group tac
		■ udp
		■ vdn
		■ vector

Note:

* G3r V2 only.

Display Commands

Allows viewing of parameters associated with a specific object/qualifier. If the command *display station 4444* is entered, for example, the voice terminal screen form currently administered for extension 4444 is displayed. If the "print" qualifier is entered, for example, *display station 4444 print*, the form is printed on the printer associated with the G3-MT. The following object words are available for use with the *display* command. They can be displayed by pressing the Help key after entering the action word "display".

■ aar analysis	■ ars digit-conversion	■ dialplan
■ aar digit-conversion	■ ars toll	■ digit-absorption
■ abbreviated-dialing 7103A-buttons	■ attendant	■ disabled-tests
■ abbreviated-dialing enhanced	■ authorization-code	■ display-messages
■ abbreviated-dialing group	■ buttons-location-aca	■ ds1
■ abbreviated-dialing personal	■ cabinet*	■ enp-number-plan
■ abbreviated-dialing system	■ call-screening	■ errors
■ access-endpoint	■ capacity	■ events
■ adjunct-controlled-agent	■ circuit-packs	■ feature-access-code
■ adjunct-names*	■ communication-interface links	■ fiber-link*
■ administered-connection	■ communication-interface hop-channels	■ hunt-group
■ agent-loginID	■ communication-interface processor-channels	■ initcauses
■ alarms	■ console-parameters	■ intercom-group
■ alias station	■ cor	■ intra-switch-cdr
■ alphanumeric-dial-table	■ cos	■ isdn cpn-prefix
■ alternate-fri	■ coverage	■ isdn network-facilities
■ announcements	■ answer-group	■ ixc-codes
■ ars analysis	■ coverage path	■ listed-directory-numbers
	■ data-module	■ mct-group-extensions
		■ meas-selection
		■ modem-pool
		■ mst

■ node-routing	■ second-digit	■ system-parameters
■ paging code-calling-ids	■ signaling-group	■ hospitality
■ paging loudspeaker	■ sit-treatment	■ term-ext-group
■ permissions	■ site-data	■ test-schedule
■ personal-CO-line	■ sit-treatment	■ time
■ pgate*	■ software	■ time-of-day
■ pickup-group	■ station	■ toll
■ port	■ svn-button-location	■ trunk-group tac
■ pri-endpoint	■ synchronization	■ udp
■ remote-access	■ system-parameters features	■ vdn
■ rhnpa		■ vector
■ route-pattern		

Note:

* G3r V2 only.

Duplicate Commands

Allows duplication of existing objects and must be used with qualifiers "extension numbers" to automatically establish service for multiple voice terminals and data modules. Only one data module can be duplicated at a time. Up to 16 voice terminals can be duplicated at one time. The objects that can be duplicated are: access-endpoint, administered-connection, data-modules, and stations.

List Commands

Displays parameters associated with groups of objects. This command is used to obtain a list of all, or a selected range of, voice terminals, trunks, and other features that have been administered. The list command and its associated qualifiers can be used to retrieve data for all the ports in the System, or for a specified subset of ports. The following object words are available for use with the *list* command. They can be displayed by pressing the Help key after entering the action word "list".

■ aar analysis	■ data-module	■ pickup-group
■ aar digit-conversion	■ disabled-mos	■ pri-endpoint
■ aar route-chosen	■ do-not-disturb	■ pms-down
■ abbreviated-dialing group	■ do-not-disturb group	■ report scheduler
■ abbreviated-dialing enhanced	■ emergency	■ route-pattern
■ aca-parameters	■ extension-type	■ set-data
■ access-endpoint	■ fiber-link*	■ signaling-group
■ administered-connection	■ groups-of-extension	■ sys-link*
■ agent-loginID	■ history	■ station
■ ars	■ hunt-group	■ term-ext-group
■ authorization-code	■ intercom-group	■ test-schedule
■ bcms	■ isdn-testcall	■ testcalls
■ bridged-extensions	■ marked-ports	■ toll all
■ cabinet*	■ met-history	■ toll toll-list
■ configuration all	■ measurements-aca	■ toll restricted-call
■ configuration board	■ measurements-ds1	■ toll unrestricted-call
■ configuration carrier	■ measurements-ds1-log	■ trunk-group
■ configuration control	■ measurements-security-violations	■ udp
■ configuration stations	■ members trunk	■ usage
	■ modem-pool	■ vdn
	■ monitored-station	■ vector
		■ wakeup activity
		■ wakeup incomplete
		■ wakeup requests

- configuration software-version
- configuration trunks
- coverage answer-group
- coverage path
- m s t
- node-routing
- partitioned-group
- performance
- personal-CO-line
- p gate*
- wakeup station
- wakeup summary
- wakeup sys-failure

Note:

* G3r V2 only.

Remove Commands

Displays the screen form for the associated object word. Pressing ENTER deletes the object from the System. Pressing CANCEL cancels the remove requested. The following object words are available for use with the *remove* command. They can be displayed by pressing the Help key after entering the action word "remove".

■ abbreviated-dialing 7103A-buttons	■ cabinet*	■ personal-CO-line
■ abbreviated-dialing enhanced	■ coverage answer-group	■ pgate*
■ abbreviated-dialing group	■ coverage path	■ pickup-group
■ abbreviated-dialing system	■ data-module	■ pri-endpoint
■ access-endpoint	■ ds1	■ report scheduler
■ administered-connection	■ fiber-link*	■ second-digit
■ agent-loginID	■ hunt-group	■ signaling-group
■ attendant	■ intercom-group	■ station
	■ modem-pool	■ term-ext-group
		■ test-schedule
		■ trunk-group
		■ update-file
		■ vdn

Note:

* G3r V2 only.

Status Commands

Displays the operational status of the facility indicated by the object word. A complete description of all status commands is provided in *DEFINITY Communications System Generic 3 V2 Maintenance*, 555-230-105. The following object words are available for use with the *status* command. They can be displayed by pressing the Help key after entering the action word "status".

■ access-endpoint	■ link	■ signaling-group
■ administered-connection	■ logins	■ spe*
■ attendant	■ mst	■ sp-link
■ audits	■ packet-control**	■ station
■ bri-port	■ periodic-scheduled	■ switch-node*
■ cabinet*	■ pgate-port*	■ synchronization
■ card-mem	■ pms-link	■ sys-link*
■ cdr-link	■ pri-endpoint	■ system
■ data-module	■ pnc*	■ trunk
■ hardware-group health	■ processor-channel	■ tsc-administered
■ interface		■ tti
■ isdn-testcall		
■ journal-link		

Notes:

* G3r V2 only.

** G3i V2 only.

Command Entry

Two or more keywords are needed to specify a complete command. Each keyword is delimited by a space character or a command line terminator (such as, pressing the Return key or the tab key). All the keywords for a specific command may be entered at the same time or each keyword may be entered separately followed by a command line terminator. If each keyword is entered separately, the Help key can be pressed to obtain help for the next part of the command. The user is prompted at each level of the command line entry with the original prompt and the command words already entered. At the command level following login, the user is prompted with the prompt *enter command*:

A completed command line must be terminated by a command line terminator. If an error is encountered, the System provides a prompt at the level where the error occurred, the remainder of the command line will be ignored, and an error message will be displayed.

If just one keyword of the command is entered at a time followed with a command line terminator, the System provides a prompt for the next keyword of the command. The prompt is composed of the command line prompt and the previously accepted keywords appended to it. If an error is encountered, an error message will be displayed and a prompt requesting reentry of the keyword.

If a complete command containing one or more invalid words is entered (for example: *display dialplan 402*), the command will be accepted up to the first invalid word and the following message will be displayed:

"xxx" is an invalid identifier; press RETURN to execute modified command

The remainder of the command line will be rejected. If the CANCEL key is pressed, the command will be aborted. If the back tab key is pressed, the last word accepted from the command will be deleted.

Command Abbreviation and Keyword Entry

Command abbreviations are accepted by entering enough characters of a keyword to uniquely distinguish it from other legal keywords in the current command line. If the input is ambiguous the following message will be displayed:

xxxx is an ambiguous entry

The list of keywords which partially matched the input will also be displayed. The unambiguous characters already entered are appended to the prompt and the cursor is positioned at the end of these characters. A user need only type enough characters to make this entry unambiguous. If the input does not partially match any of the legal keywords at the current level, the entry is ignored and the following message is displayed:

xxxx is an invalid entry -- Please Press HELP

Every character of the command does not have to be entered on the command line. The command words can be abbreviated, but the abbreviation must be unique to the command.

For example, for the command line *change station 3600*, a *ch* could be entered as the abbreviation for "change" as there is only one *action* command beginning with a *ch*. However, because there are several objects beginning with *s*, an *st* must be entered as the abbreviation for the word *station* as the System cannot determine by an *s* alone whether the *change* is to a station or to the System.

Help Facilities

At any point in the command hierarchy or on the command line, the Help key can be pressed to obtain help. The System responds with a message which depends on the current level of the command hierarchy. If the level requires a particular keyword (that is, the level is an Action or Object level), a list of the valid keywords at that level is displayed. If the level is the Qualifier level, a message is displayed describing the format and the type of parameter required at that level. The use of brackets ([]) around keywords or qualifiers indicates that the entry of the keyword, qualifier, or the part of the qualifier enclosed in the brackets is optional.

The System will only display the commands that a user has permission to use and which are needed for particular system configurations. (User permissions are controlled by login and password assignments.) If a user does not have permission to use a particular object word, that object is removed from the user's help display at that level. If a user does not have permission to use any of the object words under a given level, the objects will be removed from the user's help display at that level. Similarly, if the system configuration does not require specific commands or objects, they are removed from the user's help display at the appropriate level. A duplicated system is the system configuration that requires additional object words and associated commands.

Special Command Line Functions

The following special command line functions are available:

- **Logoff** — Typing “logoff” at any command level will log the user off the System.
- **Cancel** — Pressing the CANCEL function key at any level and after any character typed on the command line will; cancel the command, prompt for a new command at the login level, and clear the command path line.
- **Character Erase** — Pressing the Backspace key will erase the character to the left of the cursor and will position the cursor at that position. If the cursor is at the first position, the backspace will cause the terminal bell to ring.
- **Help** — Pressing the HELP function key displays a list of valid keywords for the current level or a message describing the format and the type of parameter expected at this level.
- **Word Delete** — Pressing the back tab key will erase the last word typed on the command line. If there are no words on the command line, word delete will backup one level along the hierarchical command structure. The command path line will be updated to reflect the word deletion. If the user is at the top level, the top level prompt will be redisplayed.
- **Command Line Terminator** — Pressing the Return key or the tab key will enter the characters typed at the current prompt into the System.
- **Print** — Typing *print* as part of a *display* or *list* command permits printing of all or part of the translation data of the specified object. If the “print” option is entered as part of other commands, the System returns an error message and a prompt for a correct command.
- **Direct Page Access** — When a multipage form is being displayed, the user may skip directly to any page by pressing the OPTS key and entering the desired page number, rather than by using the “Page” key to advance to the desired page.
- **Repeat Last Command** — Typing “R” when the “command:” prompt is displayed will cause the previously executed command line to be re-displayed with the cursor positioned at the end of the line. The command can then be executed “as-is” by simply pressing the RETURN key, or may be edited using the Word Delete functions described above.

When a special command line function is entered, information displayed on the screen that is not required is removed. For example, if help has been requested for a qualifier and then the CANCEL key is pressed, the display screen will be cleared.

Display Screen Format

For the command line interface, the display screen is made up of 27 lines of 80 characters each. The screen is partitioned as follows:

Line 1.	Line 1 is the command path line and is used to display the command line history, the active processing element (that is, control complex) in duplicated systems, and the page number.
Line 2 through Line 22.	These lines are used to display command output and multiline help messages.
Line 23.	This line is the message line and is used to display single line help and error messages.
Line 24.	This line is the command line and is used for command entry. All commands are entered on this line. The line is divided into two sections. The first 64 characters on the line are used to display the current command, and the last 16 characters are used to display either the page number for the current command and the active switch processing element [(SPE) - in duplicated systems], or the message <i>Please Wait</i> for commands which take longer than two seconds to respond.

When a command first executes, the command is displayed on the first section of the line. Also, for duplicated systems, the active SPE is displayed on the second section of the line. This allows the user to associate the command context with the response of the command and to be aware of which SPE is presently active. The active SPE is either "PE A" or "PE B" for duplicated systems. The format for the command path line is:

action object [qualifier] page x of x PE A B

where the action, object, and qualifier words have been defined earlier. The page information only appears when System forms are displayed. The command path line is highlighted using the terminal's reverse video enhancement feature.

Line 26 and Line 27.	These lines are used to display the functions of the screen labeled programmable keys. Normally, these lines are blank.

Command Return Point

After a command has completed either successfully or unsuccessfully, the user is returned to the command level. The last command entered will remain on the command path line, until the next command line terminator is entered. When a command line terminator has been entered, the last command will be erased before the command path line is updated for the next command.

Restrictions

A user will be restricted from executing a command if:

- The user does not have the permission to execute the command, OR
- The system configuration does not require a command, OR
- The command is a member of a set of commands which are being used by another user.

System Features, Functions, and Services

3

This chapter lists the forms and fields required to implement features associated with the System. A brief description of each feature requiring implementation is given along with associated procedures and hardware requirements. A reference table is provided for each feature. The table provides a list of System forms required to assign the feature, the fields on the form(s) requiring completion, and page locations for instructions. The forms are listed in the tables in the order they should be completed. A listing of the forms with associated instructions and additional information, if applicable, is provided immediately following the table. Examples are provided for complex features. Blank forms are provided in the accompanying "Blank Forms Package."

This chapter does not attempt to discuss any feature in detail. Refer to *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for detailed feature descriptions.

System features can be categorized into six functional areas: Voice Management (VM), Network Services (NS), System Management (SM), Data Management (DM), Telemarketing (TM), and Hospitality (H). These feature abbreviations are used in the table below. A list of features by these functional areas is provided on the following pages. Features requiring no implementation are denoted with an asterisk (*) on the list. Features requiring additional hardware (AH) are noted with an "x" in the AH column. Features requiring implementation are described individually following the functional list.

Refer to the tables in Appendix B, *Application Notes*, for specific circuit packs required for each country, and to the Capacity Table in Appendix C for the feature capacity limits for each hardware configuration.

VM	NS	SM	DM	TM	H	AH	Feature Name
x				x		x x	Abandoned Call Search Abbreviated Dialing
		x	x				Administered Connection/Access Endpoint Administration Without Hardware
	x		x	x			Agent Call Handling (includes Call Work Codes and Stroke Counts) Alphanumeric Dialing Alternate Facility Restriction Levels (AFRL)
x x x x							Attendant Auto-Manual Splitting* Attendant Call Waiting* Attendant Calling of Inward Restricted Stations Attendant Control of Trunk Group Access
x x x						x	Attendant Direct Extension Selection With Busy Lamp Field Attendant Direct Trunk Group Selection Attendant Display
x x x						x	Attendant Recall* Attendant Release Loop Operation* Audio Information Exchange (AUDIX®) Interface*
x	x		x				Authorization Codes Automatic Alternate Routing (AAR) Automatic Available Split (AAS)
x	x			x		x	Automatic Callback Automatic Call Distribution (ACD) Automatic Circuit Assurance (ACA)
x x	x				x	x x	Automatic Incoming Call Display* Automatic Route Selection (ARS) Automatic Wakeup
x				x			Basic Call Management System (BCMS) Bridged Call Appearance — Multi-Appearance Voice Terminal
x x							Bridged Call Appearance — Single-Line Voice Terminal Busy Verification of Terminals and Trunks

VM	NS	SM	DM	TM	H	AH	Feature Name
X		X	X			X	Call Coverage
X			X				Call Detail Recording (CDR)
							Call Forwarding — All Calls
X							Call Management System (CMS)
X							Call Park
X							Call Pickup
				X			Call Prompting
				X			Call Vectoring
X							Call Waiting Termination
	X						Call by Call Service Selection
	X						Calling Party Number/Billing Number
	X			X		X	CallVisor Adjunct-Switch Application Interface (ASAI)
X						X	Centralized Attendant Service (CAS)
X			X				Class of Restriction
X			X				Class of Service
X						X	Code Calling Access
X							Conference — Attendant*
X							Conference — Terminal*
X							Consult
X							Coverage Callback
X		X					Coverage Incoming Call Identification
							Customer-Provided Equipment Alarm
			X			X	Data Call Setup
			X				Data Hot Line
			X				Data Privacy
			X				Data Restriction
	X		X			X	Data-Only Off-Premises Extensions
							D-Channel Backup
	X						DCS Alphanumeric Display for Terminals
	X						DCS Attendant Control of Trunk Group Access
	X						DCS Attendant Direct Trunk Group Selection
	X						DCS Attendant Display
	X						DCS Automatic Callback
	X						DCS Automatic Circuit Assurance
	X						DCS Busy Verification of Terminals and Trunks
	X						DCS Call Forwarding — All Calls
	X						DCS Call Waiting*

VM	NS	SM	DM	TM	H	AH	Feature Name
	X X X						DCS Distinctive Ringing* DCS Multi-Appearance Conference/Transfer* DCS Over ISDN-PRI
X	X		X				DCS Trunk Group Busy/Warning Indication Default Dialing Demand Print
X X X			X			X	Dial Access to Attendant* Dial Plan Dialed Number Identification Service Digital Multiplexed Interface (DMI)
X X X						X X X	Direct Department Calling Direct Inward Dialing Direct Outward Dialing
X			X		X	X X	Distinctive Ringing (Alerting) Do Not Disturb DS1 Tie Trunk Service
X	X	X	X			X	EIA Interface Emergency Access to the Attendant Enhanced Terminal Administration Extended Trunk Access
X	X						Facility Busy Indication Facility Restriction Levels and Traveling Class Marks
X	X	X					Facility Test Calls Facility/Non Facility Associated Signaling Flash
X X	X						Flash Public CO Register Recall Forced Entry of Account Codes Generalized Route Selection
X X X							Go to Cover Hold Hot Line Service
X X				X			Hunting Inbound Call Management Individual Attendant Access
X			X			X	Information System Network (ISN) Interface Integrated Directory

VM	NS	SM	DM	TM	H	AH	Feature Name
X X	X					X X	Integrated Services Digital Network — Primary Rate Interface Inter-PBX Attendant Calls Intercept Treatment
X X X			X				Intercom — Automatic Intercom — Dial Intra-switch CDR
X X			X	X			Intraflow and Interflow Last Number Dialed Leave Word Calling
X X				X		X	Line Lockout* Lookahead Interflow Loudspeaker Paging Access
X X X						X	Loudspeaker Paging Access — Deluxe Manual Message Waiting Manual Originating Line Service
X		X	X			X X	Manual Signaling Modem Pooling Move Agent From CMS*
X X X		X					Multi-Appearance Preselection and Preference Multiple Listed Directory Numbers Multilanguage Display* Multiuser System Management Access
X	X				X	X X	Music-on-Hold Access Names Registration Network Access — Private
X X	X					X	Network Access — Public Night Service — Hunt Group Night Service — Night Console Service
X X						X	Night Service — Night Station Service Night Service — Trunk Answer From Any Station
X	X X					X	Night Service — Trunk Group Node Number Routing (NNR) Off-Premises Station
X		X		X		X	Outbound Call Management System Performance Measurements Personal Central Office Line
X X						X	Personalized Ringing Power Failure Transfer*

VM	NS	SM	DM	TM	H	AH	Feature Name
X X X							Priority Calling Privacy — Attendant Lockout Privacy — Manual Exclusion
X X				X	X X X		Property Management System Interface Pull Transfer Queue Status Indications Recall Signaling*
X X		X				X X	Recent Change History* Recorded Announcements Recorded Telephone Dictation Access
X X		X				X	Remote Access Report Scheduler and System Printer Restricted/Unrestricted Call Lists
X X X							Restriction — Controlled Restriction — Miscellaneous Terminal Restriction — Miscellaneous Trunk
X X X							Restriction — Toll Restriction — Voice Terminal — Inward Restriction — Voice Terminal — Manual Terminating Line
X X X							Restriction — Voice Terminal — Origination Restriction — Voice Terminal — Outward Restriction — Voice Terminal — Termination
X X X							Ringback Queuing Ringer Cutoff Rotary Dialing*
X X		X					Security Violation Notification Send All Calls Slenderized Operation*
X				X			Service Observing Single-Digit Dialing and Mixed Station Numbering
X	X X					X	Software Defined Data Network Straight Forward Outward Completion* Subnet Trunking
X		X X					System Measurements* System Status Reports* Temporary Bridged Appearance*

VM	N S	SM	D M	T M	H	AH	Feature Name
x x	x						Temporary Signaling Connection (TSC) Terminating Extension Group (TEG) Through Dialing*
x x	x						Time of Day Routing Timed Reminder Touch-Tone Dialing*
x x x							Transfer* Trunk Flash Trunk Group Busy/Warning Indicators To Attendant
x x x						x	Trunk Identification By Attendant Trunk-to-Trunk Transfer Uniform Call Distribution (UCD)
x x x	x					x x x x	Uniform Dialing Plan (UDP) Visually Impaired Attendant Service (VIAS) Voice Message Retrieval Voice Terminal Display

7400A/7400B+ Data Module

The 7400A data module may be used instead of an MTDM when supporting the combined Modem Pooling feature. The 7400A data module supports asynchronous operation at speeds up to 19200-bps, and provides a DCP interface to the switch and an EIA 232C interface to the associated modem. The 7400A can operate in the stand-alone mode as a data module.

The 7400B+ data module supports asynchronous data communications and can operate in the stand-alone mode for data only service or in the linked mode which provides simultaneous voice and data service (acts like a DTDM). The 7400B+ provides voice and data communications to 7400D series voice terminals and 602A1 CALLMASTER® voice terminals that have a connection to a data terminal or personal computer. The 7400B+ integrates data and voice into the DCP protocol required to interface with the switch via a port on a Digital Line circuit pack. The 7400B+ may be used instead of an MPDM when asynchronous operation at speeds of up to 19.2 kbps is required to provide a DCP interface to the switch for data terminals, printers, and so on. The 7400B+ does not support synchronous operation and keyboard dialing.

7400C High Speed Link

The 7400C High Speed Link (HSL) is a data service unit that allows data equipment to access the DCP data services. It provides synchronous data transmission at speeds of 56- and 64-kbps and provides a link to high speed data networks. It can be used for Group 4 Fax applications that will include electronic mail and messaging, and electronic storage of printed documents and graphics. The 7400C can also be used for video conferencing and LAN interconnect applications.

8500 Data Module

The 8500 Data Module connects data terminal equipment (DTE) (such as, a PC) or data communications equipment (DCE) (such as, a modem) to the ISDN network. The 8500 Data Module supports EIA 232C and V.35 interfaces and RS-366 Automatic Calling Unit interface (for the EIA 232C interface only).

When configured as an asynchronous DCE, the 8500 supports data rates of 300, 1200, 2400, 4800, 9600, and 19200 bps. When configured as a synchronous DCE, the 8500 supports data rates of 1200, 2400, 4800, 9600, 19200, 56000, and 64000 bps.

The 8500 has no voice functions, and can be configured in the following ways:

- asynchronous DCE

- 300, 1200, 2400, 4800, 9600, 19200 bps

- synchronous DCE

- 1200, 2400, 4800, 9600, 19200, 56000, 64000 bps

- asynchronous DTE (used for modem pooling)

- Up to 19200 bps

The 8500 Data Module can be stand-alone or in a multiple-mount housing.

Asynchronous Data Module (ADM)



NOTE:

The *alias station* command cannot be used to alias data modules.

The ADM may be used with asynchronous DTEs as a data stand for 7500 Series of ISDN-BRI voice terminals, thus providing connection to the ISDN network. The ADM provides integrated voice and data on the same voice terminal and supports data rates of 300, 1200, 2400, 4800, 9600, and 19200 bps. This module also supports the Hayes® command set, providing compatibility with PC communications packages.

AAR/ARS Partitioning

Provides for the Automatic Alternate Routing (AAR) and Automatic Route Selection (ARS) services to be partitioned among as many as eight different groups of users within the System.

**Note:**

The ARS/AAR Partitioning feature must be enabled on the System-Parameters Customer-Options form before fields and associated fields on forms can be administered.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction	Partitioned Group Number (PGN)	5-93
or		
Time of Day Routing	All	4-25
ARS Analysis	Partitioned Group Number	4-41
AAR Analysis	Partitioned Group Number	4-8

- Class of Restriction Form — Assign a Partitioned Group Number (1 through 8) that is used by AAR/ARS features to select the AAR/ARS service for a group of users. The PGN field on the COR form is only displayed if the ARS/AAR Partitioning option is enabled and the Time of Day Routing option is not enabled on the System-Parameters Customer-Options form.
- ARS Analysis Form — Complete the Partitioned Group Number field as required.
- AAR Analysis Form — Complete the Partitioned Group Number field as required.
- Time of Day Routing Form (Optional) — Complete one form for each PGN as required.

**NOTE:**

The Time of Day Routing option must be enabled on the System-Parameters Customer-Options form before a Time of Day Routing form can be administered.

Hardware Requirements

None.

Abandoned Call Search

Provides identification of abandoned calls. Before an incoming trunk call to a hunt group or ACD split rings the hunt group member or agent, the System checks to ensure that the calling party has not abandoned the call (that is, hung up). If the call has been abandoned, the call will not ring the hunt group member or agent.

NOTE:

Abandoned Call Search is designed to work with central office (CO) trunks (ground start — analog) that *do not* provide disconnect supervision and that *do* react to a 500 ms break. Central offices that provide disconnect supervision do not require use of the Abandoned Call Search feature.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group	Abandoned Call Search	
CO		4-178
F X		4-253
WATS		4-375

- Trunk Group Forms — Complete Abandoned Call Search field.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Each CO trunk requires a port on the TN747C Central Office Trunk circuit pack.

Abbreviated Dialing

Provides lists of stored numbers that can be accessed to place local, long-distance, and international calls; to activate features; or to perform end-to-end signaling. (End-to-end signaling allows access to remote computer equipment.) Stored numbers can be accessed by voice terminal users and data terminal users.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes	AD List 1 Access Code	5-161
	AD List 2 Access Code	
	AD List 3 Access Code	
	Program Access Code	
Station (multiappearance)	AD List 1	5-287
	AD List 2	
	AD List 3	
	Button/Feature Button Assignments	
	-AD Buttons	
	Hot Line Destination (if applicable)	
	-AD List Number	
Console Parameters	List 1, 2, 3	5-101
Attendant Console	Feature Button Assignments	5-35
	-AD Buttons	
Abbreviated Dialing	All	
71 03A Button Assignment		5-14
System List		5-11
Group List		5-5
Personal List		5-8
Enhanced List		5-2
Data Line Data Module	List1:	5-111
Feature-Related System Parameters	Off-Premises Tone Detect Timeout Interval	5-168

- **Feature Access Codes Form** — Verify that all feature access codes for accessing lists and programming entries in a personal list have been established in the “Abbreviated Dialing List 1, List 2, and List 3 Access Code and Program Access Codes” fields.
- **Station Forms** — Assign lists to voice terminal's Abbreviated Dialing field. On multiappearance voice terminals, optionally assign buttons to access an Abbreviated Dialing list entry.

For example, if entry 1 on the System List is the number of a branch office in London, then this entry can be assigned to a button. The call can be placed by lifting the receiver and pressing the button. Similarly, entries from a group or personal list can be assigned to a button. Users can program buttons which are assigned to an Abbreviated Dialing personal list entry.

Some features have a button directly associated with them; others do not. For example, a Call Pickup button can be assigned to a multiappearance voice terminal, whereas a Priority Calling button cannot. To associate Priority Calling with a button, assign the Priority Calling feature access code to an Abbreviated Dialing list (normally the System List) and then assign that list entry to the button. This is exactly the same procedure as discussed in the preceding paragraph. The only difference is that the Abbreviated Dialing list entry is a feature access code instead of a telephone number.

Certain voice terminals supported by the System are capable of storing numbers. Like Abbreviated Dialing, a stored number is automatically dialed when the associated button is pressed. This, however, is Repertory Dialing, not Abbreviated Dialing. In this case, the number is stored in the voice terminal, not in the System. Abbreviated Dialing only applies for numbers stored in the System.

- **Console Parameters Form** — Assign types and numbers in the Abbreviated Dialing field (needed for attendant's abbreviated dialing, not for stations).
- **Attendant Console Form** — Assign abbreviated dialing list button to attendant console.
- **Abbreviated Dialing Forms** — Establish the desired System, Group, Personal, and Enhanced lists and complete all fields. If the System uses 7103A Fixed Feature Voice Terminals, complete all fields of the 7103A list.

Contact personnel who will use an Abbreviated Dialing Group List to determine the codes or numbers that should be entered on the various Group Lists. Blank lists can be established and codes or numbers can be added later. Also, specify if calls to numbers on this list should be privileged.

Users can program their own Personal List once the list is in the System via the System's administration terminal.

NOTE:

The Abbreviated Dialing Enhanced List option must be enabled on the System-Parameters Customer-Options form before an Enhanced List can be administered.

The Abbreviated Dialing Enhanced List feature is not supported by the G3s V2 ABP configuration.

- Data Line Data Module Form — Assign lists to Data Module List 1 field.
- Feature-Related System Parameters Form — Assign the Off-Premises Tone Detect Timeout interval (5 to 25 seconds). The AD special “wait” character, when used in an AD string, will cause a delay in the continued dialing of numbers in the string until this interval has elapsed. This interval is the number of seconds that a Call Progress Tone Receiver (Detector) will wait to detect a tone from off-premises during dialing. Once the time-out interval occurs, any additional call progress tones will not be detected.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Additional TN748C Tone Detector circuit packs (up to five per System) may be required if the AD special “wait” character is to be used frequently. Several “wait” characters in an AD string may “tie up” a Tone Detector for an extended period (see “Feature-Related System Parameters” above).

Access Trunk Group

An Access Trunk Group provides the System with the ability to communicate with another PBX as either a main or a tandem switch in an Electronic Tandem Network arrangement. Trunks in this group will not send or receive Traveling Class Marks.



NOTE:

An ISDN-PRI trunk group whose Service Type field is “access” can also function as an access trunk group.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group Access	All	4-130

- Trunk Group (Access) Form — Complete all fields as required.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port is required on a TN464D, TN722B, TN760C, or TN767 circuit pack for each trunk to be assigned in the Access Trunk Group. A TN464D provides 32 ports, a TN722B or TN767 provides 24 ports, and a TN760C provides four ports.

Administered Connection/Access Endpoint

The **Administered Connection** (AC) feature provides the capability to establish end-to-end connections between two access/data endpoints based on AC attributes. An AC is automatically established by the System whenever the AC is scheduled to become active. ACs provide capabilities such as: alarm notification, including an administrable alarm type and threshold; automatic restoration of connections established over a Software Defined Data Network (SDDN) ISDN-PRI trunk group [service may be referred to as ISDN-PRI (AC/AE) Service]; scheduled as well as continuous connections; and administrable retry interval for connection attempts that have failed.

The SDDN provides virtual private line connectivity using the AT&T Switched Network (via 4ESS™ switch). Access to the service is provided via an ISDN-PRI trunk group whose Service Type is "sddn." The Destination field entry on the Administered Connection form is used by the system to route the AC when it is due to be active, based on associated Authorized Time Of Day field entries.

The AC feature replaces the Permanent Switched Calls feature that was provided in previous releases of the System.

An AC can be established between two endpoints on the same switch; between two endpoints in the same private network, but on different switches; or between one endpoint on the controlling switch and another endpoint off the private network. In all configurations, the AC must be administered on the same Generic 3 V2 switch which has the originating endpoint.

For an AC in a private network, if the two endpoints are on two different switches, normally the connection will be routed via AAR through tie trunks (that is, ISDN-PRI, DS1, or analog tie trunks) and possibly intermediate switches. However, if required, the connection can be routed via ARS and the Generalized Route Selection features through the public network. The call is routed over associated ISDN-PRI trunk group members (that is, trunks). When the far-end answers, a connection is "setup" between the far-end and the extension number entered in the Originator field on the AC form.

The **Access Endpoints** feature provides the ability to terminate ACs to non-signaling trunks (that is, trunks that neither generate nor respond to signaling) and thus use these trunks as endpoint facilities. This feature allows for the administration of a single trunk (that is, does not require an entire trunk group) providing the capability to assign an extension number to an individual trunk.

Access Endpoints are non-signaling trunk ports and therefore neither generate signaling to the far-end of the trunk nor respond to any signaling from the far-end. An Access Endpoint cannot be used as a trunking facility between switches and does not require the administration of a trunk group. It is used primarily to support devices, switches, or services which have a trunk interface but do not require signaling on the trunk.

An Access Endpoint may be designated as the originating (local) endpoint or destination endpoint in an AC. This provides a trunk-to-trunk cross-connect capability.

The following are typical Administered Connection applications:

- A local data endpoint connection to a local or remote access endpoint.
Examples are: an MPDM ACCUNET® digital service connecting to a Software Defined Data Network via an ISDN-PRI trunk group DS1 port; an MPDM ACCUNET digital service connecting to an ACCUNET Switched 56 Service via a DS1 port.
- A local access endpoint connecting to a local or remote access endpoint.
Examples are a DSO cross-connect and a 4-wire leased line modem to a 4-wire leased line modem connection via an analog tie trunk.
- A local data endpoint connecting to a local or remote data endpoint such as a connection between two 3270 data modules.

⇒ NOTE:

The following guidelines do not include AAR, ARS, or Generalized Route Selection administration information in support of routing AC calls over trunk groups. Refer to the respective feature coverage elsewhere in this chapter for that information.

Administration

⇒ NOTE:

The Administered Connection/Access Endpoint feature is not supported in the G3s V2 ABP configuration.

To implement this feature, the following form(s) or sections of form(s) must be completed:

Form	Field	Form Instructions {Page #}
Data Module	All	5-107
Circuit Pack (trunks)	All	5-88
Access Endpoint	All	5-16
Trunk Group	All	
ISDN-PRI		4-275
Tie		4-349
COR	All	5-93
COS	All	5-99
Dial Plan	Local Node Number	5-150

Form	Field	Form Instructions (Page #)
Administered Connection Station (multi-appearance)	All	5-21
	Button/Feature Button Assignments	5-287
	-ac-alarm	
Attendant Console	Feature Button Assignments	5-35
	-ac-alarm	

- Data Module Form — Complete the appropriate Data Module forms (MPDM or MTDM) if the AC involves one or two local data modules.
- Circuit Pack (Trunk) Form — Non-signaling DS1 or analog tie trunk ports, if required as access endpoints, may be administered as ports but not as members of trunk groups. Assign associated circuit packs using the Circuit Pack form instructions as provided in “Circuit Pack Administration” in Chapter 5 of this manual. These circuit packs must be assigned before the port field on the Access Endpoint form can be completed.
- Access Endpoint Form — Complete all fields as required. Complete a form for each Access Endpoint to be defined.
- Trunk Group Form — Complete the appropriate trunk group form for AC calls that are to be routed via AAR or ARS and Generalized Route Selection over associated trunk group members.
- COR Form (Optional) — Administer appropriate classes of restriction (CORs) so that only an AC endpoint can be connected to another AC endpoint. If a non-AC endpoint calls an AC endpoint, intercept treatment will be given the non-AC endpoint.
- COS Form — Administer class of service (COS) assignments so that the originating and destination endpoints are blocked from using the Call Forwarding All Calls feature.
- Dial Plan Form — The Auto Restoration field on the AC form cannot be set to “y” unless the Local Node Number field on the Dial Plan form is other than blank. Ensure that all far-end destinations as administered on the AC form are accounted for on the Dial Plan form.
- Administered Connection Form — Complete all fields as required. Complete a form for each AC to be established.

⇒ NOTE:

The Originator (and Destination if local) fields must be administered and be a valid extension of an access or data endpoint before the AC form can be administered.

- Station/Attendant Console Forms — Administer “at-alarm” feature buttons as required. The associated status lamp is used to indicate an AC alarm.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

- Trunk Circuit Packs — DS1 Interface circuit pack (TN767), Analog Tie Trunk (TN760C), or UDS1 circuit pack (TN464C or later).
- TN754B Digital Line circuit pack connections including:
 - MPDM (700A, 700D), MTDM (700B, 700C, 700E)
 - 7400A or 7400B Data Module
 - 7401 D Voice Terminal with 7400B Data Module
 - 7403D/7405D/7407D/7410D/7434D Voice Terminal with DTDM or 7400B Data Module
 - 7404D or 7406D Voice Terminal
 - 7505D/7506D/7507D Voice Terminal with ADM
 - 510D Personal Terminal
 - 515 BCT
 - PC/PBX Connection
- TN556 ISDN-BRI Line circuit pack connections
- TN778 Packet Control circuit pack connections
- Other Circuit Packs — Data Line (TN726B), Pooled Modem (TN758).

Administrable Language Display

Enables the system to display voice terminal messages in English, French, Italian, Spanish and one other “user-defined” language on attendant consoles and voice terminals equipped with 40-character displays.

To create the “user-defined” language, the English display message set must be translated into the desired language via the *change display-messages* command.

The display message language is then administered for each attendant console and properly equipped voice terminal (that is, voice terminals equipped with 40-character displays).

Administration

To administer this feature, the following form(s) or sections of form(s) must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Display Language	5-35
Station	Display Language	
7404D		5-343
7405D		5-356
7406D		5-369
7406+		5-369
7407D		5-369
7407+		5-369
7410D		5-343
7410+		5-343
7506D		5-392
7507D		5-392
85 10D		5-392
8520D		5-392
Language Translations	All	5-209
auto-wakeup-dn-dst		
call-identifiers		
date-time		
leave-word-calling		
malicious-call-trace		
miscellaneous-features		
property-management		
time-of-day-routing		

- Attendant Console Form — Specify the language in which you want call display messages presented on the attendant console. Choices are English, French, Italian, Spanish and "user-defined". The default is English.
- Station — Specify the language in which you want call display messages presented on the voice terminal display. Choices are English, French, Italian, Spanish and "user-defined". The default is English.



NOTE:

The Display Language field will only be displayed if the voice terminal is equipped with a 40-character display.

- Language Translations (Optional) — Complete all fields on the associated forms to create a "user-defined" display language.



NOTE:

If "user-defined" is the display language selected and no translations have been entered via the *change display-messages* command, asterisks will be displayed.

Hardware Requirements

None.

Administrable Timers

The switch provides administrable timers to control both the System and its connected trunks. Timer defaults may need adjustment depending on the application.

The Administrable Timers feature allows control of the following:

Hardware Affecting Trunk Timers

- **Answer Send** — This timer will determine the length of the answer signal pulse. It will only be administrable if the Trunk Signaling Type is “dis” and the trunk group direction is incoming or two-way.

- **Disconnect Signal Error** — Determines how long to wait for the far end to release a call after the System sends a disconnect signal, before logging the lack of release as an error.

Disconnect signal error times vary from country to country, and sometimes between trunks inside one country.

This timer begins timing when the System sends a disconnect signal over a Tie or Loop or ground start CO trunk, and ceases timing when the far end releases the trunk. If this timer expires, the System will log an error specifying the trunk involved.

The timer is administrable per Tie and Loop or ground start CO trunk group, from 1 to 255 seconds with granularity of 1 second. The default is 240 seconds.

- **End to End Signaling Tone** — Applied during end to end signaling. It specifies the length of a DTMF tone sent to the public network in response to a button depression at a hybrid station set.

If a hybrid set is used for end to end signaling, it does not send tones directly to the network, but rather signals the System when a button has been pushed. The System determines the length of the tone sent to the network via a timer, but recommended tone durations vary from country to country.

Hybrid sets are no longer being supplied, but this timer is provided to work with the installed base of hybrid sets.

The timer begins timing at the start of a dial pad button depression on a hybrid set, and the System sends out DTMF tone until the timer expires. There is a separate timer to handle this function for CPE trunks.

This timer is administered per non-CPE trunk group, from 20 ms to 2550 ms in increments of 10 ms.

- **End to End Signaling Pause** — Applied during end to end signaling. It specifies the minimum length of a pause between tones being sent in response to button depressions at a hybrid station set.

If a hybrid set is used for end to end signaling, it does not send tones directly to the network, but rather signals the System when a button has been pushed. The System determines the length of the tone sent to the network via a timer, but recommended tone duration times vary from country to country.

Hybrid sets are no longer being supplied, but this timer is provided to work with the installed base of hybrid sets.

This timer begins timing at the end of a dial pad button depression on hybrid sets during end to end signaling. The pauses between generation of DTMF tones by the System in response to button depressions will continue for the time specified by this timer. There is a separate timer to handle this function for CPE trunks.

This timer is administered per non-CPE trunk group, from 20 ms to 2550 ms in increments of 10 ms. The default is 150 ms.

- **Flash Length** — This timer specifies the length (in msec) of the flash signal to be generated toward the Central Office.

This timer is administrable for CO, FX, WATS, and DID trunk group types from 10 ms to 2550 ms in increments of 10ms. The default is 540 ms.

This field is only applied to TN436B, TN459B, TN464C (or later releases), TN2146 and TN2147 ports.

- **Frequency** — Appears if the PPM field is "yes". It tells the port what frequency(ies) to listen for to detect PPM pulses. Boards can listen for up to three different frequencies (12kHz, 16kHz, and 50Hz), plus two frequency combinations (50Hz/12kHz and 50Hz/16kHz). The default is 50Hz/12kHz.

- **Glare** — Defines the minimum time between sending an outgoing seizure and receiving a seizure acknowledgment. If seizure acknowledgment is received before expiration of the timer, a glare condition is assumed. It will only be administrable if the Trunk Signaling Type is "cont" and the trunk group direction is two-way or outgoing.

- **Incoming Dial Guard** — Specifies the minimum time between detection of an incoming seizure and acceptance of the first digit on DID and Tie trunks.

Incoming dial guard values vary from country to country and between DID and Tie trunks.

This timer begins timing after an incoming seizure on DID and Tie trunks. The System will ignore any digits it receives before the timer expires.

The timer is administrable per DID and Tie trunk group, from 10 ms to 2550 ms in increments of 10 ms. The default is 70 ms.

- **Incoming Disconnect** — A disconnect signal on an incoming call is considered valid only if it continues at least for the time specified by this timer. Since it is being detected by the System, this signal would also be called “clear forward” for tie trunks.

This timer begins timing when an on-hook signal has been detected on an incoming call over a Loop or ground start CO, DID, or Tie trunk, and resets when the signal is no longer detected. If the timer times out, the call is dropped.

The timer is administrable per DID, CO and Tie trunk group, from 50 to 2550 ms in increments of 10 ms. The default is 500 ms.

- **Incoming Disconnect Send** — Calls may be cleared by either the calling switch (forward release) or the called switch (backward release). Backward release is signaled by the called switch by grounding the M-lead for the duration specified by this timer. It will only be administrable if the Trunk Signaling Type is “dis” and the trunk group direction is incoming or two-way.

- **Incoming Glare Guard** — Specifies the minimum time between release of a trunk after an incoming call and seizure on the next outgoing call. This timer helps prevent seizure of the same two way trunk by both ends.

This timer begins timing when a two way CO or Tie trunk is released from an incoming call. The System may not reseize the trunk to place an outgoing call until after the timer expires. During this time, an incoming call may seize the trunk.

The timer is administrable on two way CO and Tie trunks, per trunk group. Its range is from 100 ms to 25500 ms with granularity of 100 ms. The default is 1500 ms.

- **Incoming Incomplete Dial Alarm** — Limits the time between seizure of a DID trunk and receipt of all digits.

This timer is supported in administration and hardware. Operation of the timer is implemented in localization for countries that use this timer.

An administration field, ranging from 1 second to 255 seconds in increments of 1 second is provided per DID and Tie trunk group. The default is 255 seconds.

- **Incoming Partial Dial** — Limits the time the System waits between incoming digits for calls over rotary DID and Tie trunks. (“Digit” includes traveling class marks, if any, over Tie trunks.) The incoming partial dial times vary between countries, and between dial pulse and DTMF trunks.

This field is only displayed when the Incoming Dial Type field (Page 1) is set to “rotary”.

Italy requires that the System take one of two actions, depending on whether the CO is using a closed numbering plan, as do all COs in the USA, or an open numbering plan. Under an open numbering plan, the number of digits to be received from the CO varies, while under a closed numbering plan the number is fixed, typically at four. Under a closed numbering plan, the System will ignore the timer and wait, possibly forever, for sufficient digits, while under an open numbering plan the System will route the call to intercept treatment if this timer expires and the System has not received enough digits.

After the first digit has been received over a rotary DID or Tie trunk, this timer begins, and begins again after each digit is received. If the time specified by this timer is reached and not enough digits have been received to route the call, the System will apply intercept treatment. The timer ceases if all digits have been received or if the incoming incomplete dial alarm timer times out.

The timer is administrable per rotary DID and Tie trunk group from 5 seconds to 255 seconds in increments of 1 second. If a trunk is administered as "tone", the timer will not time out (automatically setting the trunk to 255 seconds satisfies this requirement). The default is 18 seconds.

- **Incoming Seizure** — An incoming seizure signal (for example, ringing for CO trunks) is considered valid only if it continues for the interval specified by this timer.

This timer begins timing when a seizure signal is detected on a CO or Tie trunk, and ceases timing if the signal disappears. If the timer expires, the seizure signal is considered valid. The timer does not apply to DID trunks, as they do not have a ringing state.

The timer is administrable per CO or Tie trunk group, from 20 ms to 2550 ms in increments of 10 ms. The default is 500 ms.

- **Outgoing Dial Guard** — Specifies the minimum time between seizure acknowledgment of a CO or Tie trunk and the outpulsing of digits. For trunks which do not provide seizure acknowledgment, the timer specifies the minimum time between seizure and the outpulsing of digits.

It may be possible for the user to dial a digit after the System seizes a trunk, but before the user hears dial tone. If a user immediately dials the first digits of a number they have permission to call but the CO ignores the digits, it may be possible for the user to continue dialing and reach a number they do not have permission to dial.

Typical timing varies from country to country, and in the United Kingdom, from switch to switch.

After an outgoing call, this timer specifies the minimum time between seizure of a CO or Tie trunk and outpulsing of digits. Any digits dialed by the station user after they lift the receiver but before the timer times out will be delayed until the timer expires before being outpulsed.

This timer is administrable per CO and Tie trunk group, from 100 ms to 25500 ms in increments of 100 ms. The default is 1600 ms.

- **Outgoing Disconnect** — A disconnect signal on an outgoing call is considered valid only if it continues at least for the time specified by this timer. Since it is being detected by the System, this signal would also be called “clear back” for tie trunks.

This timer begins timing when a disconnect signal has been detected on an outgoing call over Tie and Loop or ground start CO trunks, and resets when the signal is no longer detected. If the timer times out, the trunk is dropped.

The timer is administrable per Tie and Loop or ground start CO trunk group, from 50 to 2550 ms in increments of 10 ms. The default is 500 ms.

- **Outgoing Disconnect Send** — Forward release is signaled by the calling switch by grounding the M-lead for the duration specified by this timer. It will only be administrable if the Trunk Signaling Type is “dis” and the trunk group direction is two-way or outgoing.

- **Outgoing Glare Guard** — Specifies the minimum time between release of a trunk after an outgoing call and seizure on the next outgoing call. Timing varies from country to country, and between trunk types.

This timer begins timing when an outgoing or a two way CO or Tie trunk is released from an previous call. The System will not reseize the trunk to place an outgoing call until after the timer expires.

The timer is administrable per trunk group for two way or outgoing CO and Tie trunks. Its range is from 100 ms to 25500 ms with granularity of 100 ms. The default is 1500 ms.

- **Outgoing Rotary Dial Interdigit** — This timer gives the intervals between rotary digits being outpulsed by the System. Timing varies from country to country, and between COs inside some countries.

The interval between digits being outpulsed on an outgoing call over CO and Tie trunks will last for the duration of this timer. The timer applies to dial pulse signaling.

This field is only displayed when the Outgoing Dial Type field (Page 1) is set to “rotary”.

This timer is administrable per Tie and CO trunk group, from 150 ms to 2550 ms in increments of 10 ms. The default is 800 ms.

- **Outpulsing Dial Break and Make** — Specify the duration of the make-and-break intervals while the System is outpulsing digits using dial pulse or DTMF signaling.

Timing varies from country to country, and from CO to CO inside some countries. For rotary signaling, the make and break timing always adds to 50 ms (for 20 pps signaling) or 100 ms (for 10 pps signaling), but the ratio break/(break + make) varies widely.

The make and break times used by Tie and CO trunks will last for the intervals specified by these timers. They apply while the System is outpulsing digits.

Rotary Signaling

The ranges for these timers depend on the administered number of pulses per second for the trunk group: for 10 pps, the range is 20 to 80 ms in increments of 5 ms; and for 20 pps, the range is 10 to 40 ms in increments of 5 ms, since smaller granularities than 5 ms affect board performance.

The sum of these two timers must be 50 ms for 20 pps or 100 ms for 10 pps, depending on the administered number of pulses per second, to help prevent user errors.

DTMF Signaling

For both the make and break timers, the range is from 20 to 250 ms in increments of 5 ms, without other restrictions on the sum of the make and break timings.

- **Outgoing Seizure Response** — Monitors the time between seizure of a GS trunk and detection of proceed to dial indication (PDI, for example, tip ground return, delay dial signal, or wink). If there is no dial tone detector for a loop start trunk group, the timer monitors the time between seizure and sending of the first digit.

After the System waits for PDI, it can either clear the call or assume PDI should have been detected, and proceed with the call. In the first case, the period of time a typical System waits before assuming that the call has a seizure failure for lack of PDI varies from country to country. These times differ from that used for the second case (that is, assuming PDI has been detected), but timing for the two cases can be controlled by the same timer since the two cases are mutually exclusive.

This timer has two different modes of operation, depending on whether the System is using cut through or senderized outdialing. Under cut through operation, this timer begins timing at seizure of a CO or Tie trunk, and ceases when PDI detection occurs or the end user hears dial tone, assuming end users have heard dial tone if they begin dialing digits. If the timer expires the System will assume there has been a seizure failure. Under slenderized outdialing, the timer begins at seizure of a CO or Tie trunk, and ceases when PDI detection occurs. If this timer expires, the call proceeds but the switch logs an error.

The timer is administered per CO or Tie trunk group, from 1 to 255 seconds with increments of 1 second. The default is 5 seconds. (This default value was chosen for Tie trunks. When the timer is used with CO trunks, the System is typically administered to about 240 seconds.)

- **Outgoing End of Dial** — Limits the time a CO or Tie trunk may wait for answer supervision after dialing an outgoing call.

Answer supervision is not expected in the USA or Canada, but is expected in Japan. Times vary depending on the country, and on whether answer supervision is expected.

During cut through operation, the timer begins timing after each outgoing digit is received from a station by the System and sent out over the trunk. The timer ceases timing when an interdigit dial timer times out, or when the far end sends answer supervision to signal that all digits have been received. If the timer expires and the far end is not expected to send answer supervision, the System acts as if it had received answer supervision when the timer expires.

During slenderized operation, the timer begins after the last digit that was collected from the station set is sent by the System. The timer ceases timing when the far end signals that all digits have been received by sending answer supervision. If the timer expires and the far end is not expected to send answer supervision, the System acts as if it had received answer supervision.

This timer applies to CO and Tie trunks, and only when answer supervision is not expected.

This timer is administrable per outgoing and two-way CO or Tie trunk group, from 1 to 254 seconds in increments of 1 second. Setting this timer to a value outside this range will disable the timer. The default value is 10 seconds.

For tie trunks, whether answer supervision is expected is administrable per trunk group.

 NOTE:

This field controls the firmware answer-supervision timer on DS1 port circuits; the Answer Supervision Timeout field on Page 1 of the Trunk Group form controls answer supervision for analog port circuits. For DS1 port circuits, this field and the value administered in the Answer Supervision Timeout field on the Trunk Group form should be the same value.

- **PPM (Periodic Pulse Metering)** — Pulses collected from the public network to determine call cost. When this field is “yes”, PPM pulses will be collected for the trunks in this group. This field will only appear if the trunk is an outgoing or two-way CO type trunk. If this field is “yes”, the Frequency field will appear.
- **Programmed Dial Pause** — Determines the length of a pause during abbreviated dialing, ARS outpulsing, and terminal dialing. Similarly the Programmed Dial Wait timer determines the length of a wait. This timer always times out, even if the System detects tone. This timer applies only to public network and tie trunk groups, that are outgoing or two way.

This timer ranges from 1 to 254 seconds in increments of 1 second. The default is 15 seconds.

- **PPS (Pulses per Second)** — The number of pulses per second outpulsed during rotary signaling is administrable. Either 10 pps or 20 pps are acceptable inputs for this field. The default is 10 pps.

- **Ringing Monitor** — If ringing disappears for the time specified by this timer, the call is assumed disconnected by the far end. This timer begins timing when a ringing signal that has been validated by the incoming seizure timer ceases to be detected. The timer resets when ringing is detected or when the call is answered, but if this timer expires the call will be dropped. The timer does not apply to DID or Tie trunks, as they do not have a ringing state.

The timer is administrable per CO trunk group from 200ms to 51000 ms with granularity of 200 ms. The default is 5200 ms.

- **Seize Ack Send** — Specifies the length of the seize acknowledge pulse. It will only be administrable if the Trunk Signaling Type is “dis” and the trunk group direction is incoming or two-way.
- **Normal Outgoing Seize Send** — Outgoing seizure is signaled by the calling switch momentarily grounding the M-lead for the duration specified by this timer. It will only be administrable if the Trunk Signaling Type is “dis” and the trunk group direction is two-way or outgoing.
- **Outgoing Last Digit** — Defines the maximum time to wait for the next digit dialed. After the timer expires, no more digits are accepted by the board. It will only be administrable if the Trunk Signaling Type is “dis”, “cont”, or “tgu” and the trunk group direction is two-way or outgoing.
- **Release Ack Send** — After receiving a forward release signal, the called switch must send the forward release acknowledgment signal. This signal is sent by grounding the M-lead for the duration specified by this timer. It will only be administrable if the Trunk Signaling Type is “dis” and the trunk group direction is incoming or two-way.
- **Seize Ack Delay** — This timer specifies the maximum time between receiving a seizure and the sending of seizure acknowledgment by the called switch. It will only be administrable if the Trunk Signaling Type is “dis” and the trunk group direction is incoming or two-way.

Hardware Affecting System Timers

- **Programmed Dial Wait** — Determines the length of a wait during abbreviated dialing, ARS outpulsing, and terminal dialing. This timer is also known as the Off Premises Tone Detection Timeout.

The wait timer ceases timing if the System detects tone. The System will either clear the call or proceed to send digits, depending on a system administrable parameter.

The range of this timer is from 1 second to 255 seconds in increments of 1 second. The default is 6 seconds.

Software Affecting System Timers

- **Attendant Alerting Interval** — Notifies the attendant, via primary or secondary alerting (selectable), of an unanswered call if the Attendant No Answer timer has expired. This feature increments the delay threshold counter and provides notification of all calls that have not been answered in an administrable period of time via primary alerting.

The timer associated with this feature is started at the end of the Attendant No Answer interval. If the Attendant No Answer timer has been disabled, the timer will begin timing whenever the Attendant Held Call timer expires or when an unanswered call is terminated at an attendant console. When the timer associated with this feature expires, the delay threshold count is incremented, the call is forwarded to the attendant group and the attendant is put into Position Busy Mode (if possible). If this is the last active daytime console and Night Service is administered, the system is placed into Night Service.

The interval of this timer is administrable from 10 to 1024 seconds (or blank to disable) in 1 second intervals, with the default being blank.

- **Attendant No Answer** — This timer begins timing when a call is directed to the attendant group. If the timer times out, the delay threshold count is incremented, the attendant lamp associated with call flashes faster and the ringing cadence increases, and the Attendant Alerting Interval Timer is started. The delay count is reported by the traffic feature.

When this timer is disabled, the Attendant Alerting Interval Timer is started in its place.

This range of this timer is from 10 to 1024 seconds (or blank to disable) in increments of 1 second. The default is blank.

- **Attendant Return Call** — Limits the amount of time that an unanswered attendant-extended call is allowed to ring at the extended station. This timer is activated whenever the attendant extends a call to an extension. If the extension does not answer the call before the expiration of this timer, the call returns to the attendant that extended the call. This timer is also activated whenever any station other than an attendant completes a call transfer before the transferred-to station answers. If the transferred-to extension or some other endpoint in its coverage path does not answer the call before the expiration of this timer, the call is redirected to the attendant queue.

This timer is administrable per System from 10 seconds to 1024 seconds (or blank to disable) in increments of 1 second. The default is 30 seconds.

- **Attendant Timed Reminder of Held Call** — Monitors how long a call has been held at an attendant console. If a call has been held too long the attendant is alerted of the call. On expiration of this timer the held call lamp flashes, the attendant gets ringing cadence, and the Attendant No Answer Timer is set.

This timer is administrable per System from 10 seconds to 1024 seconds in increments of 1 second. The default is 10 seconds.

- **Return Call Timeout** — This is an attendant console timer that controls the time it takes a call to return to the console when an attendant removes it to answer another call.

This timer is administrable from 10 seconds to 1024 seconds (or blank to disable) in intervals of 1 second. The default is 10 seconds.

- **Time in Queue Warning** — This is an attendant console timer that controls the amount of time a call can remain in the attendant's queue before activating an alert.

This timer is administrable from 0 to 999 seconds, or blank to disable.

- **Line Intercept Tone** — Monitors how long an analog station user can wait after hearing warning tone without going on hook, before the station is placed in the lockout state. The analog intercept tone timer operates as the intercept timeout (30 seconds), but is administrable. It begins timing if the long interdigit timer times out, and ceases if the station goes on hook. If the Line Intercept Tone timer times out, the station is placed in the lockout state.

This timer does not apply to stations with the Off-Hook Alert class of service (digital stations). Those stations use the "Time Before Off Hook Alert" timer, which sends an emergency call to the attendant when it times out.

This timer is administrable per System from 2 to 60 seconds in increments of 1 second. The default is 30 seconds.

- **Night Service Disconnect** — This is the amount of time a trunk call can be unanswered during night service before being disconnected.

This timer is administrable from 10 seconds to 1024 seconds in increments of 1 second. The default is 180 seconds.

- **Wait Answer Supervision** — This is a 50 second timer that can be activated at an administration screen. When activated, the timer will drop calls to stations that have not been answered after 50 seconds of ringing.

The time interval of this timer is not administrable, however, the timer may be disabled on a per System basis.

- **MFC Interdigit Time** — This timer controls the amount of time the switch will wait for the next digit in a dial string to arrive (applies to DID trunks using MFC signaling).

- **Flashhook Interval** — This interval is defined by a lower and upper bound of flash duration. An on-hook that lasts for an interval that lies between the two boundaries will be considered a flash by the switch.

- **Disconnect Timing** — This timer controls the number of seconds an on-hook must last for it to be considered a disconnect.

- **Short Interdigit** — Limits the time between digits collected from a station set by the System if digit processing predicts the digits already collected might form a complete dialed number (such as, after “0” in the USA).

When a timeout is needed to determine when the user has finished dialing, a short time is desirable if the digits already collected could form a complete dialed number (for example, after “0” in the USA). These times vary from country to country.

This timer begins timing after each digit is received from a station by the System, but only if the digits collected so far could form a valid extension number.

This timer ceases timing if answer supervision is received, and resets if another digit is received from a station. If the timer times out the call will be routed, if possible, otherwise the System waits for more digits until the long interdigit timer times out.

This timer is administrable per switch from 3 seconds to 9 seconds in increments of 1 second. The default is 3 seconds.



NOTE:

This timer should always be administered to a value less than the long interdigit timer (less than 10 seconds).

- **Unanswered DID Call** — Limits how long a DID call can remain unanswered before it is routed to the attendant. This timer begins at original routing of a DID call, and continues timing through any coverage points, without being reset. When the timer expires, the call is routed to the attendant queue or to a recorded announcement. The timer ceases if the call is answered.

This timer is administered per System, ranging from 10 to 1024 seconds in increments of 1 second. The default is 60 seconds.



Notes:

Whether the call routes to the attendant queue or to a recorded announcement depends on an option administrable per System.

This timer can be disabled by administration, so that an unanswered DID call will continue to ring at the called station, or following coverage station, forever.

- **Coverage** — Caller Response Interval — This timer controls the number of seconds that must elapse before unanswered internal calls are redirected to the first coverage point.
- **Off-Premises Tone Detect Timeout Interval** — This timer controls the number of seconds that must elapse before the switch ignores call progress tones on off-premises calls.

- **Time Before Off-Hook Alert** — This timer controls the number of seconds that a voice terminal with an off-hook alert class of service can remain off-hook before an emergency call is sent to an attendant.
- **Security Violation Timers** — These timers track the intervals within which security violations must occur.

Administration

To implement the timers, the following forms must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group (Administrable Timers)	All	
Access		5-16
CO		4-178
DID		4-230
DIOD		4-239
FX		4-253
PCOL		4-295
Tandem		4-324
Tie		4-349
WATS		4-375
Console Parameters (Attendant Timers)	Timer fields	5-101
Feature-Related System Parameters (Call Timers)	Timer fields	5-168

- **Trunk Group Form** — The Administrable Timers page for each trunk group will be displayed depending on the information entered on Page 1 of the form. If the information entered on Page 1 does not require administrable timers, this page will not be displayed. Assign timer values as outlined in the description for each timer above.
- **Console Parameters Form** — Complete the timer fields as required.
- **Feature-Related System Parameters Form** — Complete the timer fields as required.

Hardware Requirements

None.

Administration Without Hardware

Provides the ability to administer station forms without specifying a port location. Stations administered as such will not cause alarms or errors to be generated when the station is translated but not yet installed. These station types are referred to as “phantom” stations. The feature supports the following applications:

- Ability to administer station forms without specifying a port location.
- Ability to use a phantom extension to provide call coverage (including AUDIX coverage) for users who do not have stations physically located on the switch.
- Ability to use phantom extensions for ACD Dialed Number Identification Service (DNIS). This application allows a phantom extension to be administered on the switch for each call type that needs to be identified to ACD agents. The phantom extension is either “Call Forwarded” (via an attendant console) to an ACD split, or its coverage path is defined to include the ACD split. The Name field that is administered for the phantom extension will identify to the ACD agent which service the caller is attempting to reach, allowing the agent to properly address the caller.
- Ability to store station templates that can later be used with the *duplicate station* command when implementing many station forms of the same type in the System.
- Ability to administer phantom stations so, at a later time using Terminal Translation Initialization (TTI), users can connect themselves to the System by dialing a special digit sequence from the station.



NOTE:

Refer to “Terminal Translation Initialization (TTI)” later in this chapter.

The primary use of the Administration Without Hardware feature is to streamline system initializations, major additions, and rearrangement/changes by allowing voice terminal translations to be entered before the actual ports are assigned. Port assignments can be done at a later time, as required.

Appropriate instructions are provided in each of the voice terminal administration instructions provided in Chapter 5, specifically the administration of the Port field on the station forms.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Port	5-35
Data Module	Port	5-107
	or	
	Board	
Hunt Group	Calls Warning Port	5-189
	Time Warning Port	
Station	Port	5-287
Analog		
Hybrid		
DCP		
BRI		

- Enter an "X" in the Port field of the applicable forms to indicate that there is no hardware associated with the station administration. Complete the remaining fields on the forms as required.

Hardware

None.

Advanced Private Line Termination (APLT) Trunk Group

An APLT Trunk Group provides access to and termination from private line networks. The private network may be a Common Control Switching Arrangement (CCSA) or an Enhanced Private Switched Communications Service (EPSCS) network. If the trunk group is assigned as external, incoming calls will have a 2-burst distinctive ringing signal.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction	APLT	5-93
Trunk Group	All	
APLT		4-155

- Class of Restriction Form — Enter “n” in the APLT field.
- Trunk Group (APLT) Form — Complete all fields as required.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port on a TN760C Tie Trunk circuit pack or TN464D, TN722B, or TN767 DS1 Tie Trunk circuit pack is required for each trunk to be assigned in the APLT Trunk Group. A TN760C provides four ports for 4-wire E&M lead signaling. A TN722B or TN767 provides 24 ports, and the TN464D provides 32 ports, for tie trunks, release link trunks, and APLT trunks.

Agent Call Handling

Provides ACD agents with the various capabilities required to answer and process ACD calls. When the Forced Entry option is enabled for a split, agents are required to complete a Stroke Count or Call Work Code entry for every call answered in the Manual-In mode.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed. Also, refer to the “Automatic Call Distribution” feature coverage.

Form	Field	Form Instructions (Page #)
Feature Access Codes	Complete Feature Access Codes for ACD Features	5-161
Hunt Groups	Forced Stroke Count or Call Work Code	5-189
Station (multi-appearance)	Button/Feature Button Assignments -manual-in -auto-in -aux-work -after-call -assist -release -work-code -stroke-cnt	5-287
Stations (all)	Active Station Ringing (DCP, Hybrid) Idle/Active Ringing (CALLMASTER) Auto Answer	5-287
Attendant Console	Feature Button Assignments -after-call -assist -auto-in -aux-work -manual-in -release -work-code -stroke-cnt Auto Answer	5-35

- Feature Access Codes Form — Assign ACD features as needed.
- Hunt Group Form — Enter “y” in the Forced Stroke Count or Call Work field if either a Stroke Count or Call Work Code must be entered for each call answered by an agent when in the Manual-In mode.

- **Station Forms** — Assign Agent Call Handling feature buttons to multi-appearance stations as needed. Complete the Auto Answer field (all voice terminal types) based on the following: enter "all" to cause all calls to be automatically answered, enter "acd" to cause only ACD split/skill calls and direct agent calls to be automatically answered. Non-ACD calls terminating to an agent station with Auto Answer set to "acd" will ring audibly. If "none" is entered in the Auto Answer field, no calls will be automatically answered. Complete the Active Station Ringing or Idle/Active Ringing field as required.
- **Attendant Console Form** — Assign Agent Call Handling feature buttons to the Attendant Console as needed. Complete the Auto Answer field based on the following: enter "all" to cause all calls to be automatically answered, enter "acd" to cause only ACD split/skill calls and direct agent calls to be automatically answered. Non-ACD calls terminating to an agent station with Auto Answer set to "acd" will ring audibly. If "none" is entered in the Auto Answer field, no calls will be automatically answered.

Hardware Requirements

None.

Alphanumeric Dialing

Allows a terminal user to place a data call using the Data Call Setup feature and an alphanumeric string or alpha-name for the call destination address. For example, a user can type "abcdef" instead of "9+1-403-253-1234+%00000" to make a call. Users need only remember the alpha-name of the far-end terminating point instead of the actual digit string to complete a call. Alphanumeric names can be mixed in with normal digit dialing strings for data call setup.

Alphanumeric Dialing allows a system administrator to change a "mapped string" (actual digit dialing address) without having to inform all users of a changed dial address. Users simply dial the associated alpha name to complete calls.

Refer to the "Data Call Setup" feature coverage provided elsewhere in this chapter for a complete listing of functions available when using Data Call Setup.

Administration

To implement this feature, the following form must be completed.

Form	Field	Form Instructions (Page #)
Alphanumeric Dialing Table	-Alpha-name -Mapped String	5-30

- Alphanumeric Dialing Table Form — Complete a "Alpha-name/Mapped String" dialing pair for each combination to be defined.

Hardware Requirements

None.

Alternate Facility Restriction Level (AFRL)

Alternate Facility Restriction Levels (AFRLs) allow attendants, or stations with the “alt-fri” button administered, to change FRLs on originating facilities (lines or trunks) to a different set of FRLs. This feature allows or restricts access to trunking facilities not normally accessed with their current FRLs and Authorization Codes.

**CAUTION:**

This feature impacts AAR/ARS call routing in that AFRLs may change the routing preferences used to route a call. Using AFRLs on tandem and tie trunk applications will affect entire networks. This means that a judicious use of this feature must be applied when engineering AFRLs as now calls which may be part of a cross-country private network may be blocked from completion due to the engineering of a restrictive AFRL arrangement.

Administration

To implement this feature, the following form(s) or sections of form(s) must be completed.

**NOTE:**

See also “Authorization Codes”, “Automatic Alternate Routing”, and “Facility Restriction Levels and Traveling Class Marks” elsewhere in this chapter.

Form	Field	Form Instructions (Page #)
Alternate Facility Restriction Level	Current Status Alternate FRL	5-33
Station	Feature Button Assignments	5-287
Attendant Console	Feature Button Assignments	5 - 35

- Alternate Facility Restriction Level Form — Enable the AFRL feature by assigning “active” in the Current Status field,

Assign the alternate FRLs for each original FRL in the Alternate FRL field.
- Station Form — Assign an AFRL button to those stations that should be allowed to activate and deactivate the AFRL feature in the Feature Button Assignments field.
- Attendant Console Form — Assign an AFRL button to those attendants that should be allowed to activate and deactivate the AFRL feature in the Feature Button Assignments field.

AFRL Guidelines and Examples

The examples given here are designed to help understand AFRLs and to illustrate some of their practical aspects. In reality, each System must be administered to meet individual needs.

AFRL Mapping

Facility Restriction Levels (FRLs) are used to determine the privileges an originating party can have when making an outgoing trunk call. This originator can be either a line or a trunk. An FRL is assigned to all devices and/or device groups through its associate Class Of Restriction (COR). When a device originates an outgoing trunk call its FRL is compared to either the terminating trunk group's FRL or the FRL of the preference in the case of AAR/ARS routing. If the FRL of the originator is greater than or equal to the terminated to FRL, the call can proceed. If the FRL of the originator is less than that of the terminated to trunk, the call is blocked (unless an Authorization Code is used to override the blockage, this will be explained later). For example, if the FRL assigned to a particular trunk group is 3 (where 7 is least accessible and 0 most accessible from the perspective a someone wishing to access the trunk group) originators with an FRL of 3 or greater can use this trunk. FRLs are engineered within Generic 3 to allow or restrict outgoing calls according to their particular destination, due to tariffs applied on certain calls at certain times of day, or due to facility problems (trunk outages for example).

AFRLs allow a remapping of the engineered FRLs for all originating devices and Authorization Codes to a new value. With the AFRL feature, a remapping of a FRL level can be established by the technician. For example, all FRLs less than 3 are assigned a value of 3 and FRLs greater than 3 are assigned a value of 7 as shown in Figure 3-1. The control of whether the original FRL value or the AFRL value is used is controlled through any attendant or station which has an AFRL feature button. By depressing the button, the user can control whether calls in the switch which require FRLs for determining access will be using FRLs or AFRLs.

Original FRL Level	Alternate FRL Level
0	3
1	3
2	3
3	7
4	7
5	7
6	7
7	7

Figure 3-1. Example of Alternate FRL Mapping

Authorization Codes

Authorization Codes prevent unauthorized access to various facilities. They can be used to restrict access to certain trunk groups or to Remote Access trunk groups as examples. When a user dials an Authorization Code, it is validated by the System against all the engineered Auth Codes. If invalid, the call is routed to an assignable intercept. If the code is valid, an associated Class Of Restriction (COR) is determined. This COR has an FRL associated with it. If the AFRL feature is activated, it is this FRL level and not the originator's FRL that is used in the mapping of the AFRL. For example, a user whose FRL is 1 attempts a toll call. The AFRL feature is active and maps as shown in Figure 3-2. Since the trunk facility desired has an FRL of 7, the user is blocked even though the AFRL allows him greater calling privileges. If the Authorization code feature is engineered, the user can attempt to dial an authorization code to obtain greater calling privileges. As shown in Figure 3-2, an Auth Code of 1234567 has an FRL of 5. This would still not have access to the trunk the user desires except when an AFRL button is administered and pushed. Then the AFRL feature is active and maps the FRL of 5 to 7, thus allowing the call to complete.

Authorization code to COR Table		COR to FRL Table		FRL to AFRL Table	
Authorization Code	COR	COR	F R L	FRL	AFRL
1234567	3	1	1	0	3
1234568	2	2	3	1	3
1234569	3	3	5	2	3
2222222	3	4	7	3	3
Originator COR is 1 Trunk Desired COR is 4				4	7
				5	7
				6	7
				7	7

Figure 3-2. Example of Authorization Codes with AFRLs

Hardware Requirements

None.

Attendant Auto-Manual Splitting

Allows the attendant to announce a call or consult privately with the called party without being heard by the other party on the call.

This feature is activated automatically when the attendant, active on a call, presses **Start**, a Group Select button and a Direct Extension Selection button (if provided), or a Trunk Group Select button. Any of these actions temporarily separates the party on the call from the connection and allows the attendant to call and talk privately with another party.

The connection is reestablished when the attendant presses one of the following buttons:

- **Cancel** — Cancels the call attempt and reconnects the attendant and the separated party.
- **Split** — Establishes a three-way conversation with the attendant, the separated party, and the called party.
- **Release** — Connects the separated party and the called party and disconnects the attendant.



NOTE:

If "Auto Start" is enabled on the Feature-Related System Parameters form, the CAS attendant must use Don't Split to extend calls.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Feature Button Assignments -split -dont-split	5-93

- Attendant Console Form — One Split button must be assigned per console (this is a fixed button and cannot be changed). If Auto Start is enabled on the Feature-Related System Parameters form, assign one Don't Split button.

Hardware Requirements

None.

Attendant Automatic Start

Simplifies attendant operation by eliminating one button push each time the attendant originates or extends a call.

With the Attendant Automatic Start feature disabled, attendants must always depress a Start button and obtain dial tone before dialing to originate or extend a call. When enabled, the Start button on all consoles is disabled and attendants perform all operations without the first step of pressing Start and obtaining first dial tone.



NOTE:

When Automatic Start is enabled, a Dent Split button must be administered on each console for use with End-to-End Signaling.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Auto Start	5-168
Attendant Console	Feature Button Assignments -dont-split	5-35

- Feature-Related System Parameters Form — Enter “y” in the Auto Start field to enable Attendant Automatic Start.
- Attendant Console Form — Assign one Dent Split feature button on each Attendant console.

Hardware Requirements

None.

Attendant Call Waiting

Allows an attendant originated or extended call to a busy single-line voice terminal to wait at the called terminal. The attendant is free to handle other calls.

Attendant Call Waiting is activated for a single-line station whenever an attendant originates or extends a call to a busy single-line voice terminal. The attendant hears a Call Waiting ringback tone and the busy voice terminal user hears a call waiting tone. This burst tone is heard only by the called voice terminal user. The number of bursts (one, two, or three bursts) is administrable with the default being two.

When Attendant Call Waiting is activated the attendant may choose to cancel the call, release the call, or hold the call on the console. However, releasing an attendant-originated call results in the call being dropped completely.

If the attendant activates the Attendant Call Waiting feature, and the administered Return Call Time-Out or Timed Reminder on Hold interval expires without the call being answered, the call returns to the console.

The call in progress at the voice terminal can be placed on hold. In order to answer the waiting call, after receiving recall dial tone, the user then dials the answer call waiting access code. After answering the waiting call, the voice terminal user can use the Hold feature to return to the held call or toggle back and forth between the two calls.

NOTE:

If Automatic Callback, Data Privacy, Data Restriction, Loudspeaker Paging Access, or Recorded Telephone Dictation Access are activated at the called voice terminal, Attendant Call Waiting is denied.

Attendant Call Waiting, as covered above, also applies to satellite PBX stations via TGU/TGE trunks.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (Single-Line)	Att. Call Waiting Indication	5-303

- Station Forms — For single-line voice terminals (500, 2500, 7101A, 7103A and 7104A), enter “y” in the Att. Call Waiting Indication field to enable the feature.

Hardware Requirements

None.

Attendant Calling of Inward Restricted Stations

A voice terminal with a Class of Restriction (COR) that is inward restricted can not receive public network, attendant-originated or attendant-extended calls.

The Attendant Calling of Inward Restricted Stations feature allows an attendant to override this restriction.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction	Restriction Override	5-93

- Class of Restriction — Enter “attendant” in the Restriction Override field for each COR as necessary.

Hardware Requirements

None.

Attendant Console

The attendant console is a digital call-handling position with pushbutton control used not only to answer incoming calls and place outgoing calls, but also to manage and monitor some of the System's operations.

Refer to the Capacity Table in Appendix C for the number of Attendant Consoles administrable in each System configuration.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Console Parameters	All	5-101
Attendant Console	All	5-35

- Console Parameters Form — Complete all fields as required. This provides the group parameters for all attendant consoles to be assigned in the System.
- Attendant Console Form — Complete all fields as required. This provides the unique parameters for each attendant console in the System. A completed form is required for each console to be assigned.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a port on a TN754B Digital Line circuit pack for each attendant console to be assigned. For reliability, the attendant consoles should not be assigned to ports on the same TN754B circuit pack. For example, if three attendant consoles are to be provided, assign each console to a port on three different TN754Bs, if possible. However, if required, all attendant consoles may be assigned to ports on the same TN754B circuit pack.

Attendant Control of Trunk Group Access

Allows the attendant to control trunk groups and prevents voice terminal users from directly accessing a controlled trunk group. Attendant consoles may be administered to control different trunk groups if required.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed depending on the console type.

Form	Field	Form Instructions (Page #)
Attendant Console	Feature Button Assignments	5-35
	-act-tr-grp	
	deact-tr-g	
	-local-tgs	
	-remote-tgs	
Trunk Group Access	Busy Threshold	4-130
APLT		4-155
CO		4-178
CPE		4-200
DIOD		4-239
DMI-BOS		4-209
FX		4-253
ISDN-PRI		4-275
RLT		4-303
Tandem		4-324
Tie		4-349
WATS		4-375

- Attendant Console Form — A Control Activate (act-tr-grp) and a Control Deactivate (deact-tr-g) button (one each) must be assigned to one of the 24 programmable feature buttons on the attendant console Feature Button Assignments field. Trunk groups to be controlled are assigned via Attendant Direct Trunk Group Selection. Trunk group select buttons (that is, local-tgs or remote-tgs) must be assigned for each of the trunk groups to be controlled.
- Trunk Group Forms — Assign Busy Threshold field for trunks controlled by this feature.

Hardware Requirements

None.

Attendant Direct Extension Selection With Busy Lamp Field

Allows the attendant to place or extend calls to up to 2000 extension numbers assigned in the system by pressing a Group Select button and a Direct Extension Selection (DXS) button instead of dialing the extension number.



NOTE:

An associated DXS lamp for a Vector Directory Number (VDN) is always dark. The DXS button may be used to place a call to a VDN.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Hundreds Select Button Assignments (1-20)	5-35

- Attendant Console Form — Assign up to 20 buttons in the Hundreds Select Button Assignments field. If the selector console has just eight Hundred Group Select buttons, assign just the first eight buttons on Page 1 of the form. If required, additional buttons can be assigned to Page 2 of the form.

Hardware Requirements

A Selector Console is required. The 24A Selector Console is equipped with eight Hundred Group Select buttons and the 26A Selector Console is equipped with 20 Hundred Group Select buttons.

Attendant Direct Trunk Group Selection

Allows the attendant direct access to an idle outgoing trunk by pressing the button assigned to the desired trunk group.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed depending on console type.

Form	Field	Form Instructions (Page #)
Attendant Console	DTGS Button Assignments (1 -1 2) -DTGS Buttons (local-tgs)	5-35

- Attendant Console Form — Assign up to 12 buttons in the Direct Trunk Group Buttons (Access Code) field and up to 12 additional buttons, if required, on Page 2 of the form. If trunk groups are to be controlled via the Attendant Control Of Direct Trunk Group Access feature, they should only be assigned the first six DTGS Button Assignments (1 through 6) if using the Basic Attendant Console (301 AI). Loudspeaker Paging zones may be assigned these buttons if required. In this case, the busy/idle lamp button indicates the busy/idle status of the associated paging zone.

This feature is closely related to the “Attendant Control of Trunk Group Access” and “Trunk Group Busy/Warning Indicators to Attendant” features. Refer to those features for additional information.

Hardware Requirements

None.

Attendant Display

Shows call-related information (including call progress) that helps the attendant to operate the console more efficiently. Also shows personal-service and message information. Information is shown on the alphanumeric display on the attendant console. Each individual attendant console also has a language selection capability.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed depending on console type.

Form	Field	Form Instructions (Page #)
Attendant Console	Display Module Button Assignments (1-8) Display Language	5-35

- Attendant Console Form — Assign up to eight buttons in the Display Module Button Assignments fields. Select the language (English, French, Italian, Spanish or “user-defined”) in which message information is displayed.

**NOTE:**

Refer to the “Administrable Language Display” feature in this chapter for more information on creating the “user-defined” display language.

Hardware Requirements

None.

Attendant Intrusion

Attendant Intrusion (Call Offer) allows an attendant to intrude on an existing call for the purpose of offering a new call or message to the intruded party. Upon releasing from the intruded call, the attendant's source party (if it exists) is Call Waiting at the intruded party (analog voice terminal) or sent to an available line appearance (digital voice terminal).



NOTE:

If there is already a Call Waiting call at the intruded party, the source party (split from the attendant) cannot wait at the intruded party since only one call can be call waiting at a time.

Call Intrusion is denied for Data Privacy or Data Restriction calls, on call forwarded stations, or when stations are talking to another attendant.

Attendant Intrusion, as covered above, also applies to satellite PBX stations via TGU/TGE trunks.

Administration

To implement this feature, the following forms must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Feature Button Assignments	5-35

- Attendant Console Form — Assign an Intrusion button to those attendants who will access the Attendant Intrusion feature in the Feature Button Assignments field.

Hardware Requirements

None.

Attendant Override

Allows an attendant, when originating a call to an internal station, to override call diversion features (such as, Call Forwarding, Send All Calls, and Call Coverage) invoked by or associated with the called station. An Override call terminates at the called-station as if no diversion features of the station were activated.

Attendant Override is activated by pressing an optional Override button on the console and is active for one call attempt only.

Administration

To implement this feature, the following forms must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Feature Button Assignments	5-35

- Attendant Console Form — Assign an Override button to those attendants who will access the Attendant Override feature in the Feature Button Assignments field.

Hardware Requirements

None.

Attendant Priority Queuing

Attendant Priority Queuing is a feature that allows attendant calls to be answered in order of call category (such as by trunk type). Such prioritizing allows calls to be handled in an organized fashion during times of attendant congestion. Each call within a call category is then answered on a first-come-first-serve basis. When all calls from the highest priority queue are answered, the attendant then answers calls in the next highest priority queue, and so on.

Up to 12 call categories can be administered or grouped together to make less than 12 categories. The possible categories are:

- **Emergency Access** — The highest priority queue is the Emergency Access Queue. This is a special queue that assigns a specific telephone number to notify an attendant when the set goes off-hook and dialing does not commence. This queue is used to contact the attendant group during emergencies and should always be given the highest priority.

You can also administer an emergency access code to allow any station to access this queue by dialing this code.

- **Assistance Call** — A station may either dial the attendant access code or access the attendant group through the Manual Origination Calls Feature.
- **CO Call** — An incoming call including FX and WATS calls directed at the attendant group. This refers to the first appearance of such a call to an attendant rather than a subsequent reversion after a timeout or some deferred attendant recall such as in a serial call. Calls transferred to the attendant group apply to this category.
- **DID to Attendant** — Identical to the previous category except that a DID trunk is involved.
- **Tie Call** — Identical to the previous two categories except that a Tie Trunk is involved.
- **Redirected DID Call** — If a DID call times out due to ring no-answer, busy calls, or Number Unobtainable, it will revert back to the attendant group.
- **Redirected Call** — A call initially assigned to one attendant, but subsequently reassigned to the group because the position has become busy.
- **Return Call** — A recall of the attendant after a timeout on the extended call. Held Call Timed Reminder Calls should be included in this category. If this attendant is active on another call or in position busy mode, the call is redirected to the attendant group. If the queue is full a periodic timer will be set and the call will receive ringback.

- **Serial Call** — A call with a pending attendant recall. If the called party goes on hook, the same attendant who extended the call will automatically be recalled. If this attendant is active on another call or in position busy mode, the call will be redirected to the attendant group. The Serial Call lamp lights when the attendant depresses the Serial Call button and is extinguished once the call is extended and released from the console. (Refer to “Attendant Serial Calling” elsewhere in this chapter).
- **Individual Attendant Access** — Each attendant has an individual access number. If the attendant is active on a call, the call will be queued for the individual attendant and continue ringing.
- **Interpositional** — If one attendant seeks to access another by the Individual Attendant Access number but the attendant is active on a call or in position busy mode, the call will be queued for that individual attendant and continue ringing.
- **Miscellaneous Call** — Other calls not covered in the categories above (such as, ACA Calls).

Administration

To implement this feature, the following form(s) must be completed.

Form	Field	Form Instructions (Page #)
Console Parameters	All	5-101
Feature-Related System Parameters	All	5-168

- **Console Parameters Form** — Assign Attendant Priority Queue levels for any or all Attendant Priority Queue call categories (including the highest priority level).

Assign the attendant group calls-waiting threshold, which is used to light the Queue Warning Indication lamp on all active consoles if that threshold is exceeded, in the Calls in Queue Warning field.

- **Feature-Related System Parameters Form** — Assign the reserved queue size in the Reserved Slots for Attendant Priority Queue field.

Assign the time (in seconds) that an emergency extension can remain off-hook before being automatically connected to the Emergency Access Redirection Extension in the Time Before Off-hook Alert field.

Assign the extension number for emergency queue access in the Emergency Access Redirection Extension field.

Hardware Requirements

None.

Attendant Serial Calling

Allows attendant-extended trunk calls to return to the same attendant position after the party to which the call was extended goes on-hook. The returned call may then be extended to another station within the System by this attendant. If the attendant is busy, the returned call is queued to the attendant group. The next attendant to answer then becomes the controller of all later call returns. An attendant may activate Attendant Serial Calling for:

- A trunk call originated or answered by the attendant
- A trunk call originated or answered by a station which is subsequently transferred to, or conference with, an attendant

Attendant Serial Calling is invoked or cancelled by pressing the Serial Call button on the attendant console.

Administration

To implement this feature, the following form must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Feature Button Assignments	5-35

- Attendant Console Form — Assign a Serial Call button to one of the attendant console feature buttons.



NOTE:

Only one Serial Call button may be assigned to an attendant console but this button may be assigned to every attendant console. Normally, the same button on all consoles is administered as the Serial Call button.

Hardware Requirements

None.

Audible Message Waiting



NOTE:

This feature may not be applicable in countries that restrict the characteristics of dial tones provided to users.

Audible Message Waiting is typically, but not necessarily, used on voice terminals without message waiting lights.

This feature places a stutter at the beginning of station dial tone on a station that has a message waiting for it. The message can be waiting in system memory (to be accessed via display or via the voice synthesizer), PMS, MSA, or AUDIX. Audible Message Waiting is particularly useful for visually-impaired people who may not be able to see a message light.



NOTE:

The Audible Message Waiting feature must be enabled on the System-Parameters Customer-Options form before fields and associated fields on forms can be administered.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station	Audible Message Waiting	5-287

- Station Forms — Enter “y” in the Audible Message Waiting field to activate this feature on a per voice terminal basis.

Hardware Requirements

None.

Audio Information Exchange (AUDIX) Interface

Provides a communications link between the System and AUDIX. AUDIX allows both System users and outside callers to record, edit, send, and forward voice messages to other users. In addition, System users can also receive and store incoming voice messages from others and transfer calls into AUDIX.

The following requires implementation:

- **AUDIX Interface to Switch** — The AUDIX analog connection to the System requires up to 16 (small AUDIX) or 32 (large AUDIX) 2500-type Voice Terminal forms to be completed to assign AUDIX voice ports. In addition, an associated data link from the System to AUDIX must be administered.
- **Call Transfer Into AUDIX** — A user who is an AUDIX subscriber or a covering user for a principal who is an AUDIX subscriber may transfer a call to AUDIX. This requires use of the Transfer Into AUDIX Feature Access Code or use of an abbreviated dialing button programmed with the access code.
- **Call Transfer Out of AUDIX** — Provides call progress feedback to the calling party in the form of call ringing and voiced messages if the called party is busy. In addition, a called party with a display-equipped terminal is informed of the call type (direct or redirected) and receives associated information about the call.



NOTE:

Administration for Call Transfer Out of AUDIX must be performed on the AUDIX machine. AUDIX machine administration is not covered in this manual. Refer to the appropriate AUDIX manual for additional information.

- **AUDIX in DCS via BX.25 Data Channels** — An AUDIX connected to the System can support other switches (remote) in a DCS network. One AUDIX can be used to support all switches in a DCS network or can serve a group of switches in a DCS. The remote switch does not have a direct data link connection to AUDIX. It passes its data to the host switch via a BX.25 data link and associated processor channels. The AUDIX machine on the host switch has separately administered DCS hop channels to each of the remote switches that it is supporting (that is, either all or a group of switches). The host switch then provides the AUDIX connection. All AUDIX features can be activated from a host or remote switch. An AUDIX in DCS with connectivity via BX.25 data channels is referred to as "Traditional DCS AUDIX" later in this section.

The remote AUDIX hunt group can be a coverage point in a call coverage path at a remote switch not connected directly to AUDIX. The remote switch must be in the DCS network.

- **AUDIX in a DCS via ISDN-PRI D-channel** — (May also be referred to as ISDN-PRI D-channel DCS AUDIX feature.) This feature still uses BX.25 connectivity between the AUDIX and host switch. The ISDN-PRI connectivity is utilized between the host switch and remote switches in the DCS network. The feature requires the same hardware as the DCS Over ISDN-PRI D-channel feature.

AUDIX messages are transported via administered Non-Call Associated Temporary Signaling Connections (NCA-TSCs) between nodes supporting the ISDN-PRI D-channel DCS AUDIX feature. An administered NCA-TSC is an NCA-TSC that is established between two administered NCA-TSC endpoints on two different PBXs and will be up or enabled for a period of time depending on administered translations. The connection may be administered on an “as-needed” or “permanent” basis. (Refer to the “DCS Over ISDN-PRI D-channel” feature coverage in this Chapter for additional information on NCA-TSCs and DCS over ISDN-PRI D-channel.)

- **AUDIX as an ACD Split** — An AUDIX hunt group may be administered as an ACD split by setting the ACD field on the hunt group to “y”. This allows AUDIX traffic to be measured via the ACD’s Call Management System (CMS). AUDIX requests for voice ports are recorded as logins and AUDIX requests to the switch to disable voice ports are recorded as logouts by the CMS.

This feature is for use by Systems currently equipped with CMS and ACD enabled on the System-Parameters Customer-Options form. For those Systems not equipped with ACD and CMS, AUDIX traffic measurements can be obtained using the System Measurements feature functionality.

- **AUDIX as a Listed Directory Number (LDN) Night Destination** — An AUDIX may be used to support LDN calls when the System is in the night service mode. The following steps are required to implement this service:
 1. Assign a night destination extension (must be an AUDIX subscriber extension) on the Listed Directory Numbers form. The extension can be assigned to a phantom analog station (see the “Administration Without Hardware” feature in this chapter).
 2. Assign a coverage path to the station and assign the associated Call Coverage Paths form with the AUDIX hunt group as the first coverage point. Set the “All” coverage criteria field for outside calls on the form to “y”.
 3. Activate the Call Forwarding All Calls feature for the night extension.



NOTE:

Refer to the AUDIX feature description in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for additional AUDIX information.

The following provides references to associated forms that must be completed to administer either a small or large AUDIX. Typical figures and examples of completed forms, where necessary, are also shown. Information required to administer DCS tie trunks and data links is not given in this section. Refer to the DCS coverage for those instructions. The completed forms, where shown, are examples only. The actual data assigned on the forms will vary depending on System configuration and prior assignment of switch facilities.

The data link interface between the System and the AUDIX may be via either an MPDM or MTDM (G3s V2 and G3i V2 configurations) or by the Processor Interface jack located on the back of the Control Cabinet (XE Simplex configurations). For G3r V2, the data link interface between the System and the AUDIX may be via an X.25 data module (PGATE board).

Figure 3-3 shows an example interface using either an MPDM or an MTDM. Figure 3-4 shows a typical interface using the Processor Interface jack located on the back of the Control Cabinet. Figure 3-5 shows an example interface using an X.25 data module.

Administration — AUDIX Interface



NOTE:

Refer to the “Distributed Communications System” and “DCS and AUDIX Networking Examples” sections in this chapter for examples of administering AUDIX in various environments.

To implement the AUDIX interface in a non-DCS configuration, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Data Module	All (for one AUDIX link)	
Processor interface		5-136
MPDM		5-128
or		
MTDM		5-128
X.25 (G3r V2 only)		5-141
PGATE (G3r V2 only)	All	4-99
User Defined Adjunct Names (G3r V2 only)	All	4-403
Interface Links	All (for one AUDIX link)	4-91
Processor Channel Assignment	All (for one AUDIX link)	4-101
		or
		4-105

Form	Field	Form Instructions (Page #)
Station — 2500 Form (up to 32 forms may be assigned depending on AUDIX size)	All (for AUDIX voice port)	5-303
Recorded Announcements	All	5-244
Feature Access Codes	Transfer Into AUDIX	5-161
Hunt Groups	All (as required)	5-189
Stations (User stations as required)	All, including: COS LWC Reception LWC Activation Data Restriction Redirect Notification Call Waiting Indication Coverage Path Button/Feature Button Assignments -call-fwd -goto-cover -lwc-store -send-calls	5-287
Class of Service	Call Fwd-All Calls	5-99
Call Coverage Paths	All	5-62

NOTE:

AUDIX translations (not covered in this manual) and the System translations must be coordinated to ensure proper operation. It is recommended (but not required) that the Interface Channel number associated with each logical link match AUDIX port numbers on all forms. This helps in coordinating assignments and aids in troubleshooting.

- Data Module (Processor Interface) Form — Complete all fields as required. Assigns a link (interface channel) in the digital switch for the AUDIX interface. Eight links (01 through 08) are available for assignment in a multi-carrier cabinet System. A single-carrier cabinet has just four links (01 through 04).

If the Processor Interface jack (located on the back of the Control Cabinet) is to be used, Interface Link 1 (physical channel 01) must be assigned.

- Data Module (MPDM or MTDM) Form — Complete all fields as required. Complete an MTDM form when connecting to a large AUDIX or complete an MPDM form when connecting to a small AUDIX.

⇒ NOTE:

Instead of administering an MPDM or MTDM form, the AUDIX data link may be directly connected to the Processor Interface jack (XE Simplex configurations only) on the back of the Control Carrier (if not already in use) instead of via the MPDM or MTDM and a port on a Digital Line circuit pack. The Processor Interface jack utilizes Interface Link 01 which is administered using the Processor Interface Data Module form. It is advised not to use the Processor Interface jack in those Systems that have a duplicated control carrier. The connection is not designed so that it can be driven by either processing element in the duplicated System.

- Data Module (X.25) Form (G3r V2 only) — Assign DTE/DCE as “dte”. Assign a Baud Rate of 9600.
- PGATE Form (G3r V2 only) — Enter the board location and “rs232” as the cable type.
- User-Defined Adjunct Names Form (G3r V2 only) — Assign a name to the AUDIX machine in the AUDIX Name field. (Up to eight AUDIXes are supported.)

⇒ NOTE:

Enter this same name in the Adjunct Name field on the Hunt Group, Station, and Processor Channel Assignment forms.

- Interface Links Form — Complete all fields on the form for one link, as required. Assign a link from the Processor Interface circuit pack for AUDIX.

For a G3r V2 configuration, assign the extension of the X.25 data module to this link (from the Data Module form above). Mark the destination extension as “external”.

⇒ NOTE:

Note that when administering the Interface Links form using a *change communications-interface links* command, all fields may be initially entered except the Enable field, which must be set to “n”. After completing and administering the Processor Channel assignment form, recall the Interface Links form using the *change* command and then enable the appropriate links by entering “y” in the Enable fields.

- Processor Channel Assignment Form — Complete the required fields on the form for the AUDIX interface.

The entry in the Remote Processor Channel field must agree with an associated AUDIX port field (translated on AUDIX). The entry in the Machine ID field must agree with the AUDIX field entry as translated on the AUDIX Data Link form (typically with just one AUDIX this entry is 1).

If the Processor Interface jack (located on the back of the Control Cabinet) is to be used, Interface Link 1 (physical channel 01) must be assigned.

- Station Form (2500 Voice Terminal) — Complete up to 32 forms for a large AUDIX or up to 16 for a small AUDIX. This assigns AUDIX voice ports to the System. The associated extension numbers will then be administered in a hunt group as hunt group members. Assign COR field the same Class of Restriction (COR) as the AUDIX hunt group COR. Assign the Name field on each form as “audix”. Assign the indicated values to the fields shown below:

FIELD	VALUE
LWC Reception	none
Tests?	n
Switchhook Flash?	y
Data Restriction?	y

**NOTE:**

You can add one AUDIX Voice Port and then use the “duplicate station” command to add others.

- Recorded Announcements Form — Assign an announcement type to be associated with AUDIX, if required.
- Feature Access Codes Form — Enter the Transfer to AUDIX access code.
- Hunt Group Form — all fields including the following:
 - Enter the AUDIX extension number in the Group Extension field on Page 1 of the form.
 - Enter “ucd” in the Group Type field.
 - Enter “audix” in the Group Name field.
 - Enter “audix” in the Message Center field (G3r V2 only).
 - Enter the AUDIX machine name in the AUDIX Name field (G3r V2 only). (This is the same name defined on the User Defined Adjunct Names form.)
 - Enter “y” in the ACD field if AUDIX is to be an ACD split.
 - Enter the destination (extension, attendant) where calls to the ACD split will go when in the Night Service mode (optional).
 - Enter “y” in the Queue field.
 - Enter the number of users assigned as hunt group members in the Queue Length field. For example, if the hunt group has 10 members, then “10” must be entered in the field. These members are used for AUDIX voice retrieval.
 - Enter a recorded announcement extension and associated delay. The associated announcement will be provided to a user after being in a call waiting queue for the specified delay interval.

- Enter the AUDIX machine name in the AUDIX Name field (G3r V2 only). This is the same name defined on the User Defined Adjunct Names form.
- Enter “y” in the Primary field (G3r V2 only) to assign this hunt group as the primary hunt group, or “n” to assign it as a secondary hunt group.

Generic 3 V2 can have multiple hunt groups associated with a single AUDIX (in addition to supporting multiple AUDIXs). This allows partitioning of the voice ports into different hunt groups. Having different hunt groups, in turn, allows different coverage paths to be redirected to different voice ports. Thus, voice ports can be reserved for particular users or groups of users.

The following features do not follow coverage paths, but, instead, place a call directly to AUDIX. These calls go to the “Primary” AUDIX hunt group:

- Transfer into AUDIX with the feature access code or with the “goto-audix” button.
- Return call when a user is in message display mode and is displaying the message that says “Call AUDIX”. The user presses the “call-disp” button in this case.

Refer to the *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, or the appropriate AUDIX documentation, for more information about multiple AUDIXs.

- In the Measured field, enter “internal”, “external”, “both”, or “blank” to indicate if the System will transmit data for this trunk group to the Call Management System. Enter “internal” if the data is to be sent to the Basic Call Management System (internal to the switch) for subsequent measurement reports, and “external” to send the data to both systems for measurement reports. Enter “none” (default) if trunk group measurements are not required.
 - Assign up to 32 AUDIX voice ports as member numbers for a large AUDIX or 16 for a small AUDIX. Enter previously administered AUDIX voice port extensions (assigned using 2500 Station forms) in the Hunt Group Member Number Assignments Ext. fields.
- Station Forms (user stations)
- Assign correct Class of Service (COS) number so voice terminal can activate Call Forwarding All Calls feature.
 - Enter “y” in the LWC Activation field.
 - Enter “audix” in the LWC Reception field.
 - Enter “y” in the Redirection Notification field.
 - Enter “n” in the Data Restriction field.

- Enter “n” in the Call Waiting Indication field.
- Assign a coverage path number which has the AUDIX hunt group in a coverage point.
- Class of Service Form — Verify Call Forwarding All Calls feature is activated.
- Call Coverage Paths Form — Assign a coverage path which includes the AUDIX hunt group number in a coverage point. It is recommended (but not required) that the AUDIX be the last point in a coverage path.



NOTE:

The Distributed Communications System (DCS) features are not supported by the G3s V2 ABP configuration.

Administration — AUDIX in a DCS via BX.25 Data Channels

To implement the AUDIX interface via BX.25 Data Channels in a DCS configuration (traditional AUDIX in a DCS), refer to the “Distributed Communications System (DCS)” section elsewhere in this chapter for a complete listing of forms needed and their explanations.



NOTE:

Refer to “Distributed Communications System (DCS)” elsewhere in this chapter for examples of administering AUDIX in DCS environments. Instructions associated with implementing the DCS data links between switches and the associated DCS entries on Processor Channel Assignments forms, Interface Link forms, and so on, are also covered there.

Administration — AUDIX In a DCS via ISDN-PRI D-channel

To implement the AUDIX interface via ISDN-PRI D-channel in a DCS configuration, refer to the “Distributed Communications System (DCS)” section elsewhere in this chapter for a complete listing of forms needed and their explanations.



NOTE:

DCS is a prerequisite of administration of AUDIX. Refer to “Distributed Communications System (DCS)” elsewhere in this chapter for examples of administering AUDIX in various environments. Instructions associated with implementing the DCS Over ISDN-PRI D-channel are covered in the DCS Over ISDN-PRI D-channel feature coverage provided elsewhere in this chapter.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

The AUDIX data link interface to the System requires either one port on a TN754B Digital Line circuit pack and an MPDM/MTDM (G3s V2 and G3i V2 configurations) or may be connected directly to the System via the Processor Interface jack located on the back of the Control Cabinet (for XE Simplex Systems).

For G3r V2 configurations, a TN464C DS1 circuit pack is required (TN577 PGATE circuit packs are not required).

Up to 32 ports (large AUDIX) or 16 ports (small AUDIX) on a TN742, TN746B, or TN769 Analog Line circuit pack are required for AUDIX voice port assignments. Any combination of these analog packs can be used. In addition, for an AUDIX in a DCS configuration, DCS hardware is required as covered in the DCS implementation instructions.

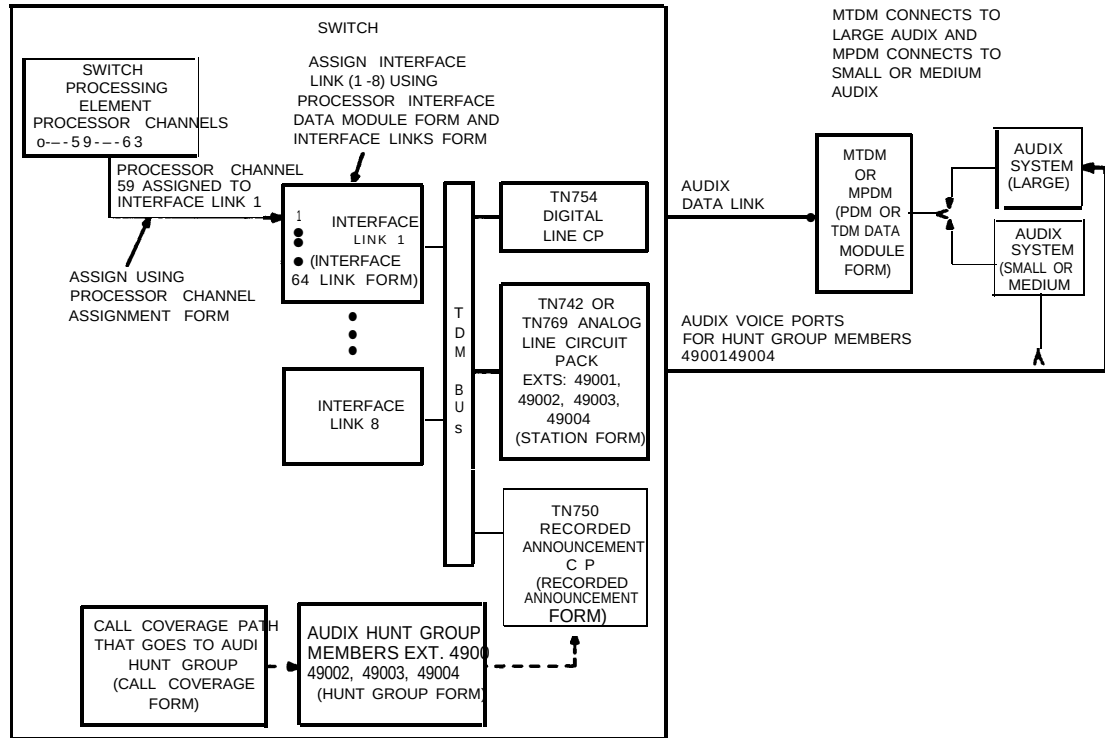


Figure 3-3. Typical AUDIX Connections Using an MPDM or MTDM Interface

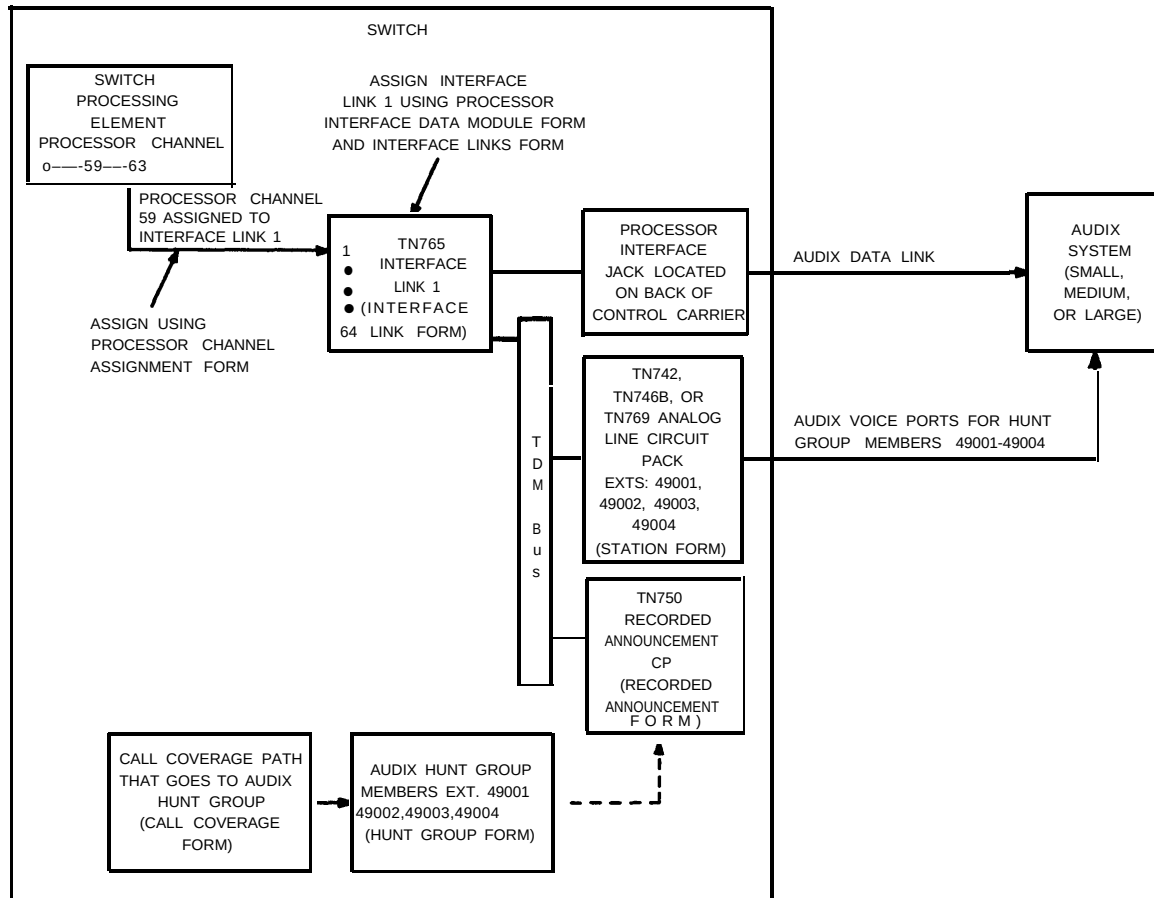


Figure 3-4. Typical AUDIX Connections Using the Control Cabinet Processor Interface Jack

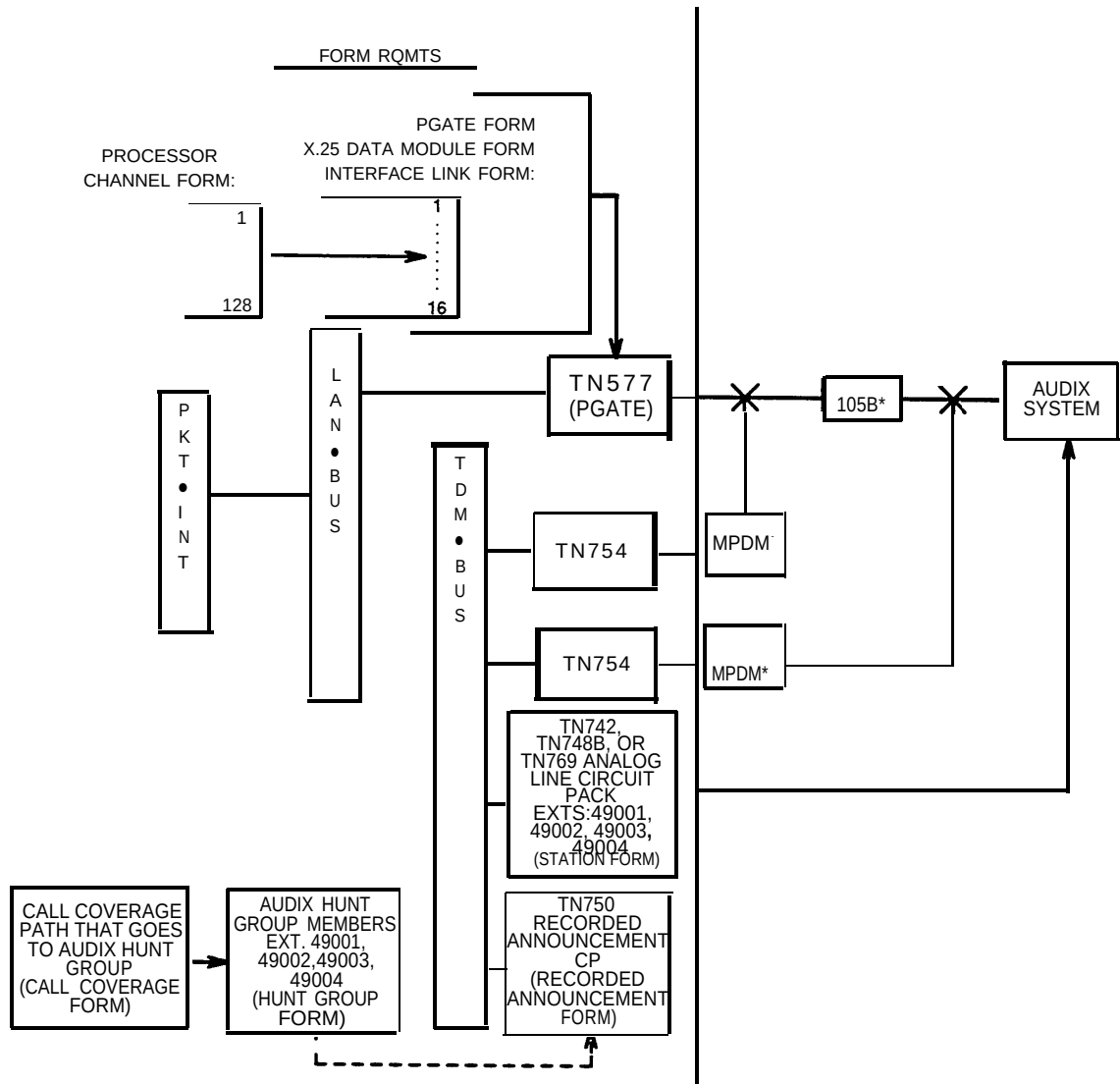


Figure 3-5. Typical AUDIX Connections Using an X.25 Data Module

DEFINITY AUDIX Interface

The DEFINITY AUDIX system is a complete AUDIX system installed on a set of port boards (TN566) in a DEFINITY cabinet carrier.

The AUDIX TN566 circuit pack is recognized and supported by the switch software. Although the TN566 circuit pack physically connects to the switch through a single slot in the backplane, its width occupies five contiguous slots. Therefore, the *list configuration all* command (described in detail in *DEFINITY Communications System Genetic 3 V2 Maintenance*, 555-230-105) provides an accurate assessment of system configuration by displaying all five slots as being used by the AUDIX TN566 circuit pack.

For details on how to administer a DEFINITY AUDIX installation, refer to *Switch Administration for DEFINITY AUDIX System R1.0*, 555-300-509, Issue 1.

Authorization Codes

Provides the means for extending control of the System users calling privileges.

On an internally dialed outgoing call, the COR assigned the facility (station) being used to originate the call and its Partitioned Group Number (PGN), when assigned, is used to select a routing pattern. At this point in the call, a 4- to 7-digit authorization code may be required to override the COR's Facility Restriction Level (FRL) assignment. This allows users to override the FRL and users within a PGN to have access to up to seven FRL's, when assigned, and still remain partitioned. On a remote access incoming call, the authorization code may be required as part of the initial dialing sequence, and in this case, the authorization code selects the COR and associated PGN (when assigned) to be used in routing the call.



NOTE:

The use of authorization codes with dialed Vector Directory Number (VDN) extensions is not allowed and will be blocked.

To maximize System security, the following should be considered:

1. Authorization Codes of at least seven digits should be administered and periodically changed.
2. Fraudulent use of authorization codes can be detected by checking CDR records.

Administration

The Authorization Codes option must be enabled on the System-Parameters Customer-Options form before the associated forms and fields on forms can be administered.



NOTE:

For the G3s V2 ABP configuration, the Automatic Route Selection (ARS) option must be enabled on the System-Parameters Customer-Options form.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Authorization Codes Feature-Related System parameters	AC, COR Authorization Code Enabled Authorization Code Length Authorization Code Cancellation Symbol Attendant Time Out Flag	5-55 5-168

Form	Field	Form Instructions (Page #)
Class of Restriction Routing Patterns Remote Access Trunk Groups: Access APLT CO FX ISDN-PRI Tie WATS	COR	5-287
	FRL	5-93
	Trunk Group Number	4-19
	FRL	
	Authorization Code	5-247
	Remote Access Dial Tone	
	Auth Code	
		4-130
		4-155
		4-178
		4-253
		4-275
		4-349
		4-375

- **Authorization Codes Form** — Assign 4-to 7-digit authorization codes (with CORs 0 through 95).
 - In the authorization code (AC) field, enter the 4- to 7-digit authorization code the user must dial. The number of digits entered must agree with the number assigned to the Authorization Code Length field on the Feature-Related System Parameters form.
 - In the Class of Restriction field, enter the desired COR (0 through 95.) This is the replacement COR to be used to modify the user's calling privileges and is effective after the corresponding authorization code has been dialed.
- **Feature-Related System Parameters Form** — Verify "y" is entered in the Authorization Code Enabled field so that Authorization Codes can be assigned on a System wide basis.
 - In the Authorization Code Length field, enter a number from 4 through 7 that defines the number of digits (length) in the authorization code. This is the number of digits that must be assigned to the AC field on the Authorization Codes form.
 - In the Authorization Code Cancellation Symbol field, enter the type of symbol the caller must enter to cancel the partially entered authorization code or to skip authorization code entry.
 - In the Attendant Time Out Flag field, define if the caller will be routed to the attendant should the caller not dial an authorization code within 10 seconds or dials an invalid authorization code.
- **Station Forms** — Assign CORs so a separate COR exists for users with different restrictions. If CORs are already established, they must be taken into account when adding and/or assigning new CORs.

- **Class of Restriction Form** — In the FRL field, assign originating Facility Restriction Levels for restricted and unrestricted users. The originating FRL can be a value of 0 through 7 where 0 is the most restrictive.
- **Routing Patterns Form** —
 - In the Group Number field, enter the desired trunk group number (1 through 99.)
 - In the FRL field, assign route FRLs for each trunk group in the Route Pattern. A route FRL of 7 is the most restrictive (that is, only users with an FRL of 7 can use the trunk group) and a route FRL of 0 (that is, users with FRLs from 0 to 7 can use the trunk group) is the least restrictive.



NOTE:

Trunk groups must have been assigned previously on the Trunk Group form.

The first choice trunk group has the lowest FRL, the second choice trunk group (if there is one) has the next lowest FRL, and so on. The assigned FRL will be used for this pattern only. Trunk group FRLs are changeable from pattern to pattern. The FRL assigned to the trunk group when the COR is defined is not used on ARS calls.

- **Remote Access Form** —
 - In the Authorization Code Required field, enter “y” if an Authorization Code must be dialed to access the System features remotely; otherwise, enter “n”.
 - In the Remote Access Dial Tone field, enter “y” if the user will receive a recall dial tone before dialing the authorization code. If Barrier Codes are assigned, the recall dial tone is heard after the Barrier Code has been dialed.
- **Trunk Group Forms** — In the Authorization Code field, enter a “y” if an Authorization Code must be dialed on incoming calls to access the trunks in this trunk group (that is, Auth Code field is used for incoming calls); otherwise, enter “n”.

[illegible]

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

When a caller dials the ARS access code to call out, the FRL of the originating facility is compared with the FRL of the available outgoing facility. If the FRL of the originating facility is less than the FRL of the trunk group, the restricted user will be prompted (via recall dial tone) to enter an authorization code. After the authorization code is entered, the call is routed to the CO for completion. If the FRL is insufficient to seize any trunk group in the route pattern, the user gets intercept tone.

Restricted callers will be prompted for and be required to enter an authorization code (as previously described). Unrestricted users will simply dial the ARS code followed by the desired number.

Refer to *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for additional information on the use of AAR/ARS FRLs for control of call routing.

Example 2.

Set up remote access to the switch such that the remote user must enter a barrier code and an authorization code to access the System features from home. The forms and fields on forms are assigned as follows:

■ Remote Access Form

- Remote Access Extension 71234
- Barrier Code Length 4
- Authorization Code Required y
- Remote Access Dial Tone y
- Barrier Code 4444
- COR 1
- COS 1

■ Remote Access using the DID Feature

To use remote access through the DID feature, dial the 7- to 10-digit Remote Access number (957-1 234) followed by the barrier code (4444). After you hear recall dial tone, enter the authorization code, followed by the desired number, or dial the ARS access code (9) and the 7- or 10-digit number you are calling. The call will be routed through to completion.

■ Remote Access using a dedicated CO, FX, or WATS Trunk

To implement the remote access feature via a dedicated CO, FX, or WATS trunk, the Remote Access form is administered as above. In addition, the Incoming Destination field is assigned the Remote Access Extension number on the Trunk Group form.

When the caller dials the Listed Directory Number (LDN) associated with the trunk group dedicated to Remote Access, the trunk group routes the call to the Remote Access Extension. The caller will hear a data tone followed by dial tone. The barrier code is then entered and, in this example, since Remote Access Dial Tone is set to "1", the caller will be prompted (via recall dial tone) to enter an authorization code. After the authorization code is entered, the caller will hear System dial tone. At this point, the desired number can be dialed and routed to completion.

Example 3.

On a System that does not use AAR or ARS for call routing, implement the Authorization Codes feature to allow a caller to override the originating COR assigned to a specific CO trunk group. On the trunk group form, enter "y" in the Authorization Code field if an authorization code must be dialed to access the trunks in this trunk group. This is in addition to administering the parameters on the Feature-Related System Parameters form, the Station form, the Authorization Codes form, and the COR form as specified in the example provided.

Hardware Requirements

None.

Automatic Alternate Routing

Provides alternate routing choices for private on-network calls. Also provides digit modification to allow on-network calls to route through the public network when on-network routes are not available.

Administration

**NOTE:**

The Automatic Alternate Routing feature is not supported by the G3s V2 ABP configuration.

Either the Private Networking or Uniform Dialing Plan option must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Dial Plan	All	5-150
Class of Restriction	FRL	5-93
	Partitioned Group Number	
	OR	
	Time of Day Plan Number	
Feature Access Codes	AAR Access Code	5-161
AAR Analysis	All	4-8
AAR Digit Conversion	All	4-12
Node Number Routing	All	4-17
Routing Patterns	All	4-19
Remote Home Number Plan Area	All	4-15
Time of Day Routing (optional)	All	4-25
Feature-Related System Parameters	AAR/ARS Dial Tone Required	5-168

- Dial Plan Form — Enter local area code. Complete digit identification and numbering.
- Class of Restriction Form — Assign FRLs for station CORs. The minimum FRLs required to access a route are assigned as part of the Routing Pattern form. Assignment of these values determines the calling privileges associated with calls placed from stations assigned the COR.

If required, assign an appropriate Partitioned Group Number (1 through 8) or a Time of Day Routing Plan Number (1 through 8) if the respective field is displayed on the form.

- Feature Access Codes Form — Assign “AAR Access Code.”
- AAR Analysis Form — Complete all fields as required. The form allows for the mapping of customer dialed numbers to routing patterns and/or node numbers.
- AAR Digit Conversion Form — Complete all fields as required. The form is used to convert private network numbers to a public network number. The form may also be used to block or intercept certain private network calls to the attendant group.
- Node Number Routing Form — Complete all fields as required.
- Remote Home Number Plan Area Form — Complete all fields as required. The form is used for 3-digit translations in the range 000 through 999. The form is typically used for mapping CO codes to routing pattern numbers.
- Routing Patterns Form — Complete all fields as required. In addition to normal trunking data, this form provides subnetwork trunking information which extends a call through a chain of subtending switches (see “Subnet Trunking”).
- Time of Day (TOD) Routing — Assign up to eight TOD charts. Each chart can have up to eight routing plans administered, each scheduled to change (based on the time of day entered on the form) up to six times a day for each of the seven days in a week. This is an optional form. The Private Networking, Automatic Route Selection Partitioning, and Time of Day Routing must be enabled on the System-Parameters Customer-Options form before this form can be implemented.
- Feature-Related System Parameters Form — complete the AAR/ARS Dial Tone Required field. Enter “y” if second dial tone is required after the feature access code; otherwise enter “n”.

AAR Guidelines and Examples

The examples that follow are designed to illustrate some of the practical aspects of AAR. These are, however, only examples. In reality, each System must be administered to meet its individual needs.

Completing the Class of Restriction Form

Make assignments as required for the following field:

- **FRL** — Assign a Facility Restriction Level (0 through 7) for each voice terminal user activating AAR. An FRL of 0 (zero) is the most restrictive and an FRL of 7 is the least restrictive. The FRL of the calling facility is compared against the FRL of the AAR pattern choices to select an allowed route.
- **Partitioned Group Number** — Only displayed if the ARS Partitioning option is enabled on the System-Parameters Customer-Options form and the Time of Day Routing option is not enabled. Enter an appropriate PGN (1 through 8).

- **Time of Day Plan Number** — Only displayed if the Time of Day Routing option is enabled on the System-Parameters Customer-Options form. Enter an appropriate Time of Day Routing Plan Number (1 through 8).

Completing the Feature Access Codes Form

Make assignments as required for the following field:

- **Auto Alternate Routing (AAR) Access Code** — Assign an access code to AAR. The usual entry is "8."

Completing the AAR Analysis Form

Complete one to eight AAR Analysis Tables. Each table is associated with a different Partitioned Group Number. Complete the Dialed String, and associated Minimum and Maximum, Route Pat (Routing Pattern) and Call Type fields for each dialed string to be given specific routing consideration.

NOTE:

If the Route Pat and Node Num fields are both administered, calls are routed via the entered pattern. If there is only a Node Num entered, calls are routed via the entered Node Number.

Only the Pattern Number may differ between partitions (changing the Node Number will effect a change in all Partitions).

Completing the AAR Digit Conversion Form

Complete the Matching Pattern and associated Replacement String fields for each dialed string (matching pattern) to be modified (either in part or whole) to an alternative address. Calls will be routed based on the modified address.

Completing the Node Number Routing Form

Complete this form if a routing pattern is not specified in the AAR Analysis form. This form specifies the routing pattern associated with each node in a private network. NNR is a required capability for Extension Number Portability (ENP) and is associated with the Uniform Dial Plan (UDP). UDP extensions can be routed to a specified node using its associated pattern and allows a UDP routing choice based on node numbers or on location codes.

Completing the Routing Pattern Form

Make assignments as required for the following fields:

- **Pattern Number** — Enter a Pattern Number.
- **Grp No.** — Enter the desired trunk group number.

- **FRL** — Enter the Facility Restriction Level 0 through 7 (0 being the least restrictive and 7 being the most restrictive) for this trunk group as it will be used by this pattern only. Trunk group FRLs are changeable from pattern to pattern. The FRL assigned to the trunk group when the COR is defined is not used on AAR calls. The NPA, Prefix Mark, and Toll Table fields listed below are used by ARS and not AAR.
- **NPA** — Enter the NPA of the distant end.
- **Prefix Mark** — Enter a number 0 through 4 as indicated. This determines the outpulsing of the Prefix digit 1.

- 0 Indicates that the Prefix digit 1 is never outpulsed for 10-digit user-dialed FNPA calls, but leaves a user-dialed Prefix digit 1 for 7-digit HNPA calls. Prefix Mark 0 also leaves 1's on 10-digit calls that are not administered as FNPA- or HNPA-types.

 NOTE:

FNPA and HNPA are North American Numbering Plan terms.

- 1 Indicates that the Prefix digit 1 is outpulsed if and **only if** the call is a 10-digit call. Prefix Mark 1 should be selected for those HNPAs that require users to dial 1 to indicate a toll call.
- 2 Indicates that the Prefix digit 1 is outpulsed for **all** toll calls, 7- and 10-digit.
- 3 Indicates that the Prefix digit 1 is outpulsed for **all** toll calls. These calls are always outpulsed as 10-digit numbers, even those within the HNPA.
- 4 Indicates that the user-dialed Prefix digit 1 is always suppressed.

 NOTE:

This capability is required, for example, when routing ISDN-PRI calls to an AT&T 4ESS. If the prefix digit 1 were not suppressed, then the 4ESS would reject such calls.

 NOTE:

Prefix Marks 2 and 3 must refer to a Toll Table (see "Toll List" below).

- **BCC** — required by the Generalized Route Selection feature. Only administrable if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form. Enter a value in the range 0 through 4.
- **Toll List** — Enter a number, 1 through 32, that references the ARS Toll Table assigned to this trunk group. This field must be completed if the Prefix Mark is 2 or 3.

- **No. Del. Digits** — Enter the total number of digits (0 through 18) to be deleted from the dialed number when this trunk group is selected for use within this pattern.
- **Inserted Digits** — Enter the actual digits to be inserted, 0 through 36. The digits may be divided into groups separated by a wait (w) for dial tone separator. "Wait" takes two digit places.

Completing the Remote Home Number Plan Area (RHNP) Form

This form is used for the analysis of the last three digits in a dialed string. References from a Dialed String entry on the AAR Analysis Table (in the "Route Pat" field) must be in the form "r1" through "r-32." This reference points to one of the 32 RHNP Table forms available. Select the proper RHNP Table form(s) and make assignments as required for the following fields:

- **RHNP Table** — Enter the applicable Table Number (1 through 32).
- **Code** — Enter the significant digit (0 through 9) to identify the hundreds block of codes to be administered on the form.
- **Pattern Choice Assignments** — Enter the routing pattern number in each appropriate field starting with 1. Up to 12 different pattern choices may be assigned.
- **Code-Pattern Choice Assignments** — Enter a routing pattern number (1 through 12) from the above list beside each appropriate code that is required to provide additional 3-digit translations to that provided on the AAR Analysis form. These codes are the least two significant digits of the hundreds block of codes represented on the RHNP form.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires the use of tie trunk facilities if not already assigned and AAR/ARS Digit Conversion software.

Automatic Call Distribution

Provides automatic connection of incoming calls to specific splits (hunt groups). Calls to a specific split are automatically distributed among the agents (hunt group members) assigned to that split. Automatic Call Distribution (ACD) data, transmitted from the switch to the Call Management System (CMS) or the Basic Call Management System (BCMS), is used to generate various reports on the status of ACD agents, splits, and trunks.

ACD is implemented using the features or functions listed below. These features can be used singularly or in combination with each other.

- Abandoned Call Search
- Agent Call Handling
 - Forced Entry of Stroke Counts/Call Work Codes
- Attendant Console
- Basic Call Management System (BCMS)
- Call Management System
- Call Prompting
- Call Vectoring
- Call Work Codes
- CallVisor Adjunct-Switch Application Interface (ASAI)
- Central Office Trunk Group
- Class of Restriction
- Foreign Exchange Trunk Group
- Hunting
- Intraflow and Interflow
- Lookahead Interflow
- Malicious Call Trace (MCT)
- Queue Status Indications
- Recorded Announcements
- Service Observing
- Stations
- Stroke Counts
- Wide Area Telecommunications Service Trunk Group

Figure 3-7 provides an example of an ACD arrangement.

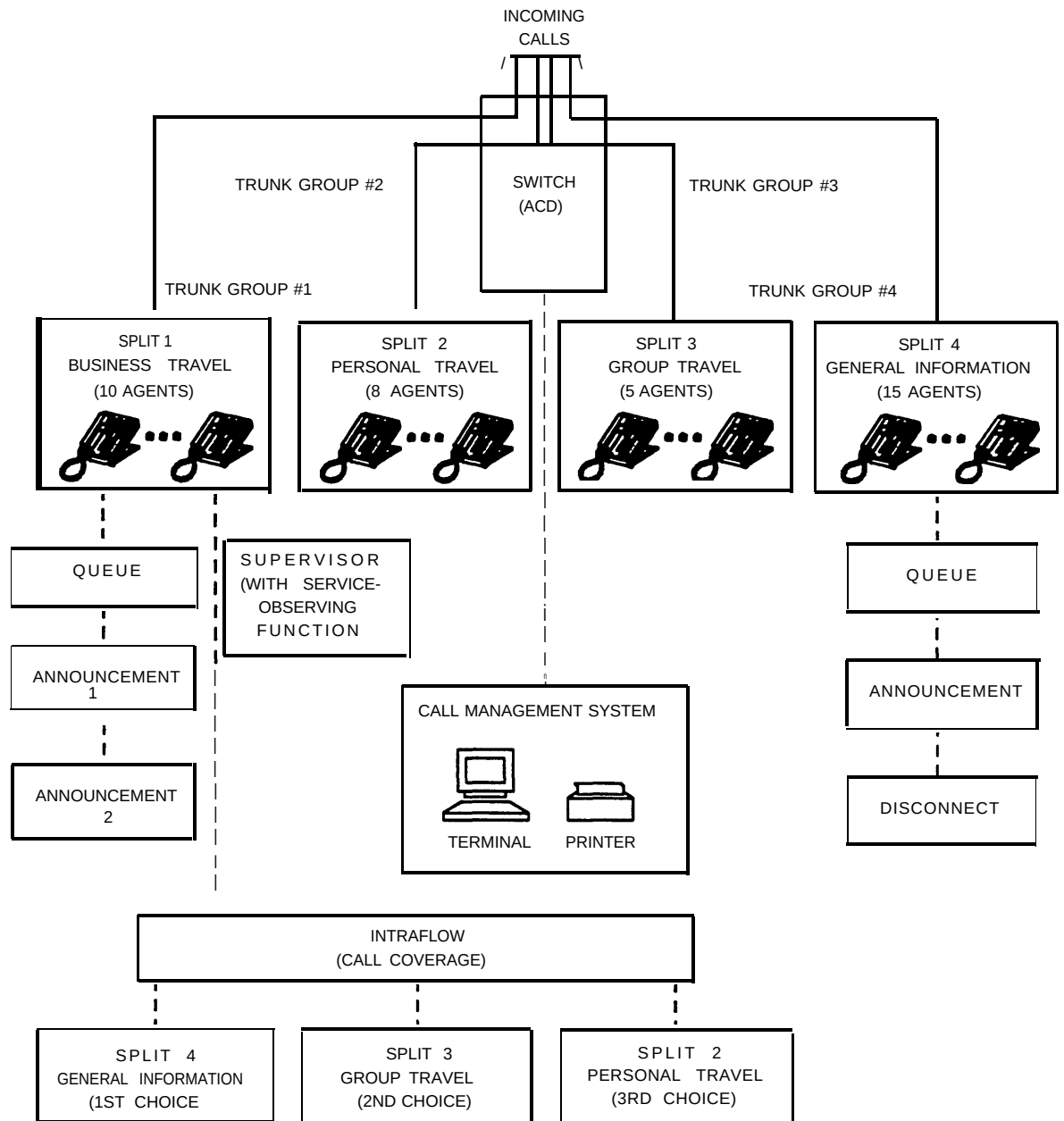


Figure 3-6. Typical Automatic Call Distribution Arrangement

Administration**NOTE:**

For G3s V2 ABP, the ACD feature is only available as part of the Basic Call Center Option. This option bundles the ACD and BCMS features and they must be purchased together.

The Automatic Call Distribution option must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following forms must be completed.

Form	Field	Form Instructions (Page #)
Trunk Groups:	Incoming Destination	
CO		4-178
FX		4-253
Tie		4-349
WATS		4-375
Attendant Console	Headset, Auto Answer	5-35
Station	Headset, Auto Answer	5-287
	Queue Status	
	Call Info Buttons	
	Feature Button Assignments - work-mode	
Hunt Group	ACD	5-189
	AAS	
	Queue Warning Lamp	
Feature-Related System Parameters	ACD Log-In Identification Length	5-168
	Service Observing Warning Tone	
Feature Access Code	Automatic Call Distribution Features	5-161
	Announcement Access Code	

- Trunk Group Forms — Group Number Field — Assign consecutive Group Numbers to trunk groups when two or more trunk groups are to be used to support ACD applications.

Incoming Destination Field — Enter ACD hunt group extension number in the Incoming Destination field.

**NOTE:**

The use of the Abandoned Call Search feature is not supported for tie trunks.

- Attendant Console Form — Make the appropriate entry in the Headset and Auto Answer fields.

- **Station Forms** — Make the appropriate entry in the Headset and Auto Answer fields. Assign the appropriate buttons for the Work Modes, Queue Status and Callr info. Assign voice terminals, as required, including the CALLMASTER digital voice terminal.
- **Hunt Group Form** — Complete fields that apply when the ACD field is “y”. Activate the Auto-Available Split feature by entering “y” in the AAS field where appropriate. (See “Auto-Available Split” in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204.)
- **Feature-Related System Parameters Form** — Enter in the ACD Log-in Identification field, the number of digits (0 through 9) that must be dialed to identify an ACD agent to CMS. Enter “y” in the Service Observing Warning Tone field to provide an audible tone when a voice terminal user is monitored by a service observer.



CAUTION:

The use of Service Observing features may be subject to federal, state or local laws, rules or regulations; or require the consent of one or both of the parties to the conversation. Customers should familiarize themselves and comply with all applicable laws, rules and regulations before using these features.

- **Feature Access Code Form** — Assign feature access codes (FACs) for Automatic Call Distribution features. Assign a FAC for announcements in the Announcement Access Code field.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Each auxiliary queue warning level lamp requires one port on a TN742, TN746B, or TN769 Analog Line circuit pack. A 21 C-49 indicator lamp may be used as a queue warning level lamp. This lamp is approximately two inches in diameter and has a clear beehive lens. The lamp operates on ringing voltage and can be mounted at a location convenient to the split. Each delay announcement requires one port on a TN750 Integrated Announcement circuit pack or announcement equipment and one port on a TN742, TN746B, or TN769 Analog Line circuit pack. If music is to be heard after the first delay announcement, a music source and a port on a TN763C Auxiliary Trunk circuit pack is required. If a CMS is to be used, CMS software and hardware is required.

The following is a list of all stations which can be used by an ACD agent:

- 2500-type stations (not recommended)
- The following Multifunction stations (except the 7200 series):
 - CALLMASTER (602A)
 - Multibutton Electronic Telephone (MET) stations
 - Hybrid Sets (7300s)
 - Digital 7400 sets (except 7401 CDT) and 510 BCTs
- Attendant Consoles

Automatic Callback

Allows internal users who placed a call to a busy or unanswered internal voice terminal to be called back automatically when the called voice terminal becomes available.

**NOTE:**

Automatic Callback is not functional for calls placed to Vector Directory Numbers.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Automatic Callback — No Answer Timeout Interval (rings)	5-168
Feature Access Codes	Automatic Callback Activation/Deactivation	5-161
Station (multi-appearance)	Button/Feature Button Assignments -auto-cback	5-287
Class of Service	Auto Callback (0-15)	5-99

- Feature-Related System Parameters Form — Specify callback time-out interval in the Automatic Callback — No Answer Time-out Interval (rings) field.
- Feature Access Codes Form — Verify Automatic Callback Activation and Deactivation fields have been assigned.
- Station Forms — Assign Automatic Callback (auto-cback) buttons to multi-appearance voice terminals, as desired.
- Class of Service Form — Verify Automatic Callback field has the correct permission.

Hardware Requirements

None.

Automatic Circuit Assurance

Assists users in identifying possible trunk malfunctions. The System maintains a record of the performance of individual trunks relative to short and long holding time calls. The System automatically initiates a referral call to an attendant or to a designated display-equipped voice terminal user when a possible failure is detected.

For the Wideband Switching feature, wideband trunk calls will be treated as a single trunk call. This way, if an ACA referral call is generated (for short or long holding time), the wideband call will only trigger a single referral call using the lowest B-channel trunk member associated with the wideband channel.

All ACA messages may be displayed in English, French, Italian, Spanish, or a "user-defined" language. Refer to the "Administrable Language Display" feature in this chapter for more information on display languages and administering a "user-defined" language.

Generic 3 V2 also provides voice synthesis (either English or Italian) for the visually impaired. This feature will be activated by the presence of the appropriate voice synthesis circuit pack.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	ACA Enabled	5-168
	ACA Referral Calls	
	ACA Referral Destination	
	ACA Short Holding Time	
	Originating Extension	
	ACA Long Holding Time	
	Originating Extension	
Attendant Console	ACA Remote Node Number	5-35
	Feature Button Assignments	
	-aca-call	
	Display Language	
Trunk Groups (All)	ACA Assignment	4-123
	Short Holding Threshold	
	Long Holding Time	
	Short Holding Time	
Station (multi-appearance)	Button/Feature Button Assignments	5-287
	-aca-call	
	Display Language	

- Feature-Related System Parameters Form — Verify ACA Enabled? field is assigned and the following fields are completed:
 - ACA Referral Calls
 - ACA Referral Destination
 - ACA Short Holding Time Originating Extension
 - ACA Long Holding Time Originating Extension
 - ACA Remote Node Number, when ACA referral is specified as “remote.”
- Attendant Console Form — Specify the language in which the display messages will be presented. Options are English, French, Italian, Spanish and “user-defined”. Default is English. Assign aca-call button.



NOTE:

Only one aca-call button can be assigned to the System. The button can be assigned to the attendant console or a voice terminal.

- Trunk Group Forms — Verify ACA Assignment field is completed and the Short Holding Time, Long Holding Time, and Short Holding Time Threshold fields are completed.
- Station Forms — Assign aca-call button if one was not assigned to the attendant console. Specify the language in which the display messages will be presented. Options are English, French, Italian, Spanish and “user-defined”. Default is English.



NOTE:

The Display Language field will only be displayed if the voice terminal is equipped with a 40-character display.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Either a TN725B (American English), TN457 (British English), or TN433 (Italian) circuit pack is required for voice synthesis.

Automatic Route Selection

Routes calls over the public network based on the preferred (normally the least expensive) route available at the time the call is placed.

Administration

The Automatic Route Selection (ARS) option must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction	FRL Calling Party Restriction Restricted Call List Partitioned Group Number or Time of Day Plan Number	5-93
Dial Plan	Area Code ARS Prefix 1 Required	5-150
Feature Access Codes	Automatic Route Selection (ARS) Access Code	5-161
Toll Analysis	Dialed String Max/Min RCL UCL (1-10) Toll List	4-117
ARS Analysis	All	4-8
ARS Digit Conversion	All	4-12
Routing Patterns	All	4-19
Remote Home Numbering	All	4-15
Plan Area (RHNP)		
ARS Toll Table	All	4-49
Time of Day Routing	All	4-25
Feature-Related System Parameters	AAR/ARS Dial Tone Required	5-168

- **Class of Restriction Forms** — Assign Facility Restriction Levels (FRLs) for station CORs. The minimum FRLs required to access a route are assigned as part of the Routing Pattern. Assignment of these values determines the calling privileges associated with calls placed from stations assigned the COR.

Assign an appropriate PGN (1 through 8) or a Time of Day Routing Plan Number (1 through 8) if displayed on the form. (The Time of Day Plan Number field is displayed if the Time of Day Routing option is enabled on the System-Parameters Customer-Options form. The Partitioned Group Number field is displayed if the ARS Partitioning option is enabled and the Time of Day Routing option is not enabled.)

- Dial Plan Form — Enter the HNPA (Area Code) and complete the ARS Prefix 1 Required field.
- Feature Access Codes Form — Verify or assign ARS access codes (1 and 2).
- Toll Analysis — Complete the Dialed String, Min/Max, Toll List, RCL, and UCL fields as required to control outgoing call access.
- ARS Analysis Form — Complete all fields as required.
- ARS Digit Conversion Form — Complete all fields as required.
- Remote Home Numbering Plan Area (RHNPA) Form — Complete all fields as required. This form can be used for 3-digit translations in addition to that provided on the ARS Analysis form. Translations for digits in the range 000 through 999 can be provided.
- Routing Patterns Form — Complete all fields as required.
- ARS Toll Table Form — Complete all fields as required to determine which 10-digit numbers are toll numbers for the purpose of prefix mark digit manipulation.
- Time of Day (TOD) Routing Form — Assign up to eight TOD charts. Each chart can have up to eight routing plans administered, each scheduled to change (based on the time of day entered on the form) up to six times a day for each of the seven days in a week. This is an optional form. The Private Networking, Automatic Route Selection Portioning, and Time of Day Routing must be enabled on the System-Parameters Customer-Options form before this form can be implemented.
- Feature-Related System Parameters Form — Complete the AAR/ARS Dial Tone Required field. Enter “y” if second dial tone is required after the feature access code; otherwise, enter “n”.

ARS Guidelines and Examples

The examples that follow are designed to illustrate some of the practical aspects of ARS. These are, however, only examples. In reality, each System must be administered to meet its individual needs.

Completing the Class of Restriction Forms

Make assignments as required for the following fields on each station's COR form:

- **FRL** — Enter an originating FRL number from 0 through 7 to assign call privileges for calls placed from stations assigned the COR. An originating FRL of "0" has the least calling privileges and "7" the most.
- **Partitioned Group Number** — Only displayed when the ARS Partitioning option is enabled and the Time of Day Routing option is not enabled on the System-Parameters Customer-Options form. Enter the appropriate Partitioned Group Number (1 through 8).
- **Time of Day Plan #** — Only displayed when the Time of Day Routing option is enabled on the System-Parameters Customer-Options form. Enter the appropriate Time of Day Plan number (1 through 8).

Completing the Dial Plan Record

Make assignments as required for the following fields:

- **Area Code** — Enter the Home Numbering Plan Area of the PBX.
- **ARS Prefix 1 Required** — Enter "y" if the user is required to dial 1 to indicate a 10-digit toll call.



NOTE:

This field applies to fnpa or hnpa call types as administered on the ARS Digit Analysis form.

This is required when the PBX is located within an area code that contains central office codes that resemble area codes. Several typical locations include: 201 in New Jersey, 212 in New York, and 312 in Chicago.

The following examples show how dialed numbers are interpreted by the System if "y" is assigned to the ARS Prefix 1 Required field. The number 9 represents the ARS Access Code. Note that the following assumes default ARS Analysis translations (see ARS Analysis coverage in Chapter 4). Changes to the default translations may alter the following:

1. 9+1+(212)-201-1234 infers a 10-digit toll call.
2. 9+(212)-201-1234 infers that 212 is a Central Office Code. The System accepts only the first seven digits following the ARS Access Code. The number 212-2011 is sent to the Central Office.
3. 9+201-1234 infers a 7-digit call within the HNPA.
4. 9+1+201-1234 infers the first seven digits of a 10-digit toll call and waits for the remaining three digits. The number being outputted is (201)-123-4xxx.

If the number being dialed is a toll call within the HNPA and the Central Office Code resembles an area code as in the preceding example, then the HNPA must also be included in the number dialed (refer to example number 1).

5. 9+922-1234 or 9+1+922-1234 infers a 7-digit call (or toll call) within the HNPA. This example differs from example number 4 in that the Central Office Code (922) does not resemble an area code.

- **First Digit Table** — Defines the PBX dial plan. For each dialable first digit (0-9, * and #), this table contains an identifier associated with the first digit and the total number of digits to collect. The following identifiers can be assigned to first digits: extension, trunk access code, feature access code, miscellaneous (also requires entries in the Second Digit Table), attendant, and prefix extensions.

Completing the Feature Access Codes Form

Make assignments as required for the following fields:

- **Auto Route Selection (ARS) Access Code** — Assign an access code to ARS. The usual entry is "9."

Completing the ARS Routing Patterns Form

Make assignments as required for the following fields:

- **Grp No.** — Enter the desired trunk group number.
- **FRL** — Enter the Facility Restriction Level 0 through 7 (0 being the least restrictive and 7 being the most restrictive) for this trunk group as it will be used by this pattern only. Trunk group FRLs are changeable from pattern to pattern. The FRL assigned to the trunk group when the COR is defined is not used on ARS calls.
- **NPA** — Enter the NPA of the distant end. For WATS trunks, the term NPA is the same as the home NPA. For tie trunks, the NPA field is left blank.
- **Prefix Mark**—Enter a number 0 through 4 as indicated. This determines the outpulsing of the Prefix digit 1.
 - 0 Indicates that the Prefix digit 1 is never outpulsed for 10-digit user-dialed FNPA calls, but leaves a user-dialed Prefix digit 1 for 7-digit HNPA calls. Prefix Mark 0 also leaves 1's on 10-digit calls that are not administered as FNPA- or HNPA-types.
 - 1 Indicates that the Prefix digit 1 is outpulsed if and **only if** the call is a 10-digit call. Prefix Mark 1 should be selected for those HNPAs that require users to dial 1 to indicate a toll call.
 - 2 Indicates that the Prefix digit 1 is outpulsed for **all** toll calls, 7- and 10-digit.

- 3 Indicates that the Prefix digit 1 is outpulsed for **all** toll calls. These calls are always outpulsed as 10-digit numbers, even those within the HNP.
- 4 Indicates that the user-dialed Prefix digit 1 is always suppressed.



NOTE:

This capability is required, for example, when routing ISDN-PRI calls to an AT&T 4ESS. If the prefix digit 1 were not suppressed, then the 4ESS would reject such calls.



NOTE:

Prefix Marks 2 and 3 must refer to a Toll Table (see "Toll List" below).

- **Toll List** — Enter a number, 1 through 32, that references the ARS Toll Table assigned to this trunk group. This field must be completed if the Prefix Mark is 2 or 3.
- **No. Del. Digits** — Enter the total number of digits to be deleted (0 through 23) when this trunk group is selected for use within this pattern.
- **Inserted Digits** — Enter the actual digits to be inserted (0 through 36). The digits may be divided into groups separated by a wait for dial tone separator. "Wait" takes two digit places. The "w" is used for pause, "p" for the second dial tone, and "m" for end-to-end signaling.



NOTE:

The special character "p" (pause) should not be used unless absolutely necessary as the first character in the string. Typical misuse can result in calls such as Abbreviated Dialing or Last Number Dialed calls not completing to the far-end.

- **IXC** — Displayed when ISDN-PRI is enabled on the System-Parameters Customer-Options form. Enter the last three digits to represent an equal access Inter-exchange Carrier code (such as, 10XXX). This field is used by all calls that route via an IXC, and is also used for Call Detail Recording (CDR). If an IXC is not specified, a call will be transmitted by the presubscribed common carrier.



NOTE:

The IXC value for non-ISDN trunk groups must be entered in the Inserted Digits field.

- **BCC Value** (required by Generalized Route Selection feature) — Displayed when ISDN-PRI is enabled on the System-Parameters Customer-Options form. Enter "y" (default) or "n" in the appropriate BCC column (0, 1, 2, 3, or 4) to specify whether or not the BCC (Bearer Capability Class) is valid for the associated route.

The following defines the BCC values:

BCC VALUE	DESCRIPTION
0	Voice-Grade Data and Voice
1	56-kbps Data (Mode 1)
2	64-kbps Data (Mode 2)
3	64-kbps Data (Mode 3)
4	64-kbps Data (Mode 0)
W	128 to 1984-kbps Data (Wideband)

 NOTE:

Refer to “Generalized Route Selection” in *DEFINITY Communications System Genetic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls. The BCC value is used to determine compatibility when non-ISDN-PRI facilities are connected to ISDN facilities (ISDN-PRI Interworking feature).

- **TSC** — Enter “y” to allow incoming Non Call Associated TSC requests to be tandemed out and to allow the establishment of Call Associated TSCs associated with B-channel connections of that preference. To achieve feature transparency, DCS+ calls should be routed via a routing pattern that has an ISDN-PRI *Used for DCS* trunk group as a first preference.

- **CA-TSC Request** — Appears when the TSC field is “y”. A CA-TSC uses the call reference value of the call control data packets to exchange user information messages associated with an ISDN B-channel connection. Valid entries are:

- as-needed No CA-TSC will be established along with the B-channel call. If a CA-TSC is needed due to feature activation somewhere in the lifetime of this B-channel call, then the CA-TSC will be established at that time and remain active for the duration of the call.
- at-set up Causes a CA-TSC to be established at the same time the initial B-channel connection is established. In other words, a CA-TSC will be setup for each and every B-channel call **whether or not that CA-TSC will ever really be needed.**
- none Disallows the establishment of CA-TSCs associated with B-channel connections of the current preference (tandeming of NCA-TSC setup requests however, are still permitted).

 NOTE:

With “as-needed”, the need to establish the CA-TSC causes a slight delay in the invocation of the Call Associated feature. This delay is not present with “at-setup” because the CA-TSC is already established at call setup and is ready to be used immediately upon feature invocation.

- **Service/Feature** — Specifies the ISDN-PRI Services/Features for an incoming call type as:

Table 3-1. Predefine Services/Features — ISDN-PRI

Service/Feature	
Administration Mnemonic	Description
accunet	ACCUNET Switched Digital Service — part of ACI (AT&T Communications ISDN) phase 2.
i800	International 800 Service — allows a subscriber to receive international calls without a charge to the call originating party.
inwats	INWATS — provides OUTWATS-like pricing and service for incoming calls.
lds	Long-Distance Service — part of ACI (AT&T Communications ISDN) phase 2.
megacom-800	MEGACOM® 800 Service — an AT&T communications service that provides unhandled 800 service using special access (4ESS switch to PBX) from an AT&T communications node.
megacom	MEGACOM Service — an AT&T communications service that provides unhandled long-distance services using special access (PBX to 4ESS switch) from an AT&T communications node.
multiquest	AT&T MULTIQUEST® Telecommunications Service — dial 700 service. A terminating users service supporting interactive voice service between callers at switched access locations and service provides directly connected to the AT&T Switched Network (ASN).
operator	Network Operator — Provides access to the network operator.
outwats-bnd	OUTWATS Band — WATS is a voice-grade service providing both voice and low speed data transmission capabilities from the user's location to defined service areas commonly referred to as bands. Currently, the widest band is 5.
sdn	Software Defined Network (SDN) — an AT&T communications offering that provides a virtual private network using the public switched network. SDN can carry voice and data between customer locations as well as off-net locations.
sub-operator	Presubscribed Common Carrier Operator — provides access to the presubscribed common carrier operator.
wats-max-bnd	Maximum Banded Wats — a WATS-like offering for which a user's calls are billed at the highest WATS band subscribed to by the user.

As an example, assume that an FX trunk group from within the USA to North Carolina, USA, (Area Code 919) is being defined:

1. The ARS user dials 9+(919)-555-1349. (The first 9 represents the ARS Access Code.)
2. The System checks the ARS Analysis Table for the assigned Routing Pattern.

3. For the identified routing pattern, if a trunk is available on the first routing preference, then the call is allowed. If a trunk is not available, then the System will search the next routing preference for an available trunk on the next trunk group listed on the routing pattern.
4. Assume that on the routing pattern that the value assigned to No. Del. Digits field is 3. The System deletes the first three digits dialed (that is, the digits 919 are deleted).

Prefix Mark 2 is specified on the routing pattern and the associated Toll Table field is 3. As a result, Toll Table 3 is checked to determine if the call is a local or toll call with respect to the office at the distant end of the trunk. If local, the number 555-1349 is outpulsed; if toll, 1-555-1349 is outpulsed.

No digits are inserted for this example.

Completing the ARS Analysis Table

Up to eight of these forms can be assigned. Each form can be associated with a different Partitioned Group Number (1 through 8). The form is used to associate dialed or modified strings to routing patterns. An associated Call Type field for each Dialed String entry is used to identify the call type (such as, international, operator assisted, FNPA, HNPA, and so on).

Competing the ARS Digit Conversion Table

This form is used to modify dialed public network numbers to private network numbers so as to route associated calls by the private network (AAR). Its purpose is to save toll charges and to allow users to dial calls using public numbers. In addition, unauthorized public calls can be intercepted and routed to an attendant or given intercept treatment.

Completing the Node Number Routing Table

Complete this form if a routing pattern is not specified in the AAR Analysis form. This form specifies the routing pattern associated with each node in a private network. NNR is a required capability for Extension Number Portability (ENP) and is associated with the Uniform Dialing Plan (UDP). UDP extensions can be routed to a specified node using its associated pattern and allows a UDP routing choice based on node numbers or on location codes.

Completing the Remote Home Numbering Plan Area

The form is used for the translating of 3-digit codes in the range of 000 through 999. The form consists of 10 pages of 100 codes each: 000 through 099, 100 through 199,...800 through 899, 900 through 999. Up to 32 RHNPA Tables may be administered. Each screen form provides fields for the selection of up to 12 Routing Pattern choices. Each Code is assigned a Routing Pattern from the 12 routing pattern choices that can be assigned on the form. It is not necessary to assign all 12 choices.

The form can be used to translate 3-digit codes in addition to the translations provided by the ARS Analysis Table.

Enter a routing pattern number from the routing patterns listed (1 through 12) for each 3-digit code to receive additional translations. Ranking of Pattern choices is not pertinent, however, because the default value for each code is 1, the Routing Pattern assigned to Pattern Choice 1 should be the one used most frequently.

Completing the Automatic Route Selection Toll Table Form

This form is used to specify whether calls to central office codes are toll or nontoll type calls.

This 800-entry table consists of eight screen forms of 100 office codes each: 200 through 299, 300 through 399,...800 through 899, 900 through 999. Up to 32 ARS Toll Tables may be completed. The default value for each office code is "y." This implies that all calls are toll calls. To identify those calls within the Table that are not toll calls, change the "y" to "n" beside the appropriate office codes.

Toll Tables are associated with the terminating NPA of a given trunk group. They are always required for those trunk groups assigned a Prefix Mark of 2 or 3 on the Routing Pattern form. Refer to Prefix Mark (described earlier under "Completing the ARS Routing Patterns Form") for additional information on Prefix Marks.

Hardware Requirements

None.

Automatic Transmission and Measurement System (ATMS)

ATMS is an integrated hardware- and software-based facility monitoring system that allows you to verify automatically that facilities (such as Tie, CO, FX, and WATS trunks) are providing satisfactory performance. ATMS allows for several measurements of noise and attenuation on trunk lines to help identify trunks that would otherwise have to be investigated manually. These tests can be initiated as either Demand and/or Scheduled tests.

Demand testing can be initiated from the G3-MT and executes the test immediately. Refer to the commands section in *DEFINITY Communications System Generic 3 V2 Maintenance*, 555-230-105, for a complete description of this procedure.

Scheduled testing executes the tests at a predetermined time and is initiated via the ATMS Trunk Test Schedule form.

When a trunk fails an unacceptable threshold twice and the administered busyout limit is not exceeded, then this trunk is busied out. This limit may be administered to be 25, 50, 75, or 100 percent, and includes trunks busied out for any reason. For example, if the limit is 25 percent and 30 percent of the trunks are busied out because of hardware problems, then a failing trunk is not busied out by ATMS.

When a decision to busyout or not busyout a trunk is made, this trunk is not rechecked when other events cause the number of busied out trunks to change. This means that ATMS could take 25 percent of the trunks out of service, and a later hardware failure could take an additional 25 percent out of service. If the ATMS busyout limit is 25 percent, it will not be rechecked and the trunks will stay out of service.

Another example is that incorrect threshold values can cause trunks to be busied out unnecessarily. Changing thresholds to their correct values does not immediately affect the busied out state of a trunk. Putting the trunk back into service can be done immediately by either changing the thresholds and running a demand test or by using the release command on the entire trunk group.

Administration

ATMS must be enabled on the System-Parameters Customer-Options form before associated fields on forms may be administered.

To implement this feature, the following form(s) or sections of form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station	Extension	5-287
	Port Number	
Class of Restriction	Facility Access Trunk Test	5-93
Hunt Group	All (optional)	5-189
Trunk Group	All (ATMS Thresholds - Page 4)	4-123
ATMS Trunk Test Schedule	All	4-51

- Station Form — Assign a Station Type of “105TL”. Assign extension numbers of this station type to port 1 of the TN771C circuit pack.
- COR Form — For those TN771Cs to be tested, enter “y” in the Facility Access Trunk Test field of each TN771C’s COR form or enter “n” in this field to exclude it from testing.
- Hunt-Group Form (optional) — Enter the above extension numbers into a hunt group in the Extension field if this switch has more than one TN771C circuit pack used as a TTL. This step is only necessary when one number is to represent a pool of TTLs.
- Trunk Group Form — Initialize the analog trunk group threshold limits and parameters for the trunk groups to be tested on the ATMS Threshold page (Page 4).
- ATMS Trunk Test Schedule Form — Define test times for system facility test schedules and assign trunk groups to test schedules. Trunk group idle hour times are first defined to form a test schedule. Test times need to be set to off-peak hours to avoid trunk resource conflicts. Trunks are then assigned to these test times for automatic test generation.

Hardware Requirements

The TN771C circuit pack is required.

Automatic Wakeup

Allows attendants, front-desk users, and guests to request that a wakeup call be placed automatically to a certain extension number at a later time. Wakeup requests may be placed from 5 minutes to 23 hours and 55 minutes in advance of the wakeup call.

For the attendant console and display-equipped voice terminals, messages may be administered to display in either English, Italian, French, Spanish, or in a “user-defined” language. Refer to the “Administrable Language Display” feature in this chapter for more information on display languages and administering a “user-defined” language.

**NOTE:**

A wakeup call cannot be programmed for a Vector Directory Number.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Button/Feature Button Assignment	5-287
Attendant Console	-Auto-wkup	5-35
	Display Language	
Class of Service	Feature Button Assignments	5-99
	-Auto-wkup	
Feature Access Codes	Display Language	5-161
	Console Perms	
Feature Access Codes for Hospitality Features	Announcement Access Code	5-161
	Group Control Restrict Activation/Deactivation	
	Automatic Wakeup Call Access Code	
	Voice Do Not Disturb Access Code	
	Verify Wakeup Announcement Code	

Form	Field	Form Instructions (Page #)
Hospitality-Related System Parameters	Announcement Type Length of Time to Remain Connected to an Announcement Announcement Ports Auxiliary Board for Announcement Extension to Receive Failed Wakeup LWC Messages Extension of Journal/Schedule Printer Extension of PMS Log Printer Time of Scheduled Wakeup Activity Report Time of Scheduled Wakeup Summary Report Routing Extension on Unavailable Voice Synthesis	5-184

- **Station Forms** — Assign an “auto-wkup” button to 510, 515, or 7400 series voice terminal equipped with a display. Specify the language in which the display messages will be presented. Options are English, French, Italian, Spanish and “user-defined”. Default is English.

**NOTE:**

The Display Language field will only be displayed if the voice terminal is equipped with a 40-character display.

- **Attendant Console Form** — Assign an “auto-wkup” button to the attendant console. Specify the language in which the display messages will be presented. Options are English, French, Italian, Spanish and “user-defined”. Default is English.
- **Class of Service Form** — Assign the correct console permissions so the attendant console can place wakeup requests for voice terminals.
- **Feature Access Codes Form** — Assign Announcement Access Code.
- **Feature Access Codes for Hospitality Features Form** — Assign Automatic Wakeup Call Access Code used for voice prompting. Assign Voice Do Not Disturb field, and Verify Wakeup Announcement codes.
- **Hospitality-Related System Parameters Form** — Assign the type of automatic wakeup announcement the hotel guest will receive.
 - Assign the announcement ports if the voice synthesis was entered for the announcement type.
 - Assign an auxiliary board for announcement if external is used for announcement type.
 - Assign extension number to receive unsuccessful Wakeup LWC messages.

- Assign extension number to the journal/schedule printer.
- Assign extension number to the PMS log printer.
- Assign time to receive the scheduled wakeup activity report.
- Assign time to receive scheduled wakeup summary report.
- Assign length of time to remain connected to announcement.
- Assign extension number (or 0 for the attendant) to which a call will be placed during voice synthesis entry of a wakeup message request when a voice synthesis port is not available.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

If voice prompting is used, a TN725B Speech Synthesizer circuit pack is required. Each circuit pack has four ports to provide voice prompting. If speech synthesis is selected for wakeup call announcements, two ports must be reserved for wakeup announcements.

If recorded announcements are used, a model HQD614B Recorder/Announcer manufactured by the Audichron Company is required. Each Recorder/Announcer requires four trunk ports that must be on the same TN763C Auxiliary circuit pack.

Basic Call Management System

Basic Call Management System (BCMS) provides a subset of the External Call Management System (CMS) applications within the System's digital switch. BCMS provides real-time and historical reports that assist in the management of individual agents, Automatic Call Distribution (ACD) splits, members of measured hunt groups, trunk groups, and Vectored Directory Numbers (VDNs).

BCMS reports can be accessed and displayed on the Administration terminal and can be scheduled to print on a dedicated asynchronous printer associated with the System's Report Scheduler. Printout intervals and associated schedules are assigned using report scheduler administration commands on the Administration terminal. (Refer to the "Report Scheduler" coverage for administration information associated with the Report Scheduler and its dedicated System printer interface.)

Administration

➤ NOTE:

For G3s V2 ABP, the BCMS feature is only available as part of the Basic Call Center Option. This option bundles the ACD and BCMS features and they must be purchased together.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Hunt Groups	Measured BCMS Acceptable Service Level	5-189
Trunk Groups	Measured	4-123
Feature-Related System Parameters	BCMS Parameters -Measurement Interval	5-168
VDN	Measured BCMS Acceptable Service Level	5-262

- Hunt Group, Trunk Group, and VDN Forms — Assign the Measured field on the Hunt Group, Trunk Group and VDN forms as one of the following:
 - internal — measured by BCMS only (internal to the digital switch)
 - external — measured by CMS adjunct only (external to the digital switch)
 - both — measured by both BCMS and the CMS adjunct
 - none — not measured (system default).

If Measured is "internal" or "both" on the Hunt Group or VDN forms, enter the number of seconds within which calls should be answered in the BCMS Acceptable Service Level field.

- Feature-Related System Parameters Form — Assign either "hour" or "half-hour" in the Measurement Interval field associated with the BCMS Parameters to indicate the interval to be used in polling and reporting measurement data. Assign the extension of the system printer in the System Printer field. Assign the number of lines printed on each page by the system printer in the Lines Per Page field.

Hardware Requirements

None (refer to the "Report Scheduler" coverage for associated printer interface requirements).

Bridged Call Appearance — Multi-Appearance Voice Terminal

Allows multi-appearance voice terminal users to have an appearance of another user's primary extension number. The bridged call appearance can be used to originate, answer, and bridge onto calls to or from the other user's primary extension number.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Bridged Call Alerting Button/Feature Button Assignments -brdg-appr	5-287

- **Station Forms** — Assign "brdg-appr" to a 2-lamp button. In the BTN field, enter the button number of the call appearance on the principal voice terminal that is being bridged. Enter the principal's extension in the "Ext." field. Enter "y" or "n" in the Bridged Call Alerting field to enable or disable the audible signal on bridged call appearances. One button must be assigned for each bridged appearance. If the principal has three call appearances, the bridging extension must have three bridged appearances assigned in order to emulate the principal's extension. Less than a full complement of bridged extensions can be assigned, but call appearance emulation (tracking) is on a one-for-one basis.

Hardware Requirements

None.

Bridged Call Appearance — Single-Line Voice Terminal

Allows a multi-appearance voice terminal to have an appearance of a single-line voice terminal's extension number. The appearance of the single-line terminal's extension number at a multi-appearance terminal is called a bridged call appearance.

The bridged call appearance can be used to originate, answer, or bridge onto an existing call to or from the single-line user's extension number.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Bridged Call Alerting Button/Feature Button Assignments -abrdg-appr	5-287

- **Station Forms** — Assign “abrdg-appr” to a 2-lamp feature button. Enter the principal's extension in the dynamic field, “Ext.” Enter “y” or “n” in the Bridged Call Alerting field to enable or disable the audible signal on bridged call appearances. One button must be assigned for each bridged appearance to a single-line voice terminal.

Hardware Requirements

None.

Business Communications/Personal Terminals

The System supports the following special-purpose terminals:

- AT&T Personal Terminal 510D
- 515 Business Communications Terminal (BCT)

The 510D integrates voice and data transmission into a single terminal. It has an integral data module and provides a Digital Communications Protocol (DCP) channel interface to the digital switch. The 510D can serve as a remote on-premises administration terminal.

The 515 BCT integrates voice and data into a single terminal. It has an integral data module and provides a DCP channel interface to the digital switch. The 515 BCT provides a standard EIA 232C interface and can serve as a remote on-premises administration terminal or as a standard data terminal.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station 510D	All	5-313
515 BCT		5-313
Data Module (DLDM)	All	5-111

- Station Forms — Verify or complete all fields as required.
- Data Module (DLDM) Form — Verify or complete all fields as required.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

510D— Requires a port on a TN754B Digital Line circuit pack.

515 BCT — Requires a port on a TN754B Digital Line circuit pack.

Data Line Data Module — Requires an ADU and a port on a TN726B Data Line circuit pack when the terminal is used as a remote on-premises administration terminal or as a standard data terminal.

Busy Verification of Terminals and Trunks

Allows attendants and specified multi-appearance voice terminal users to make test calls to trunks, voice terminals, and hunt groups [Direct Department Calling (DDC) and Uniform Call Distribution (UCD) groups]. These test calls check the status of an apparently busy resource.

**NOTE:**

Busy Verification of Vector Directory Numbers will be denied.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form instructions (Page #)
Attendant Console	Feature Button Assignments -verify	5-35
Station (multi-appearance) (this feature is best utilized on a display-equipped voice terminal)	Display Language Button/Feature Button Assignments -verify Display Language	5-287

- **Attendant Console Form** — Assign a “Verify” button. Enter the desired display language (English, French, Italian, Spanish, or “user-defined”). Refer to “Administrable Language Display” in this chapter for information on administering the “user-defined” language.
- **Station Forms** — Assign one “Verify” button per multi-appearance voice terminal. Enter the desired display language (English, French, Italian, Spanish, or “user-defined”). Refer to “Administrable Language Display” in this chapter for information on administering the “user-defined” language.

Hardware Requirements

None.

Call by Call Service Selection

Allows the System to set up, on a call-by-call basis, various voice and data services and/or features for a particular call. Services and/or Features such as MEGACOM® service, ACCUNET digital service, and INWATS can be integrated onto a single transmission facility (ISDN-PRI trunk group) with flexible assignment of trunks to the Service and/or Feature being used. Calls such as an incoming 800 Service call requiring through switching as an Outgoing WATS call can be routed via the same facility.

NOTE:

The Call by Call Service Selection feature is only available in the United States of America and then only if the ISDN-PRI option on the System-Parameters Customer-Options form has been enabled.

Administration

NOTE:

The Call by Call Service Selection feature is not supported by the G3s V2 ABP configuration.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

NOTE:

In addition to the following administrable forms, the Network Facilities form (Chapter 4), which is a display-only form, provides a listing of the predefined services and features that are available to support the Call by Call Service Selection feature.

Form	Field	Form Instructions (Page #)
Trunk Group (ISDN-PRI)	Service Type	4-275
Routing Patterns	Usage Allot	4-19
	IXC	
	Service/Feature Band	

- Trunk Group (ISDN-PRI) Form — Enter “cbc” in the Service Type field (up to 10 ISDN-PRI trunk groups can be assigned with a Service Type of “cbc”). If the Usage Alloc field is administered as “y”, two additional Call by Call related pages of the trunk group form are displayed. Complete all associated fields on the form as required.
- Routing Patterns Form — Complete all fields including the following:
 - IXC — Enter three digits to represent the Inter-Exchange Carrier (IXC) which will be used to carry an associated call. if no entry is provided, calls will be carried by the presubscribed carrier.

- Service/Feature — Enter the network provided Service/Feature for establishing an associated call. Refer to the Network Facilities form for a list of valid Services/Features (MEGACOM service, ACCUNET digital service, INWATS, and so on.)
- Band — If the Service/Feature field is administered as “outwats-bnd”, the Band field will be displayed. Enter the wats band to be used for carrying the call.

Hardware Requirements

None.

Refer to “ISDN-PRI Trunk Group” in this chapter for trunk group hardware requirements.

Call Coverage

Provides automatic redirection of certain calls to alternate answering positions in a Call Coverage path.

NOTE:

A Vector Directory Number may be administered as the last point in a Coverage Path. Refer to “VDN In a Coverage Path” in this chapter for more information.

There are two reports that provide measurement information about call coverage:

- The Coverage Path Measurement Report describes coverage activity as it relates to the coverage paths.
- The Principal Coverage Measurement Report describes coverage activity as it relates to the principal extensions.

For each report, there is a selection form that lists the specific coverage paths or principal extensions to be measured. For more detailed information on these reports and their associated commands, refer to *DEFINITY Communications System Generic 3 V2 System Reports*, 555-230-511.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed,

Form	Field	Form Instructions (Page #)
Call Coverage Answer Group	All	5-60
Call Coverage Paths	All	5-62
Feature-Related System Parameters	Coverage — Don't Answer Interval For Subsequent Redirection (rings)	5-168
	Coverage — Caller Response interval (seconds)	
	Keep Held SBA at Coverage Point	
Feature Access Codes	Send All Calls Activation and Deactivation Transfer into AUDIX	5-161

Form	Field	Form Instructions (Page #)
Hunt Groups	All	5-189
Terminating Extension Group	All	5-260
Station (principals — the one to whom the call is first directed)	Coverage Path Redirect Notification Coverage Msg Retrieval Permission Button/Feature Button Assignments -goto-cover -send-calls (Type:_Grp:_)	5-287
Station (multi-appearance) (covering user — the one to whom the call redirects)	Button/Feature Button Assignments -consult -cov-cback -send-calls (Type:_Grp:_)	5-287
Station (multi-appearance) (where users will place calls that can redirect to coverage)	Button/Feature Button Assignments -goto-cover	5-287
Trunk Group	Internal Alert	
APLT		4-155
ISDN-PRI		4-275
Tie		4-349

- Call Coverage Answer Group Form — Establish coverage answer groups.
- Call Coverage Paths Form — Establish desired coverage paths.
- Feature-Related System Parameters Form — Verify or complete Coverage Don't Answer Interval for Subsequent Redirection (rings), Keep Held SBA at Coverage Point, and Coverage-Caller Response Interval (secs) fields.
- Feature Access Codes Form — Verify or assign a "Send All Calls Activation and Deactivation" code, if desired. If required, enter the digits that must be dialed (1 to 3 digits) to have the caller transferred to the called party's AUDIX mail.
- Hunt Groups Form — Assign coverage path to groups, as desired.
- Terminating Extension Group Form — Assign coverage paths to groups as desired.
- On principal's Station Form — (the one to whom the call was first directed):

- Assign a Call Coverage Path.
- Complete Redirect Notification field (which causes the principal's voice terminal to receive a half ring on calls that redirect to coverage). This field is common to Call Coverage and Call Forwarding.
- Complete Coverage Msg Retrieval Permission field (which allows any user in the principal's call coverage path to retrieve the principal's Leave Word Calling messages).
- Assign a Go to Cover (goto-cover) button, if desired.
- Assign a Send All Calls (send-calls) button, if desired.
- On covering user's Station Form — (the one to whom a call redirects), assign the following buttons, as desired:
 - Consult
 - Coverage Answer Group Numbers (in-call-id field)
 - Coverage Call Back ("cov-cback")
 - Send All Calls
- Station Form — On voice terminals where users will place calls that can redirect to Coverage, assign a Go to Coverage (goto-cover) button, if desired.
- APLT, ISDN-PRI, and Tie Trunk Group Forms — Assign "y" to the Internal Alert field to specify that internal ringing and call coverage will be used for incoming calls on these trunk groups.

Call Coverage Guidelines and Examples

The examples that follow illustrate some of the practical aspects of Call Coverage. These are, however, only examples. In reality, each System must be administered to meet its individual needs.

Three typical coverage arrangements are as follows:

■ Executive Coverage

Provides a principal with call redirection to covering users having a close working relationship with the principal. Because of the status of the principal, personalized answering should be provided. Also, the principal may or may not choose to answer his or her own calls.

A typical example of this form of coverage is when a principal's calls are redirected to a secretary. The secretary would be informed of the principal's daily schedule and other pertinent facts such as the importance of certain calls. The secretary could provide personalized answering by answering calls with the principal's name.

If the secretary is unavailable to answer the coverage call for the principal, the call redirects to a backup answering position. Personalized answering should also be provided at the backup position.

■ Middle Manager Coverage

Provides a group of principals with call redirection to one or more covering users (such as a secretary). The secretary should have some knowledge of the principal's daily schedule. A backup answering position should be provided in case the secretary is unavailable.

■ General User Coverage

Provides less personal coverage for a broader spectrum of users. Covering users typically consist of a group or pooled answering arrangement. With this type of arrangement, coverage calls may be distributed among the members of the answering group.

As an example of how to provide a particular cover arrangement, the following provisions for the Executive Coverage arrangement are given.

■ Determine if the secretary and backup position have a call display capability.

- If so, Coverage Answer Groups are not required.
- If not, establish a unique Coverage Answer Group for each one without a display. Specify only the applicable extension number. The Coverage Answer Group will contain only one member. Establish two groups, if required.

NOTE:

If the secretary and/or the backup answering position are in a Coverage Answer Group, each will receive only one redirected call for the executive at any given time. Calls do not ring a Coverage Answer Group member already busy on a call to the group. For frequently called executives, it is desirable that the secretary and possibly the backup answering position have a digital display capability.

■ Establish a unique Call Coverage Path for the executive.

- If the secretary will screen the calls, specify Cover All Calls as the redirection criteria.
- If the executive will answer calls, specify Active, Busy, Don't Answer, Active/Don't Answer, or Busy/Don't Answer as desired.
- Specify the secretary and the backup position [or the Coverage Answer Group(s) containing the secretary's and backup position's extension numbers] as the coverage points in the path.

- Optionally, specify a Send All Calls button on the executive's voice terminal. If someone else answers the executive's calls, the button is not needed.
- Specify a Send All Calls button and a Consult button on the secretary's voice terminal. Specify a Coverage [CI button if the secretary doesn't have a call display capability. Send All Calls is needed if the secretary will be unavailable for a period of time. Consult is needed to enable private consultation with the executive during an established call. Coverage ICI is needed to identify the call as a call to the executive rather than a personal call to the secretary.
- Specify a Consult button and a Coverage ICI button on the backup position's voice terminal for the same reasons these buttons were specified for the secretary.

Hardware Requirements

None.

Call Detail Recording (CDR)



NOTE:

This section deals with Call Detail Recording (CDR). For information on measuring internal calls, refer to the "Intra-switch CDR" section in this chapter.

Records detailed call information on all incoming and outgoing calls on specified trunk groups and sends this information to a CDR output device. The CDR output device provides a detailed printout that can be used by the System Manager to compute call costs, allocate charges, analyze calling patterns, and keep track of unnecessary calls.

Figure 3-8 provides typical System CDR connections and Figure 3-9 provides typical CDR connections to a 3B2 Messaging Server adjunct.



NOTE:

The following information regarding System Access Ports applies only to the G3r V2 configuration. G3i V2 and G3s V2 do not use System Access Ports.

The system knows of one set of System Access Ports (SAPS) for both incoming and outgoing features. The following features that use SAPS (the number of SAPS that can be potentially used by the feature is in brackets []):

Incoming:

Remote Administration [5]

temporary — used for the duration of the remote administration session (that is, until the administrator logs out).

Outgoing:

CDR [2]

primary and secondary

permanent — established at system restart and never taken down

Property Management System Interface [3]

PMS adjunct, PMS log printer, Wakeup journal printer

permanent — established at system restart and never taken down

Recorded Announcements [1]

(for announcement circuit pack save and restore to mass storage).

temporary — only used while announcement circuit pack is uploading or downloading announcements

Report Scheduler and System Printer [1]

temporary — only used while report is printing

Incoming features can be restricted to using particular SAPS by placing only the desired SAPS in a hunt group and then always dialing that hunt group's extension for incoming features.

Outgoing features always choose from the full set of administered SAPS. Therefore, placing fewer than the full complement of administered SAPS in a hunt group for incoming access is counterproductive in that one or more of those SAPS (in the hunt group) might get chosen for an outgoing application, thus making them unusable for incoming applications. Also, there is no guarantee that those SAPS left out of the hunt group will be used for outgoing applications, and, since they are unusable for incoming applications, they might not be used at all.

Administration

The System forms listed in the first table below must be completed to assign CDR. In addition, depending on the CDR output device connection to the digital switch, System forms as listed in the tables that follow must also be completed.

Form	Field	Form Instructions (Page #)
Trunk Groups:	CDR Reports	
Access	Answer Supervision Timeout	4-130
APLT	Disconnect Supervision	4-155
CO	PPM	4-178
CPE	Frequency	4-200
DMI-BOS		4-209
DID		4-230
FX		4-253
RLT		4-303
Tandem		4-324
Tie		4-349
WATS		4-375
Personal Central Office Line Groups (PCOLGs)	CDR Reports	4-295
loudspeaker Paging and Code	CDR	5-224
Calling Access		
System Parameters CDR	CDR Parameters (all fields)	5-69
Inter-Exchange Carrier (IXC) Codes	All	5-205
Feature Access Codes	CDR Account Code Access Code	5-161

CDR Output Device Connected To MPDM/MTDM:

Form	Field	Form Instructions (Page #)
Netcon Data Module (G3s V2, G3i V2 only)	All	5-133
SAP Data Module (G3r V2 only)	All	5-139
MPDM/MTDM Data Module	All	5-128

CDR Output Device Connected To Messaging Server Adjunct:

Form	Field	Form Instructions (Page #)
Processor Interface Data Module	All	5-136
MPDM/MTDM Data Module	All	5-128
Processor Channel Assignment	All	4-101 or 4-105
Interface Links	All	4-91

CDR Output Device Connected to DCE Jack on the Control Carrier

Form	Field	Form Instructions (Page #)
System Parameters CDR	EIA Device Bit Rate Primary Output Layout Secondary Output Layout Primary/Secondary Output Extension	5-69

CDR Output Device Connected To Data Line Circuit Pack and Asynchronous Data Unit (ADU):

Form	Field	Form Instructions (Page #)
Data Line Data Module	All	5-111
Netcon Data Module (G3s V2, G3i V2 only)	All	5-133
SAP Data Module (G3r V2 only)	All	5-139

CDR Output Device Connected To 212A-type Modem:

Form	Field	Form Instructions (Page #)
Modem Pool Group (integrated)	All, if not already assigned; otherwise, verify that a circuit pack assignment has been made.	5-229
Station-2500 type	All	5-303

- Trunk Group Forms — Complete CDR Reports field. Enter a number (0 to 250) in the Answer Supervision Timeout field. This field specifies the amount of time in seconds at which the System will assume it received answer supervision for a call. This interval begins as soon as the outgoing trunk is seized. Make entries in the Disconnect Supervision, PPM, and Frequency fields as required.
- PCOL Groups Form — Complete CDR Reports field.
- Loudspeaker Paging and Code Calling Access Form — Complete CDR field.
- System Parameters CDR Form — Complete all CDR Parameters fields as required.
- Inter-Exchange Carrier (IXC) Codes Form — Assign IXC codes where applicable to allow identification of the IXC on the CDR report. If no carriers are specified, the CDR record will contain a "0" in the IXC code field on the CDR printout.
- Feature Access Codes Form — Complete CDR Account Code Access Code field.

Complete the following forms if the CDR output device is connected to MPDM/MTDM:

- Netcon Data Module Form (G3s V2, G3i V2 only) — Complete all fields as required. This form activates a physical channel on the TN777 Network Control circuit pack. An associated MPDM/MTDM Data Module form must also be completed to assign the associated MTDM interface from the CDR output device to the switch.
- System Access Port Data Module Form (G3r V2 only) — Complete all fields as required. This form activates a physical channel on the TN726B that connects via software to the TN553 (packet bus). The system chooses one of the free SAPs to use to connect the data module connected directly to the CDRU. The SAP chosen is unpredictable.
- MPDM/MTDM Data Module Form — Complete all fields if a 700A-type Modular Processor Data Module (MPDM) is to be used. The 700A-MPDM/MTDM form can be used to connect the CDR output device to a port on a TN754B Digital Line circuit pack.

- **System Parameters CDR Form** — Complete the Primary/Secondary Output Layout and Primary/Secondary Output Extension fields.

Complete the following forms if the CDR output device is connected to a Messaging Server Adjunct:

- **Processor Interface Data Module** — Complete all fields as required.
- **MPDM/MTDM Data Module Form** — Complete all fields if a 700B Modular Trunk Data Module is to be used. The 700B-MTDM can be used to connect the CDR output device to a port on a TN754B Digital Line circuit pack.
- **Processor Channel Assignment Form** — Complete the required fields to assign a processor channel for the CDR output device.
- **Interface Links Form** — Complete required fields to assign the CDR output device interface link.

Complete the following form if the CDR output device is connected to the DCE jack on the back of the Control Carrier.

- **System Parameters CDR Form** — Complete the EIA Device Bit Rate, Primary/Secondary Output Layout, and Primary/Secondary Output Extension fields.

Complete the following forms if the CDR output device is connected to a TN726B Data Line circuit pack via a Z3A ADU.

- **Netcon Data Module (G3s V2, G3i V2 only)** — Complete all required fields.
- **System Access Port Data Module (G3r V2 only)** — Complete all required fields.
- **Data Line Data Module Form** — Complete all fields as required. The Data Line circuit pack provides an alternative to MPDM and 212A-type modems for interconnection to CDR output devices and is the preferred method. A Data Line circuit pack must be assigned using the Circuit Pack Administration form as described in "Circuit Pack Administration" in Chapter 5 of this manual. Up to eight ports are provided. A Z3A Asynchronous Data Unit (ADU) is required at the CDR output device.

Complete the following forms if the CDR output device is connected to an integrated modem pool.

- **Modem Pool Group Form** — Complete all fields. Do not fill out this form if the CDR output device is connected to an MPDM. This is used with the TN758 Pooled Modem circuit pack.
- **Station Form** — Complete the required fields for a 2500-type voice terminal. This is used with the TN742, TN746B, or TN769 Analog Line circuit pack and provides a dial-up extension for the associated 212-type modem.

- System Parameters CDR Form — Complete the Primary/Secondary Output Layout, and Primary/Secondary Output Extension fields.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

The type of data module required depends on how the CDR output device is connected to the digital switch.

- A Modular Processor Data Module (MPDM) must be connected to a port on a TN754B Digital Line circuit pack if the CDR output device is a Printer.
- A Modular Trunk Data Module (MTDM) must be connected to a port on a TN754B Digital Line circuit pack if the CDR output device is a Host Computer or a 94A Local Storage Unit (LSU).
- If the CDR output device is connected to a conventional modem, a TN758 Pooled Modem circuit pack and a TN742, TN746B, or TN769 Analog Line circuit pack must be installed.
- If the CDR output device is connected to a Data Line Data Module, a TN726B Data Line circuit pack is required.
- If the CDR output device is connected to the DCE jack on the back of the Control Carrier, the appropriate 50-foot cable is required.
- A TN726B and TN553 are required to equip the System Access Ports.

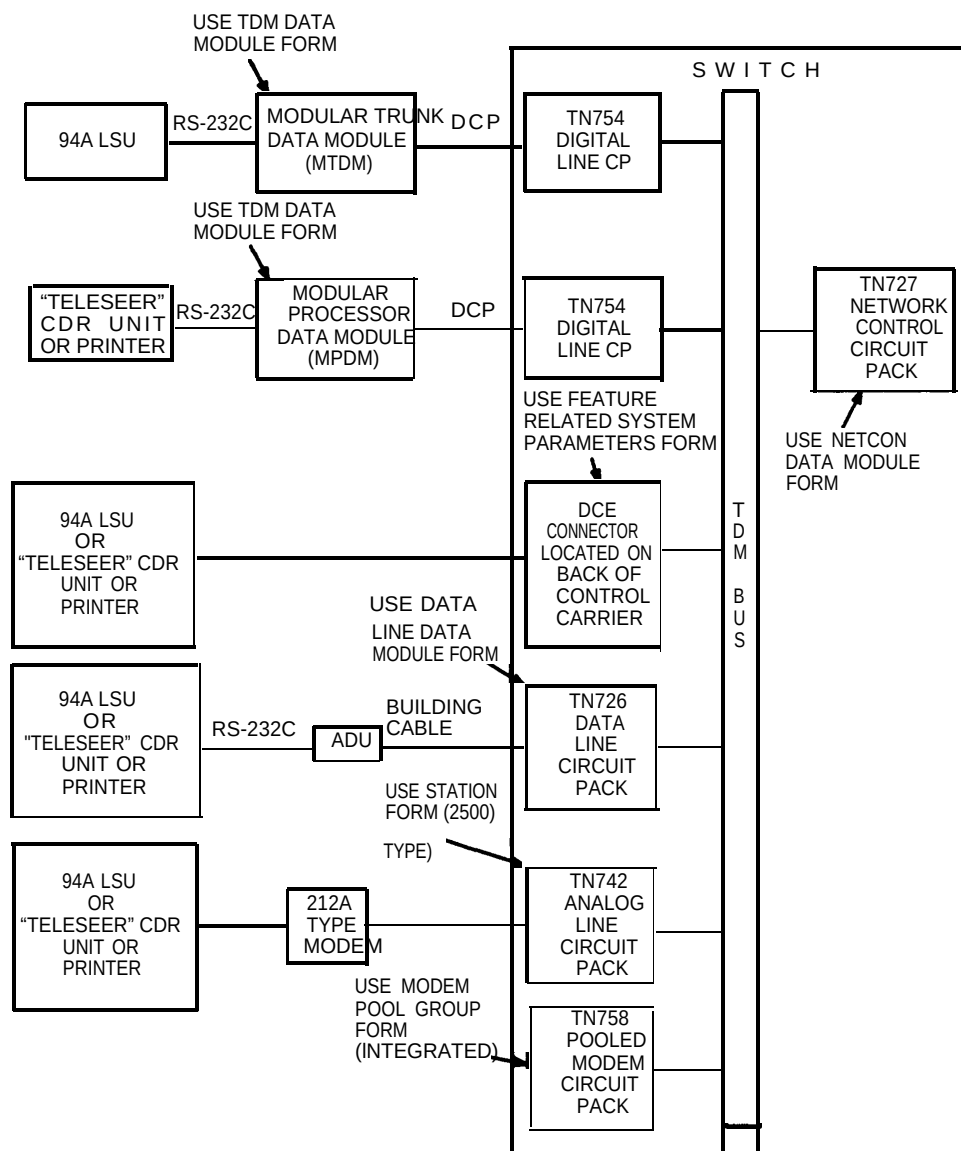


Figure 3-7. Typical CDR Connections (G3s V2, G3i V2 only)

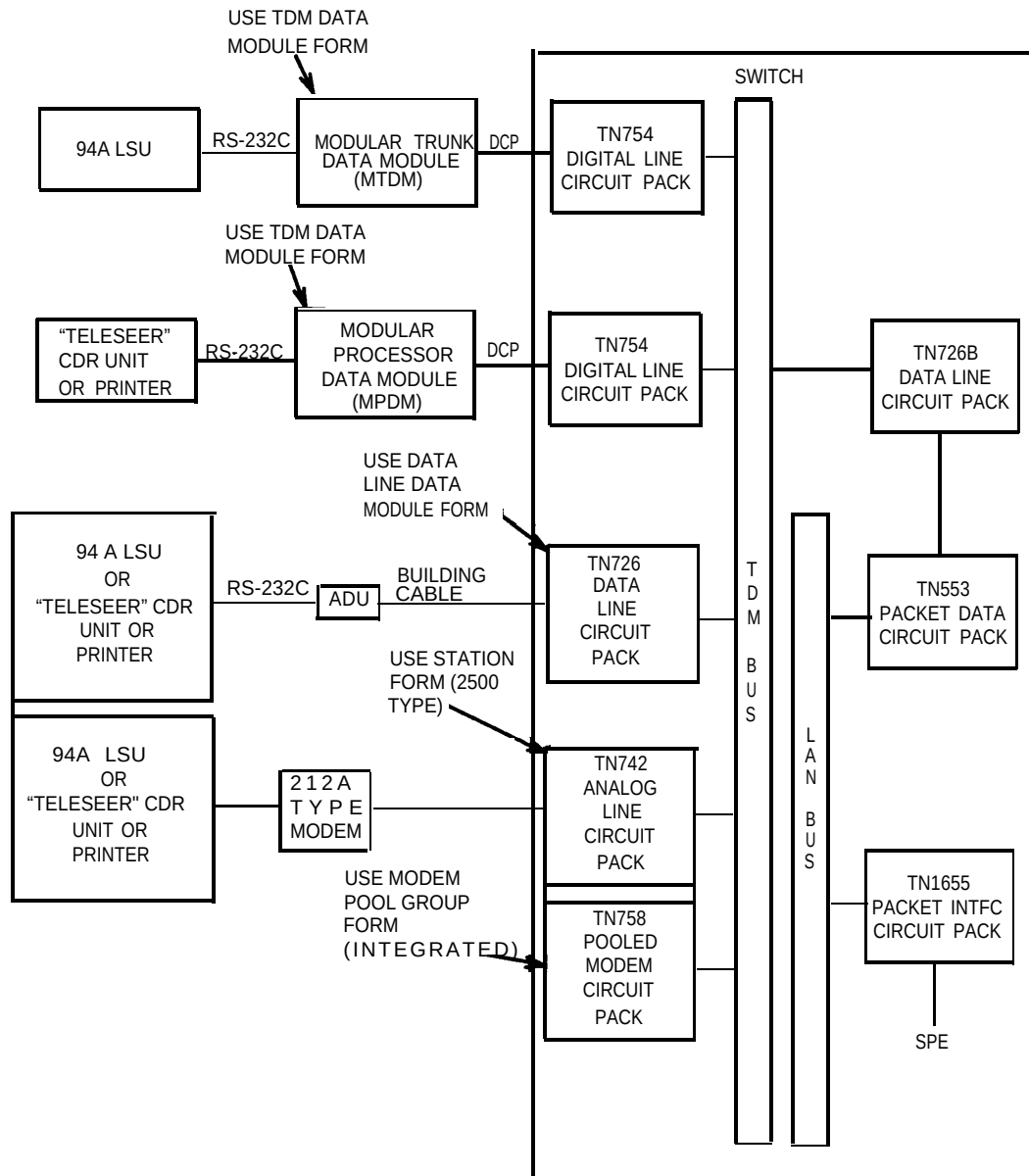


Figure 3-8. Typical CDR Connections (G3r V2 only)

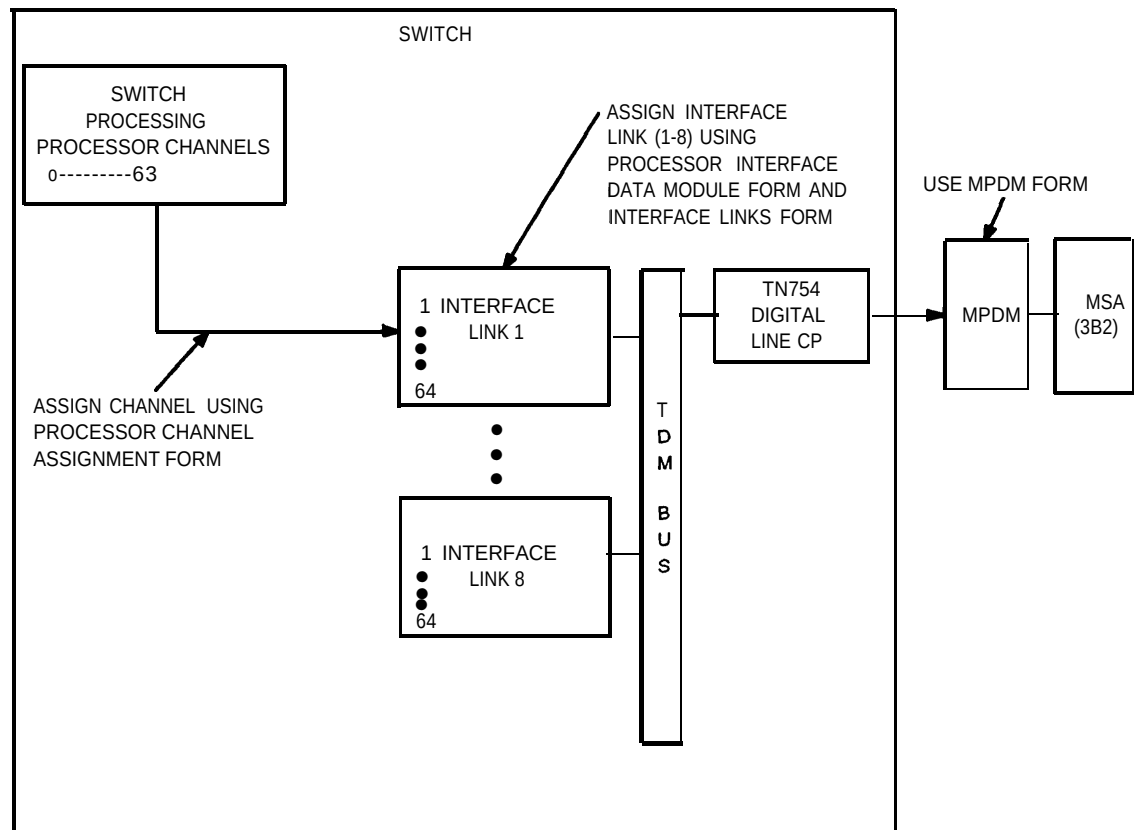


Figure 3-9. Typical CDR Connections to a 3B2 Messaging Server Adjunct

Call Detail Recording — Account Code Dialing

Allows certain calls to be associated with a particular projector account number by dialing a Call Detail Recording (CDR) Account Code feature access code and then the appropriate account code before making outgoing calls. This information is recorded by the CDR feature and can be used later for accounting and/or billing purposes.



NOTE:

The "Forced Entry of Account Codes" feature is covered elsewhere in this Chapter.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes	CDR Account Code Access Code	5-189
System Parameters CDR	CDR Account Code Length	5-69

- Feature Access Codes Form — Assign an appropriate access code to the CDR Account Code Access Code field.
- System Parameters CDR Form — Complete CDR Account Code Length field.

Hardware Requirements

None.

Call Detail Recording — Periodic Pulse Metering

Analog PPM

Uses pulses transmitted over the trunk line from the serving CO at periodic intervals during the course of the outgoing public network call to determine call charges. Each pulse has an intrinsic value; at the end of the call, the total number of pulses collected is the basis used for determining its charges. The more expensive the call, the faster the sending rate of the pulses becomes.

The table below lists the circuit packs capable of detecting Analog PPM pulses and the frequencies they can detect.

Circuit Pack	PPM Frequency (KHz)
TN438B	12/16
TN447	50
TN465	16
TN465B	12/16
TN2138	12/16
TN2148	12/16

The pulses can occur at a maximum of once every 1.4 seconds during the call, or if the CO accumulates the total PPM count, they can occur up to three to five seconds after the call is dropped. To ensure that delayed PPM data is received, the Outgoing Glare Guard Timer on the trunk group should be adjusted accordingly.

Digital PPM

Digital PPM is also a method of determining call charges by sending periodic pulses on the trunk line, and is performed by the TN464D UDS1 circuit pack on digital CO trunks.



NOTE:

Digital PPM is currently being used in Italy on the TN464C circuit pack.

Digital PPM is performed by the local CO by pulsing one of the backwards bits (A, B, or C) from 0 to 1 or vice versa for a particular length of time. These pulse durations vary with each country.

The table below lists which backwards bit each supported country uses.

Digital Metering Bit		
A-bit	B-bit	C-bit
Italy	Czechoslovakia	Belgium
	Netherlands	Chile
	Norway	
	Poland	
	Spain	
	Sweden	

CDR Output

For both Analog and Digital PPM, once the trunk circuit has collected the PPM count, the CDR output may be any of the following records: Enhanced Unformatted, Enhanced Expanded, International Printer, and International ISDN. Each of the records has a format to include PPM pulse count information.

Administration:

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Groups	PPM	
CO		4-178
DIOD		4-239
FX		4-253
PCOL		4-295
WATS		4-375

Hardware Requirements:

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

TN465, TN2138, TN447, and TN438B CO Loop Start Trunk circuit packs support Analog PPM pulse detection over associated trunks assigned to CO, FX, WATS, and PCOL Groups.

For Digital PPM pulse detection, the TN464D UDS1 circuit pack is required.

Call Detail Recording — Privacy

Allows digits in the called number field of an outgoing call to be blanked on a per-station basis.

**NOTE:**

When an adjunct originated call is made on behalf of a hunt group and the CDR system parameter “record hunt group or member extension” option is set to group, then CDR privacy does not apply. If this field is set to member, privacy does apply.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (All)	CDR Privacy	5-287
System Parameters CDR	Privacy — Digits to Hide	5-69

- Station Forms — Complete the CDR Privacy field as required.
- System Parameters CDR Form — Enter the number of digits (1 through 7) that are to be blanked from the Digits Dialed field of the CDR record in the Privacy - Digits to Hide field.

Hardware Requirements

None.

Call Forwarding — All Calls

Allows all calls to an extension number to be forwarded to a selected internal extension number (may be a VDN), external (off-premises) number, the attendant group, or a specific attendant. This feature is activated or deactivated by dial access code or by a Call Forwarding button.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes	Call Forwarding Activation and Deactivation	5-161
Station (multi-appearance)	Redirection Notification Button/Feature Button Assignments -call-fwd	5-287
Class of Service	Call Forwarding (0-15)	5-99

- Feature Access Codes Form — Verify Call Forwarding Activation and Deactivation field access codes have been assigned.
- Station Forms — Complete Redirect Notification field (which causes the forwarding terminal to receive a half ring on calls that forward). This field is common to Call Coverage and Call Forwarding. Assign a Call Forwarding (call-fwd) button, if desired.
- Class of Service Form — Verify Call Forwarding field has the correct permission.

Hardware Requirements

None.

Call Management System (CMS) Interface

The CMS is an adjunct to the System and is used to collect and process Automatic Call Distribution (ACD), trunk and call vectoring data where applicable. The CMS uses this data to generate various reports on the status of agents, splits, and trunks. These reports can be stored for later use or can be displayed on a terminal for real-time information. Refer to Figure 3-7 for a typical ACD CMS arrangement.

Also, refer to the ACD feature coverage for a listing of associated forms that must be administered to implement the ACD feature.

To implement CMS features, refer to the following features in this Chapter:

- Abandoned Call Search
- Agent Call Handling
- Intraflow and Interflow
- Queue Status Indications
- Recorded Announcements
- Service Observing

Administration

To implement the CMS interface, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Adjunct CMS Release	5-168
	Automatic Call Distribution	
	ACD Log-in Identification Length	
	Minimum Agent Login ID	
	Password Length	
	All (for one CMS link)	
Data Module		
Processor Interface (G3s V2, G3i V2 only)		5-136
Processor Data Module (PDM)		5-128
X.25 (G3r V2 only)		5-141
Processor Channel	All (for one CMS link)	4-101
		or
		4-105
Communication Interface Link	All (for one CMS link)	4-91

Form	Field	Form Instructions (Page #)
Hunt Groups	Measured	5-189
Trunk Group (All)	Measured	4-123
VDN	Measured	5-262
PGATE (G3r V2 only)	All	4-99

- **Feature-Related System Parameters** — Enter the number of digits the agent must dial to log into the ACD split in the ACD log-in identification length field.

⇒ NOTE:

For CMS, this field cannot be "0".
Enter the appropriate "Adjunct CMS Release".

⇒ NOTE:

For CMS, this field cannot be blank.

- **Data Module Forms** — Complete all fields as required. For the Processor Interface Data Module, assign a "physical channel" and "maintenance extension". For the PDM Data Module, assign a digital line port. For the X.25 Data Module, assign DTE/DCE as "dte" and Baud Rate as "9600".
- **Processor Channel Form** — Complete the required fields on the form for CMS interface. Enter the CMS link number from the Interface Links Form. Enter the appropriate "Interface Channel" and "Remote Proc Chan". Leave the Machine ID field blank.
- **Communication Interface Link Form** — Complete all fields on the form for one link. The Destination Digits field will be the extension assigned to the PDM data module. Ensure the "Prot" field is set to "bx25" and the "DTE/DCE" field is set to "dte".
- **Hunt Group, Trunk Group, and VDN Forms** — Complete the form that applies when Measured is answered either "external" or "both". Refer to the Capacity Table in Appendix C for the maximum number of Hunt Groups, Trunk Groups, Agents, and VDNs that can be measured.
- **Packet Gateway (PGATE) Form (G3r V2 only)** — Enter the board location and "rs232" as the Cable Type.

Hardware Requirements

⇒ NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

The CMS interface requires one port on a TN577 Digital Line circuit pack. Each auxiliary queue warning lamp requires one port on a TN742, TN746B, or TN769 Analog Line circuit pack. A 21 C-49 indicator lamp may be used as an auxiliary warning lamp.

Call Park

Allows users to put a call on hold and then retrieve the call from any other voice terminal within the system.

With Call Vectoring operation, calls cannot be parked to a VDN extension or be parked while in vector processing. However, a call can be parked to a destination that could go to coverage after ring timeout. With VDN In a Coverage Path administered, that coverage point could be a VDN extension.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes	Call Park Access Code Answer Back Access Code	5-161
Feature-Related System Parameters	Call Park Timeout Interval (minutes)	5-168
Station (multi-appearance)	Button/Feature Button Assignments -call-park	5-287
Console Parameters	Common Shared Extensions-(all fields)	5-101

- Feature Access Codes Form — Verify Call Park Access Code and Answer Back Access Code fields are completed.
- Feature-Related System Parameters Form — Complete Call Park Timeout Interval (minutes) field.
- Station Forms — Assign Call Park button to voice terminal, if desired.
- Console Parameters Form — Complete Common Shared Extension fields.

Hardware Requirements

None.

Call Pickup

Allows voice terminal users to answer calls to other extension numbers within the user's specified Call Pickup group.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes Pickup Groups Station (multi-appearance)	Call Pickup Access Code	5-161
	All	5-239
	Button/Feature Button Assignments -call-pkup	5-287

- Feature Access Codes Form — Assign a call pickup access code in the Call Pickup Access Code field (used for voice terminals that do not have a Call Pickup button assigned on the Station form).
- Pickup Groups Form — Establish pickup groups.
- Station Forms — Assign Call Pickup (call-pkup) buttons to voice terminals, if desired.

Hardware Requirements

None.

Call Pickup Alerting

Provides a visual indication, via the Call Pickup status lamp, to pickup group members as to the eligibility of a call to be answered via Call Pickup.

No indication will be received by pickup group members not equipped with a Call Pickup button and status lamp. Call Pickup Alerting does not provide an audible notification.

Administration

The Call Pickup feature must be implemented before Call Pickup Alerting can be enabled.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Call Pickup Alerting	5-168

- Feature-Related System Parameters Form — Enter “y” in the Call Pickup Alerting field to enable Call Pickup Alerting. Default is “n”.

Hardware Requirements

None.

Call Prompting

Provides flexible call handling based on information (such as, Touch-Tone digits) collected from a calling party. Applications such as an automated attendant function, limited Data In/Voice Answer (DIVA) capability, data collection, and message collection are supported as follows:

- **Automated Attendant** — Allows the calling party to enter the extension of the party to be called. The call is routed to the desired extension.
- **Data In/Voice Answer** — Allows the calling party to hear a particular announcement based on the digits entered.
- **Data Collection** — Allows the calling party to enter data that could then be used by a host/adjunct to assist in call handling. This data, for example, may be the calling party's account number.
- **Message Collection** — Allows the calling party the option to leave a message for an extension (for example, split/hunt group, station, and so on) or of receiving other call treatment (for example, queue to split, if call vectoring is enabled).

Call Prompting is administered using a set of specialized Call Vector commands. Refer to *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, and the *DEFINITY Communications System Generic 3 Call Vectoring Guide*, 555-230-520, for detailed information on the Call Prompting and Call Vector features.

Also refer to "Call Vectoring" in this chapter for additional administration information.

Administration

NOTE:

The Call Prompting feature is not supported by the G3s V2 ABP configuration.

The Vector (Basic) and/or Vector (Prompting) options must be enabled on the System-Parameters Customer-Options form before associated Call Vector forms and fields on forms can be administered.

To implement this feature, the following form(s) or section(s) of forms must be completed.

Form	Field	Form Instructions (Page #)
Vector Directory Number	All	5-262
Announcements	All	5-108
Hunt Groups	Vector	5-189
Call Vector	All	5-76
Station (multi-appearance)	Button/Feature Button Assignments - callr-info	5-287
Attendant Console	Feature Button Assignments -callr-info	5-35

- Vector Directory Number Form — Complete a VDN form for each Call Vector to be defined.
- Announcement Form — Enter the extensions that will provide the appropriate prompts to the callers.
- Hunt Group Form — Enter “y” in the Vector field in each Hunt Group and Split (that is, ACD Hunt Group) to be controlled.
- Call Vector Form — Complete a Call Vector form for each Call Vector to be defined.
- Station Forms — Assign Caller Information (callr-info) buttons to multi-appearance voice terminals equipped with a display, as desired.
- Attendant Console Forms — Assign Caller Information (callr-info) buttons to attendant consoles as required.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

The announcement capabilities of the Call Prompting feature will require either

- A TN750 Integrated Announcement circuit pack
- or
- An external announcement facility (analog announcements).



NOTE:

Each analog announcement requires a port on a TN742, TN746B, or TN769 Analog Line circuit pack.

The TN744 Call Classifier circuit pack is required to provide Touch-Tone Receivers (TTRs) for the Call Prompting feature. Each TN744 provides eight touch-tone receivers.

⇒ NOTE:

The TN744s are not to be used as general TTRs. Other TTRs (TN748C vintage 5 or later) must be used for normal call processing and maintenance-related features.

Call Vectoring

Provides a flexible way to process network and internal calls. Call Vectoring is used to control the type of call processing an incoming network or internal call receives. Vectoring allows calls to be directed to on-premises or off-premises destinations, to a hunt group or split, or to a treatment such as announcement, forced disconnect, forced busy, or delay.

Optional capabilities also exist for collecting digits from the user, routing calls to a destination specified by those digits and/or doing conditional processing according to those digits (see Call Prompting feature).

NOTE:

If BRI sets will be accessing vectors, it is recommended that an announcement step or a “wait time 2 sec with ringback” step be executed *before* collecting digits.

A vector step may also request routing instructions from an adjunct (see Outbound Call Management feature). In addition, the Lookahead Interflow feature makes use of Call Vectoring for its operation.

Vectors are accessed by Vector Directory Numbers (VDNs). A VDN maps to one vector; however, several VDNs may map to the same vector. VDNs are “soft” switch extension numbers that **are not** assigned to a physical equipment location. The VDN determines which vector is activated when a call terminates to the VDN. When a call enters a Call Vector, its routing and treatment will be determined by up to a maximum of 32 vector commands.

NOTE:

It is not recommended that you change a vector while it is processing calls since calls already in the vector could experience problems. Instead, add a new vector and change the VDN to point to the new vector.

An answering party's display-type terminal can be used to display information (for example, Parts Dept) associated with the VDN and, thus, the user can respond to a call with knowledge of the called number. This operation provides a “Dialed Number identification Service.”

The five primary ways that a VDN can be used to access a vector areas follows:

- **Internal Call** — Dialing the VDN extension from a station
- **CO Trunk** — A CO trunk may be mapped to a VDN (that is, as an incoming destination or night service extension)
- **Non-CO Trunk** — An incoming DID call may be routed to a VDN extension
- **Listed Directory Numbers (LDN)** — A VDN may be a night destination for a LDN
- **From another Vector** — Through the “route-to number <VDN-ext> if _” step (see below). This is similar to an internal call.

Refer to *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, or *DEFINITY Communications System Generic 3 Call Vectoring Guide*, 555-230-520, for a complete description of Call Vectoring and associated features.

Administration

NOTE:

The Call Vectoring feature is not supported by the G3s V2 ABP configuration.

The Vectoring (Basic) and/or Vectoring (Prompting) options must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or section(s) of the forms must be completed.

Form	Field	Form Instructions (Page #)
Vector Directory Number	All	5-262
Announcements	All	5-108
Hunt Group	Vector	5-189
	ACD	
Call Vector	All	5-76
Trunk Group (All)	Incoming Destination	4-123
	Night Service	
	Trunk Member (Night)	
Feature-Related System Parameters	Music-On-Hold Port	5-168
	Music (or Silence) On Transferred Trunk Calls	

- **Vector Directory Number Form** — Complete a VDN form for each Call Vector to be defined.
- **Announcement Form** — Enter the extension that will provide “announcement in queue” treatment for the vector.
- **Hunt Group Form** — Enter “y” in the Vector field in each Hunt Group and Split (that is, ACD Hunt Group) to be vector controlled. For calls being redirected to a split, make sure to assign a queue length greater than zero. If this is not done, calls that cannot be served immediately will be lost.
- **Call Vector Form** — Complete a Call Vector form for each Call Vector to be defined.
- **Trunk Group Forms** — Incoming Destination, Night Service, and Trunk Member Night fields may be directed to a VDN extension. Administer as required.

- Feature-Related System Parameters Form — Enter a port number for Music-On-Hold Port field. This is required for the “wait_ Seconds Hearing Music” Call Vector command. Enter a port number for the Music (or Silence) On Transferred Trunk Calls field.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

The announcement capabilities of the Call Vectoring feature will require either

- A TN750 Integrated Announcement circuit pack
- or
- An external announcement facility (analog announcements).



NOTE:

Each analog announcement requires a port on a TN742, TN746B, or TN769 Analog Line circuit pack. Each announcement may also require a port on an analog line circuit pack for remote recording capability.

- Music source connected to a port on a TN763C Auxiliary Trunk circuit pack.



NOTE:

See also “Call Prompting” hardware requirements elsewhere in this chapter.

Call Waiting Termination

Provides for calls to busy single-line voice terminals to wait and sends a distinctive call waiting tone to the called party.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (single-line)	Call Waiting Indication	5-303

- Station Forms — Complete Call Waiting Indication field for single-line voice terminals.

Hardware Requirements

None.

Calling Party Number/Billing Number

Provides for the transmission of Calling Party Number/Billing Number (CPN/BN) from the System to an ISDN-PRI trunk group.

The CPN is the calling party's telephone number and BN is the billing number of the calling party. The CPN/BN may also contain international country codes, where applicable.

Administration



NOTE:

The CPN/BN feature is not supported by the G3s V2 ABP configuration.

The CPN/BN Adjunct feature must be enabled on the System-Parameters Customer-Options form before associated fields on forms can be administered.

All ISDN-PRI and ACD related forms must be administered as described in the ISDN-PRI and ACD sections in this chapter.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group (ISDN-PRI)	All fields including "Per Call CPN/BN"	4-275
CPN Prefix Table	All	4-60
PGATE (G3r V2 only)	All	4-99
Data Module	All	
X.25 (G3r V2 only)		5-141
Interface Links	All	4-91
Processor Channel	All	4-101
		or
		4-105

- Trunk Group (ISDN-PRI) — Assign all fields as required to provide an ISDN-PRI between the System and a far-end node. In the Per Call CPN/BN field, enter either "cpn-only", "cpn-pref", "bn-only", or "bn-pref" as required. The corresponding information will be sent with a call offered event report to the adjunct. If the field is blank, no CPN/BN information is sent to the adjunct.
- CPN Prefix Table Form — Complete all fields on the form as required.
- PGATE Form — Enter the board location and "rs232" as the Cable Type.
- Data Module (X.25) Form (G3r V2 only) — Assign DTE/DCE as "dte" and the Baud Rate as "9600".

- **Interface Links Form** — Complete all fields on the form for one link, as required. Assign the extension of the X.25 data module to this link (from the Data Module form above). Mark the destination extension as “external”.
- **Processor Channel Form** — Assign all fields for one data link. Only one interface can be supported by the System.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

CallVisor Adjunct-Switch Application Interface

Supports an Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) link between the switch and associated adjuncts (see Figure 3-10). The feature provides “building blocks” for implementing adjunct-based features such as Inbound Call Management. Specifically, the interface allows adjunct-based capabilities access to switch features, and allows the adjunct to supply routing information to the switch.

NOTE:

For more detailed information on CallVisor ASAI, refer to *DEFINITY CallVisor ASAI Protocol Reference*, 555-230-221, *DEFINITY CallVisor ASAI Technical Reference*, 555-230-220, and *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204.

The following functionality between associated adjuncts and the switch is supported:

- The adjunct can make requests to the switch for call originations and dropping calls to local endpoints. With each call, call progress information and event reporting are transmitted across the interface.
- The adjunct can manipulate active calls in which the adjunct is not a party on the calls (that is, third party). It can place calls on hold, reconnect calls, transfer calls, conference calls, and drop selected parties from a call.
- The adjunct has the ability to activate certain switch features (such as, Call Forwarding).
- The adjunct can query the switch for information associated with a particular item. For example, the adjunct can request the number of agents logged into a split.
- The adjunct can supply routing information for an “adjunct-route” step in a VDN.

When the System is configured with an Expansion Cabinet (with or without duplication), it is recommended that the ASAI resources home on the switch's Processor Cabinet.

ASAI Feature Administration

NOTE:

The CallVisor ASAI feature is not supported by the G3s V2 ABP configuration.

To use any ASAI capability, the ASAI Interface option must first be enabled on the System-Parameters Customer-Options form. This action causes Page 2 of the form (“ASAI Capability Groups”) to be displayed (see below).

change system-parameters customer-options

Page 2 of 2

ASAI CAPABILITY GROUPS

Adjunct Call Control Group? y
Adjunct Routing Group? y
Domain Control Group? y
Event Notification Group? y
Request Feature Group? y
Set Value Group? y

The above capabilities are defaulted to “y”, but can be disabled by entering “n”.
A brief explanation of each of the capability groups follows:

- Adjunct Call Control Group — Allows the associated adjunct to invoke Third Party Call Control capabilities, such as Third Party Selective Hold, Third Party Reconnect, Third Party Merge, and so on, that can be used in either of the Third Party Call Control cluster subsets: Call Control and Domain Control. These capabilities enable the adjunct to place, monitor, control, and end calls as they move through the switch.
- Adjunct Routing Group — Allows the associated adjunct to provide adjunct routing information to the switch for incoming calls.
- Domain Control Group — Allows an adjunct to control calls and receive event reports for station sets and receive logout event reports for adjuncts in a given ACD split.
- Event Notification Group — Allows the associated adjunct to request incoming call notification and enables the switch to send event reports about such calls.
- Request Feature Group — Allows the associated adjunct to request features such as “change work modes”, “login”, “logout”, “sac”, and “fwd”.
- Set Value Group — Allows the adjunct to request status changes for Message Waiting lamps (that is, control the on/off state of the lamps).

The following table shows which capabilities are automatically enabled when ASAI is enabled on the System-Parameters Customer-Options form.

Table 3-2. Automatically Enabled ASAI Capabilities

Capability	Adjunct Call Control Group	Adjunct Routing Group	Domain Control Group	Event Notif. Group	Request Feature Group	Set Value Group
Event Reports	x		x	x		
Agent Logout			x			
Alerting	x		x	x		
Answered	x		x			
B u s y	x		x	x		
Call Ended Event (FAC message)				x		
Call Initiated			x			
Call Offered to Domain				x		
Call Redirected			x	x		
Call Conference	x		x	x		
Connected	x		x	x		
Cut-Through	x		x	x		
Denial/Reorder	x		x	x		
Dropped	x		x	x		
Hold	x		x	x		
Queued	x		x	x		
Reconnected	x		x	x		
Call Transferred	x		x	x		
Trunk Seized	x		x	x		
Notification Request				x		
Notification Cancel				x		
Notification Ended				x		
Request Feature					x	
Route End		x				
Route Request		x				
Route Select		x				
Set Value						x
Stop Call Notification				x		

Table 3-2. Automatically Enabled ASAI Capabilities (continued)

Capability	Adjunct Call Control Group	Adjunct Routing Group	Domain Control Group	Event Notif. Group	Request Feature Group	Set Value Group
Third Party Answer			x			
Third Party Auto Dial			x			
Third Party Call Ended	x					
Third Party Clear Call	x					
Third Party Domain Control			x			
Third Party Domain Control Ended			x			
Third Party Make Call	x					
Third Party Merge	x		x			
Third Party Reconnect	x		x			
Third Party Relinquish Control	x		x			
Third Party Selective Hold	x		x			
Third Party Selective Drop	x		x			
Third Party Take Control	x					

➤ NOTE:

By enabling the CallVisor ASAI option(s) on Page 1 of the form, the following capabilities are automatically enabled as well, regardless of the groups selected on Page 2: Value Query (includes Response Continued Capability), Abort, Heart Beat, Restart Procedure, Suspend/Resume Alarm).

The capabilities shown here correspond to the operation values given in the "Operation Value/Error Value Coding" table of *DEFINITY CallVisor ASAI Protocol Reference*, 555-230-221.

For CallVisor ASAI adjuncts, an alarm severity option can be assigned via the *set options* command to each of the following categories:

- Major on-board ASAI adjunct alarms
- Major off-board ASAI adjunct alarms
- Minor on-board ASAI adjunct alarms
- Minor off-board ASAI adjunct alarms

The *set options* command is considered to be a maintenance command. Therefore, for more information on this command, refer to *DEFINITY Communications System Generic 3 V2 Maintenance*, 555-230-105.

⇒ NOTE:

The Hunt Group, Vector, Special Information Tones, Class of Service, and Trunk Group forms may also require administration when implementing ASAI.

The following provides information on assigning an ASAI link only. Refer to specific adjunct feature coverage (such as Inbound Call Management) for associated adjunct implementation instructions.

CallVisor ASAI Link Administration

Currently, this interface must be assigned when implementing the Inbound Call Management (ICM) feature.

⇒ NOTE:

The System can have either the ICM feature (using the ASAI) or the Outbound Call Management — Calling Party Number/Billing Number feature (using a 6X.25 interface) optioned in the System but not both.

The Packet Bus option must be enabled on the Maintenance-Related System Parameters form before other forms and fields on forms associated with CallVisor ASAI implementation can be administered. Details regarding the use of this form are provided in *DEFINITY Communications System Generic 3 V2 Installation and Test*, 555-230-104.

To implement the CallVisor ASAI link, the following form must be completed:

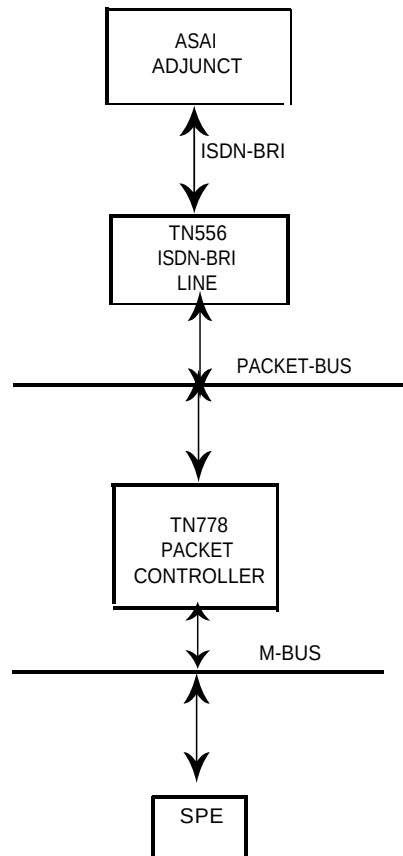
Form	Field	Form Instructions (Page #)
Station	Extension Type (always asai) XID Fixed TEI TEI MIM Support (always no) CRV Length	5-287

Hardware Requirements**⇒ NOTE:**

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port on a TN556 ISDN-BRI circuit pack (12 ports) is required for each ASAI link to be assigned. Up to eight ports (maximum) may be assigned.

The TN778 Packet Control circuit pack is required for ASAI applications. As noted above, the Packet Bus option must be enabled on the Maintenance-Related System Parameters form.



GLOSSARY:

- ASAI - ADJUNCT SWITCH APPLICATIONS INTERFACE
- ISDN-BRI - INTEGRATED SERVICES DIGITAL NETWORK-BASIC RATE INTERFACE
- M-BUS - MEMORY BUS
- SPE - SWITCH PROCESSING ELEMENT

Figure 3-10. ASAI Switch Interface Link

Central Office Trunk Group

A Central Office Trunk Group provides access from the System to the public network through the local Central Office (CO).

Administration

To assign a CO Trunk Group, the following forms must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group (CO)	All	4-178
Digit Absorption	All	4-62
DS1	All	4-64

- Trunk Group (CO) Form — Complete all fields as required.
- Digit Absorption Form — If required, complete this form when the central office is a step-by-step office. The Digit Absorption List field on the Central Office trunk group form must reference the Digit Absorption List Number entered on the form.
- DS1 Circuit Pack form — Complete all fields as required if the DS1 circuit pack is used.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port on a TN747B Central Office Trunk, or TN767 or TN464D DS1 Interface circuit pack is required for each CO trunk to be assigned. A TN747B provides eight ports, a TN767 provides 24 ports, and a TN464D provides 32 ports.

Centralized Attendant Service

Allows services performed by attendants in a private network of switching systems to be concentrated at a central, or main, location. Each branch in a Centralized Attendant Service (CAS) has its own Listed Directory Number (LDN) or other type of access from the public network. Incoming trunk calls to the branch, as well as attendant-seeking voice terminal calls, are routed to the centralized attendants over Release Link Trunks (RLTs).

Administration

NOTE:

The Centralized Attendant Service feature is not supported by the G3s V2 ABP configuration.

The Centralized Attendant Service (CAS) Branch or the Centralized Attendant Service (CAS) Main options (depending on your location) must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Feature Button Assignments -cas-backup -trunk-name	5-35
Console Parameters	CAS RLT Trunk Group Number CAS Back-Up Ext Timed Reminder on Hold Return Call Timeout (sec)	5-101
Station (multi-appearance)	Button/Feature Button Assignments -cas-backup -flash -trunk name -night serv	5-287
Trunk Group (RLT)	All	4-303
Feature Access Codes	CAS Remote Hold Access Code	5-161

- Attendant Console Form — Assign “cas-backup” to a designated button lamp if an attendant console is available at a branch. Assign “trunk-name” feature button to identify the RLT name.

- Console Parameters Form — Verify CAS is administered as either main or branch and RLT Trunk Number and CAS Back-Up Ext fields are completed as required. Administer the Timed Reminder on Hold and Return Call time-out (sec) the same on all switches.



NOTE:

The CAS and IAS (Inter PBX Attendant service) Branch fields cannot both be administered as “y”.

- Station Forms — Assign “cas backup” to a designated button lamp (an attendant console will probably not be available at a branch). It is a good idea to assign a “night-serv” button to one station when operating without an attendant console. Assign “flash” and “trunk-name” feature buttons as required to stations that may be handling CAS calls. Administer “trunk name” buttons to display-equipped voice terminals only.
- Trunk Group (RLT) Form — Complete all fields. Enter “incoming” in the Direction field if this is a CAS main location or enter “outgoing” if this is a CAS branch location. Assign Queue Length field to other than 0 when the direction field is “outgoing”.
- Feature Access Codes Form — Complete the CAS Remote Hold Access Code field. Administer the same code on all switches.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a TN760B Tie Trunk circuit pack or TN722B or TN767 DS1 circuit pack to assign a Release Link Trunk Group.

Class of Restriction

All System users have an assigned Class of Restriction (COR) to define their calling privileges. Restrictions can be assigned to facilities as listed in the table below.

The COR specifies up to 96 different classes of call origination and termination privileges, and Systems may have a single COR, one with no restrictions, or may have as many CORs (up to 96) as necessary to effect the desired restrictions.

A unique COR must be defined for each combination of FRLs, calling party restrictions, called party restrictions, miscellaneous restrictions, and CCSA/EPSCS off-network restrictions.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction	All	5-93
Abbreviated Dialing	COR	5-2
Access Endpoints	COR	5-16
Announcements	COR	5-108
Attendant Console	COR	5-35
Authorization Codes	COR	5-55
Console Parameters	COR	5-101
Hunt Groups	COR	5-189
Loudspeaker Paging and Code	COR (1 -9, all)	5-224
Calling Access		
Data Module	COR	
MPDM/MTDM		5-128
Netcon (G3s V2, G3i V2 only)		5-133
Processor Interface (G3s V2, G3i V2 only)		5-136
SAP (G3r V2 only)		5-139
Recorded Announcement		5-108
Feature-Related System Parameters	COR	5-168
Station	COR	5-287
Remote Access	COR (Barrier Code)	5-247
Terminating Extension Group	COR	5-260
Trunk Groups	COR	4-123
Vector Directory Number	COR	5-262

- Class of Restriction Form — Complete appropriate fields.
- Complete the “COR” fields for the following forms:
 - Abbreviated Dialing
 - Access Endpoints
 - Announcements
 - Attendant Console
 - Authorization Codes
 - Console Parameters
 - Data Modules (includes MPDM, MTDM, Recorded Announcement, Data Line, Netcon, SAP, and Processor Interface data modules)
 - Hunt Groups
 - DDC Group
 - UCD Group
 - ACD Split
 - Loudspeaker Paging Access and Code Calling Access
 - Remote Access (per barrier code)
 - Feature-Related System Parameters
 - Station
 - Terminating Extension Group
 - Trunk Groups
 - Vector Directory Number

Class of Restriction Guidelines and Examples

The examples which follow illustrate some of the practical aspects of assigning CORs. These are, however, only examples. In reality, each System must be administered to meet its individual needs.

Example Using Miscellaneous Restrictions

As an illustration of miscellaneous restrictions, assume a System installation provides the following:

- Central office trunks
- WATS
- FX trunks
- Data modules
- Attendant service
- Voice terminals

- Direct Inward Dialing (DID) trunks
- Remote Access

In an unrestricted environment, each of the preceding facilities could have the same COR. However, suppose the following requirements exist:

- Attendants cannot make data calls.
- Remote Access can be used for data calls only.
- DID cannot be used for data calls except through Remote Access. (A dedicated Remote Access trunk group is not required, although one or more could be provided. This example assumes all Remote Access is via DID.)
- There are three classes of voice terminals:
 - Those that can call anywhere, any time
 - Those that can place local central office and in-house calls only
 - Those that can place local central office, FX, and in-house calls only

To implement the preceding requirements, a COR must be assigned to each facility or group of facilities. For simplicity, each can have a unique COR. The CORs are arbitrarily assigned as follows:

- COR 30 — Local central office trunks
- COR 31 — WATS trunks
- COR 32 — FX trunks
- COR 33 — Data modules
- COR 34 — Attendant group
- COR 35 — Unrestricted voice terminals
- COR 36 — Voice terminals that can place in-house and local central office calls only (no FX or WATS calls)
- COR 37 — Voice terminals that can place in-house, local central office, and FX calls only (no WATS calls)
- COR 38 — DID trunk group
- COR 39 — One of the remote access barrier codes (can be up to 10)

With the CORs defined, it should be individually determined which CORs cannot call other CORs. This is done as follows:

- COR 30 (local central office trunks) — No restrictions were specified for these trunks. The default values on the screen form are sufficient. No action is required, except to specify a COR number of 30.

- COR 31 (WATS) — CORs that cannot use WATS are specified as they are encountered. WATS itself is an outgoing service without any calling capabilities. Thus, Miscellaneous Restrictions are not specified on this form. The Calling Party Restriction should be “none” (although this restriction does not really have any meaning for an outgoing facility). Similarly, the Called Party Restriction applies to facilities capable of answering a call. Since this is not the case with WATS, “none” should be specified. Again, the default values are sufficient, so only the COR number needs to be specified.
- COR 32 (FX) — According to the requirements for this example, no restrictions apply. Reasons are the same as for WATS. Only the COR number needs to be specified.
- COR 33 (data modules) — No restrictions apply for reasons similar to the reasons why no restrictions were assigned for WATS. Only the COR number needs to be specified.
- COR 34 (attendant group) — The attendant group cannot call COR 33 (data modules). Specify an “n” beside COR 33 in the Calling Permission field. Specify 34 in the COR Number field.
- COR 35 (unrestricted voice terminals) — Since no restrictions were specified, only the COR number needs to be entered.
- COR 36 (no FX or WATS calls) — This COR cannot call COR 32 (FX) or COR 31 (WATS). Specify an “n” beside CORs 32 and 31 in the Calling Permission field. Specify 36 in the COR Number field.
- COR 37 (no WATS calls) — This COR cannot call COR 31 (WATS). Specify an “n” beside COR 31 in the Calling Permission field. Specify 37 in the COR Number field.
- COR 38 (DID) — This COR cannot call COR 33 (data modules). Specify “n” beside COR 33 in the Calling Permission field. Enter 38 in the COR Number field.
- COR 39 (Remote Access barrier code) — This COR can be used for data calls only. Thus, this COR can call COR 33, but not CORs 30 (local central office), 31 (WATS), 32 (FX), 34 (attendant group), 35, 36, or 37 (voice terminals). Specify an “n” beside CORs 30,31,32,34,35,36, and 37 in the Calling Permission field. Enter 39 in the COR Number field. [The CORs listed in the Calling Permission field can be viewed as terminating or screening CORs that can or cannot be called by the originating COR. Since COR 38 (DID) is neither a terminating nor a screening COR, it does not have to be considered when assigning the barrier code COR.]

Example Using Calling Party Restrictions, Called Party Restrictions, and Miscellaneous Restrictions

To illustrate the use of both Calling and Called Party restrictions, and Miscellaneous restrictions, assume a System installation provides the following:

- Central office trunks (outgoing)

- W A T S
- FX trunks (outgoing)
- Voice terminals
- Data modules
- Terminating Extension Groups
- Loudspeaker Paging

Suppose that the following requirements exist:

- Only the attendant can access loudspeaker paging.
- Terminating Extension Groups can only accept calls from internal voice terminals.
- There are six classes of voice terminals:
 - Those that are toll restricted
 - Those that cannot call outside to a public network (outward restricted)
 - Those that can receive calls only from an attendant
 - Those that can call anywhere, any time
 - Those that cannot place FX or WATS calls
 - Those that cannot place WATS calls

To implement the preceding requirements, a COR must be assigned to each facility or group of facilities. For simplicity, each can have a unique COR. The CORs are arbitrarily assigned as follows:

- COR 40 — Local central office trunks
- COR 41 — WATS trunks
- COR 42 — FX trunks
- COR 43 — Attendant group
- COR 44 — Data modules
- COR 45 — Terminating Extension Groups
- COR 46 — Loudspeaker Paging Access Zones
- COR 47 — Unrestricted voice terminals
- COR 48 — Voice terminals that are toll restricted
- COR 49 — Voice terminals that are outward restricted
- COR 50 — Voice terminals that can only receive calls from an attendant
- COR 51 — Voice terminals that cannot place FX or WATS calls
- COR 52 — Voice terminals that cannot place WATS calls

With the CORs defined, it should be determined individually which CORs cannot call other CORs. This is done as follows:

- COR 40 (local central office trunks) — Restrictions that prohibit access to this COR are assigned when the originating CORs are considered. Only the COR number has to be specified on this form.
- COR 41 (WATS) — Only the COR number needs to be specified, this is the same case as described in the previous configuration example.
- COR 42 (FX) — Again, only the COR number needs to be specified.
- COR 43 (attendant group) — No restrictions were stated, so only the COR number needs to be specified.
- COR 44 (data modules) — No restrictions were stated, so only the COR number needs to be specified.
- COR 45 (Terminating Extension Group) — This COR can receive internal voice terminal-originated calls only. Since no tie trunks are specified for this example, the Inward Restriction feature can provide the desired restriction. Specify "inward" as the Called Party Restriction. If dial repeating tie trunks are provided, Miscellaneous Restrictions could be used to deny trunk access to the group. Also, specify 45 as the COR number.
- COR 46 (Loudspeaker Paging Access zones) — Since this COR can be accessed by an attendant only, the Manual Terminating Line feature can provide the restriction. Specify "manual" as the Called Party Restriction. Specify 46 as the COR number.
- COR 47 (unrestricted voice terminals) — No restrictions were stated, so only the COR number needs to be specified.
- COR 48 (toll restricted voice terminals) — Specify "toll" as the Calling Party Restriction. Specify 48 as the COR number.
- COR 49 (outward restricted voice terminals) — Specify "outward" as the Calling Party Restriction. Specify 49 as the COR number.
- COR 50 (voice terminals that can only receive calls from an attendant) — Specify "manual" as the Called Party Restriction, Specify 50 as the COR number.
- COR 51 (voice terminals that cannot place WATS or FX calls) — None of the Calling Party Restrictions uniquely prohibit WATS and FX calls, so Miscellaneous Restrictions are used. Enter an "n" beside COR 41 (WATS) and COR 42 (FX) in the Calling Permission field. Leave the Calling Party Restriction as "none" and specify 51 as the COR number.
- COR 52 (voice terminals that cannot place WATS calls) — Enter an "n" beside COR 41 (WATS) in the Calling Permission field. Leave the Calling Party Restriction as "none" and specify 52 as the COR number.

Another method to determine COR assignment is to consider the restrictions to be assigned.

This method is probably more difficult to use, but it minimizes the number of CORs established. This method requires 9 CORs to effect the same restrictions as 13 CORs with the previous method.

The requirements given for this example are as follows:

- Only the attendant can access loudspeaker paging.
- Terminating Extension Groups can only accept calls from internal voice terminals.
- The six classes of voice terminals are:
 - Those that are toll restricted
 - Those that cannot call outside to a public network (outward restricted)
 - Those that can receive calls only from an attendant
 - Those that can call anywhere, any time
 - Those that cannot place FX or WATS calls
 - Those that cannot place WATS calls

Assignments for these requirements could be made as follows:

- COR 20 — Manual Terminating Line Restriction.
- COR 21 — Inward Restriction.
- COR 22 — Toll Restriction (that is, “tac-toll” or “all-toll”).
- COR 23 — Outward Restriction.



NOTE:

A new Manual Terminating Line Restriction for voice terminals was not established. COR 20, above, can be assigned.

- COR 24 — Unrestricted.
- COR 25 — COR for WATS.
- COR 26 — COR for FX.
- COR 27 — Provides Miscellaneous Restrictions for WATS and FX. Enter an “n” beside COR 25 and COR 26 on the form for COR 27.
- COR 28 — Provides Miscellaneous Restriction for WATS. Enter an “n” beside COR 25 on the form for COR 28.

Now assign the appropriate COR to each physical or screening facility:

- Central office trunks — COR 24 (unrestricted).
- WATS — COR 25 (WATS COR).
- FX — COR 26 (FX COR).
- Attendant group — COR 24 (unrestricted).
- Voice terminals — COR 22 (toll — “tac-toll” or “all-toll”), COR 23 (outward), COR 20 (manual), COR 24 (unrestricted), COR 27 (WATS and FX miscellaneous), or COR 28 (WATS miscellaneous), as required.

- Data Modules — COR 24 (unrestricted).
- Terminating Extension Group — COR 21 (inward).
- Loudspeaker Paging trunks — COR 20 (manual).

Example Using ARS/AAR Facilities Restriction Level (FRL) for Control of Call Routing

Establish a group of users who must dial an authorization code to make outside calls. The client has ARS and the Authorization Codes feature. The forms and fields are administered as follows:

■ Feature-Related System Parameter Features Form

Field	Enter
- Authorization Codes Enabled	Y
- Authorization Code Length	7
- Authorization Code Cancellation Symbol	#
- Attendant Timeout Flag	n

■ Station Form

Assign COR = 1 for all unrestricted users and COR = 49 for restricted users who must dial an authorization code to make outside calls.

■ Authorization-Codes Form

Assign the restricted users a replacement COR = 1 and an authorization code the same as their 7-digit phone number.

■ COR Form

Assign/change originating FRLs for restricted and unrestricted users. Assign an originating FRL of 7 to users with a COR of 1 and an originating FRL of 0 to users with a COR of 49.

■ AAR/ARS Route Pattern Form

For route pattern 1, assign trunk group 40 (CO) as the first choice route with a route FRL = 1, NPA = 201, and Prefix Mark= 1. Assign first, second, and third choice routes as follows:

Grp No	FRL	NPA	Prefix Mark	Toll List	No. Del Digits	Inserted Digits
40	1	201	1			
2	3	201	1			
32	3	201	1			9

For this example, trunk group 40 is a CO trunk, trunk group 2 is WATS, and trunk group 32 is a tie trunk to the System 85.

When a caller dials the ARS access code to call out, the FRL of the originating facility is compared with the FRL of the available outgoing facility. If the FRL of the originating facility is less than the FRL of the trunk group, the restricted user will be prompted (via recall dial tone) to enter an authorization code. After the authorization code is entered, the call is routed to the CO for completion. If the FRL is insufficient to seize any trunk group in the route pattern, the user gets intercept tone.

Restricted callers will be prompted for and be required to enter an authorization code. Unrestricted users will simply dial the ARS code followed by the desired number.

Another practical application of the use of auth-codes might be to enable an unrestricted user to make a call from a restricted phone. For example, an executive could enter an authorization code that enables him to dial out from a restricted phone in the factory.

Hardware Requirements

None.

Class of Service

Defines whether or not voice terminal users may access or use the following features and functions (refer to *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for feature descriptions).

- Automatic Callback (feature)
- Call Forwarding All Calls (feature)
- Data Privacy (feature)
- Priority Calling (feature)
- Console Permission (allows multi-appearance voice terminal users to control the same features controlled by an attendant)
- Off-Hook Alert (see "Emergency Access to Attendant" feature)
- Client Room (see "Hospitality Services" — allows use of the check-in, check-out, room change/swap, and maid status features).

Administration

The 16 possible Classes of Service (COSs) are preassigned in the System. Choose and modify the appropriate COS and assign to users as required. Types of users are listed in the following table.

Form	Field	Form Instructions (Page #)
Class of Service	All	5-99
Attendant Console	COS	5-35
Console Parameters	COS	5-101
Data Module	COS	
PDM/TDM		5-128
Processor Interface		5-136
Netcon (G3s V2, G3i V2 only)		5-133
SAP (G3r V2 only)		5-139
Recorded Announcement		5-108
DLDM		5-111
Station	COS	5-287
Remote Access	COS	5-247
PGATE (G3r V2 only)	COS	4-99

- Class of Service Form — Verify or complete all fields as required.
- Complete the "COS" fields on the following forms:
 - Attendant Console
 - Console Parameters

- Data Modules [includes PDM, TDM, Processor Interface, Netcon, Recorded Announcement, DLDM, and SAP (G3r V2 only)]
- Station
- Remote Access
- PGATE (G3r V2 only)

Hardware Requirements

None.

Conference — Attendant

Allows the attendant to set up a conference call for as many as six conferees, including the attendant. Conferees from inside and outside the system can be added to a conference call.

To setup a conference, the attendant dials a number and uses the split key to add each party to the rest of the conference. Once an attendant adds a party to a conference call (whether the call was established by an attendant or other voice terminal user), only the attendant can add another party to the call.

The attendant cannot handle any other calls while setting up a conference call.

NOTE:

If Trunk-to-Trunk Transfer is disabled and the attendant releases from a conference call involving only trunk conferees, the trunks are also disconnected.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Public Network Trunks on Conference Call Conference Parties With Public Network Trunks Conference Parties Without Public Network Trunks Conference Tone	5-168

- Feature-Related System Parameters Form — Enter the number of public network trunks allowed on a conference call, the maximum number of parties allowed in a conference call involving public networks, and the maximum number of parties allowed in a conference call involving no public networks. Enter “y” in the Conference Tone field to provide a conference tone as new parties join a conference call.

Hardware Requirements

None.

Conference — Terminal

Allows multi-appearance voice terminal users to set up six-party conference calls without attendant assistance. Single-line voice terminal users can set up three-party conference calls without attendant assistance.

NOTE:

Single-line voice terminals can have more than three parties on a conference call with assistance from other users. For example, one user can add a party, who can add another party, and so on.

If Trunk-to-Trunk Transfer is disabled and voice terminal user releases from a conference call involving only trunk conferees, the trunks are also disconnected.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Public Network Trunks on Conference Call Conference Parties With Public Network Trunks Conference Parties Without Public Network Trunks Conference Tone	5-168

- **Feature-Related System Parameters Form** — Enter the number of public network trunks allowed on a conference call, the maximum number of parties allowed in a conference call involving public networks, and the maximum number of parties allowed in a conference call involving no public networks. Enter “y” in the Conference Tone field to provide a conference tone as new parties join a conference call.

Hardware Requirements

None.

Code Calling Access

Allows attendants, voice terminal users, and tie trunk users to page with coded chime signals.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Loudspeaker Paging and Code Calling Access	Code Calling IDs-(all fields)	5-224

- Loudspeaker Paging and Code Calling Access Form — Complete Code Calling fields as follows:
 - Assign Code Calling Playing Cycles (1 through 3) to indicate the number of times a code calling identification will be played.
 - Assign TN763C Auxiliary Trunk ports to each paging zone to be used.
 - Assign Code Calling TACs and CORs to each zone to be assigned (1 through 9, all).
- Assign extension numbers to Code Calling ID fields.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a port on a TN763C Auxiliary Trunk circuit pack for each of nine paging zones that can be assigned. The Code Calling Access feature shares the same ports used for loudspeaker paging.

Consult

Allows a covering user, after answering a coverage call, to call the principal (called party) for private consultation.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Button/Feature Button Assignments -consult	5-287

- Station Forms — Assign a Consult button.

Hardware Requirements

None.

Coverage Callback

Allows a covering user to leave a message for the principal (called party) to call the calling party.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Button/Feature Button Assignments -cov-cback	5-287

- Station Forms — Assign a Cover Callback (cov-cback) button.

Hardware Requirements

None.

Coverage Incoming Call Identification

Allows multi-appearance voice terminal users without a display in a Coverage Answer Group to identify an incoming call to that group.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Button/Feature Button Assignments -in-call-id (Type:_Grp:_)	5-287

- Station Forms — Assign a UCD/DDC Coverage Answer Group (in-call-id) button.

Hardware Requirements

None.

Customer-Provided Equipment (CPE) Alarm

The CPE alarm device provides an indication that a System alarm has occurred and that the System has attempted to contact a preassigned service organization about the problem. A customer-provided device, such as a lamp or bell, is used to indicate the alarm situation.

The CPE Alarm field is administered on the Maintenance-Related System-Parameters form as described in *DEFINITY Communications System Generic 3 V2 Installation and Test*, 555-230-104. Associated hardware requirements are also specified.

Customer-Provided Equipment (CPE) Trunk Group

The Customer-Provided Equipment (CPE) Trunk Group provides for the connection of on-premises customer equipment to the System for applications such as the Recorded Telephone Dictation Access feature.

The auxiliary trunk ports that are used to connect CPE to the digital switch are administered as CPE Trunk Group members for those features such as Recorded Telephone Dictation Access that are not supported by port assignment fields on other System forms. For example, trunk port interfaces can be assigned on System forms for such features as Music-on-Hold Access (Feature-Related System Parameters form) and Loudspeaker Paging and Code Calling Access (Loudspeaker Paging and Code Calling Access form).

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group (CPE)	All	4-200

- Trunk Group (CPE) Form — Verify or complete all fields as required.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port on a TN763C Auxiliary Trunk circuit pack is required for each trunk to be assigned the CPE Trunk Group. A TN763C provides four ports.

Cut-Through

Provides a connection to the analog CO/FX trunk after dialing the TAC of a CO or FX trunk. Subsequent digits dialed after receiving dial tone from the CO/FX trunk are transmitted to the CO/FX trunk as either rotary pulses or DTMF tones. Dialed digits are also checked for authorization and toll restrictions and are recorded in a CDR record if CDR has been enabled on the Trunk Group form.

For display-equipped voice terminals, when Cut-Through and Outgoing Display are enabled, the dialed digits will be displayed, and when the CO trunk is seized, the trunk group name will be displayed when the call is answered.

Digits are not collected and/or checked for restrictions until dial tone is received from the CO/FX trunk.

**NOTE:**

WATS trunks and ARS are not supported by the Cut-Through feature.

This feature does not replace the *automatic* Outgoing Dial Type capability.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group	Outgoing Dial Type	
CO	Cut-Through	4-178
FX	Toll Restricted	4-253
	CDR Reports	
	Outgoing Display	

- **Trunk Group Forms** — For the desired CO and FX trunk groups, enter either “rotary” or “tone” in the Outgoing Dial Type field. This is the method in which the digits will be outpulsed.

Enter “y” in the Cut-Through field to enable the feature.

If Toll Restriction is desired, enter “y” in the Toll Restricted field.

Enter “y” in the CDR Reports field to enable the generation of CDR records for calls involving this trunk group.

Enter “y” in the Outgoing Display field to enable the display of group name information for an outgoing trunk call.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port is required on a TN747B CO trunk circuit pack for each trunk to be assigned.

D-Channel Backup



NOTE:

The ISDN-PRI and D-channel Backup features are not supported by the G3s V2 ABP configuration.

For DS1 trunk port interfaces used for ISDN-PRI, this provides a backup signaling link (D-channel) in the event of a signaling link failure. If a signaling link failure were to occur, a switch to a backup signaling link (D-channel) can be implemented.

D-channel Backup requires that one D-channel be administered as the Primary D-channel and that a second D-channel be administered as the Secondary D-channel on the Signaling Group form. These assignments ensure that, at certain times during D-channel Backup process, each switch at each end of the interface select the same D-channel. In these cases, the Primary D-channel is given precedence over the Secondary D-channel.

Refer to the "Facility and Non-Facility Associated Signaling" feature coverage for additional information. A detailed discussion of both Facility and Non-Facility Associated Signaling and D-channel Backup is provided. Sample Signaling Group forms that are used to administer the features are shown.

Data Call Setup

Provides three methods to set up a data call: Data Terminal (keyboard) Dialing, which includes Alphanumeric Dialing, Data Hot Line, and Default Dialing (features covered separately elsewhere in this chapter), and Voice Terminal Dialing, or dedicating a voice terminal for data calls.

**NOTE:**

Voice terminal dialing is not available in ISDN-BRI applications because ISDN-BRI terminals do not support voice call transfer to data or data call transfer to voice.

Typically, when a data terminal is available, keyboard dialing is more convenient and requires fewer steps; therefore, it should be used whenever possible.

In addition to data terminal and voice terminal dialing, the System accepts calls from other devices, such as a Modular Processor Data Module (MPDM) equipped with an Automatic Calling Unit (ACU) interface module. An analog modem interfaced with an ACU can also be used to provide dialing capability for a host computer.

The Administered Connection/Access Endpoint feature (covered elsewhere in this chapter) may also be used to establish a data call.

Administration — Voice Terminal Dialing

Voice Terminal Dialing must be used when the data terminal is connected to an analog modem or when a data terminal is not accessible for dialing.

NOTE:

ADU-type hunt groups connecting the System to terminal servers on a host computer should have these hunt group extensions assigned as “no” keyboard dialing.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes Station (multi-appearance)	Data Origination Access Code	5-161
	Button/Feature Button Assignments -data-ext (Ext:_)	5-287
Data Module MPDM/MTDM	All	5-128
Data Line		5-111
Modem Pool Group	Circuit Pack Assignments	5-229

- **Feature Access Codes Form** — Assign a Data Origination Access Code. When a user places a data call to digital data endpoint, and does not transfer the call to another digital data endpoint but uses a modem or acoustically coupled modem, the user must dial the Data Origination access code before dialing the distant endpoint.
- **Station Forms** — Assign Data Call Setup buttons to multi-appearance voice terminals. This supports the use of the Data Call Setup One-Button Transfer To Data, Return-to-Voice, and Data Call Preindication features. If the Data Module form is associated with the station form, complete the form.
- **Data Module Form** — If the Data Module form is not associated with the station, complete an MPDM/MTDM or Data Module form as required.
- **Modem Pool Group Form** — Assign Circuit Pack port locations if dialing outside locations requiring digital-to-analog conversion.

Depending on the hardware being used, assign ports to the following as required:

- Data Modules
- BCTs/510Ds
- 7400D Series or CALLMASTER Digital Voice Terminals
- 7500D Series of Voice Terminals with ADM
- Analog Modems (port is assigned using a 2500 Voice Terminal form)

Administration — Data Terminal (keyboard) Dialing

In addition to standard keyboard dialing, Data Terminal Dialing can be enhanced by Alphanumeric Dialing, Default Dialing, and the Data Hot Line features. Refer to the respective feature coverage provided elsewhere in this chapter for additional administration information associated with these features.

⇒ NOTE:

ADU-type hunt groups connecting the System to terminal servers on a host computer should have these hunt group extensions assigned as “no” keyboard dialing.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Data Module MPDM/MTDM	All	5-128
Data Line 8500		5-111
Modem Pool Group	Circuit Pack Assignments	5-145
		5-229

- **Data Module Form** — Complete an MPDM/MTDM, Data Line Data Module, or 8500 Data Module form as required.
- **Modem Pool Group Form** — Assign Circuit Pack port locations if dialing outside locations requiring digital to analog conversion.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Data Call Setup is a means of using data equipment to establish data calls. Requirements for data modules, 510D or 515 BCT voice terminals, and modems are as follows:

- **Data Modules:** Each MPDM/MTDM Data Module requires one port on a TN754B Digital Line circuit pack. The 8500 Data Module requires a port on a TN556 ISDN-BRI Line circuit pack. When administered in multipoint (passive bus) configuration, a port may be shared by up to two endpoints that can be of the following types: stand-alone voice or stand-alone data. However, there can only be one integrated voice and data endpoint on a ISDN-BRI port. A Digital Terminal Data Module (DTDM) and a ISDN-BRI Asynchronous Data Module (ADM) share the port with their associated voice terminal. Each Data Line data module requires a port on a TN726B Data Line circuit pack.
 - **7400A Data Module:** The 7400A Data Module may be used instead of an MTDM when using the combined Modem Pooling feature, or as a stand-alone PDM.
 - **7400B Data Module:** The 7400B Data Module can be used to provide voice and data communications to 7400D series voice terminals and the 602A1 CALLMASTER Digital Voice terminal that have connections to a data terminal or PC. The 7400B does not support synchronous communication or keyboard dialing. May be used in a linked mode like a DTDM or an unlinked mode like a PDM to provide voice/data services.

— **7400C HSL Data Module:** The 7400C provides a synchronous link to high-speed data networks. Can support Group 4 Fax applications, video teleconferencing, and Local Area Network (LAN) interconnect applications.

— **Data Line Data Module:** Each TN726B Data Line circuit pack port connects to an Asynchronous Data Unit (ADU) that provides an EIA 232C interface to the switch.

■ **510D or 515 BCT:** Each 510D or 515 BCT requires one port on a TN754B Digital Line circuit pack for shared use of voice and data.

■ **7400D Series or CALLMASTER Digital Voice Terminals:** Each voice terminal requires one port on a TN754B Digital Line circuit pack for shared use of voice and data. The 7403D and 7405D voice terminals require an optional Digital Terminal Data Module. The 7404D requires an optional messaging cartridge, the 7406D requires an optional 703A Data Stand, and the 7407D requires an optional 702A DSU for connection to associated data terminals. In addition, a 7400B Data Module may be used to provide all 7400D series voice terminals a connection to data terminals and a common DCP interface to the switch.

■ **7500D Series Voice Terminals:** Each voice terminal requires one port on a TN556 ISDN-BRI Line circuit pack for shared use of voice and data. The 7505D, 7506D, and 7507D require an optional Asynchronous Data Module (ADM) for connection to associated data terminals. For ISDN-BRI applications, a TN778 Packet Control circuit pack is also required to provide ISDN-BRI connectivity. The Packet Control circuit pack provides ISDN signaling links with Link Access Protocol for the D-channel. Also see the "Asynchronous Data Module" section in this chapter.

■ **Modems:** Each modem requires one port on a TN742, TN746B, or TN769 Analog Line circuit pack. (Administration designates the modem as a 2500-series voice terminal and assigns an extension number. A modem is connected to the port instead of a voice terminal. Access is through the assigned extension number.)

■ **Modem Pooling:** A TN758 Modem Pool circuit pack, or one digital port associated with a Trunk Data Module (either TDM or MTDM) and one analog port with analog modem, is required for each conversion resource.

Keyboard Dialing to off-premises data endpoints requires the use of a TN748C Tone Detector circuit pack. Extensive use of features and services using tone detection may necessitate adding additional TN748C circuit packs (several features also use a TN748C).

Data Hot Line

This feature allows the data terminal user to place a data call to a predetermined destination by simply entering a carriage return at the "DIAL" prompt.

Data Hot Line calls are automatically placed by the System from specified digital data endpoints to preassigned extension numbers or off-premises numbers. The destination number is stored in the Abbreviated Dialing list.

Administration

A Data Hot Line number is administered on a per-data-terminal basis.

NOTE:

ADU-type hunt groups connecting the System to terminal servers on a host computer should have these hunt group extensions assigned as "no" keyboard dialing.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Abbreviated Dialing Station	All	5-2
	Data Module form	5-287
	AD List	
	Special Dialing Option	
	Hot Line Destination AD	
	Dial Code	
Data Modules:	AD List1:	
Data Line	Special Dialing Option	5-111
Processor Interface	AD Dial Code	5-136
PDM, TDM		5-128
Netcon (G3s V2, G3i V2 only)		5-133
SAP (G3r V2 only)		5-139
X.25 (G3r V2 only)		5-141
8500		5-145

- **Abbreviated Dialing Form** — Complete an Abbreviated Dialing (AD) form and enter the hot line dial string beside an appropriate AD Dial Code field.
- **Station Forms** — Complete the station's associated Data Module form. Assign the AD List per the AD form completed above (such as, "p" for personal, "g" for group, and so on). Enter "hot-line" in the Special Dialing Option field, and enter the appropriate AD Dial Code (code number on AD form that contains the hot line dial string) in the AD Dial Code field.

- Data Module Forms — Assign the AD List per the AD form completed above (such as, “p” for personal, “g” for group, and so on). Enter “hot-line” in the Special Dialing Option field, and enter the appropriate AD Dial Code (code number on AD form that contains the hot line dial string) in the AD Dial Code field.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

See “Data Call Setup” in this chapter.

Data Modules

The following provides administration information for equipment requiring a data module interface to the switch.

NOTE:

In addition to the equipment listed below, data module administration required for voice terminals is provided in the appropriate terminal coverage.

- Asynchronous EIA 232C compatible Data Terminal Equipment (DTE)
- AUDIX
- Call Detail Recording (CDR) output device
- Call Management System (CMS)
- CallVisor ASAI
- Data service unit associated with a private data line or the digital data system
- Data set
- Data terminal
- Local host computer
- Messaging Server Adjunct (MSA)
- On- or off-premises administration/maintenance terminal
- Other DEFINITY Systems, System 75s, System 85s, or enhanced AT&T DIMENSION® PBX nodes in a Distributed Communications System (DCS)
- System Printer
- 3270 type data modules

Figure 3-11 shows typical data module connections to the System.

NOTE:

The Administration Without Hardware Translation feature is usually paired with the Terminal Translation Initialization (TTI) feature. In the context of data modules, the TTI feature allows data modules that are administered without hardware translation to be “merged” with an appropriate data module connected to an unadministered port. The unadministered port is given TTI default translation that is sufficient to allow a terminal connected to the data module (which is connected to the port) to request a TTI merge with the extension of a data module administered without hardware translation. **TTI is not useful for Announcement and X.25 hardware.**

Administration Without Hardware Translation supports the PDM, TDM, Data-Line, Announcement, and X.25 data module types.

Administration

To implement data modules, the following forms must be completed.

Form	Field	Form Instructions (Page #)
Data Module	All	5-107

The "Type" field of the Data Module form assigns the data module type (such as PDM, TDM, and so on) that brings up different fields based on the type of data module entered. The following discussions describe how to administer these data module types from the corresponding form that appears for that type (see Chapter 5 for examples).

- **Data Module Form** — Complete one Data Module form for each of the following data modules in your System:
 - 700A — Provides an interface to a Messaging Server Adjunct (MSA), CDR output device, an on-premises administration terminal, data terminal, or a local host computer. [Also known as a processor data module (PDM)].
 - 700B — Provides an interface to an CDR output device, a data set, or a data service unit associated with a private data line or the Digital Data System (DDS). [Also known as a trunk data module (TDM)].
 - 700C — Functions the same as a TDM-700B. Can be operated in a private line (PL) or switched network (SW) mode. For PL mode, use "tdm" in the Type field on this form; for SW mode, use the "Modem Pool" form described elsewhere in this chapter.
 - 700D — Functions similar to the PDM-700A. The MPDM can support a variety of data interface requirements. It provides EIA 232C or RS-449 interfaces and an Automatic Calling Unit (ACU) RS-366 interface. [Also known as a module processor data module (MPDM)].
 - 700E — A multi-purpose data module configured that provides digital switch interface (EIA 232C and RS-449) to support trunk data requirements. Can be operated in a private line (PL) or switched network (SW) mode. For PL mode, use "tdm" in the Type field on this form; for SW mode, use the "Modem Pool" form described elsewhere in this chapter. [Also known as a modular trunk data module (MTDM)].
 - 7400A — May be used as a replacement for an MTDM in support of the combined Modem Pooling feature. Also may be used as a stand-alone PDM.
 - An asynchronous mode 2 data module that can be used as a stand-alone data module like a PDM (in linked mode) or like a DTDM (in unlinked mode) to provide both voice and data services.

In the unlinked mode, the 7400B is administered via the Data Module form. In the linked mode, it is administered via the Station Form (7400D series).

- 7500D — Instructions for administering a 7500D data module are provided in the appropriate voice terminal (7500D series, CALLMASTER digital voice terminal) coverage provided in Chapter 5.



NOTE:

The 7500D Voice Terminals are digital, but not of the DCP-type.

- Recorded Announcement Data Module Form — Complete all fields on this form. This form allows the System to transfer the recorded announcements file from the announcement board to the System tape and from the System tape to the announcement board.
- Processor Interface Data Module Form (G3s V2, G3i V2 only) — Complete one Processor Interface Data Module form for each synchronous/asynchronous interface port to be assigned. These ports provide communications interfaces for the following:
 - 3B/Call Management System (maximum of one)
 - 3B/Messaging Server (maximum of one)
 - Distributed Communications System (maximum of eight for multi-carrier cabinet System and maximum of four for a single-carrier cabinet System)
 - AUDIX (maximum of one)
 - ISDN-PRI (maximum of eight for multi-carrier cabinet System and maximum of four for a single-carrier cabinet System.
 - ISDN Gateway Adjunct (maximum of one) — supports the Station Identification/ Automatic Number Identification (SID/ANI) feature

This form assigns a physical channel (01 through 08) from a TN765 Processor Interface circuit pack; it does not assign a physical port circuit. Connections for these interfaces are achieved via a digital line port and an MPDM combination, and/or in the case of DCS or ISDN-PRI, via a DS1 interface. One of the Processor Interface circuit packs (TN765) provides one direct EIA connection (labeled as Processor Interface on the back of the Control Carrier), which is available for simplex operation only. Use of this connection eliminates the need for one digital line/MPDM combination.

- Data Line Data Module Form — Complete one Data Line Data Module form for each Asynchronous Data Unit (ADU) EIA 232C DTE type interface to be assigned. A port on a TN726B Data Line circuit pack is required for each ADU interface to be provided.

- X.25 Data Module Form (G3r V2 only) — Complete one X.25 Data Module form for each X.25 Data Module to be assigned. An X.25 data module is the port on the PGATE board that is designed to act as a protocol converter and packet handler resource for the switching of data packets between data endpoints. With respect to X.25, PGATE provides protocol conversion between Mode 3 and X.25.

There are four ports located on a PGATE board. Each port, in the physical level, uses an EIA 232-C physical (RS-449 electrical) interface to connect with endpoint. For TDM bus access to another Generic 3r V2, use an “rs232” or “switched” cable (PGATE form).

A second page is added for X.25 version of form for setting up X.25 layer 2 and layer 3 parameters.

- Netcon Data Module Form (G3s V2, G3i V2 only) — Complete one Netcon Data Module form for each of a maximum of four data channels on the TN777 Network Control circuit pack.

The NetCon Data Module form is used to assign a physical channel (01 to 04) from the TN777 Network Control circuit pack. An associated port interface to the switch requires completion of a MPDM/MTDM form. The port assignment requires a port on a TN754B Digital Line circuit pack to the TDM associated with the equipment.

Since many applications can be assigned to the Netcon interface and there are just four channels, consideration must be given to the actual administration assignments so as not to exceed these limitations. In addition, several of the applications require use of the Terminal User's Interface (TUI), which is an internal software process. The TUI can support up to five associated ports being active at one time. As a result, care must be taken when provisioning a system to ensure that the assigned features can indeed be supported by the hardware and software.

There are two classifications of access or paths into the software maintenance of the switch's central processor. The paths and their associated port requirements are as follows:

- Physical Paths:
1. EIA port (CDR) — 1 port
 2. Maintenance Circuit Pack (RMATS, local G3-MA, and remote G3-MA) — 4 ports
 3. Netcon Channels (BCMS, Remote G3-MA, and so on) — 4 ports
- Software Path:
1. Terminal User IDs (TUIs) — 5 ports

The requirement for a physical path and/or software path is based on the application and the need for login sessions. The following provides a summary of the applications that can be assigned these paths and their path requirements:

Application	Netcon (Note)	TUI (Note)
Processor Cabinet G3-MA Terminal Port	No	Yes (1)
Expansion Cabinet G3-MA Terminal Port	No	Yes (1)
Remote G3-MA	Yes (2)	Yes (2)
BCMS Terminal	Yes (2)	Yes (2)
INADS	No	Yes (6)
CDR - DCE Port	No	No
CDR - Other Than DCE Port	Yes (3)	No
PMS Printer	Yes (2)	Yes (2)
Journal/Log Printer	Yes (2)	Yes (2)
System Printer - DCE Port	No	Yes (2)
System Printer - Other Than DCE Port	Yes (2)	Yes (2)
PMS Interface	Yes (3)	No
Announcement Circuit Pack (TN750)	Yes (4)	No
Data Channel Loop Test	Yes (5)	No

Notes:

1. TUI in use when "powered up"
2. In use while logged-in and/or printing
3. Netcon channel in use continuously once established
4. Netcon channel in-use while Saving/Restoring announcements
5. Two Netcon channels are in-use while performing a Loop-Around test
6. TUI in-use while dialed in

Access to a Netcon channel requires the assignment of a extension number on a Netcon Data Module form. Access to the TUI software requires a valid login. Internal design limits allows only five of the above TUI applications to be active at one time. As shown on the table, when announcements are Uploaded or Downloaded (store/restore to/from tape) from a TN750 Announcement circuit pack, the use of a NetCon port is required during the process. Also, maintenance requires the use of two Netcon channels during a data channel loop-around test. Several applications can share use of the same Netcon port (not simultaneously though) such as the Remote Manager I and Announcement Upload/Download or the PMS Interface and journal/log printers.

- Digital Terminal Data Module — Refer to the 7403D and 7405D Voice Terminal coverage in Chapter 5 (the associated Data Module form, if required, is covered with each respective terminal's coverage).

- 3270 type Data Module Form — Complete one PDM/TDM Data Module form for each 3270-type Data Module to be provided an interface to the digital switch. The 3270 Data Module allows 3270-type terminals such as an IBM® 3278 Information Display System to communicate with a host computer via the digital switch. A 3270-type data module allows connection to industry-type cluster controllers. A port on a TN754B Digital Line circuit pack is required for each 3270 Data Module interface provided.
- 8500 Data Module Form — Complete one 8500 Data Module form for each 8500 Data Module to be assigned. The 8500 Data Module connects data terminal equipment (DTE) such as a modem to the ISDN network. For additional information, refer to the “8500 Data Module” section of this chapter.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port is required on a TN754B Digital Line circuit pack for each MPDM, MTDM, or 7400A Data Module to be assigned. One TN754B provides eight ports.

A port is required on a TN726B Data Line circuit pack for each interface to be provided asynchronous EIA 232C compatible equipment. An ADU allows direct connection between the digital switch port on a TN726B Data Line circuit pack and EIA terminals, printers, and computer ports. One TN726B provides eight ports.

A port is required on a TN556 ISDN-BRI Line circuit pack for each 7500D data module to be assigned. Due to multipoint support, a port may be shared with another voice-only or data-only endpoint. The TN556 ISDN-BRI Line circuit pack provides 12 ports (or 24 stations or data modules).

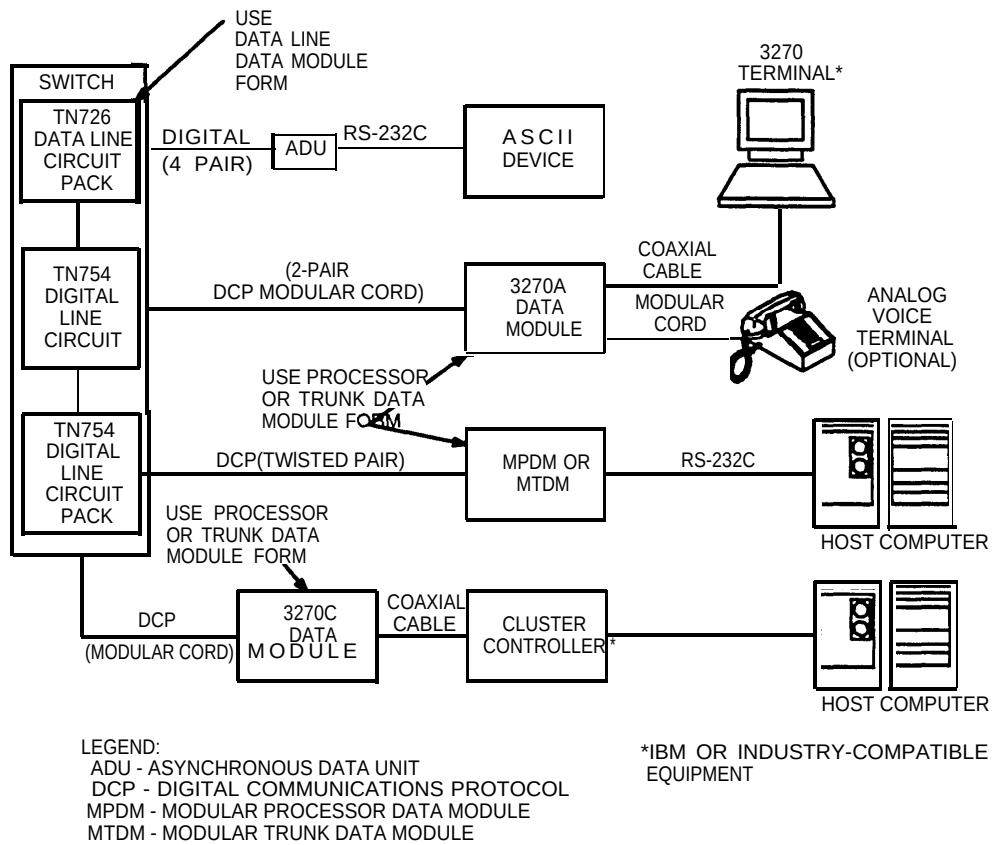


Figure 3-11. Typical Data Module Connections

Data-Only Off-Premises Extensions

Allows users to establish data calls involving data communications equipment (DCE) or Data Terminal Equipment (DTE) that is located remotely from the System site using DATAPHONE® data communication service or other private line data facilities. A Data-Only Off-Premises Extension uses a Modular Trunk Data Module (MTDM) located on-premises. Communication with the remote data equipment is accomplished through the private line facility linking the on-premises MTDM and the remote data equipment.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Data Module MPDM/MTDM	All	5-128

- MPDM/MTDM Data Module Form — Assign the associated data module port interface to the digital switch.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a Modular Trunk Data Module and one port on a TN754B Digital Line circuit pack.

Data Privacy

Protects analog or digital endpoints involved in a data connection from unwanted intrusion of tones, music, or voice that may be misconstrued as data. Data Privacy, when activated by a user, denies the system the ability to gain access to, or to superimpose tones, music, or voice onto, the protected call.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes	Data Privacy Access Code	5-161
Class of Service	Data Privacy (0-15)	5-99

- Feature Access Codes Form — Complete Data Privacy Access Code field.
- Class of Service Form — Verify Data Privacy field has the correct permission.

Hardware Requirements

None.

Data Restriction

Protects analog or digital endpoints involved in a data connection from unwanted intrusion of tones, music, or voice that may be misconstrued as data. Data Restriction, when administered to an extension number or trunk group, denies the system the ability to gain access to, or to superimpose tones, music, or voice onto, the protected call.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station	Data Restriction	5-287
Trunk Groups:	Data Restriction	
Access		4-130
APLT		4-155
CO		4-178
CPE		4-200
DID		4-230
FX		4-253
ISDN-PRI		4-275
RLT		4-303
Tandem		4-324
Tie		4-349
WATS		4-375

- Station Forms — Complete Data Restriction field.
- Trunk Group Forms — Complete Data Restriction field.

Hardware Requirements

None.

DCS Alphanumeric Display for Terminals

Allows calls to or from terminals on different nodes (switches) in a DCS equipped with alphanumeric displays to have transparency with respect to the display of call-related data.

Administration



NOTE:

The DCS features are not supported by the G3s V2 ABP configuration.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group - Tie (DCS TG)	Outgoing Display	4-349

- Trunk Group (Tie) Form — Enter “n” in the Outgoing Display field of the DCS Tie Trunk Group forms. This enables the called party’s name to be displayed at the calling terminal.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

DCS interface hardware is required. Refer to the “Distributed Communications System (DCS)” section in this chapter for information.

DCS Attendant Control of Trunk Group Access

Allows an attendant at any node in the DCS to exercise control over an outgoing trunk group at a different node in the cluster. This feature requires that there be a DCS Trunk Group between the local and remote switches, and that the trunks in that trunk group are not set up to insert digits on incoming calls. If digit insertion is needed on such trunks, it should be performed on the outgoing trunk based on the dialed digits.

⇒ NOTE:

This feature is not available for trunk groups with 4-digit trunk access codes or for trunk members 100 through 999.

Administration

⇒ NOTE:

The DCS features are not supported by the G3s V2 ABP configuration.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Feature Button Assignments -act-tr-grp -deact-tr-g -remote-tgs	5-35

- Attendant Console Form — Assign Attendant Control of Trunk Group Access Activate (act-tr-grp) and Attendant Control of Trunk Group Access Deactivate (deact-tr-g) buttons for each remote trunk group to be controlled. Assign a “remote-tgs” button for each remote trunk group to be controlled [that is, Direct Trunk Group Select buttons 1 through 6 for the Basic Attendant Console (301A) or buttons 1 through 12 on the Enhanced Attendant Console (302A)].

Hardware Requirements

⇒ NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

DCS interface hardware is required. Refer to the “Distributed Communications System (DCS)” section in this chapter for information,

DCS Attendant Direct Trunk Group Selection

Allows attendants at one node to have direct access to an idle outgoing trunk at a different node in the DCS. This feature requires that there be a DCS Trunk Group between the local and remote switches, and that the trunks in that trunk group are not set up to insert digits on incoming calls. If digit insertion is needed on such trunks, it should be performed on the outgoing trunk based on the dialed digits.

⇒ NOTE:

This feature is not available for trunk groups with 4-digit trunk access codes or for trunk members 100 through 999.

Administration

⇒ NOTE:

The DCS features are not supported by the G3s V2 ABP configuration.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Direct Trunk Group Select Button Assignments -remote-tgs	5-35

- Attendant Console Form — Assign up to 12 “remote-tgs” buttons in the Direct Trunk Group Buttons (Access Code) field on Page 1 of the form if not already assigned. An additional 12 buttons can be assigned on Page 2 of the form if required. Assign the Trunk Access Code (TAC) used to access the remote switch and the TAC of the remote trunk group to be accessed.

Hardware Requirements

⇒ NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

DCS interface hardware is required. Refer to the “Distributed Communications System (DCS)” section in this chapter for information.

DCS Attendant Display

Provides some transparency with respect to the display of call-related information.

Administration

NOTE:

The DCS features are not supported by the G3s V2 ABP configuration.

To implement this feature, the following form(s) or sections of form(s) must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Display Module Button Assignments Display Language	5-35

- Attendant Console Form — Assign up to eight buttons in the Display Module Button Assignment field as required. Assign the desired display language (English, French, Italian, Spanish, or “user-defined”). Refer to “Administrable Language Display” in this chapter for information on administering the “user-defined” language.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

DCS interface hardware is required. Refer to the “Distributed Communications System (DCS)” section in this chapter for information.

DCS Automatic Callback

Allows a user at one node to make an automatic callback call to a user at another node in the DCS.

NOTE:

Automatic callback calls do not apply for Vector Directory Numbers.

Administration

NOTE:

The DCS features are not supported by the G3s V2 ABP configuration.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Automatic Callback — No Answer Timeout Interval	5-168
Feature Access Codes	Automatic Callback Activation	5-161
Station (multi-appearance)	Automatic Callback Deactivation	5-287
Class of Service	Button/Feature Button Assignments -auto-cback	5-99
	Automatic Callback (0-15)	

- Feature-Related System Parameters Form — Specify callback time-out interval in the Automatic Callback — No Answer Timeout Interval (rings) field.
- Feature Access Codes Form — Verify Automatic Callback Activation and Deactivation fields have been assigned.
- Station Forms — Assign Automatic Callback (auto-cback) buttons to multi-appearance voice terminals, as desired.
- Class of Service Form — Verify Automatic Callback field has the correct permission.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

DCS interface hardware is required. Refer to the “Distributed Communications System (DCS)” section in this chapter for information.

DCS Automatic Circuit Assurance

Allows a voice terminal user or attendant at a System node to activate or deactivate Automatic Circuit Assurance (ACA) referral calls for the entire DCS network. This transparency also allows the referral calls to be generated at a node other than the node that detects the problem.

Administration

**NOTE:**

The DCS features are not supported by the G3s V2 ABP configuration.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters Attendant Console	ACA Referral Calls	5-168
	Feature Button Assignments -aca call	5-35
Station (multi-appearance)	Button/Feature Button Assignments -aca call	5-287
Trunk Group (Tie)	ACA Assignment	4-349

- Feature-Related System Parameters Form — Determine if ACA referral calls are to be “local,” “remote,” or “primary.”
 - If administered as “local”, referral calls are generated at the System node for the System node.
 - If administered as “remote”, referral calls are generated at a remote node for the System node. In this case, the remote node number must also be entered. The remote node number is the same node number as defined on the Dial Plan form.
 - If administered as “primary”, referral calls are made at the System node for one or more remote nodes.
- Station (multi-appearance) Form — Assign ACA (aca-call) feature button if required.
- Attendant Console Form — Assign ACA (aca-call) feature button if required.
- Trunk Group (Tie) form — Complete the ACA Assignment and associated Long and Short Holding Time and Short Holding Threshold fields as required.

Hardware Requirements

 NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

DCS interface hardware is required. Refer to the “Distributed Communications System (DCS)” section in this chapter for information.

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DCS Busy Verification of Terminals and Trunks

Allows attendants and multi-appearance voice terminal users to make test calls to voice terminals and trunk groups that are located at other nodes within the DCS. This feature requires that there be a DCS Trunk Group between the local and remote switches, and that the trunks in that trunk group are not set up to insert digits on incoming calls. If digit insertion is needed on such trunks, it should be performed on the outgoing trunk based on the dialed digits.

⇒ NOTE:

This feature is not available for trunk groups with 4-digit trunk access codes or for trunk members 100 through 999.

Administration

⇒ NOTE:

The DCS features are not supported by the G3s V2 ABP configuration.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Feature Button Assignments	5-35
Station (multi-appearance)	-verify Button/Feature Button Assignments, -verify	5-287

- Attendant Console Form — Assign a “verify” button.
- Station Forms — Assign a “verify” feature button on multi-appearance voice terminals.

Hardware Requirements

⇒ NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

DCS interface hardware is required. Refer to the “Distributed Communications System (DCS)” section in this chapter for information.

DCS Call Forwarding — All Calls

Allows all calls to an extension number to be forwarded to a selected extension number within the DCS network or to an external (off-premises) number. This feature is activated or deactivated by dial access code or by a Call Forwarding button. The feature can be activated or deactivated only by voice terminal users within the DCS.

⇒ NOTE:

Calls can be forwarded to a Vector Directory Number (VDN) anywhere in the DCS network. An attendant cannot activate/deactivate Call Forwarding for a VDN.

Administration

⇒ NOTE:

The DCS features are not supported by the G3s V2 ABP configuration.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes	Call Forwarding Activation	5-161
Station	Call Forwarding Deactivation	5-287
	Redirect Notification	
	Button/Feature Button Assignments	5-99
	-call-fwd	
Class of Service	Call Fwd-All Calls (0-15)	

- Feature Access Codes Form — Verify Call Forwarding Activation and Deactivation field access codes have been assigned.
- Station Forms — Complete Redirect Notification field (which causes the forwarding terminal to receive a half ring on calls that forward). This field is common to Call Coverage and Call Forwarding.
- Station Forms — Assign a Call Forwarding (call-fwd) feature button.
- Class of Service Form — Verify Call Forwarding field has the correct permission.

Hardware Requirements

⇒ NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

DCS interface hardware is required. Refer to the “Distributed Communications System (DCS)” section in this chapter for information.

DCS Leave Word Calling

Enables System terminal users to leave preprogrammed “call me” messages at other terminals within the DCS network. Messages can be left by calling, called, or covering users.

Administration

NOTE:

The DCS features are not supported by the G3s V2 ABP configuration.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Max. Number Of Messages Per Station	5-168
Feature Access Codes	Stations With System-Wide Message Retrieval Permission	
	LWC Message Retrieval Lock	5-161
	LWC Message Retrieval Unlock	
	LWC Send A Message	
	LWC Cancel A Message	
Station	LWC Reception	5-287
	LWC Activation	
	Button/Feature/Button Assignments	
	-lwc-store	
	-lwc-cancel	
	-aut-msg-wt (Ext:_)	
	-msg-retr	
	-delete-msg	
	-lwc-lock	
	-next	
	-call-disp	
	-cov-msg-rt	
Attendant Console	Feature Button Assignments	5-35
	-cov-msg-rt	
	-delete-msg	
	-next	
	-lwc-cancel	
	-call-disp	
	-lwc-store	
	-aut-msg-wt (Ext:_)	

- Feature-Related System Parameters Form — Complete the Maximum Number of Messages Per Station and Stations with System-Wide Retrieval Permission fields.

- **Feature Access Codes Form** — Verify or assign the following access codes:
 - Leave Word Calling Message Retrieval Lock field
 - Leave Word Calling Message Retrieval Unlock field
 - Leave Word Calling Send a Message field
 - Leave Word Calling Cancel a Message field
- **Station Forms** — Complete the “LWC Reception” and “LWC Activation” fields (which specify if the voice terminal can receive and/or activate LWC messages, respectively).
 - Assign a Leave Word Calling (lwc-store) button, if desired
 - Assign a Cancel (lwc-cancel) button, if desired, to allow a calling party to cancel a previously left message
- **Attendant Console Form or the Station Form** — For each voice terminal or attendant console group that can retrieve LWC messages, optionally assign the following buttons:
 - Message Retrieve (msg-retr) to access one's own messages — voice terminals only
 - Covr Msg Retrieval (cov-msg-rt) to access another user's message
 - Delete Message (delete msg) to remove a retrieved message
 - Lock LWC (lwc-lock) displays locked or unlocked status of the Message Retrieval
 - Next (to retrieve the next stored message)
 - Cancel LWC (lwc cancel) to allow canceling a previously left message
 - Message name or extension # (aut-msg-wt) used for voice terminal users who monitor another user's messages

⇒ NOTE:

Buttons can be assigned on the visual display module or in the “features area” of the terminal or console. If a Message Retrieval or a Coverage Message Retrieval button is specified, a Next Message and a Delete Message button should also be specified. These button assignments are covered in the Attendant Display and Voice Terminal Display features.

Hardware Requirements

⇒ NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

DCS interface hardware is required. Refer to the “Distributed Communications System (DCS)” section in this chapter for information.

DCS Over ISDN-PRI D-Channel

Enhances the DCS feature by allowing access to the public network to provide DCS feature connectivity between DCS switch nodes. DCS features are no longer restricted to private facilities. The ISDN-PRI B-channel is used for voice communications, and the ISDN-PRI D-channel is used to transport DCS control information. The only difference between DCS networks that do not utilize the DCS Over ISDN-PRI feature and those that do is in the method of signaling. The DCS Over ISDN-PRI D-channel feature uses Temporary Signaling Connections (TSCs) to transport certain DCS control information.

⇒ NOTE:

It is recommended that this feature only be used over DS1/E1 or T1 circuit packs that are administered using Country Protocol Option 1 (even in a private network environment) independent of what country the System is in.

A TSC provides a temporary signaling path through ISDN switches for exchanging user-user information. There are two types of temporary signaling connections: Call Associated Temporary Signaling Connection (CA-TSC) and Non-Call Associated Temporary Signaling Connection (NCA-TSC).

A Call Associated Temporary Signaling Connection (CA-TSC) refers to a service for exchanging USER INFORMATION messages that are associated with an ISDN B-channel connection by the call reference value of the call control data packets (for example, post-indicated LWC).

An NCA-TSC is a connection that is not related to any ISDN B-channel connections (for example, pre-indicated LWC). It is an administered virtual connection established for exchanging USER INFORMATION messages on the ISDN D-channel for the DCS over ISDN-PRI D-channel application as well as for the DCS AUDIX application. Once an NCA-TSC has been administered and enabled it will be active for an extended period of time. There are two types of administered NCA-TSCs depending on their setup mechanism: *Permanent* (Can be established by Near-end or Far-end) and *As-needed* NCA-TSCs.

Once enabled, a permanent NCA-TSC will remain established while the System is running. If the permanent NCA-TSC is dropped for any reason, the System will attempt to reestablish the connection. An as-needed administered NCA-TSC is established based on user request and the availability of TSC facilities. The connection will be dropped after an administered period of inactivity.

The System can transport DCS or DCS AUDIX messages over an ISDN-PRI D-channel and over BX.25 data links when functioning as a gateway between a PBX equipped with the DCS Over ISDN-PRI D-channel feature and a PBX equipped with traditional DCS using BX.25 data links. In this situation, the messages travel from the gateway through the NCA-TSCs or CA-TSCs to TSC-capable PBXs and from the gateway to PBXs that support only traditional DCS via a BX.25 logical channel.

ISDN DCS Gateway Node

At least one PBX must be configured as an ISDN DCS Gateway node in a DCS network that consists of PBXs that support DCS Over ISDN-PRI D-channel and PBXs that do not support the feature. PBXs directly connected to AUDIX serve as Gateway Nodes.

Examples of various DCS Network Configurations are provided later in this section. Administration necessary to configure the TSCs and other related parameters for the network is provided with the examples.

Administration

NOTE:

The DCS features are not supported by the G3s V2 ABP configuration.

The ISDN-PRI and DCS options must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Signaling Group Page 1 contains TSC-related fields. Pages 2-5 contain Administered NCA-TSC-related fields.	Max number of NCA TSC Max number of CA TSC Trunk Group for NCA TSC Complete Administered "NCA-TSC Assignment" fields as needed. Service/Feature As-needed Inactivity Time-out (min)	4-108
ISDN TSC Gateway Channel Assignments	All	4-89
Trunk Group (ISDN-PRI) (Page 2 of form)	Used for DCS Node Number DCS Signaling NCA TSC Signaling Group TSC	4-275
Routing Patterns	CA-TSC Request	4-19
Processor Channel Assignment	Appl	4-101 or 4-105
Feature-Related System Parameters	Record TSCs for CDR	5-168

⇒ NOTE:

The following does not provide administration instructions associated with assigning an ISDN-PRI trunk group or administering a DCS network. Refer to the appropriate sections in this manual for related instructions.

- Signaling Group Form — Complete the following fields:
 - Max number of NCA-TSC — Specifies the maximum number of NCA-TSCs that will be supported in the Signaling Group. Default is 0.
 - Max number of CA-TSC — Specifies the maximum number of CA-TSCs that will be supported in the Signaling Group. Default is 0.

For Leave Word Calling (LWC), set this value to equal the maximum number of simultaneous LWCs.

- Trunk Group for NCA-TSC — Specifies the ISDN-PRI trunk group whose Incoming Call Handling Table (ICHT) will be used to handle incoming NCA TSCs through this signaling group. This is necessary when tandeming TSCs.

Complete Pages 2 through 5 of the form as required to assign administered NCA-TSCs. A maximum of 64 administered NCA-TSCs may be administered as part of the Signaling Group form.

- Service/Feature — Specifies the service type for all the Administered NCA-TSCs in this signaling group. Valid entries are “accunet”, “i800”, “inwats”, “lds”, “mega800”, “megacom”, “multiquest”, “operator”, “sdn”, “sub-operator”, and “wats-max-bnd”. Default is blank.
 - As-needed Inactivity Time-out(min) — Specifies the inactivity time-out for as-needed NCA-TSCs assigned in this signaling group. An as-needed administered TSC will be torn down. Enter a number between “10” and “90”. Default is blank.
- ISDN TSC Gateway Channel Assignment Form — Used to map administered NCA-TSCs to (BX.25) processor channels in an Integrated DCS Network. (Form only required for PBX location serving as an ISDN Gateway in an Integrated DCS Network). Complete all fields as required.
- Trunk Group (ISDN-PRI) Form — Complete the following fields:
 - Used for DCS? — Appears for “access”, “rlt”, “tandem”, “tie”, and “isdn-pri” trunk group types. This field determines if a trunk will send and receive messages via a DCS signaling link. (NOTE: This field does not appear for an “isdn-pri” trunk group with a service type of “dmi-bos” or “ivbs”.) For all other “isdn-pri” trunk group types, if “y” is entered in this field, then the dependent fields “Node Number” and “DCS Signaling” appear.

- Node Number (dependent field) — Only displayed when the “Used for DCS?” field entry on the ISDN-PRI trunk group form is “y”. Identifies the remote PBX within the network with which the trunk will communicate on a DCS signaling link. Valid entries are “1” through “63”. Default is “1”.
- DCS Signaling (dependent field) — Only displayed when the “Used For DCS?” field entry on the ISDN-PRI trunk group form is “y”. The option “bx.25” is used to support the traditional DCS feature. The option “d-chan” is used to support the DCS Over ISDN-PRI D-channel feature. Enter “d-chan”.
- NCA-TSC Signaling Group — Specifies on which signaling group NCA-TSC calls routed to this trunk group should be established. Number entered must match at least one of the entries in the “Sig Grp” column on the “Trunk Group Member Assignments” portion of the Trunk group form. Default is blank.

 NOTE:

If there is no ambiguity in the “Sig Grp” column (that is, only one number has been entered for one or more group members), then, if this field is left blank, the system will fill in the field based on the information that was entered in the “Trunk Brd” column on Page 1 of the Signaling Group form. If there is ambiguity, then you must fill in this field.

■ **Routing Pattern Form** — Complete the following fields:

- TSC — Valid entries are “y” or “n”. When a “y” is entered in this field, the “CA-TSC” field becomes writable. (See “CA-TSC Request” below.) Default is “n”.

For Leave Word Calling, enter “y”.

- CA-TSC Request — This field becomes writable when a “y” is entered in the “TSC” field. (See “TSC” above.) You must specify when a CA-TSC will be established if the call is routed through a particular preference of a routing pattern. Valid entries are then “as-needed”, “at-setup”, and “none”. The first two entries, “as-needed” and “at-setup”, are meaningful only for CA-TSCs. If the “as-needed” option is entered, a CA-TSC will be established only when it is requested during a call. If the “at-setup” option is requested, then the CA-TSC will be established when the call is set up. Selection of the “none” option means that there will be no CA-TSC associated with this call. For an NCA-TSC, the “none” option means that the NCA-TSC will be blocked if it is routed through this pattern in a tandem switch. Default is “none”.

For Leave Word Calling, enter “as-needed”.

- Communications-Links Processor Channels Form — The “Appl” field (G3s V2 and G3i V2 only, in G3r V2 this is the “Application” field) specifies to which application channel this processor channel is connected. Enter “gateway” in the associated “Appl” field if the processor channel is used as one end of the gateway channel assigned in the ISDN TSC Gateway Channel Assignments form. The gateway node serves as the terminating node to the D-channel DCS network as well as the terminating node to the traditional DCS network.

A PBX serving as an ISDN DCS Gateway node introduces some interesting situations when administering processor channels in an associated traditional DCS PBX. In a traditional DCS network (BX.25 processor channel links), the “Remote Proc Chan” field in the Processor Channel Assignments form refers to the processor channel of the destination PBX. In an Integrated DCS network, the “Remote Proc Chan” field in the Processor Channel Assignments form refers to the processor channel of the Gateway PBX (if the destination PBX is an ISDN DCS PBX), *not* the destination PBX.

On the contrary, the “Machine-ID” field in the Processor Channel Assignments form refers to the destination PBX, either an ISDN DCS PBX or a traditional DCS PBX. If the “Appl” (or “Application” in G3r V2) field is “gateway”, the “Machine-ID” field is left blank. No entry will be permitted.

DCS and AUDIX Networking Examples



NOTE:

The DCS features are not supported by the G3s V2 ABP configuration.

DCS network configurations can be:

1. Traditional DCS Network — A DCS network configured of two or more PBXs using BX.25 signaling for transporting DCS feature transparency information.
2. D-channel DCS Network (Private Network Only) — A DCS network that includes Generic 3 V2 (or Generic 1.1, Generic 3i, or Generic 3r) PBXs using the ISDN-PRI D-channel DCS feature transparency information (D-channel signaling). ISDN-PRI facilities with this type of network use only private line facilities.
3. D-channel DCS Network (Public Network Access/Egress) — A DCS network that includes Generic 3 V2 (or Generic 1.1, Generic 3i or Generic 3r) PBXs using D-channel signaling. At least one of these ISDN-PRI facilities uses public network ISDN-PRI (usually via the AT&T Software Defined Network).
4. Integrated DCS Network (Private Network Only) — A DCS network that may contain a variety of PBXs using either 8X.25 and D-channel signaling methods. At least one Generic 3 V2 (or Generic 1.1, Generic 3i or Generic 3r) PBX serves as an ISDN-PRI DCS Gateway node. This node can interwork DCS feature transparency information between a BX.25 connection and one of the ISDN-PRI user-to-user signaling methods over the D-channel and vice versa.

An ISDN-PRI DCS Gateway node provides backward compatibility to existing traditional DCS networks.

5. Integrated DCS Network (Public Network Access) — The same as #2 above but the D-channel of at least one ISDN-PRI facility uses public network ISDN-PRI.

ISDN User-to-User Services

User-to-user information (UUI) is usually not needed for call establishment but rather for call-related or value-added services. ISDN-PRI allows three ways to exchange UUI: Message Associated UUI (MA-UUI), Call Associated Temporary Signaling Connections (CA-TSCs), and Non-Call Associated Temporary Signaling Connections (NCA-TSCs). Each of these methods are described in more detail in the following subsections.

MA-UUI Refers to the ability to carry UUI within a Q.931 call control message¹ when a call is established or cleared. This additional information is contained in one of several optional information elements (IEs). MA-UUI exchange does not necessitate additional Q.931 layer 3 message exchange, rather, additional IEs may be piggy-backed on other messages.

CA-TSC Refers to the ability to exchange UUI either during and/or after the establishment of an ISDN-PRI circuit switched call. Once a CA-TSC is established, the UUI is carried in a special Q.931 message known as a user information message (UIM). This message is not considered a call control message. The UIM and its contents are associated with an existing ISDN-PRI call by using the same Call Reference Value (CRV) as the existing call. A CA-TSC can be requested either at setup time (where an indication is included in the Network Specific Facility (NSF) IE contained in the SETUP message), or after setup time (where the switch needing to send a UIM first establishes a CA-TSC by sending an appropriately encoded FACility message). In both cases, the recipient of the request acknowledges the successful establishment of a CA-TSC by returning an appropriately encoded FACility Acknowledge message. Once the CA-TSC is established, either end of the connection can begin sending UIMs. The CA-TSC remains active until the associated circuit switched call is terminated.

If any intervening switch or the recipient of the CA-TSC request cannot establish a CA-TSC, a FACility REJect message is returned and no UIMs are exchanged.

NCA-TSC Refers to the capability to exchange UUI not associated with any current B-channel connection. A NCA-TSC is established using procedures similar to that of a circuit switched call, but the SETUP message specifies a packet connection on the D-channel rather than selecting any B-channel. The resulting connection can be thought of as a virtual D-channel connection.

Once the NCA-TSC is established, either end of the interface can exchange UUI by encoding a UIM. NCA-TSCs remain active until explicitly torn down. Refer to "DCS Over ISDN-PRI D-channel" in this chapter for more information on Permanent and As-Needed NCA-TSCs.

1. A message needed to establish or clear a call. An MA-UUI may be sent in the SETUP, ALERTing, CONNect, and first clearing message DISConnect, RELease, or RELease COMPLETE.

D-channel Signaling For DCS/AUDIX

The BX.25 signaling link used in a traditional DCS network is no longer needed between the Host Switch and Remote Switches, but the BX.25 connectivity is still required between the AUDIX and the Host Switch. AUDIX feature transparency information is transported over the ISDN-PRI D-channel (via administered AUDIX NCA-TSCs) between the Host Switch and Remote Switches, and the Host Switch uses the ISDN Gateway functionality to transfer the AUDIX messages between the BX.25 interface (via processor channels) and the ISDN-PRI D-channel interface (via administered NCA-TSCs) to and/or from AUDIX. In addition, administered DCS NCA-TSCs are also required between the Host Switch and Remote Switches for carrying DCS feature transparency information.

The contents and even layout of the DCS feature transparency information using D-channel signaling is the same as a traditional DCS network. In a D-channel signaling network, the DCS feature transparency messages are encoded in a special Information Element (IE) known as a DCS-IE, and the AUDIX transparency messages are encoded in an AUDIX-IE. Then, depending on the user-to-user signaling method being employed, the DCS-IE or AUDIX-IE is then carried in either a Q.931 Layer 3 UIM (if either a CA-TSC or NCA-TSC is being used) or in an appropriate Q.931 Layer 3 call control message (such as, SETUP, ALERTing, and so on).

D-channel Signaling MA-UUI Example

In a D-channel signaling network, basic DCS distinctive alerting and name and number transparency provide an example of features that use MA-UUI signaling. For example, when a DCS call is originated, the DCS distinctive ringing information and the calling party name information is available at the time the call is being established. In a D-channel signaling network, this information is carried via DCS-IEs as MA-UUI in the SETUP message used to initiate the call. Similarly, the called party name information is available at the time the terminating switch begins to alert the called extension. As such, this information is returned via a DCS-IE as MA-UUI in the returned ALERTing message.

DCS Over the D-channel CA-TSC Example

Activation of LWC while alerting an extension on a remote switch in a D-channel signaling network provides an example of a feature that uses CA-TSC signaling. If after the called party is alerted and the calling party is listening to ringback, the calling party activates the DCS leave word calling (LWC) feature, there are no waiting call control messages to convey this feature activation. Here, since there exists an active B-channel connection, a CA-TSC is used to accomplish the LWC activation. If the CA-TSC was not established at call setup time, an attempt is made to establish it when the LWC feature is first activated. Assuming the TSC is successfully established, the DCS request to activate LWC is carried in a DCS-IE in a UIM over the CA-TSC. Based on the Call Reference Value of the UIM, the terminating switch can associate the feature activation with the active

B-channel connection and hence determine the intended recipient of the LWC activation. Furthermore, the terminating switch can also use the same CA-TSC to acknowledge the successful (or unsuccessful) activation of the ringing LWC feature.

D-channel Signaling NCA-TSC Example

Activation of pre-indication LWC toward a user on a remote switch in a D-channel signaling network provides an example of a feature using NCA-TSC signaling. If a user dials either the LWC feature access code or presses the LWC feature button prior to dialing the extension of a remote user, there is no need to attempt to establish a circuit switched voice connection. Rather, all that is necessary is for the originating switch to inform the destination switch that a given user has activated LWC for a specific user on the destination switch and that the destination switch acknowledges the feature activation. Since there is no active B-channel connection, this message exchange is accomplished via a NCA-TSC. The originating switch selects, and if necessary, establishes the NCA-TSC and conveys the DCS request to activate LWC in a DCS-IE in a UIM over the selected NCA-TSC. The acknowledgment and subsequent messages associated with this feature activation also use the same NCA-TSC.

Administered NCA-TSCs

For the correct operation of non-call associated features, every switch in a DCS network requires a dedicated connection to every other switch. In a traditional DCS network, individual processor channels are assigned for each remote PBX in the network.² In a D-channel signaling network, each switch requires an administered NCA-TSC to every other switch in the network. An administered NCA-TSC has an administered *NCA-TSC endpoint* and a *NCA-TSC*. The administered NCA-TSC endpoint defines a local extension, a destination Node Number, and a destination extension³ or digits for the administered NCA-TSC. As an analogy, the administered NCA-TSC endpoint is like a station originating/terminating a packet-like data call while the NCA-TSC is like a trunk carrying the data call.

NOTE:

A NCA-TSC can tandem through an intermediate PBX. Additional detail on routing NCA-TSCs appears later.

An administered NCA-TSC is a virtual connection over a D-channel in that it does not consume any physical hardware. Administered NCA-TSCs do, however, consume memory and extension numbers and are limited.

2. Several processor channels can share a single BX.25 link and these connections can hop through 1 or 2 intermediate nodes.

3. As well as other associated administration described earlier.

D-channel Signaling Method Summary

Table 3-3 provides a summary of each DCS feature and the user-to-user signaling method used in a D-channel signaling network.

Table 3-3. ISDN-PRI D-channel Signaling Method Used For DCS Features

DCS Feature	D-channel Signaling Method		
	MA-UUI	CA-TSC	NCA-TSC
DCS Alphanumeric Display for Terminal	y	n	n
DCS Attendant Call Waiting	y	y	n
DCS Attendant Control of Trunk Group Access	n	n	y
DCS Attendant Direct Trunk Group Selection	y	n	n
DCS Attendant Display	n	y	n
DCS Automatic Callback	y	n	y
DCS Automatic Circuit Assurance	n	n	y
DCS Busy Verification of Terminals and Trunks	n	y	n
DCS Call Forwarding All Calls	n	n	y
DCS Distinctive Ringing	y	n	n
DCS Leave Word Calling	n	y	y
DCS Multi-Appearance Conference/Transfer	n	y	n

Administration Overview of ISDN-DCS and ISDN-DCS AUDIX Networks

This section discusses new forms and new fields on existing forms applicable to ISDN-DCS. Translating a simple D-channel signaling network requires:

- Coordinated Uniform Dial Plan (UDP) Administration

For a D-channel signaling network, coordinated UDP administration remains unchanged from a traditional DCS network. As with prior versions of DCS, all nodes in the DCS network must be part of a four- or five-digit Uniform Dialing Plan. For Generic 3 V2, this administration is translated on the Uniform Dial Plan form on each PBX in the network. The extensions on this form map directly into node numbers or into UDP codes that are mapped into node numbers by the AAR analysis table.

■ ISDN-PRI Link Administration

A D-channel signaling network requires ISDN-PRI connectivity between the switches using this feature. D-channel signaling does not require any additional or special administration of the ISDN-PRI link.

■ DCS Trunk Group Administration, trunk-group form

 NOTE:

Although the System limit is 4 digits, DCS Trunk Groups in this application can only use 3-digit Trunk Access Codes (TACs).

When an ISDN-PRI trunk group is marked as Used for DCS, two additional fields appear. The Node Number contains the node number of the remote PBX with which the trunk communicates. For a trunk to the SDN/SDDN network, this field should be blank. A DCS Signaling Method field also appears since DCS signaling is now possible via a BX.25 link or via the D-channel. Enter "d-chan" for all ISDN-DCS trunk groups signifying that DCS signaling for voice calls carried by this trunk group will be over the ISDN-PRI D-channel associated with the signaling group of the trunk member used to carry the call.⁴ This field should be "BX.25" when this trunk communicates with a node that is not part of the ISDN-DCS subnetwork, and uses BX.25 signaling to achieve feature transparency (such as the trunk group of a gateway node connected to a non ISDN-DCS switch).

The new NCA-TSC Signaling Group field appears on page 2 of the trunk group form. This field is relevant at a node which tandems an NCA-TSC setup request and should contain the number of the signaling group through which the NCA-TSC setup request is tandemed-out. When an NCA-TSC setup request arrives at the tandem node and the tandem node determines that the destination is non-local, standard routing is performed. A routing pattern is chosen that should have as its first preference the trunk group that specifies the signaling group used to tandem the NCA-TSC setup request to the destination switch.

■ TSC Administration, signaling group form

Pages 2 through 5 of the signaling group form are used for TSC administration. Up to 64 Administered NCA-TSCs per signaling group can be administered. Page 1 specifies the maximum number of CA- and NCA-TSCs that can be established over that signaling group. The Max. CA-TSC field specifies the maximum number of CA-TSCs (typically the number of ISDN-PRI trunk group members controlled by that signaling group). Such a strategy guarantees a CA-TSC resource for each B-channel call associated with this signaling group.

4. Trunk members in a given trunk group can be associated with different signaling groups.

All signaling groups used to carry DCS information must have CA-TSC and NCA-TSC resources associated with them. If this is not done, those DCS features that require CA-TSCs or NCA-TSCs will not work. There are times, however, when even those DCS features that only use MA-UUI will not work,⁵ so it is highly recommended that both CA and NCA-TSC facilities are available for all signaling groups represented on the trunk group form of ISDN-DCS trunk groups.

- To achieve feature transparency, ISDN-DCS calls should be routed via a routing pattern that has an ISDN-PRI Used for DCS trunk group as its first preference. The new TSC field on the routing pattern form must be “y” to allow incoming NCA-TSC requests to be tandemed out and to allow CA-TSCs associated with B-channel connections of that preference to be established. If this field is “y”, the CA-TSC Request Method field appears. Entering “none” here disallows the establishment of CA-TSCs associated with B-channel connections of the current preference (tandeming NCA-TSC setup requests are still allowed). “at-setup” causes a CA-TSC to be established at the same time as the initial B-channel connection. That is, a CA-TSC is setup for each B-channel call whether or not that CA-TSC is needed. “as-needed” does not establish a CA-TSC with the B-channel call. If a CA-TSC is needed, it is established at that time and remains active during the entire call.

⇒ NOTE:

“as-needed” causes a minor delay in the invocation of the Call Associated feature. This delay is not present for “at-setup” since the CA-TSC is already established.

■ Gateway Channel Administration

A switch can act as a gateway node by being positioned between the part of the network that supports ISDN-DCS and the part that does not. The gateway node maps DCS messages from ISDN-PRI protocol to BX.25 protocol and vice versa. NCA-TSCs that carry ISDN-PRI DCS messages are mapped to BX.25 processor channels on the gateway channel form.

⇒ NOTE:

The Host PBX-AUDIX link is a BX.25 link. Gateway channel administration is applicable to the AUDIX Host PBX for PBXs with remote AUDIX.

5. Such as where a non-ISDN switch is connected to the gateway node and PRI interworking takes place, the ISDN message flow does not allow MA-UUI, and those DCS features that normally use MA-UUI are implemented via CA-TSCs.

The Gateway Channel form allows up to 64 entries where each entry consists of a signaling group/tsc-index pair, the processor channel that it maps to and an indication of whether the mapping is for use as a DCS gateway or an AUDIX gateway.

The Processor Channel form assigns those processor channels that function as the gateway.



NOTE:

Refer to *DEFINITY Communications System Generic 3 V2 Installation and Test*, 555-230-104, for complete instructions on Gateway administration.

Graphical Notations

The following symbols are used in the design examples (refer to Figure 3-12):

Signaling Switching Functions — Show how a TSC or a logical channel can be switched through an intermediate switch (Tandem, Hop, or Gateway).

Communication Interface Links — Show how a communication link is connected from one switch to another switch (BX.25 Link and D-channel). For D-channel signaling networks, the communication interface link numbers should match the signaling group number at each end to help coordinate assignments and aid in troubleshooting.

Signaling Methods — Show the transport mechanism used to carry DCS messages between two DCS nodes [TSC and logical channel (BX.25)].

Other Notations —

- TSC x/y - Administered NCA-TSC Index y belonging to Signaling Group x
- (m <--> n) - represents a connection between PBX m and PBX n
- (m <--> n for z) -An administered NCA-TSC exists between PBX m and "gateway" PBX n, for the purpose of establishing a connection between PBX m and PBX z (a non-TSC Capable PBX)
- Link a/b - Logical channel b on interface link a
- hop(a/b : c/d) - A hop channel exists between interface link a - logical channel b and interface link c - logical channel d.
- PBX ID - Node number assigned to each switch in DCS
- RNX - Home RNX assigned

Legend

1. Signaling Switching Functions 2. Communication Interface Links



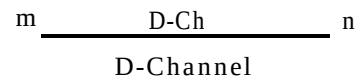
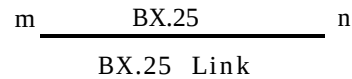
Tandem



Hop



Gateway



m, n - Link Number
m, n - Signaling Group

3. Signaling Methods

.....
TSC x/y

Logical Channel a/b

Figure 3-12. Symbols and Meanings

Figure 3-13 is a sample DCS Network configuration where PBXs 1, 2, and 3 are TSC Capable PBXs that support D-channel signaling; PBXs 4 and 5 do not support D-channel signaling but use traditional DCS. Solid lines represent administered NCA-TSCs, dotted lines represent gateway channels and hop channels, and dashed lines represent SCI links.

SAMPLE DCS NETWORK CONFIGURATION

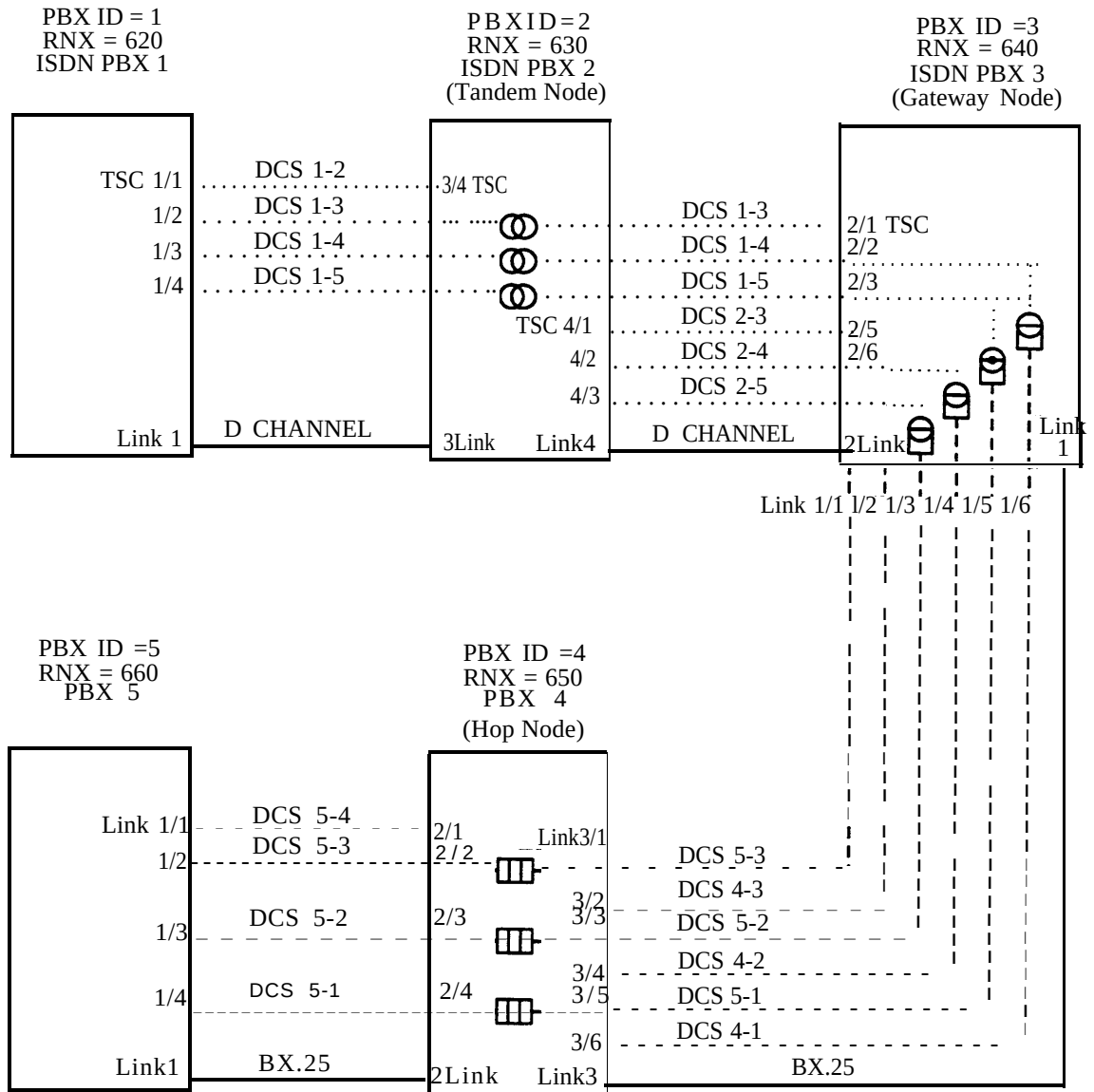


Figure 3-13. Sample Mixed DCS Network

Figure 3-14 is a D-channel DCS AUDIX configuration.

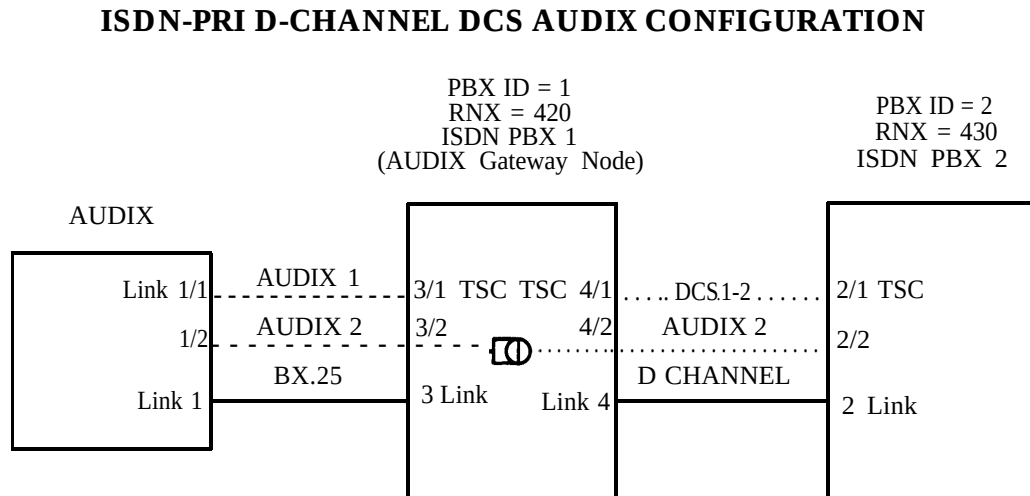


Figure 3-14. Sample DCS AUDIX Network

Design Example (using Figure 3-15)

In the following example, to show the differences in the types of calculations that may be required, two types of intercom distribution are assumed. Node 2 is assumed to have equal intercom distribution to the other nodes in the cluster. This could be the case for all of the nodes in the cluster.

Step 1 — Determine Intercom CCS Generated by Each Node

Traffic studies must be done to determine the average intercom traffic generated by each station in each node. By multiplying the average intercom CCS/station by the number of stations in the node, the total intercom CCS/node is found (see Table 3-4).

Table 3-4. Finding the Total Intercom CCS Per Node

Node Number	Stations in Node	CCS/Station	Intercom CCS
1	800	2	1600
2	400	2	800
3	600	3	1800
4	500	1	500
TOTAL			4700

Step 2 — Determine Intranode Intercom CCS Generated by Each Node

Consult with the customer to determine the percentage of intercom traffic generated in each node that stays within the node. These percentages areas follows:

Node 1 — 40 percent Stays Within Node
Node 2 — Equal Distribution to Stations in the Cluster
Node 3 — 60 percent Stays Within Node
Node 4 — 50 percent Stays Within Node

Determine the intranode intercom CCS by multiplying these percentages by the total intercom CCS generated by each node (Step 1). Since calls for Node 2 are distributed equally among all stations in the DCS cluster, the fraction that stays within Node 2 is determined by taking the ratio of stations in Node 2 to the total number of stations in the cluster.

Table 3-5. Intercom CCS Within Node

Intranode CCS = *Intercom CCS times percent CCS Within Node*

Intranode 1 CCS	=	1600 times 0.40
	=	640 CCS
Node 2 Ratio	=	<i>N2 Stations over Total Stations in Cluster</i>
	=	400 over 800+400+600+500
	=	400 over 2300
	=	0.174
Intranode 2 CCS	=	800 CCS times 0.174
	=	139 CCS
Intranode 3 CCS	=	1800 CCS times 0.60
	=	1080 CCS
Intranode 4 CCS	=	500 CCS times 0.50
	=	250 CCS

Record the results from the preceding calculations in the table below.

Step 3 — Determine Internode Intercom CCS for Each Node in the Cluster

This value is calculated by subtracting the intercom CCS that stays within the node from the total intercom CCS generated by the node. (See table below.)

Table 3-6. Internode Intercom CCS for Each Node in the Cluster

Node Number	Intercom CCS	Percent Intranode Intercom	Intranode Intercom CCS	Internode Intercom CCS
1	1600	0.40	640	960
2	800	0.174	139	661
3	1800	0.60	1080	720
4	500	0.50	250	250
TOTAL	4700		2109	2591

Step 4 — Determine Internode Traffic Distribution From Each Node in the DCS Cluster to Other Nodes in the DCS Cluster

Calculate this value by determining the ratio of stations for each node (other than the node being analyzed) compared to the total stations for all nodes (other than the node being analyzed).

Multiply the ratio for each node by the total outgoing intercom CCS leaving the node being analyzed to get the CCS distribution to each node.

The following equations use values obtained from Steps 1 and 3.

Table 3-7. Node 1 Outgoing Intercom Distribution

Node 2 Ratio	=	<i>N2 Stations over N2+N3+N4 Stations</i>
	=	400 over 1500
	=	0.267
Node 3 Ratio	=	<i>N3 Stations over N2+N3+N4 Stations</i>
	=	600 over 1500
	=	0.400
Node 4 Ratio	=	<i>N4 Stations over N2+N3+N4 Stations</i>
	=	500 over 1500
	=	0.333
Intercom CCS From Node 1 to Node 2	=	<i>N2 Ratio times Outgoing CCS N1</i>
	=	0.267 times 960
	=	256 CCS
Intercom CCS From Node 1 to Node 3	=	<i>N3 Ratio times Outgoing CCS N1</i>
	=	0.400 times 960
	=	384 CCS
Intercom CCS From Node 1 to Node 4	=	<i>N4 Ratio times Outgoing CCS N1</i>
	=	0.333 times 960
	=	320 CCS

Table 3-8. Node 2 Outgoing Intercom Distribution

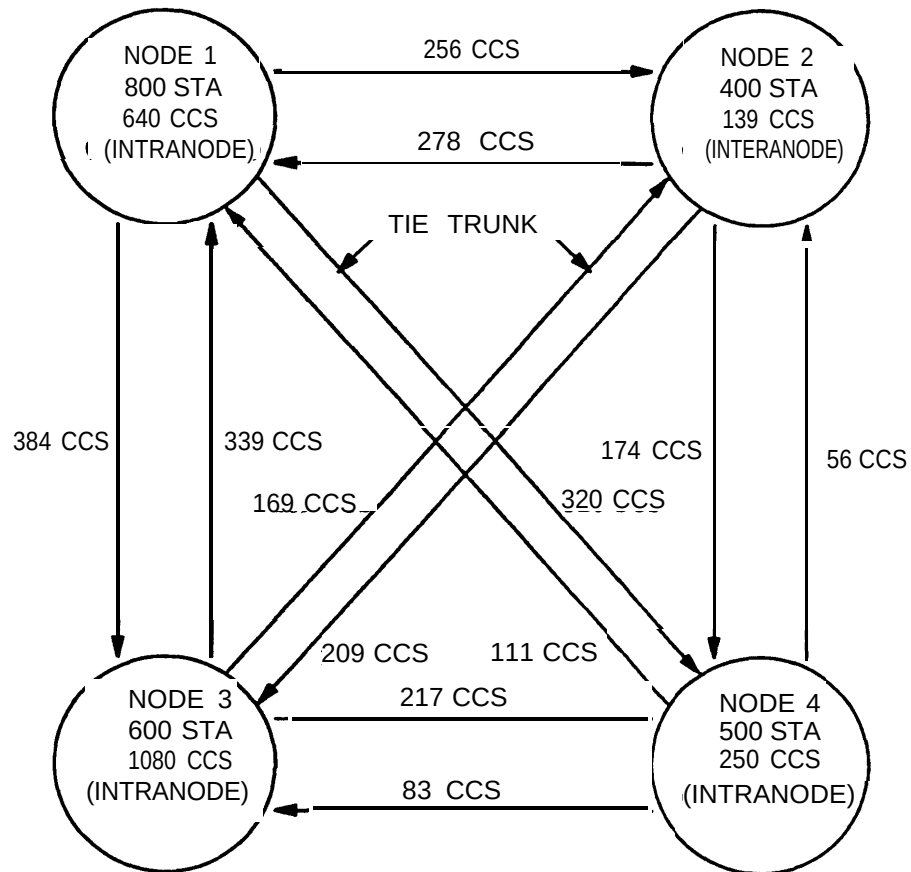
Node 1 Ratio	=	<i>N1 Stations over N1+N3+N4 Stations</i>
	=	800 over 1900
	=	0.421
Node 3 Ratio	=	<i>N3 Stations over N1+N3+N4 Stations</i>
	=	600 over 1900
	=	0.316
Node 4 Ratio	=	<i>N4 Stations over N1+N3+N4 Stations</i>
	=	500 over 1900
	=	0.263
Intercom CCS From Node 2 to Node 1	=	<i>N1 Ratio times Outgoing CCS N2</i>
	=	0.421 times 661
	=	278 CCS
Intercom CCS From Node 2 to Node 3	=	<i>N3 Ratio times Outgoing CCS N2</i>
	=	0.316 times 661
	=	209 CCS
Intercom CCS From Node 2 to Node 4	=	<i>N4 Ratio times Outgoing CCS N2</i>
	=	0.263 times 661
	=	174 CCS

Node 3 and Node 4 Outgoing Intercom Distribution:

Use the same method as the one used for computing Node 1 outgoing intercom distribution to compute Node 3 and Node 4 outgoing intercom distribution.

Step 5 — Summarize Data

Using results from Step 2 (intranode intercom CCS) and Step 4 (internode CCS), develop a summary table and a DCS intercom traffic distribution diagram (Figure 3-15).

**Figure 3-15. DCS Intercom Traffic Distribution****Step 6 — Check Calculations**

The total intercom CCS from Step 1 and the total intranode and internode intercom CCS values obtained from the summary table in Figure 3-16 should agree. For this example, the intranode intercom CCS is 2109 CCS, and the internode intercom CCS is 2596 CCS for a total of 4705 CCS. The total intercom CCS from Step 1 is 4700 CCS. This five CCS difference is due to rounding.

The CCS values obtained by completing Step 4 (internode intercom CCS) when combined with the incoming and outgoing loads to/from the cluster are used to configure the internode tie trunk configuration. See "Tie Trunk Requirements" elsewhere in this section for determining the tie trunk requirements for the cluster.

Internode Tie Trunk Requirements

Tie trunks must be provided between all nodes in a DCS cluster (see Figure 3-15). The object of DCS tie trunk engineering is to provide the customer with an acceptable service level with a minimal number of tie trunks.

Service levels are generally measured by the percent of demands for service that fail to receive service (expressed as percent blocking). A term synonymous with percent blocking is a mathematical expression, such as P.01 that states the probability (P) of an attempt being blocked is one percent (One percent blockage = P.01). The service level must be determined by the customer. A recommended service level for DCS tie trunks is P.02 (two percent blockage). The *Retrial Capacity Tables*, 788-100-140, can be used to determine the number of trunks required between each node in a DCS cluster.

Example

With the required offered load given, the number of two-way tie trunks required between nodes for two percent blockage can be determined using the following steps:

1. Determine the required offered traffic load between the two nodes. For example in Figure 3-15, the total estimated traffic between Node 1 and Node 2 is 534 CCS (256 CCS + 278 CCS).
2. Since the desired blocking objective is two percent, go to Figure 3-16 (Table 2) and read down the offered load column (OFFD CCS) to 534 CCS, or in this case, 546 CCS — the next offered load above 534 CCS.
3. Read horizontally across the table to find the number of servers (trunks) listed for 546 CCS, in this case 23.

RETRIAL CAPACITY TABLES WITH NO DAY-TO-DAY VARIATION ADJUSTMENTS

	TABLE .01		TABLE .02		TABLE .03		TABLE .04	
GROUP SIZE	OFFD CCS	CRRD CCS	OFFD CCS	CRRD CCS	OFFD CCS	CRRD CCS	OFFD CCS	CRRD CCS
1	0.2	0.2	0.5	.05	0.7	0.7	1.0	1.0
2	4.7	4.7	6.8	6.7	8.4	8.4	9.9	9.8
3	14.8	14.8	19.3	19.2	22.7	22.5	25.5	25.2
4	29	29	36	36	41	40	45	44
5	46	46	55	55	62	61	67	66
6	65	65	77	76	85	84	91	90
7	86	85	99	99	109	108	116	115
8	108	107	123	122	134	133	143	141
9	131	130	148	147	160	159	170	168
10	154	154	174	173	187	185	198	195
11	179	178	200	199	215	212	226	223
12	203	203	227	225	243	240	255	252
13	230	229	254	253	271	269	285	281
14	256	255	282	280	300	297	314	310
15	283	282	310	308	330	326	344	340
16	309	308	339	337	359	356	375	370
17	336	335	368	365	389	385	406	400
18	364	362	397	394	419	415	437	431
19	392	391	426	424	450	445	468	462
20	420	418	456	453	480	476	499	493
21	448	447	486	483	511	506	531	524
22	477	475	516	513	542	537	562	555
23	506	504	546	543	573	568	594	587
24	535	533	577	573	604	599	626	618
25	564	562	607	603	636	630	658	650

Trunks Required Offered Load = 546 CCS (next offered load above 534 CCS)

USAGE NOTES:

- 1) "TABLE NUMBER" is the ratio of overflowed peg count to total peg count. The TABLE NUMBER multiplied by 100 gives the percent blocking
- 2) True offered load (OFFD CCS) is the amount of traffic that would be served if all requests for service were immediately accommodated.
- 3) Carried load (CRRD CCS) is a measure of server occupancy, expressed in CCS.
- 4) "GROUP SIZE" is the number of working servers (trunks) in the group.

Figure 3-16. Retrial Capacity Table With No Day-to-Day Variation Adjustments

If a PI link is provided between the two nodes, an additional data link must also be provided. See "PI Link Connectivity" for PI link requirements elsewhere in this section.

Table 3-9. Intercom Traffic Summary

From Node	To Node	Intranode Intercom CCS	Internode Intercom CCS
1	1	640	
1	2		256
1	3		384
1	4		320
2	1	139	278
2	2		
2	3		209
2	4		174
3	1	1080	339
3	2		169
3	3		
3	4		217
4	1	250	111
4	2		56
4	3		83
4	4		
TOTAL			2109

Recommended Design of UDP

All nodes within the DCS network must be assigned compatible and unique dial plans. It is recommended that:

- All feature access codes be identical
- Routing patterns are designed consistently at each node to make outward dialing transparent

However, the Uniform Dial Plan (UDP) must be used for extension assignment. The UDP design has to be coordinated among the switches in the DCS network to obtain a common 4-or 5-digit dial plan.

Generic 3 V2 offers full extension number portability and different forms of routing.

Generic 3 V2 UDP

The number of patterns that may match all the digits of a dialed extension varies depending on the configuration of the Generic 3 V2 switch. Refer to the Capacity Table in Appendix C for the maximum values for each configuration. These patterns consist of digits and a trailing wildcard "x" pattern, thus entries can be conserved by using wildcards. For example "20xxx" would match and route all entries beginning with "20." More exact matches take precedence over less, so the extension 20100 would match the entry "201xx" before it matched "20xxx".

Once a pattern is matched, one of five different routing treatments is applied. UDPCode and NodeNum below would be the most likely routing treatments used in a DCS network.

- **Intercept (or blank)** — intercept treatment is given to the caller. The call is not routed anywhere.
- **TempOOS** — reorder treatment. This is used on the old home of a station while it is being moved.
- **AARCode** — an AAR location code is specified with this type. This code is prefixed to the last 4 digits of the extension and the resulting digit string is given to AAR. AAR then performs digit conversion and/or analysis. There are two tables, the AAR Digit Conversion and AAR Digit Analysis tables. The best match may be in either one. Conversion matches take precedence over analysis matches only to break a tie (identical matching digits). Conversion matches can form a new number and send the digit string to ARS, through AAR again, or back to UDP. Eventually, analysis is used to route the call.
- **UDPCode** — a UDP code is also specified with this type. This is identical to AARCode, except that no digit conversion is ever performed (the call must route via AAR).
- **NodeNum** — a node number is also specified. This number can range from 1 to 999, but for use in a DCS network it must be limited to the range from 1 to 63. This node number is the PBX-ID for DCS. In another table, the node-number-routing form will map this node number into a routing pattern for routing the call. A third table, the enp-number-plan form, provides the information to convert the extension into a 7-digit number, in a manner similar to the UDPCode. The difference here is that the AAR analysis table is never used in this form of routing.

Using this example, the following shows the information required for the various forms on node 1 of the DCS network. Node 2 will use UDPCode routing, while NodeNum routing will be used for nodes 3 and 4.

Uniform Dialing Plan			
Extension Codes	Type	Node Number/Location Code	
20xxx	TempOOS		
21xxx	TempOOS		
22xxx	TempOOS		
30xxx	UDPCode		630
31xxx	UDPCode		631
32xxx	UDPCode		632
40xxx	NodeNum	003	
41xxx	NodeNum	003	
42xxx	NodeNum	003	
50xxx	NodeNum	004	
51xxx	NodeNum	004	
52xxx	NodeNum	004	

Once the UDPCode is determined from the UDP table, the AAR digit analysis table (one per PGN) is used to route the call and/or identify the node number. In this example, routing pattern number 100 is used to identify the trunk group over which the call should be routed.

AAR Digit Analysis					
Dialed String	Total		Rte Pat	Call Type	Node Num
	Min	Max			
630	7	7	100	aar	2
631	7	7	100	aar	2
632	7	7	100	aar	2

For NodeNum routing, the routing pattern used to route the call is identified by the following table (one per PGN).

Node Number Routing	
Node Number	Route Pattern
3	101
4	102

For NodeNum routing, the 7-digit number is formed with information from the following table.

Extension Number Portability Numbering Plan	
Pattern	ENP Code
40	640
41	641
42	642
50	650
51	651
52	652

Because 7-digit numbers are used throughout this network, when they arrive at a node, they must be converted back into an extension to identify a station or route further. These 7-digit numbers can arrive from neighbor nodes with the AAR access code prepended (performed in routing pattern of neighbor node) or the AAR access code can be prepended by the local node (performed by digit insertion by the trunk group). The following table is then used to convert the 7-digit numbers.

AAR Digit Conversion						
Matching Pattern	Min	Max	Del	Replacement String	Net	Conv
620	7	7	3	2	ext	n
621	7	7	3	2	ext	n
622	7	7	3	2	ext	n

If the neighbor nodes are only sending 5-digit extensions, with no AAR access code prepending, then the previous table need not be used. The 5-digit extensions will be interpreted directly as if they were dialed on the local node. Sending the 5-digit extensions requires the neighbor nodes to use the routing pattern to replace the UDP (or ENP) codes with the appropriate digit (for example, 621 with 2 for node 1).

Generic 3 V2 Number Portability

Since Generic 3 V2 allows the specification of the routing of individual 5-digit extensions,⁶ full number portability is realized. The only restriction is the number of patterns that can exist in the UDP table (dependent upon system configuration).

6. Four-digit UDPS are also possible even though no example was shown.

Recommended Design of TSC

The following basic steps are required for implementing the D-channel signaling feature using SDN:

1. Determine the number of TSCs required at each location.
2. Determine the number of TSC message transfers expected.
3. Verify that the overall TSC requirement for each node per D-channel does not exceed the system capacity.

To determine the number of TSCs required, one has to know the DCS network configuration. However, the maximum number of CA-TSCs required at each SDN location is equal to the number of trunks accessing the SDN. This method can be used to estimate CA-TSCs required at any given location when cost is not a factor (for example, private network).

Number of CA-TSCs required = Number of Trunk group members accessing SDN

In addition to CA-TSCs, NCA-TSCs are also required between each pair of switches.

Number of NCA-TSCs required = Number of connections between each switch and every other switch

Total Number of TSCs = CA-TSCs + NCA-TSCs

For an example, if a location has one PRI access to SDN, the maximum number of CA-TSCs required at that location is 23. However, the actual number of TSCs (CA-TSCs and NCA-TSCs) required may be somewhat less (see the following example), since some incoming and outgoing calls might not be DCS calls (for example if some callers are not provided with DCS features through COR).



CAUTION:

*A node needs to be provided with enough TSCs to accommodate those initiated by itself as well as initiated by the other end **and any tandemed TSCs.***

For an example, consider the case of adding a remote node to a DCS network using SDN. In this case, it is possible to calculate the number of TSCs required with the following assumptions.

1. Average line size of the system is 400.
2. Average call rate generated or received by a station is 3 CCS (medium traffic).
3. 15 percent of the traffic load is internode outgoing DCS calls.

With the above assumptions, the total internode outgoing DCS traffic load is 180 CCS ($400 \times 3 \times 0.15$). TSCs must be established between all nodes to provide the DCS features over SDN. The objective of determining the number of TSCs required at each SDN location is to provide the customer an acceptable service level with a minimal cost. Service levels are generally measured by the percent of demands for service (in this case D-channel signaling feature) that fail to receive service (expressed as percent blocking). The service level for D-channel signaling feature has to be determined by the customer. Assuming two percent blocking, Retrial Capacity Tables can be used to determine the number of TSCs required at each SDN location. For the above example, 11 TSCs are required at the remote DCS node to implement the D-channel signaling feature using SDN. Since the customer can only subscribe in steps of 16 TSCs, in this case, 16 TSCs (or 1 unit of 16 TSCs) are needed to meet the service level. In this case, 5 remaining TSCs ($16 - 11$) can be used as NCA-TSCs to other SDN locations.

TSC Messages Usage

The first step in analyzing the TSC messages usage is to evaluate the number of TSC messages involved in each successful DCS feature activation. The following tables summarize the TSC messages required for each feature operation.

D-channel signaling		
	Feature	No. of TSC messages
1	Alphanumeric Display of Terminals	MA-UUI
2	Attendant Call Waiting	1
3	Attendant Control of Trunk Group Access	N/A*
4	Attendant Direct Trunk Group Selection	N/A*
5	Attendant Display	2
6	Automatic Callback	2
7	Automatic Circuit Assurance	2
8	Busy Warning Indication	no. of nodes
9	Busy Verification of Terminals and Trunks	N/A*
10	Call Forwarding	2 (activ.) 1 (use)
11	Call Waiting-Termination	1
12	Conference/Transfer	6 (Max.)
13	Distinctive ringing	MA-UUI
14	Leave Word Calling	3 (pre) 2 (post)
15	Priority Calling	MA-UUI

* These features are not supported over SDN.

ISDN-PRI D-channel DCS AUDIX		
	Feature	No. of TSC messages
1	Direct Access to AUDIX	1 (retrieval)
2	Redirected Calls to AUDIX	1
3	LWC store to AUDIX	2
4	Call Transfer into AUDIX	1
5	Call Conference into AUDIX	1
6	Call Transfer Out Of AUDIX	1

Table 3-10. TSC Messages For Successful Feature Activation

Other Maintenance Messages		
	Function	No. of TSC messages
1	TSC Heart Beat Test	2/hour
2	Audit From AUDIX	2 (as requested)
3	MW Status Request	1/station

The above tables show that, on average, most DCS features use only one TSC message. However, most DCS calls do not require a transfer of TSC messages. For example, when a DCS call is initiated over SDN, display information and distinctive ringing feature information are carried over as MA-UUI messages that are already included in the call setup charges. However, if the user activate another DCS feature after initiating this call, then an appropriate TSC message is transferred over the SDN.

Assuming an average of one TSC message transfer per DCS call, it is possible to estimate the number of TSC messages transfers per month. For the example mentioned in TSC design section, the first step is to estimate the number of outgoing DCS calls generated per hour. Assuming an average call duration of 180 seconds, this can be calculated as $180 \times 100/180 = 100$ BH calls/hr. Assuming 20 working days each handling 5 busy hour (5 hr is used instead of 8 to average out the busy hour traffic) traffic load per month, the messages transfers per month can be estimated as $100 \times 1 \times 5 \times 20 = 10,000$. This can be used in "TSC Tariff" elsewhere in this section to estimate the expected service charge for subscribing to AT&T SDN services.

The following table summarizes an estimated "billable" TSC messages usage for a given location.

Table 3-11. TSC Message Usage

“Billable” TSC Messages Usage	
Location Size (lines)	Number of TSC messages (per month)
100	2,500
500	12,500
1,000	25,000
8,000	200,000

DCS/AUDIX Gateway

A Generic 3 V2 switch can serve as an interface between PBXs that support the D-channel signaling feature and those that do not support this feature. The switch providing this interface is known as the ISDN-DCS Gateway node and provides backward compatibility to existing traditional DCS networks. It does so by maintaining a mapping between processor channels and Administered NCA-TSCs. When a DCS D-channel message arrives on an Administered NCA-TSC that is acting as a gateway, it is converted to a traditional DCS message and sent out through the processor channel that has been administered to map to this Administered NCA-TSC. This administration is done on the ISDN Gateway Channel form described in “Overview of Administration for ISDN-DCS/ISDN-DCS AUDIX Network” elsewhere in this section. Likewise, when a traditional DCS message arrives at the gateway node on a processor channel that is acting as a gateway, it is converted to a DCS D-channel message and sent out through the Administered NCA-TSC that has been associated with this processor channel on the ISDN Gateway Channel form.

The switch can also serve as an ISDN AUDIX Gateway by acting as a conduit for AUDIX messaging between the AUDIX and remote switches in the D-channel DCS network. The AUDIX Gateway node is directly connected to the AUDIX via a BX.25 link and to the remote switch(es) via Administered NCA-TSCs. AUDIX messages destined for remote switches arrive at the gateway node on processor channels administered as gateways, are repackaged in Q.931 format, and are sent out via the appropriate Administered NCA-TSC also administered as a gateway. In the reverse direction, Q.931 AUDIX messages from remote switches arrive at the gateway node on Administered NCA-TSCs, are repackaged in the traditional (BX.25) fashion, and are sent out to the AUDIX through the appropriate processor channel. If one of the remote switches does not support D-channel DCS then not only must the host switch act as an ISDN AUDIX Gateway, but the switch connected to the non D-channel DCS switch must also act as an ISDN-DCS Gateway.

In summary, a gateway is required whenever a transition is being made from BX.25 signaling to D-channel signaling. When this transition takes place at a switch acting as an AUDIX host, that switch is an ISDN AUDIX Gateway. When the transition takes place at a switch that sits between that part of the network

that supports D-channel DCS and that part that does not, that switch is an ISDN-DCS Gateway. A DCS/AUDIX network consisting entirely of switches that support D-channel DCS will never require an ISDN-DCS Gateway because none of the switches require “translation” to/from BX.25. However, such a network will still require an ISDN AUDIX Gateway because AUDIX still “speaks” BX.25 and in this sense is like a switch that does not support D-channel DCS.

The number of processor channels at a node is limited (refer to the Capacity Table in Appendix C for maximum values for each configuration), and a switch acting as a gateway may have to allocate a large number of processor channels to this activity. Figure 3-17 shows how processor channels can be quickly consumed at a gateway node.

For the ISDN-DCS subnetwork (which uses administered temporary signaling connections to transport DCS information) to communicate with the BX.25 subnetwork (which uses special BX.25 links to transport DCS information), the gateway node must map administered TSCs to processor channels administered as X.25 links. One processor channel is consumed for each such mapping. The formula for the number of processor channels consumed by gateway functionality at a gateway node is simply $m \text{ times } n$, where m is the number of nodes in the ISDN-DCS subnetwork and n is the number of nodes in the BX.25 subnetwork.

If processor channel capacity is exhausted, the simple solution is to split the gateway functionality between two gateway nodes. Since retranslating an entire network to use a second gateway node can require an extensive amount of translation changes, this formula should be taken into consideration when first engineering the network.

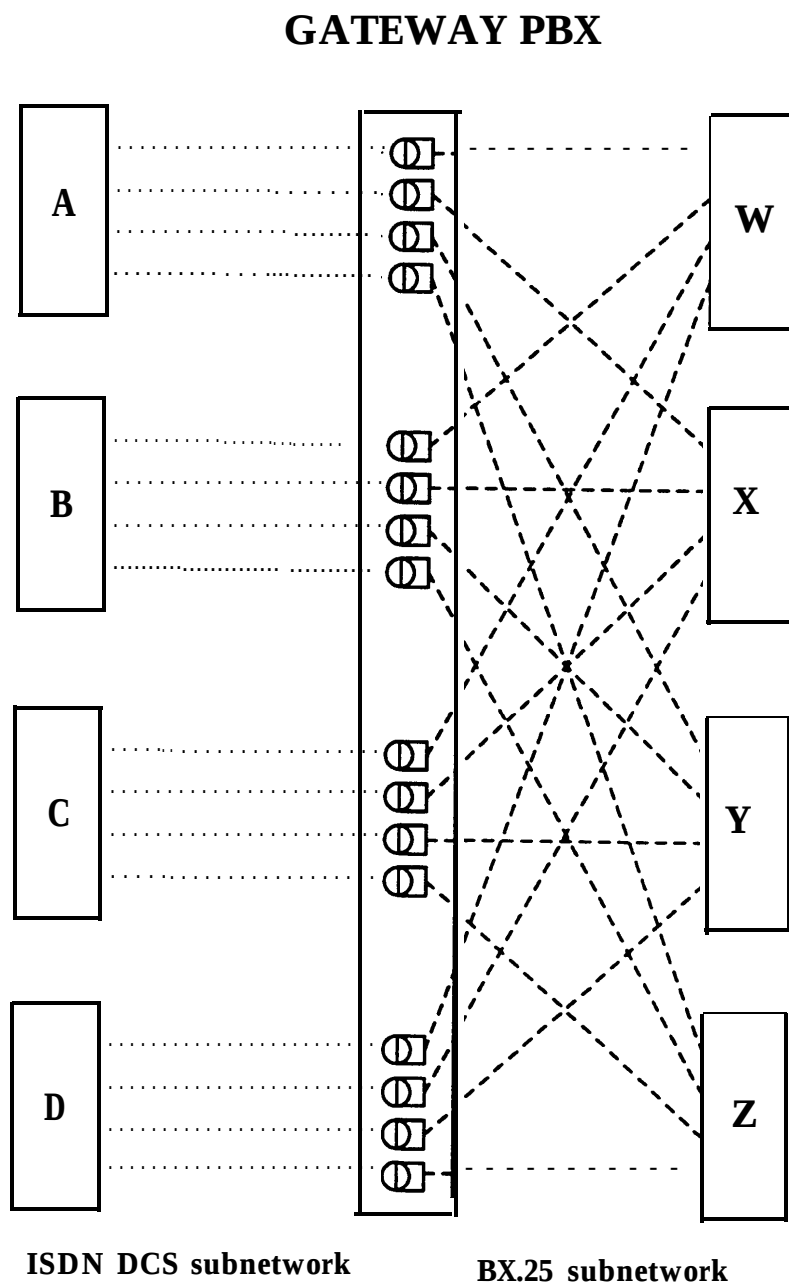


Figure 3-17. Use of Processor Channels for Gateway Functionality

Further examples of DCS/AUDIX gateways as well as sample administration can be found in subsequent sections.

Recommended Desire of Synchronization

Synchronization design considerations are the same as when installing ISDN-PRI links.⁷ Since each switch can transmit at a rate determined by its internal clock, information will be lost if the digital network is not synchronized to a single clock. Furthermore, one switch should be selected as the master and all others should obtain slave-timing from it. Since synchronization issues affect all network nodes, a network synchronization plan must be developed, deployed, and verified to be installed correctly.

The primary objective of synchronization design is to minimize the slip rate. The impact of slips on a customer varies with the service used. For an example, voice services are insensitive to slips. However, data services are much more sensitive to slips since each bit of data is a discrete piece of information. For data applications, a slip requires retransmission of data, thus adversely degrading the performance of data transmission facilities. However, it is important to note that even if all network nodes are synchronized, slips can still occur due to transmission impairments.

The AT&T network synchronization plan⁸ specifies a hierarchy of synchronization nodes of stratum 1 to 4, where stratum 1 is the most accurate clock. Figure 3-18 shows the synchronization hierarchy and the node's internal clock stratum level.

7. See *DS1/DM1/ISDN-PRI Reference* (555-025-101).

8. AT&T PUB 60110, "Digital Network Synchronization Plan," December 1983.

Synchronization Hierarchy

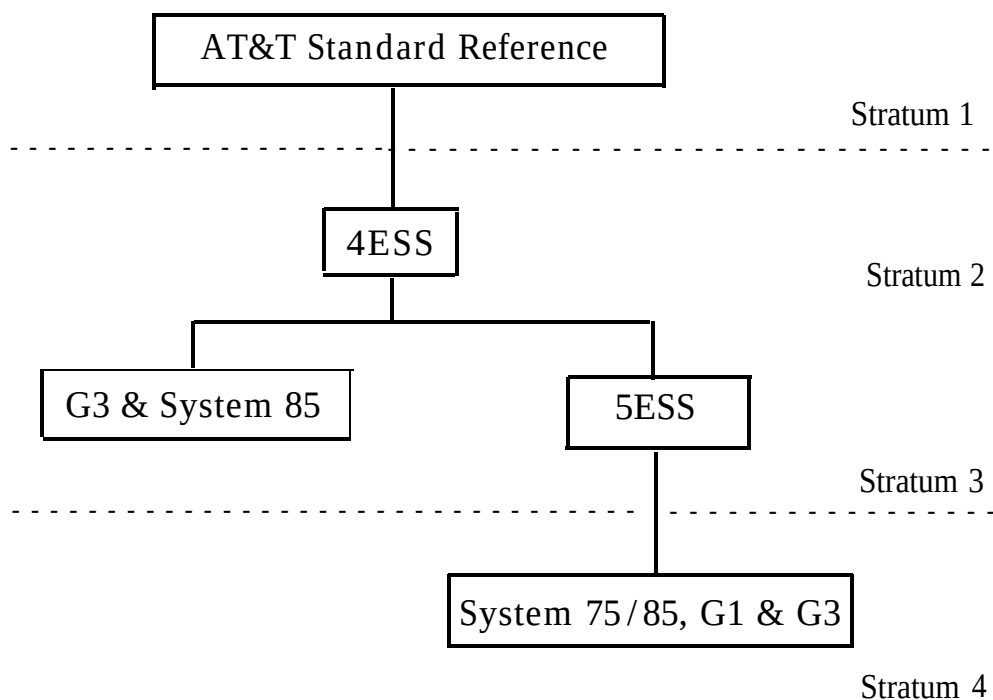


Figure 3-18. Synchronization Hierarchy

Each node is compelled to take its timing from the following:

1. A higher stratum level
2. A node equal to its own stratum level
3. A free-running timing clock (generated internally) that meets or exceeds the requirements for its level

Large private networks require⁹ stratum 4 type I synchronization. PBXs may someday be required by EIA and ANSI to support stratum 3 operation as well.

9. AT&T PUB 62411, "ACCUNET T1.5 Service Description and Interface Specification," August 1988.

Interactions with CBC Trunk Groups

Recall that a Call-by-Call trunk group is one that can carry calls to many network services or facilities, such as SDN, MEGACOM, MEGACOM 800, and so on. The only network service that currently supports Temporary Signaling Connections is SDN. As such, if a CBC trunk group is being used to carry ISDN-DCS information over the public switched network, then the service being requested (on the routing pattern form) must be SDN, otherwise a partial or complete loss of feature transparency may occur.

Also, for those signaling groups being used to establish NCA-TSCs over the public network, the service/feature field on the second page of the signaling group form should be filled in with the appropriate network service/feature (currently only SDN).

Processor Performance Considerations

Processor occupancy is the percent of time, averaged over the busy hour, that the call processor performs call processing and scanning. Since some processing time must be reserved for maintenance and other tasks, maximum occupancy is always less than 100%.

The maximum percentage allowed depends on the call mix and the number of nodes in the DCS cluster. Some calls, especially those involving the attendant or those across nodes, require a large amount of processor time for processing complicated instructions during part of the call.

For a DCS network, processor occupancy is increased to process DCS messages between nodes. For ISDN-DCS, the increase is slightly smaller than that for a traditional DCS network, but for all practical purpose, the increase in the two cases can be regarded as the same.

Maximum processor occupancy depends on calling patterns, the number of stations and nodes in the network. For private network ISDN DCS, reduce the BHCC for a private network without ISDN-DCS by one-third to account for DCS and ISDN additional load on the processor.

Examples of ISDN-DCS and ISDN-DCS AUDIX Networks

Recommended general design steps:

1. Draw a network configuration diagram using the graphical notations described earlier in this section. Label PBX IDs, TSCs and BX.25 links to the nodes.
2. Design a network with required number of trunks among the nodes, using information from the "DSC Networks Design" earlier in this section.
3. Administer the required Dial Plan, Communication Links, DS1 circuit packs, and synchronization. This is required before ISDN-DCS can be superimposed.
4. Administer the Signaling Group, Trunk Group, Routing Pattern, Gateway Channel, and Processor Channel forms using the proper dial plan numbers for the TSCs. Administer Page 2 of Feature-Related System Parameters for the desired CDR format.
5. Check for consistency.
6. If facilities are available, load the translations on an actual network and perform basic functionality checks as outlined in "Maintenance and Troubleshooting" elsewhere in this section to verify the proper working of the feature.

2-Node Private Network with AUDIX

Figure 3-19 shows a 2-node DCS/AUDIX D-channel network. In this configuration, DCS feature transparency is achieved exclusively through the exchange of user-to-user information on the D-channel using one of the three methods discussed earlier — MA-UUI, CA-TSCs or NCA-TSCs. Although NCA-TSCs are nothing more than virtual connections on the D-channel, they are shown as independent entities in the diagram for the purposes of clarity. Administered TSC 2/1 (that is, the first Administered NCA-TSC of signaling group 2) of Switch A is connected to TSC 4/1 of Switch B. This virtual connection is used in the exchange of user-to-user information for DCS features not associated with any current B-channel connection.

Notice that for AUDIX, a BX.25 data link is no longer required between the host switch and the remote switch. 10 AUDIX messages between the AUDIX and the remote switch will use the AUDIX Gateway functionality of the host switch and will be transported to the remote switch via an NCA-TSC. Specifically, AUDIX messages destined for Switch B will arrive at Switch A on Link 1, Channel 2 (processor channel 57), be converted to ISDN-PRI Q.931 format and sent out via Administered NCA-TSC 2/2.

10. A BX.25 link is still required between the AUDIX and the host switch.

This is accomplished by administering processor channel 57 as a gateway and mapping it on the gateway form to Administered NCA-TSC 2 of signaling group 2 that is also administered as a gateway.

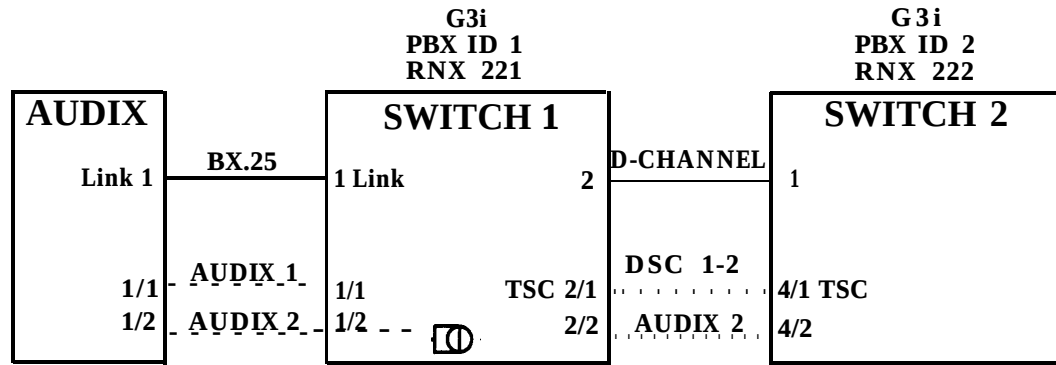


Figure 3-19. 2-Node Private Network

Sample Administration

■ AUDIX Administration

AUDIX Translations				
Switch Number	AUDIX Port	Switch Port*	Logical Channel	Data Link
1	1	59	1	1
2	2	57	2	1

* Switch Port refers to the processor channel that is used for AUDIX in the PBX.

Administration for Switch 1

■ Dial Plan Administration

Dial Plan Form		
Start Dig.	Len	Usage
4	4	ext
5	4	ext

■ Uniform Dial Plan Administration

Uniform Dial Plan Form		
Ext Code	Type	Location Code
5xxx	UDPcode	222

■ AAR Digit Conversion

AAR Digit Conversion Form						
Matching Pattern	Min	Max	Del	Replacement String	Net	Conv
221	7	7	3	—	ext	n

■ AAR Analysis Administration

AAR Analysis Table					
Dialed String	Min	Max	Rte Pat	Call Type	Node Num
222	7	7	2	aar	2

■ Signaling Group Administration

Signaling Group Form (signaling group 2)						
TSC Index	Local Ext.	Enabled	Establish	Dest. Ext.	Far-end PBX-ID	Appl.
1	4900	y	permanent	5900	2	dcs
2	4901	y	permanent	5901	—	gateway

■ Trunk Group Administration

Trunk Group Form				
Group #	Grp Type	Used for DCS?	DCS Sig. Method	PBX ID
2	isdn-pri	y	d-chan	2

■ Routing Pattern Administration

Routing Pattern Form					
Routing Pattern #	Trunk Group #	FRL	Del	TSC	CA-TSC Request
2	2	0	3	y	at-setup

■ Gateway Channel Administration

Gateway Channel Form			
Signaling Group	TSC Index	Processor Channel	Application
2	2	57	audix

■ Processor Channel Administration

Processor Channel Form					
Proc. Channel	Application	Inter. Link	Channel	Remote Proc. Channel	PBX ID
57	gateway	1	2	2	-
59	audix	1	1	1	1

Administration for Switch 2

■ Dial Plan Administration

Dial Plan Form		
Start Dig.	Len	Usage
4	4	ext
5	4	ext

■ Uniform Dial Plan Administration

Uniform Dial Plan Form		
Ext Code	Type	Location Code
4xxx	UDPcode	221

■ AAR Digit Conversion

AAR Digit Conversion Form						
Matching Pattern	Min	Max	Del	Replacement String	Net	Conv
222	7	7	3		ext	n

■ AAR Analysis Administration

AAR Analysis Table					
Dialed String	Min	Max	Rte Pat	Call Type	Node Num
221	7	7	1	aar	1

■ Signaling Group Administration

Signaling Group Form (signaling group 4)						
TSC Index	Local Ext.	Enabled	Establish	Dest. Ext.	Far-end PBX-ID	Appl.
1	5900	y	permanent	4900	1	dcx
2	5901	y	permanent	4901	-	audix

■ Trunk Group Administration

Trunk Group Form				
Group #	Grp Type	Used for DCS?	DCS Sig. Method	PBX ID
1	isdn-pri	y	d-chan	1

■ Routing Pattern Administration

Routing Pattern Form					
Routing Pattern #	Trunk Group #	FRL	Del	TSC	CA-TSC Request
1	1	0	3	y	at-setup

3-Node Public/Private Network with AUDIX

The D-channel signaling feature expands the domain of DCS networks by supporting configurations that include public network ISDN facilities utilizing network services including Software Defined Network (SDN). By eliminating the need for dedicated private line facilities, this feature allows geographically dispersed DCS networks to be cost effective. Figure 3-20 shows a 3-node network.

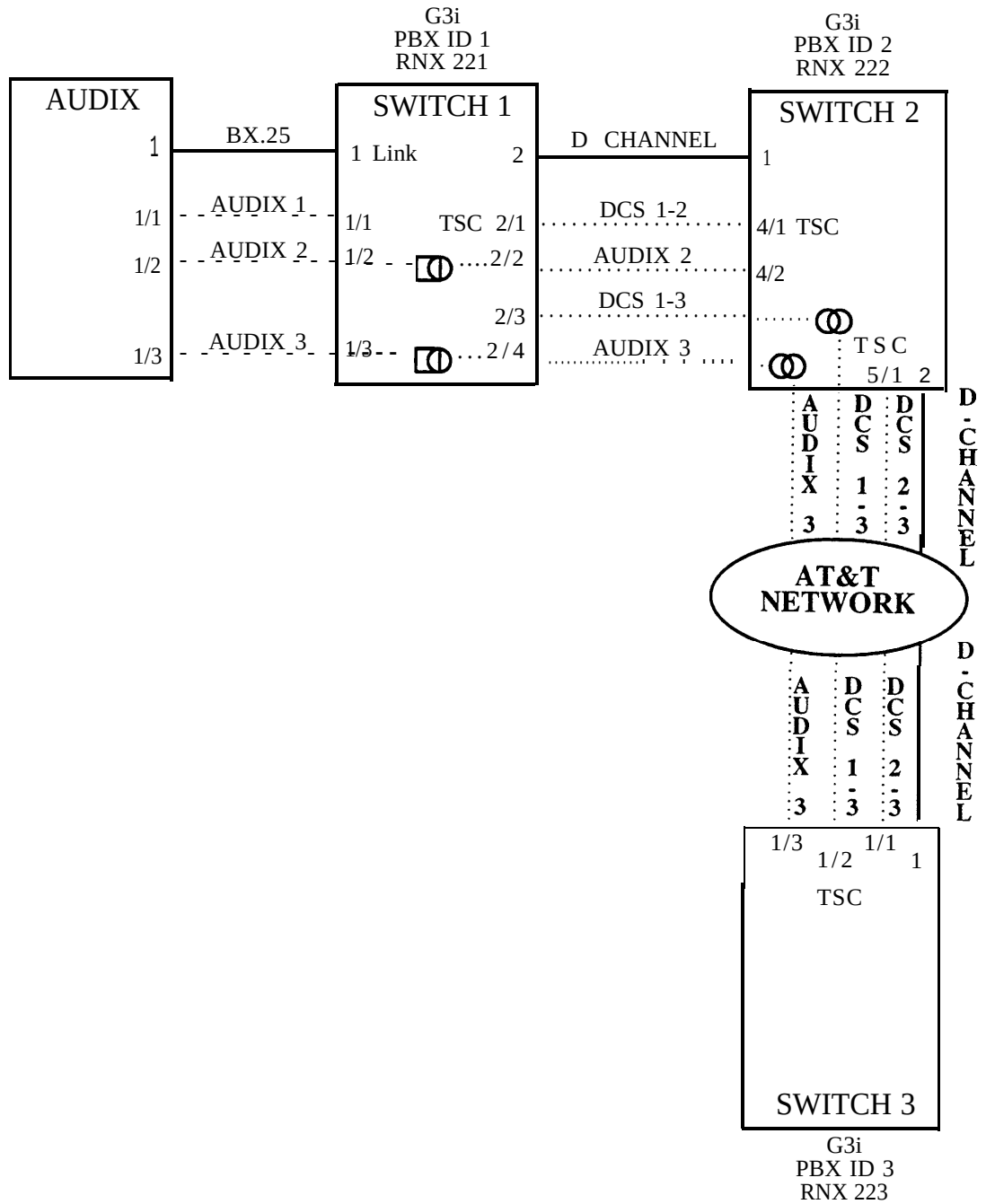


Figure 3-20. 3-Node Public/Private Network

Sample Administration

■ AUDIX Administration

AUDIX Translations				
Switch Number	AUDIX Port	Switch Port*	Logical Channel	Data Link
1	1	59	1	1
2	2	57	2	1
3	3	58	3	1

* Switch Port refers to the processor channel that is used for AUDIX in the PBX.

Administration for Switch 1

■ Dial Plan Administration

Dial Plan Form		
Start Dig.	Len	Usage
4	4	ext
5	4	ext
6	4	ext

■ Uniform Dial Plan Administration

Uniform Plan Form		
Ext Code	Type	Location Code
5xxx	UDPcode	222
6xxx	UDPcode	223

■ AAR Digit Conversion

AAR Digit Conversion Form						
Matching Pattern	Min	Max	Del	Replacement String	Net	Conv
221	7	7	3	-	ext	n

■ AAR Analysis Administration

AAR Analysis Table					
Dialed String	Min	Max	Rte Pat	Call Type	Node Num
222	7	7	2	aar	2
223	7	7	3	aar	3

- Signaling Group Administration

Signaling Group Form (signaling group 2)						
TSC Index	Local Ext.	Enabled	Establish	Dest. Ext.	Far-end PBX-ID	Appl.
1	4900	y	permanent	5900	2	dcs
2	4901	y	permanent	5901	-	gateway
3	4902	y	permanent	6902	3	dcs
4	4903	y	permanent	6903	-	gateway

- Trunk Group Administration

Trunk Group Form				
Group #	Grp Type	Used for DCS?	DCS Sig. Method	PBX ID
2	isdn-pri	y	d-chan	2
3	isdn-pri	y	d-chan	3

- Routing Pattern Administration

Routing Pattern Form					
Routing Pattern #	Trunk Group #	FRL	Del	TSC	CA-TSC Request
2	2	0	3	y	at-setup
3	3	0	3	y	at-setup

- Gateway Channel Administration

Gateway Channel Form			
Signaling Group	TSC Index	Processor Channel	Application
2	2	60	audix
2	4	61	audix

- Processor Channel Administration

Processor Channel Form					
Proc. Channel	Application	Inter. Link	Channel	Remote Proc. Channel	PBX ID
59	audix	1	1	1	1
57	gateway	1	2	2	-
58	gateway	1	3	3	-

Administration for Switch 2

■ Dial Plan Administration

Dial Plan Form		
Start Dig.	Len	Usage
4	4	ext
5	4	ext
6	4	ext

■ Uniform Dial Plan Administration

Uniform Dial Plan Form		
Ext Code	Type	Location Code
4xxx	UDPcode	221
6xxx	UDPcode	223

■ AAR Digit Conversion

AAR Digit Conversion Form						
Matching Pattern	Min	Max	Del	Replacement String	Net	Conv
222	7	7	3		ext	n

■ AAR Analysis Administration

AAR Analysis Table					
Dialed String	Min	Max	Rte Pat	Call Type	Node Num
221	7	7	1	aar	1
223	7	7	3	aar	3

■ Signaling Group Administration

Signaling Group Form (signaling group 4)						
TSC Index	Local Ext.	Enabled	Establish	Dest. Ext.	Far-end PBX-ID	Appl.
1	5900	y	permanent	4900	1	dcs
2	5901	y	permanent	4901	-	audix

Signaling Group Form (signaling group 5)						
TSC Index	Local Ext.	Enabled	Establish	Dest. Ext.	Far-end PBX-ID	Appl.
1	5905	y	permanent	6905	3	dcs

■ Trunk Group Administration

Trunk Group Form					
Group #	Grp Type	Used for DCS?	DCS Sig. Method	PBX ID	NCA-TSC Sig. Group*
1	isdn-pri	y	d-chan	1	-
3	isdn-pri	y	d-chan		5

* This field is only used for tandeming.

■ Routing Pattern Administration

Routing Pattern Form						
Routing Pattern #	Trunk Group #	FRL	Del	TSC	CA-TSC Request	
1	1	0	3	y	at-set up	
3	3	0	3	y	at-setup	

Administration for Switch 3

■ Dial Plan Administration

Dial Plan Form		
Start Dig.	Len	Usage
4	4	ext
5	4	ext
6	4	ext

■ Uniform Dial Plan Administration

Uniform Dial Plan Form		
Ext Code	Type	Location Code
4xxx	UDPcode	221
5xxx	UDPcode	222

■ AAR Digit Conversion

AAR Digit Conversion Form						
Matching Pattern	Min	Max	Del	Replacement String	Net	Conv
223	7	7	3		ext	n

■ AAR Analysis Administration

AAR Analysis Table					
Dialed String	Min	Max	Rte Pat	Call Type	Node Num
221	7	7	1	aar	1
222	7	7	2	aar	2

■ Signaling Group Administration

Signaling Group Form (signaling group 4)						
TSC Index	Local Ext.	Enabled	Establish	Dest. Ext.	Far-end PBX-ID	Appl.
1	6905	y	permanent	5905	2	dcx
2	6902	y	permanent	4902	1	dcx
3	6903	y	permanent	4903	-	audix

■ Trunk Group Administration

Trunk Group Form				
Group #	Grp Type	Used for DCS?	DCS Sig. Method	PBX ID
1	isdn-pri	y	d-chan	

■ Routing Pattern Administration

Routing Pattern Form					
Routing Pattern #	Trunk Group #	FRL	Del	TSC	CA-TSC Request
1	1	0	3*	y	at-setup

Note *: Should be blank if SDN network routing requires 7 digits.

Special Administration at the Tandem Node

To illustrate administration of a tandem node, it is useful to examine the administration at Switch 2 of Figure 3-20. In this network configuration, Switch 2 acts as a tandem for TSC establishment between switches 1 and 3. (For this example, ignore that the public network is between switches 2 and 3.) NCA-TSC 3 of signaling group 2 on PBX 1 has as its destination digits 6902, an extension local to PBX 3. When these digits arrive at PBX 2, the *Trunk Group for NCA-TSC* field (from the Signaling Group form) is checked to determine whether to manipulate the incoming digits to produce a new destination address. When no manipulation is necessary, the destination address in the NCA-TSC SETUP message is used unaltered. At PBX 2, the destination address remains 6902, which is seen to be non-local, and routing is performed. The Dial Plan form steers us to AAR entry 223 which sends us to routing pattern 3. Routing pattern 3 has as its first and only preference trunk group 3. On the second page of the trunk group form, there is a field called NCA-TSC Signaling Group. This field should be filled in with the signaling group number that the NCA-TSC request should be tandemmed out over. In our example, this is signaling group 5. The NCA-TSC request with destination digits 6902 is now transmittal to Switch 3 via signaling group 5.

DCS Trunk Group Busy/Warning Indication

Provides attendants with a visual indication that the number of busy trunks in a remote group has reached an administered level. A visual indication is also provided when all trunks in a trunk group are busy. This feature requires that there be a DCS Trunk Group between the local and remote switches, and that the trunks in that trunk group are not setup to insert digits on incoming calls. If digit insertion is needed on such trunks, it should be performed on the outgoing trunk based on the dialed digits.

⇒ NOTE:

This feature is not available for trunk groups with 4-digit trunk access codes or for trunk members 100 through 999.

Administration

⇒ NOTE:

The DCS features are not supported by the G3s V2 ABP configuration.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions
Attendant Console	Direct Trunk Group Select Button Assignments (1-6) for 301A Basic or (1 -1 2) for the 302A Enhanced Attendant Console.	(Page #) 5-35
Trunk Groups (All)	Busy Threshold	4-123

- Attendant Console Form — Trunk group must be assigned to one of the first six Direct Trunk Group Button Assignments (Access Codes) fields on the console. Refer to Attendant Direct Trunk Group Selection feature for additional information.
- Trunk Group Forms — Assign Busy Threshold (Warning) field.

Hardware Requirements

⇒ NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

DCS interface hardware is required. Refer to the “Distributed Communications System (DCS)” section in this chapter for information.

Default Dialing

Enhances Data Terminal (Keyboard) Dialing by allowing a data terminal user to place a data call to a pre-administered destination by simply entering a carriage return at the "DIAL" prompt. The user can still place calls to other destinations by entering the complete address after the "DIAL" prompt (normal Data Terminal Dialing with/without alphanumeric dialing).

NOTE:

ADU-type hunt groups connecting the System to terminal servers on a host computer should have these hunt group extensions assigned as "no" keyboard dialing.

For the AT command interface supported by the 7400A/7400B Data Module, the "ATD" command may be entered instead of a carriage return to dial the default destination.

Default Dialing can be assigned to any data endpoint that has Data Terminal Dialing capability.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Abbreviated Dialing List	All	5-2
Data Module	Special Dialing Option Abbreviated Dialing List AD Dial Code	5-107

- Abbreviated Dialing List form — Enter the default destination on the appropriate Abbreviated Dialing List form for your terminal. This list can be a System, Group, Personal, or Enhanced List.
- Data Module form — Complete the following fields on appropriate Data Module forms (that is, Data Line, MPDM) as follows:
 - Special Dialing Option — Enter "default".

NOTE:

Default Dialing and the Data Hotline feature cannot both be assigned on the Data Module form.

- Abbreviated Dialing List — Enter the abbreviated dialing list type where the default destination is stored.
- AD Dial Code — Enter the AD list number associated with the stored default destination.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Refer to the “Data Call Setup” feature coverage for associated hardware requirements.

Demand Print

Allows the voice terminal user to print their own undelivered messages without calling the Message Center.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Button/Feature Button Assignments -print-msgs Security Code	5-287
Feature Access Codes	Print Messages Access Codes	5-161

- Station Forms — Assign Demand Print (print-msgs) feature buttons to multi-appearance stations. Assign 4-digit code in the Security Code field to enable retrieving Demand Print messages.
- Feature Access Codes Form — Assign Print Messages Access Codes.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A Messaging Server Adjunct (MSA) such as a 3B2 equipped with appropriate Messaging Server software and associated printers is required. Refer to the "Messaging Server" implementation instructions for additional information.

Dial Plan

The Dial Plan is the system's guide to digit translation. When a digit is dialed, the system must know what to expect based on that digit. For example, if a voice terminal user dials a 4, the system must know how many more digits to expect before the call will be processed.

A feature access code cannot be assigned to a feature if it is not already defined and consistent with the Dial Plan.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Dial Plan	All	5-150
Second Digit Table	All	5-150
Uniform Dialing Plan	Plan Number	4-396
	Extension Codes	
Extension Number Portability	All	4-73
Extended Trunk Access	Call Screening Entry	5-159
Route Pattern	All	4-19
Trunk Group	Digit Treatment	4-123
	Digits	
Feature Access Code	As required	5-161
Attendant Console	As required	5-35

- **Dial Plan Form** — Enter the HNPA (Area Code) and complete the ARS Prefix 1 Required field. This is required only in North America.

Enter the ETA Node Number and/or the ETA Routing Pattern. These values determine which trunk (or pattern) to use when routing the call to the remote PBX. (Node Numbers are used when no Routing Patterns are assigned or for DCS.)

- **Second Digit Table Form** — Assign routing of the second digit (the corresponding first digit must be assigned as a "miscellaneous" type in the first digit table). This table determines which extensions are UDP extensions.

- Uniform Dialing Plan Form — If the Uniform Dialing Plan (UDP) option is used, enter the number of digits in the plan (4 or 5), and the Extension Codes for non-home extensions in the ENP subnetwork are node number routed.

⇒ NOTE:

The Uniform Dialing Plan feature is not supported by the G3s V2 ABP configuration.

- Extension Number Portability Form — If the Uniform Dialing Plan (UDP) option is used, associate the leading one or two digits of extensions in the ENP subnetwork with a 3-digit ENP code, used to construct a 7-digit AAR-like ENP number.

⇒ NOTE:

The Extension Number Portability feature is not supported by the G3s V2 ABP configuration.

- Extended Trunk Access Form — If the ETA Node Number field in the Dial Plan form is assigned an Node Number for a remote PBX from which calls can be attempted, enter those call strings that should be blocked in the Call Screening Entry fields.
- Route Pattern Form — If the ETA Node Number field in the Dial Plan form is assigned an Node Number for a remote PBX from which calls can be attempted, associate a trunk group with this Node Number along with a FRL, a NPA, a Prefix Mark, a Toll List, and either insertion of digits or deletion of digits.
- Trunk Group Form — For AAR configurations, assign “inserted” in the Digit Treatment fields and the inserted digits in the Digits field.
- Feature Access Code Form — Assign Feature Access Codes as required for those features to which you wish to restrict access.
- Attendant Console Form — Assign dial plan related buttons as required.

Hardware Requirements

None.

Dialed Number Identification Service (DNIS)

Provides a called party or answering position with a personalized identification of the service or product associated with the call. The system can be administered to detect and display the name of the product or service being called about.

For Integrated Services Digital Network (ISDN) Primary Rate Interface (PRI) calls, DNIS is the called party number in the associated call setup messages. No additional administration is required for these type calls.

NOTE:

ISDN-PRI is not supported by the G3s V2 ABP configuration.

For non-ISDN-PRI type calls, DNIS can be obtained from the network by subscribing to AT&T-COMM DNIS service. The connecting central office passes digits within the dial plan (0 to 7 digits) representing the dialed 800 number to the digital switch. The System then can connect the call to an interim Terminating Extension Group (TEG), hunt group, phantom extension (see "Administration Without Hardware" feature), Vector Directory Number (VDN) or Automatic Call Distribution (ACD) split, which immediately forwards the call to a terminating extension. The terminating extension can be either a station, hunt group, or ACD split. The interim extension is assigned the name of the product or service associated with the call. When the terminating extension answers the call, the user's display-equipped voice terminal shows the name of the product or service being called. As a result, the user can answer the call accordingly,

The recorded announcements that a caller hears for the various methods of DNIS implementation areas follows:

- When the interim extension is a TEG or phantom extension and the final destination is a non-ACD hunt group, no announcements are heard by the caller, even if an announcement was administered via the hunt group.
- When the interim extension is a TEG or phantom extension and the terminating destination is an ACD split, one of two situations will occur. If a second announcement has been administered for the split, that announcement will be played for the caller. The first announcement will not be played. If a second announcement has not been administered, no announcement will be heard by the caller.
- When the interim extension is a hunt group or an ACD split and the final destination is a non-ACD hunt group, only an announcement administered at the interim extension could be played. This announcement must be administered as a forced first announcement at the interim extension.
- When the interim extension is a hunt group or ACD split and the final destination is an ACD split, a forced first announcement will be played for the interim extension and the second announcement at the final destination will be played.

When the interim extension is an ACD split, measurement of DNIS calls can be made. The CMS, for example, pegs all calls that leave the interim extension via the coverage path as overflowed calls. Therefore, a count of how many calls reached the interim extension can be made. To obtain an accurate count of DNIS calls, it is essential that all such calls are routed to the interim extension first. If some DNIS calls are routed directly to the terminating extension, the measurements for calls reaching the split via the DNIS service will not be accurate.

The measurement facility (CMS for example) can also provide information on whether or not the covered call was connected or whether the caller abandoned the call. From this information, the number of calls terminated and abandoned can be determined.

Implementation of the switch for non-ISDN-PRI type calls can be accomplished in several ways.



NOTE:

The answering user requires a display-equipped station to identify the product or service being called.

Administration

The following does not provide administration guidelines for the answering extension. Refer to the appropriate coverage (such as 7400D series Voice Terminals, ACD, DDC/UCD) in this chapter for those guidelines.

DNIS via DID Trunk Group

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group (DID)	All	4-230
Hunt Group	All	5-189
or		
Station (phantom extension)	All	5-287
or		
Terminating Extension Group	All	5-260
Call Coverage Paths	All	5-62

- **Trunk Group (DID) Form** — A separate Direct Inward Dial (DID) trunk group must be assigned whose incoming calls will terminate at the interim extension. The extension can be a phantom extension, TEG, hunt group, or ACD split. The Group Name field on the form can be administered as “DNIS” or as appropriate to identify the trunk group usage.
- **Hunt Group Form** — This hunt group is administered as an interim extension. The purpose of the hunt group is to send the call along with the name of the product or service being called to an answering (display-equipped) station. The hunt group will not have Group Member Assignments (that is, no members). Administer the Group Extension field as the 4-digit number representing the 800 number being called. Administer the Group Name field with the name of the product or service being called. Assign a coverage path in the Coverage Path field. The Coverage Path form will be administered to forward the calls to the appropriate terminating extension. Optionally, the Hunt Group form can be administered as an ACD split (ACD field = “y”), and if appropriate, the Measured field as “internal” (Basic Call Management System), “external” (Call Management System), or “both” to obtain measurement reports of the call activity associated with the product or service.
- **Station Form** — Complete a station form to assign a phantom extension. Administer the Extension field as the number representing the 800 number being called. Administer the Name field with the name of the product or service being called. Assign a coverage path in the Coverage Path field. The Coverage Path form will be administered to forward the calls to the appropriate terminating extension. Enter “x” in the Port field. This permits the administering of a station form without having a port assigned and does not require a voice terminal.
- **Terminating Extension Group Form** — This form can be administered as the interim extension instead of the Hunt Group form. Administer the Group Extension, Group Name and Coverage Path fields as required for the Hunt Group form. Do not administer the Group Member Assignments fields. Note that when using a TEG as the interim extension, measurement reports cannot be obtained.
- **Call Coverage Paths Form** — Assign the Coverage Path Number field per the path number entered on the interim extension form (that is, Hunt Group, ACD split, phantom extension, or TEG form). Assign the Coverage Criteria All field as “y” for both inside and outside calls. Administer the Coverage Point 1 field as the terminating extension. This extension can be a station, hunt group, or ACD split.

DNIS via MEGACOM 800 Service Tie Trunk Group

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Hunt Group	All	4-349
or	All	5-189
Station (phantom extension)	All	5-287
or		
Terminating Extension Group	All	5-260
or		
Vector Directory Number	All	5-262
Call Coverage Paths	All	5-62

- **Trunk Group (Tie) Form** — A separate Tie trunk group must be assigned. Administer the Group Name field as “MEGACOM” or as required to identify the trunk group usage. Administer the Incoming Destination field as the interim extension. The extension can be a TEG, hunt group, phantom extension, or ACD split.
- **Hunt Group Form** — This hunt group is administered as an interim extension. The purpose of the hunt group is to send the call along with the name of the product or service being called to an answering (display-equipped) station. The hunt group will not have Group Member Assignments (that is, no members). Administer the Group Extension field as the 4-digit number representing the 800 number being called. Administer the Group Name field with the name of the product or service being called. Assign a coverage path in the Coverage Path field. The Coverage Path form will be administered to redirect the calls to the appropriate terminating extension based on the “busy” criteria (not “all” or “send or calls”). Optionally, the Hunt Group form can be administered as an ACD split (ACD field = “y”), and if appropriate, the Measured field as “internal” (Basic Call Management System), “external” (Call Management System), or “both” to obtain measurement reports for the number of calls directed to this DNIS number for the associated product or service.

To get measurements, calls must be redirected via the Call Forwarding feature instead of Call Coverage. Dummy splits that are redirected via Call Forwarding can also have coverage paths that will be followed if the dummy split's coverage criteria are met at the split to which the call is forwarded.

- **Station Form** — Administer the Extension field as the number representing the number being called. Administer the Name field with the name of the product or service being called. Assign a coverage path in the Coverage Path field. The Coverage Path form will be administered to redirect the calls to the appropriate terminating extension. Enter “x” in the Port field. This permits the administering of a station form without having a port assigned and does not require a voice terminal. No BCMS or CMS measurements for the number of calls directed to the DNIS number can be provided if this method is used.

- **Terminating Extension Group Form** — This form can be administered as the interim extension instead of the Hunt Group form. Administer the Group Extension, Group Name and Coverage Path fields as required for the Hunt Group form. Do not administer the Group Member Assignments fields. No BCMS or CMS measurements for the number of calls directed to the DNIS number can be provided if this method is used.



NOTE:

When using a TEG as the interim extension or Call Coverage, measurement reports cannot be obtained.

- **Call Coverage Paths Form** — Assign the Coverage Path Number field per the path number entered on the interim extension form (that is, Hunt Group, VDN, ACD split, phantom extension, or TEG form). Assign the Coverage Criteria All field as “y” for both inside and outside calls. (If using coverage for an ACD split, use Cover on Busy.) Administer the Coverage Point 1 field as the terminating extension. This extension can be a station, hunt group, or ACD split. No BCMS or CMS measurements for the number of calls directed to the DNIS number can be provided if this method is used.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

DNIS via DID

Requires a port on a TN753 DID trunk circuit pack or TN767 or TN464 DS1 Interface circuit pack for each DID trunk to be administered.

DNIS via MEGACOM 800 Service Tie Trunk Group

Requires a port on a TN760B Tie Trunk, or TN722B, TN767, or TN464 DS1 Tie Trunk circuit pack for each tie trunk to be administered.

DNIS via ISDN-PRI

Refer to the ISDN-PRI coverage elsewhere in this chapter for hardware requirements.

Digital Multiplexed Interface (DMI)

The Digital Multiplexed Interface (DMI) provides for digital trunk interfaces to the System. DMI supports high-volume (high-speed, high-capacity) data transmission via DS1 digital facilities between host computers, another PBX, or a private or public network and analog and digital data endpoints. When ISDN-PRI signaling is used, associated trunks can be connected to host computers, another PBX, or a private or public network.

Administration

**NOTE:**

ISDN-PRI is not supported by the G3s V2 ABP configuration.

Instructions for administering the DS1/DMI interface to the System are provided in the DS1/DMI Interface Manual.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
DS1 Circuit Pack	All	4-64
Trunk Group	All	
DMI-BOS		4-209
ISDN-PRI		4-275
Synchronization Plan	All	4-114

- DS1 Circuit Pack Form — Complete all fields. Assign ports for each trunk member to be assigned on the associated Trunk Group form.
- Trunk Group (DMI-BOS) Form — Complete all fields as required when using Bit-Oriented Signaling.
- Trunk Group (ISDN-PRI) Form — Complete all fields as required when using Message-Oriented signaling.
- Synchronization Plan Form — Complete all fields.

Hardware Requirements

**NOTE:**

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A TN7226, TN767, or TN464D DS1 Tie Trunk circuit pack must be provided for trunk assignments. The circuit pack must be assigned (via a DS1 Circuit Pack form) prior to administration of DMI-BOS or ISDN-PRI Trunk Groups. If ISDN-PRI signaling is used, a TN767 must be used in conjunction with a TN765 Processor Interface circuit pack.

The TN722B or TN767 provides up to 24 independent trunks. When used with common channel or ISDN-PRI signaling, 23 trunks are available for data and one trunk is used for signaling purposes. The TN464D provides up to 32 independent trunks. When used with common channel or ISDN-PRI signaling, 31 trunks are available for data and one trunk is used for signaling purposes.

A port is required on a TN754B Digital Line circuit pack if a Long Haul DCS is used with a high-speed modem, Data Service Unit, a DATA PHONE II data set, or a Local Area Data Set.

Direct Agent Announcement

The Direct Agent Announcement (DAA) feature enhances the CallVisor ASAI and Expert Agent Selection (EAS) Direct Agent Calling capabilities by playing an announcement to Direct Agent callers waiting in the queue.

Administration

Automatic Call Distribution (ACD) and Vectoring (Basic) must be enabled on the System-Parameters Customer-Options form before related fields on forms can be administered. In addition, either Expert Agent Selection (EAS) or ASAI Adjunct Routing (or both) must be enabled on the System-Parameters Customer-Options form.



NOTE:

Automatic Call Distribution is only available in the G3s V2 ABP configuration as part of the Basic Call Center option.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Direct Agent Announcement Delay	5-168
	Direct Agent Announcement Extension	
	Minimum Agent-LoginID Password Length	
Feature Access Codes	Expert Agent Selection (EAS) Enabled	5-161
Station (multi-appearance)	Automatic Call Distribution Features (All)	
	Button/Feature Button Assignments	5-287
	-manual-in	
	-auto-in	
	-aux-work	
	-after-call	
	-assist	
Attendant Console	Feature Button Assignments	5-35
	-after-call	
	-assist	
	-auto-in	
	-aux-work	
	-manual-in	
Announcement	All	5-244

- Feature-Related System Parameters Form — Complete the Direct Agent Announcement fields as required. If Expert Agent Selection is enabled, complete the Minimum Agent-LoginID Password Length and Expert Agent Selection (EAS) Enabled fields.

- Feature Access Codes Form — Assign ACD feature access codes as needed.
- Station Forms — Assign feature buttons to multi-appearance stations as needed.
- Attendant Console Form — Assign feature buttons to the Attendant Console as needed.
- Announcement Form — Complete all fields as required.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Each announcement requires announcement equipment and a port on a TN742, TN746B, or TN769 Analog Line circuit pack. If music is to be provided after the delay announcement, a music source and a port on the TN763C Auxiliary Trunk circuit pack are also required. The announcement and music equipment are not provided as part of the System equipment.

Refer to the “Recorded Announcements” and “Trunk Groups” features for additional administration and hardware requirements.

Direct Department Calling

Allows direct inward access to an answering group other than the attendant even if the system does not have the Direct Inward Dialing (DID) feature.

A Direct Department Calling (DDC) answering group can consist of voice terminals and individual attendants.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Recorded Announcements	As Required	5-244
Data Module (Recorded Announcement)	All	5-107
Call Coverage Paths	All	5-62
Hunt Groups	All	5-189
Trunk Groups (All)	Incoming Destination Night Service	4-123

- Recorded Announcements Form — Assign recorded announcement extension numbers, if used.
- Recorded Announcement Data Module Form — Complete all fields if recorded announcements are used (TN750 circuit pack).
- Call Coverage Paths Form — Verify or assign Call Coverage Path for the group, if used.
- Hunt Groups Form — Complete all fields.
- Trunk Group Forms — If this feature is to be provided via DID, the assigned hunt group extension number must be accessible via DID. Enter the extension number assigned to the hunt group in the trunk group Incoming Destination and/or Night Service fields.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

If the optional Auxiliary Queue Warning lamp is used, requires one port on a TN742, TN746B, or TN769 Analog Line circuit pack for each warning lamp. A 21C-49 indicator lamp may be used as a warning lamp. This lamp is approximately 2 inches in diameter and has a clear beehive lens. The lamp operates on ringing voltage and can be mounted in any convenient location.

Each delay announcement requires announcement equipment and a port on a TN763C Aux Trunk circuit pack, or TN742, TN746B, or TN769 Analog Line circuit pack. If music is to be provided after the delay announcement, a music source and a port on the TN763C Auxiliary Trunk circuit pack are also required. The announcement and music equipment are not provided as part of the System equipment.

Refer to the "Recorded Announcements" and "Trunk Groups" features for additional administration and hardware requirements.

Direct Inward Dialing

Connects calls from the public network directly to the dialed extension number without attendant assistance.

**NOTE:**

DID features are also supported over Main/Satellite TGU/TGE trunks.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group (DID)	All	4-230
Feature-Related	DID/Tie/ISDN Intercept Treatment	5-168
System Parameters	DID Busy Treatment	

- Trunk Group (DID) Form — Verify or complete all fields.
- Feature-Related System Parameters Form — Complete the DID/Tie/ISDN Intercept Treatment and DID Busy Treatment fields to specify how to handle DID calls that are invalid or that terminate to a busy station.

Hardware Requirements

**NOTE:**

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Each Group Member Assignment (DID trunk) in the DID Trunk Group requires a port on a TN753 DID Trunk circuit pack. A TN753 provides eight ports.

Direct Inward and Outward Dialing (DIOD)

Allows calls from a local exchange to be made to a subscriber on a PBX system, without connecting through the Attendant Console. The Japanese version of DID, however, implies a 2-way service, with both inward and outward dialing features. DIOD is a combination of the DID feature and the CO feature.



NOTE:

The TN429 DIOD trunk circuit pack is used in Japan to provide a communication link between a public local exchange and a Generic 3 V2 switch.

When the TN429 is administered, only loop-start is allowed to be entered as its trunk type.

The TN429 circuit pack is an 8-port loop start trunk circuit pack and can be used in any of the following ways:

- DID trunk
- CO trunk — 2-way, 1-way, or 1-way outgoing CO trunk capability
- Direct Inward and Outward Dialing (DIOD) trunk with DID service and 1-way outgoing CO trunk capability

The TN429 supports several administrable timers and different trunk group types (DID, CO, DIOD, FX, and WATS).

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group (DIOD)	All	4-239

- Trunk Group (DIOD) Form — Verify or complete all fields.

Hardware Requirements

- TN429 Direct Inward and Outward Trunk circuit pack International.

Direct Outward Dialing

Allows voice terminal users by use of a Trunk Access Code to access the public network without attendant assistance.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Dial Plan	Identification/Number Of Digits for: -Local CO Trunk Group -Foreign Exchange Trunk Group -WATS Trunk Group	5-150
Trunk Groups:	All	
CO		4-178
FX		4-253
WATS		4-375

- Dial Plan Form — Verify trunk access codes for local Central Offices, Foreign Exchange offices, ISDN-PRI trunk groups, and/or outward Wide Area Telecommunications Service (WATS).
- Trunk Group Forms — Verify or complete all fields for the applicable outgoing Central Office, Foreign Exchange, or WATS Trunk Group form.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a port on a TN747B Central Office Trunk or TN767 or TN464D DS1 Interface circuit pack for each trunk to be assigned in the trunk group. Each TN747B provides eight ports, each TN767 provides 24 ports, and each TN464D provides 32 ports.

Disconnect Supervision

Allows the system at call completion to remove resources used on a call and make them available for servicing new calls; otherwise, the resources can be used indefinitely. At international locations, it cannot always be assumed that incoming Public Network trunks will provide a disconnect supervision signal. If no parties on a call provide disconnect supervision, the call cannot be allowed, and without a guaranteed disconnect supervision a transfer operation is denied.

In the United States, all incoming trunks are assumed to provide disconnect supervision, while an outgoing trunk is assumed never to have disconnect supervision. In international locations, public network trunks rarely provide disconnect supervision. This requires administration of incoming disconnect supervision on a trunk group basis. The second assumption (outgoing trunks never provide disconnect supervision) will be made for both standard and international locations. If a "y" is entered in the Disconnect Supervision - Out? field, trunk to trunk transfers will be permitted.

**NOTE:**

When "y" is entered in the Disconnect Supervision - Out? field, when you tab out of the field a warning message will be displayed stating that this setting can cause trunk lock-up. You must press Return a second time for the System to accept the setting.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Groups (All)	Disconnect Supervision	4-123

- Trunk Group Forms — Complete the Disconnect Supervision field as required.

Hardware Requirements

None.

Distinctive Ringing (Alerting)

Helps voice terminal users and attendants distinguish between various types of incoming calls.

Distinctive Ringing is a standard feature. No administration is required to activate it. However, Distinctive Ringing can be disabled for single-line voice terminals if required.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (single-line)	Distinctive Audible Alert	5-303
Station	Redirect Notification	5-287
Feature-Related System Parameters	Internal/External/Priority Call (ringing patterns)	5-168

- Station Forms for 500, 2500, 7101A, 7102A, 7103A, and 7104A voice terminal — Complete Distinctive Audible Alert field.
- Station Forms — Enter “y” in the Redirect Notification field to provide a half ring at the voice terminal when calls to the terminal have been redirected (via Call Coverage or Call Forwarding).
- Feature-Related System Parameters Form — Assign a ringing pattern (one-, two-, or three-burst) to the desired call type (internal, external, or priority).

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires that a 500-type, 2500-type, or 7100-series voice terminal be assigned.

Distributed Communications System (DCS)

Allows a configuration (cluster) of two or more switches (nodes) to provide certain attendant and voice terminal features as if the cluster is a single large System. This simplifies dialing procedures between locations, and also allows transparent use of some of the System's features between locations.

For detailed information on DCS, refer to *AT&T Network and Data Services Reference Manual*, 555-025-201, Issue 3, and *AT&T System 75 Application Notes — Distributed Communications System*, 555-209-003.

The following figure illustrates an example of connecting switches in a DCS configuration using voice tie trunks and DS1 signaling.

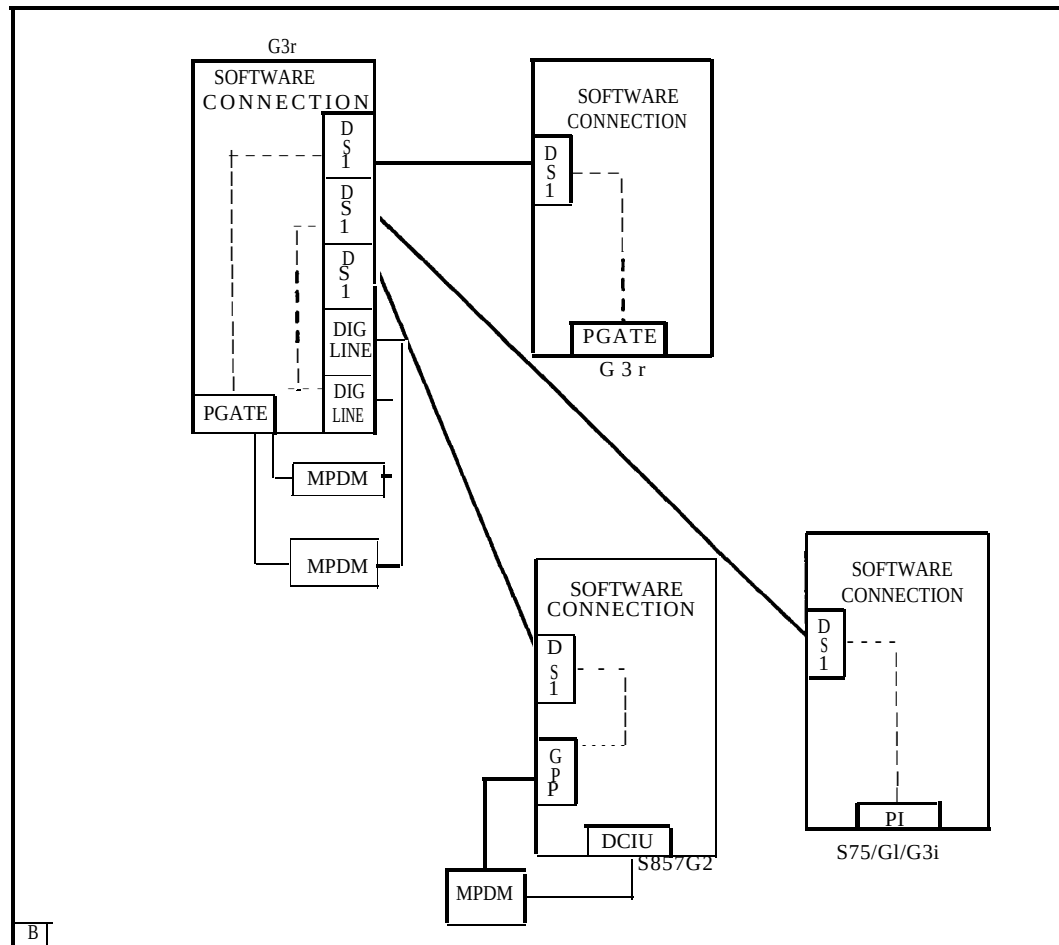


Figure 3-21. Distributed Communications System Using DS1 Facilities

Administration



NOTE:

The Distributed Communications System feature is not supported by the G3s V2 ABP configuration.

The Distributed Communications System (DCS) and UDP options must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
DS1 Circuit Pack	All	4-64
Synchronization Plan	All	4-114
Trunk Group Tie	All	4-349
ISDN-PRI		4-275
Dial Plan	All	5-150
Uniform Dial Plan	All	4-396
AAR Digit Analysis Table	All	4-8
AAR Digit Conversion Table	All	4-12
Routing Patterns	All	4-19
Node Number Routing	All	4-17
Data Module	All	
X.25 (G3r V2 only)		5-141
PI		5-136
Netcon (G3s V2, G3i V2 only)		5-133
Interface Links	Interface Links (assign DCS links)	4-91
Processor Channel Assignment	All Proc Chan fields to be assigned DCS	4-101
		or
		4-105
Signaling Group	All (for TSCs)	4-108
Hop Channel Assignments	as required	4-85
PGATE (G3r V2 only)	All	4-99

- **DS1 Circuit Pack Form** — This form must be completed if DS1 tie trunks are used for DCS signaling.
- **Synchronization Plan Form** — This form must be completed if the tie trunk is used for DCS signaling. Assign a secondary circuit pack that the System can use if the primary circuit pack fails.
- **Trunk Group (Tie) Form** — Provide data links (can be DS1 or tie trunks) and voice channels. If trunk group is used for voice, enter the required number. If the trunk group is used for DS1 signaling, enter one member in the trunk group. This one member is used to establish the link using a port on a DS1 circuit pack. Enter wink/wink in the trunk Type field and "avd" in the Comm Type field for DS1 signaling trunk groups.
- **Trunk Group (ISDN-PRI) Form** — Used to provide voice and data paths. Assign Service Type field as "tie", "tandem", or "access" as appropriate.
- **Dial Plan Form** — Complete all fields to assign a 4- or 5-digit number for DCS and complete all applicable fields for Uniform Dial Plan.
- **Uniform Dialing Plan Form** — Enter the Extension Codes for non-home extensions in the ENP subnetwork that are node number routed.

- AAR Digit Analysis Table Form — Assign routing patterns and destination Node Numbers.
- AAR Digit Conversion Table Form — Assign the replacements for all or part of a dialed digit string with a modified string and/or change of analysis type. The modified string represents an alternative equivalent address and results in the call being analyzed according to the network type. If the AAR Access Code is dialed, this table is accessed during call processing.
- Routing Patterns Form — Assign routing patterns and destination Node Numbers.
- Node Number Routing Form — Associate a routing pattern with each node in the Extension Number Portability (ENP) subnetwork.
- Netcon Data Module Form (G3s V2, G3i V2 only) — Assign Netcon physical channels as required.
- PGATE Form (G3r V2 only) — Enter the board location and “rs232” as the cable type.
- Data Module (X.25) Form (G3r V2 only) — Enter “dte” or “dce”. One side of the link should be “dte” and the other side should be “dce”. Enter “9600” as the Baud Rate.
- Interface Links Form — In the destination number field, enter “external” or the digits used to dial the remote X.25 data module. These digits can be a TAC plus an extension or a UDP extension. The digits used to dial the X.25 data module should be entered only if connecting to another G3r over a digital trunking facility.

In addition, only if digits are entered will the “Establish Connection” field be displayed. One side of the connection should have “y” in this field and the other side should have “n”.

- Processor Channel Assignment Form — Complete the required fields on the form for the AUDIX interface.
 - The Application field is “dcs”.
 - The Interface Link field must be the number of the interface link administered above.
 - The interface Channel field must be the channel on the link on which communication will be established. It must match the Interface Channel field on the remote switch.
 - The local port field on the local switch can be any number 1 through 64, but it must match the value of the remote port field on the remote switch.
 - The remote port field on the local switch can be any number 1 through 64, but it must match the value of the local port field on the remote switch.
 - The Machine-ID field must match the Node Number of the remote switch (usually administered on the Dial Plan form).

- Signaling Group Form — Complete the following fields:
 - Max number of NCA TSC — Specifies the number of NCA-TSCs that will be supported in the Signaling Group. Valid entries are 0 through 256; default is 0.
 - Max number of CA TSC — Specifies the number of CA-TSCs that will be supported in the Signaling Group. Valid entries are 0 through 479; default is 0.
 - Trunk Group for NCA TSC — Specifies the ISDN-PRI trunk group whose Incoming Call Handling Table (ICHT) will be used to handle incoming NCA TSCs through this signaling group.

Complete Pages 2 through 5 of the form as required to assign administered NCA-TSCs. Up to 64 NCA-TSCs may be administered as part of the Signaling Group form.

- Hop Channel Assignments Form — Identify the link numbers and associated channels that are to be assigned as “hop” channels in the DCS. Complete all fields of the form as required.

 NOTE:

To provide 4- or 5-digit dial plan among a group of switches, refer to the “Uniform Dial Plan” feature and complete all forms as indicated.

Hardware Requirements

 NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a TN765 Processor Interface circuit pack if not already provided. A DCS data link may be assigned to a vacant channel on a TN722B Tie Trunk or TN767 DS1 Interface circuit pack or a vacant port on TN754B Digital Line circuit pack.

Do Not Disturb

Allows guests, attendants, and authorized front desk voice terminal users to request that no calls, other than priority calls, terminate at a particular extension number until a specified time. At the specified time, the system automatically deactivates the feature and allows calls to terminate normally at the extension.

For the attendant console and display-equipped voice terminals, messages may be administered to display in either English, Italian, French, Spanish, or in a “user-defined” language. Refer to the “Administrable Language Display” feature for more information.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Feature Button Assignments -dn-dst -ext-dn-dst -grp-dn-dst	5-35
Station (multi-appearance)	Button/Feature Button Assignments -dn-dst -ext-dn-dst -grp-dn-dst	5-287
Feature Access Codes	Group Control Restrict Activation/Deactivation	5-161
Feature Access Codes for Hospitality Features	Voice Do Not Disturb Access Code	5-161
Feature-Related System Parameters	Controlled Termination Restriction (Do Not Disturb)	5-168

- Attendant Console Form — Assign do not disturb feature buttons (ext-dn-dst, grp-dn-dst).
- Station Forms — Assign dn-dst, ext-dn-dst, and grp-dn-dst feature buttons as required to appropriate voice terminals.
- Feature Access Code Form — Assign a feature access code to the Group Control Restriction Activation and Deactivation fields.
- Feature Access Codes for Hospitality Features Form — Assign a feature access code to the Voice Do Not Disturb Access Code field.
- Feature-Related System Parameters Form — Assign the type of intercept treatment (that is, intercept tone, recorded announcement, call coverage, or attendant) the caller will receive when the call is placed to a termination restricted (Do Not Disturb active) voice terminal.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A TN725B Speech Synthesizer circuit pack is required if voice prompting is used. Each circuit pack has four ports to provide voice prompting.

DS1 Tie Trunk Service

Provides a set of digital trunks that support voice and data communications.

Refer to Chapter 4 for additional information on DS1 Tie Trunk Services including a listing and description of each type of trunk supported.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
DS1 Circuit Pack	All	4-64
Trunk Group	All	
Access		4-130
APLT		4-155
DMI-BOS		4-209
ISDN-PRI		4-275
RLT		4-303
Tandem		4-324
Tie		4-349
Synchronization Plan	All	4-114

- DS1 Circuit Pack Form — Assign the circuit pack to the System before the administration of the associated trunks
- Trunk Group Forms — Associate trunk members to groups, as required. Verify or complete all fields.
- Synchronization Plan Form — Complete all fields.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A TN722, TN722B, TN767, or TN464B (or later release) DS1 circuit pack is required. Refer to “DS1 Trunk Service” in Chapter 4 for DS1 circuit pack usage requirements. A TN765 Processor Interface circuit pack is required in addition to the TN767 if ISDN-PRI signaling is used. A TN768 Tone Clock circuit pack is required to provide synchronization for the DS1 tie trunks.

Dual DCP I-Channels

Supports the use of dual I-channels for AUDIX networking. In this case, “networking” refers to the ability to send data files between AUDIXs, not to communications with the switch.

Each AUDIX has two DCP and two external (EIA 232C) connections that can be used for networking with each external connection capable of running one communications session. Data support for both I-channels increases the simultaneous AUDIX networking capacity from four ports to six ports.

Dual DCP I-channel data modules are administered as Processor Data Modules (PDMs) with both the primary and secondary data module having the same port location but different extensions.

NOTE:

If the primary data module is a TTI port, the secondary data module cannot be administered as the TTI feature cannot be used on a secondary data module

If the secondary data module is already administered, the TTI feature cannot be administered on the primary data module.

Administration

NOTE:

Refer to the “Audio Information Exchange (AUDIX) Interface” feature in this chapter and the appropriate DEFINITY AUDIX documentation for information on how to administer an AUDIX installation.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Data Module (PDM)	All	5-107

- Data Module (PDM) Form — Enter “pdm” in the Type field. Complete all other fields as required.

Hardware Requirements

Refer to the “Audio Information Exchange (AUDIX) Interface” feature in this chapter for hardware requirements.

Duplicate Station

Provides a quick and efficient way to populate similar station translations. This feature can also be used from the G3-MT.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station	All	5-287

- **Station Form** — Assign the first station of a given set type and with similar buttons with the *add station* command. Then, using this station as a template, use the *duplicate station* command to replicate this translation. Up to 16 stations can be added with a single command. The syntax of this command is:

Form	Action	Object	Command Line (Note)
			Qualifier
Station	duplicate	station (extension)	['start' (start extension)] ['board' (board addr) or 'x'] ['count' (1–16)] ['one-ep']

extension — voice terminal extension number to be duplicated.

start extension — starting extension used for finding unassigned extensions.

board addr — starting board address for finding unassigned ports or "x" for no port searching.

'count' (1–16) — is the number of station forms to generate.

one-ep — specifies that during duplication of a bri station, ports are selected in such a way that one endpoint is associated with one port. No entry of this option (default) specifies one endpoint per port for a non-BRI station, and two multipoint configurable endpoints per port for BRI stations.

Note: Brackets [] indicate the qualifier is optional.

Single Quotes (' ') indicate the word inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Duplicate Station Form and Fields

A duplicate station form is composed of two parts. The first part contains a list of parameters that can be customized for each station. The second part contains the station form used as a template, which is a standard station form containing fields that are common to all stations being added.

Using the command count "n" option, the system selects "n" default extensions and ports. These default values can be changed, a list of parameters customized, or fields on the station template customized. Fields on the template are common to all the stations being added.

Duplicate Station Port Selection

When the count “n” on the command is nonzero, the system selects ports for the duplicate station form on the basis of the following criterion. These ports could have been logically administered with circuit pack administration.

If no board is specified on the command line, a preferred port search is started from the first port in the system and continues in an alphanumerically ascending order of locations and ports until no preferable port is available.

If a board address of “x” is used, no port search occurs. A value of “X” is placed in the first “n” port fields on the duplicate station form. This refers to the Administration Without Hardware feature where an “x” or “X” can be overwritten with a valid port number (if needed).

If a board address is specified, the search starts from that board and continues as described above. The search ends when the count is satisfied or when there is no preferred port at an alphanumerically higher numbered location.

NOTE:

There is no wraparound to start searching for boards that have not been searched for earlier.

Any valid port used in the *add station* command is a preferred port for the *duplicate station* command. This applies for non-BRI endpoints as duplicating stations and non-multipoint configured BRI endpoints as duplicating stations.

A special case of a multipoint configurable endpoint (these are BRI by definition) as the duplicating station must be considered.

With *one-ep* not specified on the command line:

- If the port is multipoint configurable and is not used, select the port twice.
- If the port is multipoint configurable and is used once, select the port.
- If the port is multipoint configured (and hence used twice, by definition), do not select it.
- If the port is not multipoint configurable and is used once, do not select it.

With *one-ep* specified on the command line:

- If the port is multipoint configurable and is not used, select the port once.
- If the port is multipoint configurable and is used once, do not select it.
- If the port is multipoint configured (and hence used twice, by definition), do not select it.
- If the port is not multipoint configurable and is used once, do not select it.

Field Interactions

The customized section of the duplicate station form changes according to certain values of the duplicating station as summarized in the table below.

Supports Data	Data Module field	Result
n	N/A	Page 1 Without Data Module
y	n	Page 1 Without Data Module
y	y	Page 1 With Data Module

In the template section, the SPID field is given special treatment. If it appears on the form, it does so as a read-only field and its value is defaulted to the extension of the duplicating station. The SPID of the duplicated station is defaulted to its extension.

Hardware Requirements

None.

EIA Interface

Provides an alternative to Digital Terminal Data Modules (DTDMs) and Modular Processor Data Modules (MPDMs) within the System hardware for interconnection between EIA 232 compatible Digital Terminal Equipment (DTE) and the System. The EIA Interface consists of a Data Line circuit pack port and an Asynchronous Data Unit (ADU).

Figure 3-22 shows a typical EIA interface connection.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Button/Feature Button Assignments	5-287
Data Module	-data-ext (Ext:_) All	5-107

- Station Forms — Assign Data Extension (data-ext) buttons to multi-appearance voice terminals.
- Data Module Form — Assign a vacant port of a Data Line circuit pack (TN726) and complete the Capabilities and Options fields.

The following permissions can be administered on a data line port to allow DTEs to be used.

- Keyboard Dialing (KYBD) — Must be set to allow data endpoints to receive and send text during data call origination or termination. Text prompts are provided.



NOTE:

ADU-type hunt groups connecting the System to terminal servers on a host computer should have these hunt group extensions assigned as “no” keyboard dialing.

- Configuration — Must be set to allow DTEs to change their data module options; that is, examine and change options, such as speed, from the DTE. Keyboard Dialing permission must be granted first.
- Busy Out — Should be set for DTEs that are members of a hunt group, and to allow “busy out” (when DTE turns power off) so that calls will not terminate on that DTE.

The following options can be examined and changed from the DTE if the “configuration” permission has been granted:

- Speed — All speeds (up to 19.2 kbps) at which the DTE can operate are selectable, including Autoadjust. Autoadjust is the capability of the data line port to determine what speed and parity the associated DTE is transmitting at and match it for terminal dialing and/or text feedback purposes.
- Permit Mismatch — The EIA Interface may be operated at a higher transmission speed rate than the rate between the Data Line circuit and the far end data module. This allows for calls between digital endpoints with different speeds without changing the speed of the DTE.
- Dial Echoing — Can be set to echo typed characters back to the DTE during dialing.
- Disconnect Sequence — Set the signal to indicate “disconnect.” Choices are one break greater than 2 seconds or two breaks within 1 second.
- Answer Text — Can be selected when DTE is an intelligent device to allow text messages to be delivered to the DTE when a call is being answered; also, applies to text generated by the data line circuit and received from the System. The following call progress messages may be answered:
 - INCOMING CALL
 - PLEASE ANSWER
 - TRANSFER
 - FORWARDED
 - ANSWERED
 - ABANDONED
 - DISCONNECTED
 - OTHER END
- Parity — All choices of parity (even, odd, mark, or space) can be selected.
- Connected Indication — Can be set to allow the text “CONNECTED SPEED= XXXX” to be sent to the DTE when the data call has been established.
- Other Characteristics — The Data Line circuit always operates in automatic answer (provided the DTE is on), asynchronous, and full duplex modes. The “Loss of Carrier Disconnect” is set to off; that is, the Data Line circuit, unlike other data modules, does not disconnect upon loss of EIA updates in the previous 4 seconds.

Hardware Requirements

➤ NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires an ADU and a port on a TN726B Data Line circuit pack for each interface to be provided. A TN726B provides eight ports.

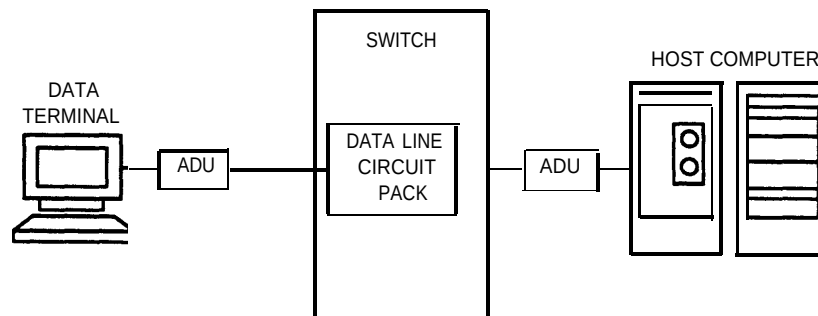


Figure 3-22. Typical EIA Interface

Emergency Access to the Attendant

Provides for emergency calls to be placed to an attendant. These calls can be placed automatically by the system or can be dialed by system users. Such calls can receive priority handling by the attendant.

Administration

The Emergency Access to Attendant option must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

**NOTE:**

At least one attendant console must be administered before activating this feature.

Form	Field	Form Instructions (Page #)
Class of Service Feature-Related System Parameters	Off-Hook Alert	5-99
	Reserved Slots for Attendant	5-168
	Priority Queue	
	Time Before Off-Hook Alert	
Hospitality-Related System Parameters	Emergency Access	
	Redirection Extension	
	Time of Scheduled	5-184
	Emergency Access Activity Report	
Attendant Console	Extension of	
	Journal/Schedule Printer	
Feature Access Codes for Hospitality Features	Feature Button Assignments	5-35
	-em-acc-att	
	Emergency Access To Attendant Access Code	5-161

- Class of Service Form — Assign correct permission to access Off-Hook Alert.
- Feature-Related System Parameters Form — Assign the number of calls that can go in the emergency queue. Assign the time, in seconds, a voice terminal with an off-hook alert class of service can remain off-hook before an emergency call for the voice terminal is sent to the attendant. Assign the extension number where emergency queue overflow will redirect.
- Hospitality-Related System Parameters Form — Assign time for scheduled emergency access activity report.

- Attendant Console Form — Assign emergency access feature button (em-acc-att) to provide lamp notification of an emergency call (optional).
- Feature Access Codes for Hospitality Features Form — Assign access code to the Emergency Access To Attendant Access Code field.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a 301A Basic or 302A Enhanced Attendant Console if a unique Emergency tone is required at the console; otherwise, normal ringing is heard for an emergency call and the attendant display flashes.

Enhanced DCS (EDCS)

Enhances DCS capabilities for the System by providing the following features:

- Class of restriction (COR) checking between PBXs in the DCS network
- Call progress information for the attendant
- Attendant intrusion between a main and a satellite
- DID/CO intercept treatment provided by a main PBX rather than the satellite PBX

**NOTE:**

EDCS is not compatible with DCS Over/Under ISDN-PRI. If use with ISDN-PRI is desired, the switch must be configured as a DCS node.

Administration

**NOTE:**

The Enhanced DCS feature is not supported by the G3s V2 ABP configuration.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Enhanced DCS Enabled? Apply Intercept Locally? Enforce PNT-to-PNT Restrictions?	5-168

- Feature-Related System Parameters Form — Enter “y” in the Enhanced DCS Enabled? field (page 6 of form) to enable the Enhanced DCS feature on a system-wide basis. Choices are “y” and “n”. The default is “n”.

Enter “y” in the Apply Intercept Locally? field to indicate that DID/CO intercept treatment will be applied locally instead of on the originating switch. This field appears only if the “Enhanced DCS Enabled” field is set to “y”. Choices are “y” and “n”. The default is “y”.

Enter “y” in the Enforce PNT-to-PNT Restrictions? field to indicate that restrictions and denial of PNT-to-PNT connections will be enforced when the EDCS message is unavailable. This field appears only if the Enhanced DCS Enabled? field is set to “y”. Choices are “y” and “n”. The default is “n”.

Hardware Requirements

None.

Enhanced Terminal Administration

Provides for the administration of new terminals that are not supported by the System's software. Administration information associated with terminals that are supported (such as MET sets, 7100 series, 7400D series, and so on) is provided at the end of this chapter. For any new terminal types, the Enhanced Terminal Administration (ETA) feature allows the new terminal to be "mapped" to an existing or supported type. The mapping does not guarantee set compatibility. It does allow non-supported types to be administered and tracked by their own unique names. The administration commands that are used to display station set types and to obtain help messages will include the new set types.

The administrator must refer to customer set-type documentation for supported types and terminal manuals for non-supported types to avoid set type mismatches between the new terminal and the supported set-type. In particular, the protocol used by the new terminal (such as analog, DCP, hybrid) must match the protocol used by the terminal to which it is mapped. For example, DCP type terminals (such as 7400D series) must be matched to existing DCP set types.

Administration

To administer a new voice terminal-type not supported by a system form, the following form must be completed.

Form	Field	Form Instructions (Page #)
Alias Station	All	5-28

- Alias Station Form — Verify or complete all fields as required.

Hardware Requirements

None.

Expert Agent Selection

Expert Agent Selection (EAS) is a telemarketing feature that builds on the capabilities of Call Vectoring. It expands the flexibility of ACD by allowing calls to be routed to specialized agents.

Expert Agent Selection allows up to three Skills to be assigned to a call type (VDN). Refer to the Capacity Table in Appendix C for the maximum number of Skills allowed per System configuration.

NOTE:

A particular Skill number always has the same meaning. For example, if Skill 127 means "Spanish speaking," then Agent Skill 127 and VDN Skill 127 both mean "Spanish speaking."

Using ACD queueing and Call Vectoring, the incoming call is matched to an agent who has at least one of the Skills required to handle the call. Each Skill has an associated Skill Hunt Group administered in a similar fashion to a vector-controlled hunt group.

When EAS is enabled on the System-Parameters Customer-Options form, Skill Hunt Groups replace splits. In addition, help messages, error messages and field titles will be changed from "Split" to "Skill" on the various forms where appropriate.

Agents can be logged in with up to four Skills at any one time. Each of the agent's Skills will be administered as a primary Skill or a secondary Skill. The ACD software will distribute any call waiting for one of the agent's primary Skills when the agent becomes available. If no primary Skill calls are waiting, any secondary Skill calls waiting are routed to the agent. If no primary or secondary Skill calls are waiting, the agent will be placed in the most-idle-agent queues for primary and secondary Skills.

In addition to matching Skills required for a call to an agent with one of the Skills, EAS provides two other capabilities: Logical Agent and Direct Agent Calling from a voice terminal. Logical Agent associates hardware (voice terminal) with an agent only when the agent is logged in. While the agent is logged in, calls to the LoginID will be directed to the agent. Direct Agent Calling allows a user to call a particular agent and have the call treated as an ACD call (if the COR for both the calling party and the called agent have the Direct Agent Calling option set).

NOTE:

Station User records cannot be shared between TTI ports and EAS LoginID extensions. This causes a reduction in the number of possible EAS LoginID extensions allowed by the System depending on the number of TTI ports that are administered.

For example, if 2,000 TTI ports are administered, the maximum number of EAS LoginIDs allowed is reduced by 2,000.

Administration

The ACD, Vectoring (Basic), and Expert Agent Selection options must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Expert Agent Selection Enabled	5-168
	Minimum Agent-LoginID Password Length	
	Direct Agent Announcement Extension	
	Direct Agent Announcement Delay	
Agent LoginID	All	5-25
Hunt Group	Skill	5-189
	ACD	
	Vector	
Vector Directory Number	1st/2nd/3rd Skill	5-262
System Parameters CDR	Record Called Agent Login ID	5-69
	Instead of Group or Member	
Call Vector	All	5-76

- Feature-Related System Parameters Form — Enter “y” in the Expert Agent Selection Enabled field. Enter the minimum number of digits the Agent must enter as a LoginID password in the Minimum Agent-LoginID Password Length field. If Direct Agent Announcements are desired, complete the Direct Agent Announcement Extension and Direct Agent Announcement Delay fields.
- Agent LoginID Form — Complete all fields as required.
- Hunt Group Form — Enter “y” in the Skill, ACD and Vector fields.
- Vector Directory Number Form — Enter the desired Skill numbers in the 1st Skill, 2nd Skill, and 3rd Skill fields.
- System Parameters CDR Form — Enter “y” in the Record Called Agent Login ID Instead of Group or Member field if desired.
- Call Vector Form — Complete all fields as required.

Hardware Requirements

None.

Extended Trunk Access

Extended Trunk Access permits a switch to send any unrecognized number (such as an extension not administered locally) to another switch for analysis and routing. Such unrecognized numbers can be Facility Access Codes, Trunk Access Codes, or Extensions that are not defined locally (that is, not in the UDP table for extensions). The “form” of these unrecognized numbers must be administered on either the First Digit Table (on the Dial Plan Record form) or the Second Digit Table For Digit X form.



CAUTION:

When administering Extended Trunk Access on separate switches, care must be taken to not create a circular Extended Trunk Access call setup; otherwise, all trunk members being used for Extended Trunk Access will be tied up until the calling party releases the call. Thus, if PBX A routes calls to the PBX B and the PBX B has been administered to route calls to PBX A, then any time an invalid set of digits is dialed all trunk members being used for Extended Trunk Access will be busied in an attempt to route the Extended Trunk Access call. Since both switches point to each other, an infinite loop has been administered. Care should be taken not to have a receiving PBX administered with Extended Trunk Access when the switch it attempts to route to is in fact the sending PBX.

This does not rule out chaining PBXs together using Extended Trunk Access, that is, PBX A points to PBX B which points to PBX C, and so on.



NOTE:

When Trunk Access or Facility Access Codes are dialed, users must wait for the Remote Switch to generate dial tone before entering additional digits.

Administration



NOTE:

The Extended Trunk Access feature is not supported by the G3s V2 ABP configuration.

The Uniform Dialing Plan option must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of form(s) must be completed.

Form	Field	Form Instructions (Page #)
Dial Plan	ETA Routing Pattern and/or ETA Node Number ETA Routing Pattern	5-150
ETA Call Screening Table	Call Screening Entry	5-159

- Dial Plan Form — Enter the ETA Node Number and/or the ETA Routing Pattern. These values determine which trunk (or pattern) to use when routing the call to the remote PBX. (Node Numbers are used when no Routing Patterns are assigned or for DCS.)
- ETA Call Screening Table Form — Enter the digit strings that cannot be routed to the remote PBX (blocked strings). Wildcards can be used (such as 45x) to block any dialed string beginning with those digits (such as 451, 452, and so on). The "#" and "*" characters for Feature Access Codes can also be used.

Hardware Requirements

None.

Extension Number Portability (ENP) Numbering Plan

The Extension Number Portability (ENP) Numbering Plan feature converts a 4- or 5-digit Uniform Dialing Plan (UDP) extension to an AAR-like 7-digit ENP number. Conversion of a 5-digit UDP extension is done by prepending a 3-digit ENP code to the last four digits of the extension; the conversion of a 4-digit UDP extension is done by prepending a 3-digit ENP code to the UDP extension. UDP extensions are converted to ENP numbers if node number routing is specified for the extensions in the UDP table. The 3-digit ENP conversion codes are specified by ENP Numbering Plan administration. The ENP Numbering Plan specifies which 3-digit ENP code is to be used with each extension starting with the same one or two leading digits. ENP codes are different from AAR location codes because they are location-independent within the ENP subnetwork. That is, each 3-digit ENP code is administered to be home on every node within the ENP subnetwork (on the AAR Digit Conversion Table).

This feature allows extensions to be moved across PBXs while retaining the original extension number, as long as these PBXs are part of the ENP subnetwork.



NOTE:

Only one ENP code is required for a 4-digit ENP subnetwork; 5-digit UDP requires one ENP code for each leading digit of extensions used within the ENP subnetwork.

DCS message signaling links are not required to support ENP. As a result, many multiple switch configurations are possible with ENP. Typically the ENP network will be a subnetwork of a UDP or ETN network.

Administration



NOTE:

The Extension Number Portability feature is not supported by the G3s V2 ABP configuration.

The Uniform Dialing Plan option must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of form(s) must be completed.

Form	Field	Form Instructions (Page #)
AAR Digit Conversion	All	4-12
ENP Numbering Plan	All	4-73
Node Number Routing	All	4-17
Uniform Dialing Plan	Ext Code	4-396

- **AAR Digit Conversion Form** — Assign all 3-digit ENP codes as home, and if using a 5-digit UDP, associate the ENP codes with the leading, or 10 thousands, digit (that is, the fifth digit of the extension). For example, for extension number 73446, "7" is the 10 thousands digit.



NOTE:

ENP Codes are distinguished from AAR location codes because ENP Codes are home on every node within the ENP subnetwork, and ENP Codes are administered in the ENP Numbering Plan table as well as in the AAR Analysis table. Since ENP Codes are home on every node, they cannot be used as AAR location codes.

- **ENP Numbering Plan Form** — Associate the leading one or two digits of extensions in the ENP subnetwork with a 3-digit ENP code, used to construct a 7-digit AAR-like ENP number.
- **Node Number Routing Form** — Associate a routing pattern with each node in the ENP subnetwork.
- **Uniform Dialing Plan Form** — Enter the number of digits in the plan (4 or 5) and the Extension Codes for non-home extensions in the ENP subnetwork as ENPNode (node number routed).

Hardware Requirements

None.

Facility and Non-Facility Associated Signaling

Facility Associated Signaling (FAS) allows an ISDN DS1 Interface D-channel to carry signaling information for those B-channels located on the same DS1 facility (circuit pack) as the D-channel.

Non-Facility Associated Signaling (NFAS) allows an ISDN DS1 Interface D-channel (signaling channel) to convey signaling information for B-channels (voice and data channels) on ISDN-PRI DS1 facilities other than the one containing the D-channel. As a result, a D-channel can carry signaling information for numerous B-channels located on different DS1 facilities.

NOTE:

It is recommended that NFAS only be used over DS1/E1 circuit packs that are administered using Country Code Protocol Option 1 (even in a private network environment) independent of what country the System is in.

In addition, to improve reliability in the event of a signaling link failure, a signaling channel (D-channel Backup) may be administered. If a signaling link failure does occur, a switch to a backup signaling channel (D-channel) can be implemented.

D-channel Backup requires that one D-channel be administered as the Primary D-channel and that a second D-channel be administered as the Secondary D-channel. These assignments ensure that at certain times during the D-channel backup process, that each switch at each end of the interface select the same D-channel. In these cases, the Primary D-channel is given precedence over the Secondary D-channel.

Immediately following the administration instructions, an example is provided for administering a FAS/NFAS interface.

Administration

NOTE:

The Facility and Non-Facility Associated Signaling feature is not supported by the G3s V2 ABP configuration.

Refer to the "ISDN-PRI" coverage in this chapter for a complete listing of forms and fields on forms to be completed for ISDN-PRI applications.

The following provisioning and administration must be considered when implementing FAS, NFAS, and D-channel backup. Coordinate the following with the far-end switch for the DS1 facilities to be used:

- Decide which DS1 facilities will use FAS.
- Decide which of the remaining DS1 facilities will carry D-channel signaling information on the 24th/31st channel. For those channels that have a D-channel Backup, D-channel pairs must be allocated.

- Define Signaling Groups. Each Signaling Group must be designated as either a FAS or NFAS Signaling Group.
 - A FAS Signaling Group must contain all the ISDN B-channels on the DS1 interface associated with the group's D-channel, and cannot contain B-channels from any other DS1 circuit pack. Some of the DS1 ports may use in-band (robbed-bit) signaling and be members in a tie trunk group rather than an ISDN trunk group. These tie trunks cannot be members of a Signaling Group.
 - There is no restriction on which DS1 ports can belong to a NFAS Signaling Group. Normally, an NFAS Signaling Group would consist of one or two D-channels and several complete DS1 interfaces as shown in Figure 3-23.



NOTE:

If a Signaling Group contains only a subset of a DS1's B-channels (ports 1 through 12 for example), it is considered an NFAS Signaling Group, not a FAS Signaling Group. The remaining B-channels on the DS1 would then be assigned as members of another NFAS Signaling Group.

- An Interface ID must be assigned to each DS1 facility in a NFAS Signaling Group. For example, if the B-channels in a Signaling Group span three DS1 facilities, a unique Interface ID must be assigned to each of the three DS1 facilities.
- D-channel Backup involves two or more ISDN-PRI DS1 facilities that interconnect the switch to another PBX or to the network. Two D-channels must be present on the facilities. One of the D-channels is designated as Primary and the other as Secondary. This designation must be agreed upon by both sides of the interface and administered prior to initialization. The purpose of this designation is to resolve glare situations between the two D-channels.

To implement FAS/NFAS and/or D-channel Backup, the following form must be completed:

Form	Field	Form Instructions (Page #)
Signaling Group	All	4-108

- Signaling Group Form — Complete all fields as required.



NOTE:

The use of the DS1 circuit pack form and other related ISDN-PRI forms for implementation of an ISDN-PRI interface are described in the ISDN-PRI feature coverage.

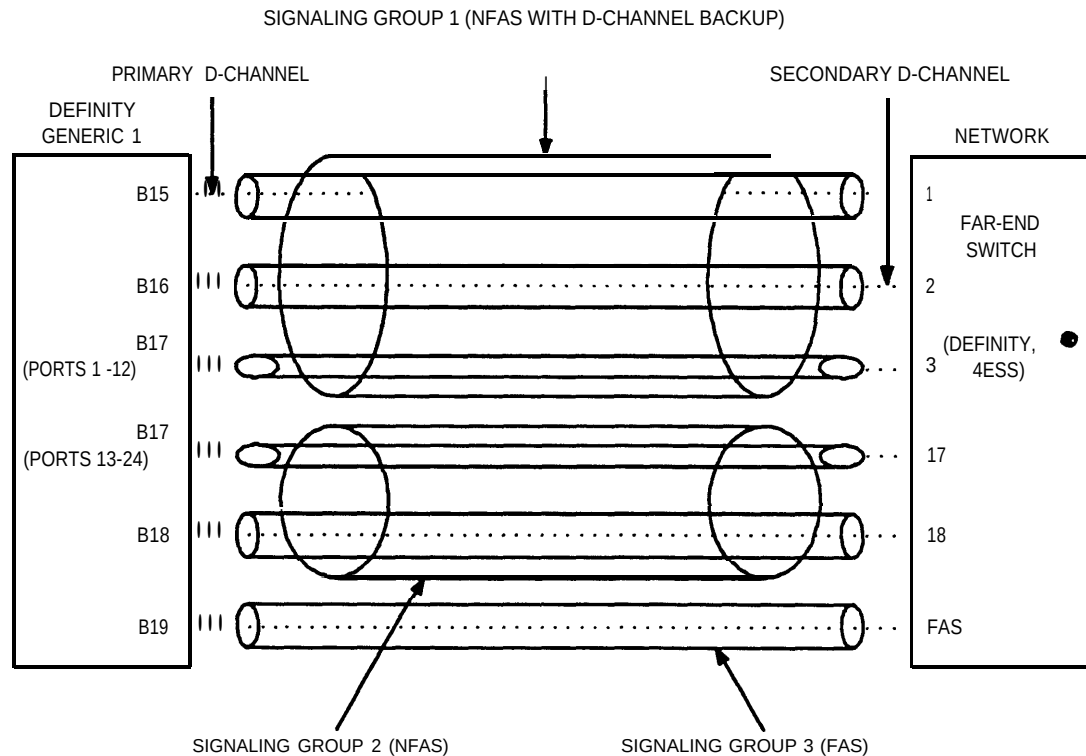


Figure 3-23. Example FAS/NFAS Interface Configurations With Interface IDs

The following examples describe the DS1 interface configuration shown in Figure 3-23 for NFAS. The examples make use of key forms associated with implementation of the ISDN-PRI feature described elsewhere in this chapter in addition to the use of the Signaling Group form. Refer to the "ISDN-PRI" coverage for additional information associated with implementing ISDN-PRI. When implementing FAS and NFAS, the DS1 form must be submitted first, followed by the Interface Link and associated forms followed by the ISDN-PRI trunk group form.

Note that the Interface Link and associated forms may be administered at any time after the DS1 forms have been administered, with the following restrictions:

- A D-channel cannot be assigned on a Signaling Group form unless the associated link is disabled.
- A trunk member cannot be assigned unless its associated Signaling Group has been administered.

The Signaling Mode must be specified for each DS1 circuit pack. Currently the options are "common-channel" (default), "robbed-bit", "isdn-pri", or "isdn-ext".

The "isdn-ext" entry is used to indicate that the circuit pack uses ISDN (mixed) signaling, but that the 24th/31st port on the circuit pack will not be used as a D-channel. All trunks on this circuit pack will be signaled using either inband robbed-bit signaling, or by a D-channel on another DS1 circuit pack. The following DS1 screen form shows the fields that are displayed when "isdn-ext" is entered.

Page 1 of 1

DS1 CIRCUIT PACK

Location: 1B17

Bit Rate: 2.048

Name: _____

Line Coding: hdb3

Signaling Mode: isdn-ext

Interface Commanding: mulaw

Idle Code: 11111111

MAINTENANCE PARAMETERS

Slip Detection? n

Remote Loop-Around Test? n

Screen 3-1. DS1 Circuit Pack Form (Signaling Mode = isdn-ext)

Next, Signaling Groups are administered using Signaling Group forms.

Page 1 of 1

SIGNALING GROUP

Group Number : 1

Associated Signaling? n

Primary D-Channel : 1B1524

Secondary D-Channel: 1B1624

Trunk Group for Channel Selection: _____

Max number of NCA TSC: 0

Max number of CA TSC: 0

Trunk Group for NCA TSC: _

Trunk Brd	Interface ID	Trunk Brd	Interface ID
1: 1B15	15	11: _____	—
2: 1B16	16	12: _____	—
3: 1B17	17	13: _____	—
4: _____	—	14: _____	—
5: _____	—	15: _____	—

Screen 3-2. Signaling Group (Group 1) - D-channel Backup, Three DS1 Interfaces

Page 1 of 1

SIGNALING GROUP

Group Number : 2 Associated Signaling? n Max number of NCA TSC: 0
 Primary D-Channel: 1B1824 Max number of CA TSC: 0
 Secondary D-Channel: _____ Trunk Group for NCA TSC: _
 Trunk Group for Channel Selection: _____

	Trunk Brd	Interface ID		Trunk Brd	Interface ID
1:	1B17	17	11:	_____	—
2:	1B18	18	12:	_____	—
3:	_____	—	13:	_____	—
4:	_____	—	14:	_____	—
5:	_____	—	15:	_____	—

Screen 3-3. Signaling Group Form (Group 2)—No D-channel Backup, Two DS1 Interfaces

Page 1 of 1

SIGNALING GROUP

Group Number : 3 Associated Signaling? y Max number of NCA TSC: 0
 Primary D-Channel: 1B1924 Max number of CA TSC: 0
 Trunk Group for NCA TSC: _
 Trunk Group for Channel Selection: _____

Screen 3-4. Signaling Group Form (Group 3)—Facility Associated Signaling

Note in the three previous Signaling Group screen displays:

- Signaling Group 1 B-channels on DS1 circuit packs (boards) B15 and B16 are signaled by D-channel pair B1524 (see Primary D-channel field) and B1624 (see Secondary D-channel field).
- Signaling Group 2 B-channels on board B18 are signaled by D-channel B1824.
- Board B17 has no D-channel. The B-channels on board B17 can be signaled by either D-channel pair B1524/B1624 (Signaling Group 1) or D-channel B1824 (Signaling Group 2).
- The DS1 interface on board B19 (Signaling Group 3) is a Facility Associated Signaling case. Note that the Secondary D-channel and Trunk Board/Interface ID fields are not displayed when the Associated Signaling field is "y".

The following two communications-interface forms must be completed for the ISDN-PRI interface:

- **Interface Links Form** — Used to create an association between the D-channel on a DS1 circuit pack and the port on a TN765 Processor Interface circuit pack used for this link.
- **Processor Channels Form** — Used to assign processor channels to the link administered on the Interface Links form.

Finally, trunk ports are added to the ISDN-PRI trunk group and to Signaling Groups.

Page Y of X

TRUNK GROUP
 Administered Members (min/max) : xxx/yyy
 Total Administered Members: xxx

GROUP MEMBER ASSIGNMENTS

Port	Code	Sfx	Name	Night	Sig Grp
1: 1B1501_			_____	_____	—
2: 1B1523_			_____	_____	—
3: 1B1601_			_____	_____	—
4: 1B1623_			_____	_____	—
5: 1B1701_			_____	_____	1
6: 1B1709_			_____	_____	1
7: 1B1716_			_____	_____	2
8: 1B1724_			_____	_____	2
9: 1B1801_			_____	_____	—
10: 1B1823_			_____	_____	—
11: 1B1901_			_____	_____	—
12: 1B1923_			_____	_____	—
13: _____			_____	_____	—
14: _____			_____	_____	—
15: _____			_____	_____	—

Screen 3-5. ISDN-PRI Trunk Group Form — Trunk Members with Required Signaling Group Numbers Shown

The Sig Grp column on the above trunk group form is completed as follows:

- If a DS1 interface appears in one and only one Signaling Group, then the Sig Grp field may be left blank because the System will automatically populate the field with the correct Signaling Group.
- If a DS1 circuit pack appears in more than one Signaling Group, then the Signaling Group numbers must be entered in the appropriate fields before submitting the form.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Refer to the "ISDN-PRI" feature coverage in this chapter.

Facility Busy Indication

Provides multi-appearance voice terminal users with a visual indication of the busy or idle status of an extension number, a trunk group, terminating extension group, a hunt group (Direct Department Calling or Uniform Call Distribution group), or any loudspeaker paging zone, including all zones. The Facility Busy Indication button provides the voice terminal user direct access to the extension number, trunk group, or paging zone.

**NOTE:**

The Facility Busy lamp indication for a VDN is always off (that is, dark).
The associated button may be used to place a call to a VDN.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Button/Feature Button Assignments	5-287
Attendant Console	-busy-ind Feature Button Assignments -busy-ind	5-35

- Station Forms — Assign “busy-ind” to a voice terminal button.
- Attendant Console Form — Assign “busy-ind” feature button.

Hardware Requirements

None.

Facility Restriction Levels and Traveling Class Marks

Provides up to eight levels of restriction for users of the Automatic Alternate Routing (AAR) and/or Automatic Route Selection (ARS) features.

Administration

The Private Networking and/or Automatic Route Selection (ARS) options must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction	FRL	5-93
Routing patterns	FRL (0-7)	4-19

- Class of Restriction Form — Assign originating FRLs.
- Routing Patterns Form — Assign terminating FRLs.

FRL and TCM Guidelines and Examples

The examples given here are designed to help understand FRLs and to illustrate some of the practical aspects of FRLs. These are, however, only examples. In reality, each System must be administered to meet individual needs.



NOTE:

Facility Restriction Levels are an important part of System security. The lowest possible FRL should be assigned on the Class of Restriction and AAR/ARS Routing Patterns forms in order to help prevent unauthorized use of System features.

FRLs on the terminating end of a call are not checked unless the terminating facility is a trunk group. This simplifies assignments. At each switch, the trunk groups available to handle a given AAR or ARS call can be listed in any order within the Routing Pattern. For G3i V2 and G3s V2 configurations, up to six choices can be specified. For G3r V2 configurations, up to 16 choices can be specified. Access to each of the listed trunk groups must be determined. This, of course, is specified via an FRL. On a scale of 0 to 7, the relative value is determined and assigned. Decisions are normally based on the cost, or appropriateness, of using the facility, although other criteria can be used. The same FRL value can be assigned to more than one trunk group if there is no reason to prefer one trunk group over the other.

If some users within the system are not allowed to make outside calls, use a value other than 0 as the value for the first-choice trunk group. By assigning these users an FRL of 0, none of the trunk groups can be accessed (since all trunk group FRLs will be greater than 0). Such calls are denied.

Each Routing Pattern must be individually constructed. The same trunk group can be used in more than one pattern. The associated FRL is assigned within the pattern and is not associated with the trunk group itself. The same trunk group can have a different FRL in a different pattern.

Be consistent in FRL assignments. Do not use a range of 0 to 5 in one pattern and a range of 2 to 7 in another pattern if all users can access both routes. Admittedly, the trunk group with an FRL of 2 may be more expensive than the trunk group with an FRL of 0, but there is no real reason to assign a 2 to a trunk group that everyone can access. For ease of assignments, always use a 0 for such a trunk group.

At least one class of restriction (COR) should be established for each FRL used in a Routing Pattern. The appropriate COR is then assigned to the users who can access the routes restricted by the FRL value. For example, a middle executive might be able to access all routes with an FRL of 5 or lower, whereas the president can access all routes. In this case, the executive is assigned a COR with an FRL of 5 and the president is assigned a COR with an FRL of 7.

Remote Access users can access the System's features and services the same as an on-premises user. FRL assignment is via Remote Access Barrier Codes or Authorization Codes. Up to 10 Barrier Codes, each with its own COR (and FRL), can be assigned. Although the COR defines other restrictions, 10 Barrier Codes are enough to also provide a range of FRL assignments. Assignment of Barrier Code FRLs is the same as if the user were on-premises. The simplest way to assign these FRLs is to duplicate the on-premises FRLs, and then merely relate the appropriate Barrier Code to those that will be using Remote Access.

FRLs apply only on ARS and AAR calls. If CDR 15-digit account codes are used, the FRL field in the CDR record is overwritten.

The following is an example of how FRLs can be assigned in a COR:

- **FRL0** — No outgoing calls.
- **FRL1** — Local calls only.
- **FRL2** — FRL1 plus the home area code calls using WATS.
- **FRL3** — FRL2 plus the use of local lines for all calls in the home area code.
- **FRL4** — FRL3 plus the calls to all the USA, using WATS only.
- **FRL5** — FRL4 plus the calls to all the USA, using local lines.
- **FRL6** — FRL5 plus the international calls.
- **FRL7** — Reserved for a spare.

Hardware Requirements

None.

Facility Test Calls

Provides a voice terminal user with the capability of making test calls to access specific trunks, touch-tone receivers, time slots, and system tones. The test call is used to make sure the facility is operating properly. A local voice terminal user can make a test call by dialing an access code. An Initialization and Administration System (INADS) terminal user can also make test calls.

NOTE:

AT&T has designed the Facility Test Calls feature such that, when properly administered by the customer, will enable the customer to minimize the ability of unauthorized persons to gain access to the network. It is the customer's responsibility to take the appropriate steps to properly implement the features, evaluate and administer the various restriction levels, protect access codes and distribute them only to individuals who have been advised of the sensitive nature of the access information. Each authorized user should be instructed concerning the proper use and handling of access codes.

In rare instances, unauthorized individuals make connections to the telecommunications network through use of test call features. In such an event, applicable tariffs require that the customer pay all network charges for traffic. AT&T cannot be responsible for such charges, and will not make any allowance or give any credit for charges that result from unauthorized access.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes	Facility Test Calls Access Code	5-161
Class of Restriction	Facility Access Trunk Test	5-93
Station (multi-appearance)	Button/Feature Button Assignments -trk-ac-alm	5-287

- Feature Access Codes Form — Assign the "Facility Test Calls Access Code."
- Class of Restriction Form — Enter "y" in the Facility Access Trunk Test (FAT) field to allow FAT calls from facilities assigned the associated COR.
- Station (Multi-appearance) Form — Assign a "trk-ac-alm" feature button if required. The associated status lamp lights when a successful FAT call has occurred. Pressing the button when the status lamp is lighted will turn off all trk-ac-alm lamps administered in the System.

Hardware Requirements

None.

Fiber Link Administration

⇒ NOTE:

This feature applies only to G3r V2 configurations.

Port Cabinets are connected via direct fiber link connections or through a Center Stage Switch (CSS) to provide the inter-port network connectivity required for voice/data information transfer. The CSS is composed of "Switch Nodes" that can be interconnected in one or two levels to provide a network of up to 32 PNs. The CSS provides circuit switched connectivity among PNs for voice and data communications as well as packet-switched connectivity. Fiber Link administration permits an administration of translation data associated with a Switch Connection (such as the optical fiber link between two endpoints). The two endpoints can be:

1. An Expansion Interface (EI) board in a Port Cabinet
2. A Switch Node Interface (SNI) board in a Switch Node carrier

⇒ NOTE:

Only one G3-MT may administer fiber links at a time; others may display fiber link information.

Administration

The PNC Duplication option must be enabled on the System-Parameters Customer-Options form before related fields on forms may be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Circuit Pack	All	5-88
Fiber Link	All	4-75
System-Parameters Duplication Parameters	Enable Operation of PNC Duplication	5-157

Fiber Link administration interacts with or is dependent on other system features that must be administered before it. The order of administration is:

- Cabinet Form — Assign the system's cabinets and their carrier configurations (such as Switch Node carriers, port carriers and processor carriers).
- Circuit Pack Form — Assign circuit packs into the carriers of the cabinets previously administered. Of those circuit packs, Expansion Interface (EI), Switch Node Interface (SNI), and optionally DS1 Converter circuit packs are of importance.

Port Network Connectivity (PNC) has two different reliability configurations: simplex and duplex. The duplex configuration has three stages that the Fiber Link form may be in at any one time as described next.

Stage 1- Simplex PNC

Provides the most cost-effective product with standard reliability. During stage 1, PNC Duplication is disabled on the System-Parameters Customer-Options form and Operation of Duplication is disabled on the System-Parameters Duplication Parameters form.

Stage 2- Administration of Duplication

During stage 2, the PNC operates as a simplex system. PNC Duplication is enabled on the System-Parameters Customer-Options form and Operation of Duplication is disabled on the System-Parameters Duplication Parameters form. Duplication is not in operation during this stage but merely in the process of being administered. When PNC Duplication is enabled on the System-Parameters Customer-Options form, the following administration forms change:

- Cabinet Form — Additional fields appear to allow administration of switch nodes to A-PNC and B-PNC sides of the CSS. Pairing of switch nodes is also defined here.
- Fiber Link Form — Additional fields appear to allow administration of fiber links on the B-PNC side of the CSS. If an endpoint on the A-PNC side is administered as an SNI, its corresponding endpoint on the B-PNC side is determined (if Switch Nodes are paired in the cabinet form prior to this administration) and displayed. However, administration of the duplicate B-PNC link will not be enforced until duplication is in full operation (stage 3).
- System-Parameters Duplication Parameters Form — An additional field appears to enable operation of PNC duplication.

Stage 3- Duplex PNC

During stage 3, Operation of Duplication is enabled on the System-Parameters Duplication Parameters form. To configure a duplicated system, the following administration must take place:

- System-Parameters Duplication Parameters Form — Enter “y” to enable the operation of PNC duplication in the Enable Operation of PNC Duplication field.



NOTE:

Before operation of duplication can be enabled:

- All Switch Nodes must be paired with a duplicate
- All fibers that contain an Expansion Interface board must be duplicated.

Once stage three is reached, duplication is in full operation and affects the following administration features in the following way:

- Cabinet Form — All switch nodes administered must have a duplicate administered.
- Fiber Link Form — All fiber links administered must have a duplicate administered. If a DS1 Converter Complex is administered, then it too must have a duplicate administered.

Hardware Requirements

With more than three PNs in the System, a Center Stage Switch (CSS) must be added. The CSS provides the interconnection facilities between PNs. With three or fewer PNs, interconnection facilities are provided by connecting each PN to other PNs via EI boards.

Forced Entry of Account Codes

Requires users to dial an account code when making certain types of outgoing calls.



NOTE:

To maximize System security, it is recommended that the Forced Entry of Account Codes feature be enabled and administered on the System.

Administration

The Forced Entry of Account Codes option must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

For All Toll Calls via ARS or a Trunk Access Code (TAC):

Form	Field	Form Instructions (Page #)
System Parameters CDR	Forced Entry of Account Codes	5-69
Toll Analysis	CDR Account Code Length Dialed String, Min, Max, CDR FEAC	4-117

- System Parameters CDR Form — Enter “y” in the Forced Entry of Account Codes field to indicate that an account code must be entered when making a call. Complete the CDR Account Code Length field.
- Toll Analysis Form — Complete entries for the Dialed String, Min, and Max fields if the Dialed String is not already on form and enter “x” in the CDR FEAC field for each dialed string to be marked as a call associated with the Forced Entry of Account Code feature.

For Toll Calls Made By A Particular Group of Users (via ARS or a TAC):

Form	Field	Form Instructions (Page #)
Class of Restriction	Forced Entry of Account Codes	5-93
Call Originating Facility (e.g., station, data module, etc.)	COR	
Toll Analysis	Dialed String, Min, Max, CDR FEAC	4-117

- Class of Restriction Form — Assign “y” to the Forced Entry of Account Codes field on each appropriate COR form.
- Call Originating Facility Forms — Assign the appropriate COR (Forced Entry of Account Codes field = “y”) to each station, data module, etc., form as required.
- Toll Analysis Form — Complete appropriate lines on the form for each dialed string to be associated with the Forced Entry of Account Code feature. For each line, complete the Dialed String, Min, and Max fields if the Dialed String is not already on form and enter “x” in the CDR FEAC field for each dialed string to be marked as a call associated with the Forced Entry of Account Code feature.

For All Calls Routed Over A Particular Trunk Group (TAC calls only):

Form	Field	Form Instructions (Page #)
Class of Restriction	Forced Entry of Account Codes	5-93
Trunk Group	COR	4-123

- Class of Restriction Form — Assign “y” to the Forced Entry of Account Codes field on each appropriate COR form.
- Trunk Group Forms — Assign the appropriate COR (Forced Entry of Account Codes field = “y”) to each Trunk Group form as required.

Hardware Requirements

None.

Foreign Exchange (FX) Trunk Group

A Foreign Exchange (FX) Trunk Group provides for trunk connections between the System and a distant central office.

Administration

To assign an FX Trunk Group, the following form must be completed,

Form	Field	Form Instructions (Page #)
Trunk Group (FX)	All	4-253
Digit Absorption	All	4-62

- Trunk Group (FX) Form — Complete all fields.
- Digit Absorption Form — If required, complete this form when the far-end central office is a step-by-step office. The Digit Absorption List field on the Foreign Exchange trunk group must reference the Digit Absorption List number entered on the form.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port is required on a TN747B CO Trunk, or TN464D or TN767 DS1 Interface circuit pack for each trunk to be assigned. A TN747B provides eight ports, a TN767 provides 24 ports, and a TN464D provides 32 ports.

Generalized Route Selection

Enhances the AAR and ARS features by providing additional parameters to be considered in the routing decision. Optimal routing of voice and data calls is supported.

Refer to *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for more information.

Administration

NOTE:

Generalized Route Selection is not supported by the G3s V2 ABP configuration.

The ISDN-PRI and the Automatic Route Selection options must be enabled on the System-Parameters Customer-Options form before associated forms or fields on forms can be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Routing Patterns	IXC BCC Service/Feature Band	4 - 19
Trunk Group	BCC	
Access		4-130
CO		4-178
FX		4-253
ISDN-PRI		4-275
Tandem		4-324
Tie		4-349

- Routing Patterns Form — Complete the IXC, BCC, Service/Feature, and Band fields as required.
- Trunk Group Forms — Complete the BCC field where required for all trunk groups with “avd” in the Conn Type field.

Hardware Requirements

None.

Go to Cover

Allows users, when making a call to another internal extension, to send the call directly to coverage.

**NOTE:**

Go to Cover cannot be activated for calls placed to a Vector Directory Number extension, but can be used to force a call to cover to a VDN if the called principal has a VDN as a coverage point in their coverage path.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Button/Feature Button Assignments -goto-cover	5-287

- Station Forms — Assign a Go to Cover (goto-cover) button.

Hardware Requirements

None.

Hold

Allows terminal users to disconnect from a call temporarily, use the voice terminal for other call purposes, and then return to the original code.

Administration

To administer this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes Station	Answer Hold-Unhold	5-161
	Button/Feature Button Assignments -hold	5-287

- Feature Access Codes Form — Assign an access code to the Answer Hold-Unhold field.
- Station Forms — Assign an attendant Hold (hold) button.

Hardware Requirements

None.

Hold, Automatic

Automatic Hold allows attendants and Multi-Function station set users to alternate easily between calls by merely selecting call appearances.

For example, with this feature enabled, depressing a second call appearance button automatically puts the active call on hold (without pressing the HOLD button) and makes the second call appearance the active call; pressing the first call appearance places the second call on hold and makes the first call appearance the active call.

If the Automatic Hold feature is disabled, Automatic Drop is enabled and the same actions listed above will drop the active call appearance.

The Held Call Timed Reminder Timer works in conjunction with this feature to ringback calls placed on hold after the specified period of time. (This timer does not apply to conference calls.)

This feature is enabled or disabled on a system-wide (not individual) basis.

Administration

To implement this feature, the following forms must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Auto Hold	5-168

- Feature-Related System Parameters form — Enable Auto Hold by entering “y” in the Auto Hold field. Entering “n” in the Auto Hold field enables Automatic Drop.

Hardware Requirements

None.

Hospitality Services

A System with the Hospitality option enabled and Hospitality Parameter Reduction disabled on the System-Parameters Customer-Options form provides all System capabilities and supports all types of customers. A System with both the Hospitality and Hospitality Parameter Reduction options enabled provides reduced System parameters that have a major impact on essential System features used by non-lodging customers. The Hospitality features set (Auto Wakeup, Do Not Disturb, PMS) is the same on both packages.

The parameters that are reduced when the Hospitality Parameter Reduction option is enabled are shown in the Capacity Table in Appendix C. The Standard or Current Package and reduced (New Package) and associated maximums with each parameter are shown.

The following parameters are offered in the Reduced package:

- Trunks
- Hunt Groups
- Pickup Groups
- Call Coverage Paths

Administration

NOTE:

Hospitality Parameter Reduction is not supported by the G3s V2 ABP configuration.

Both Hospitality and Hospitality Reduced Parameters options must be enabled on the System-Parameters Customer-Options form for a Reduced Parameters System. In addition, associated hospitality parameters must be administered on the Hospitality-Related System-Parameters form (instructions provided in Chapter 5).

Hardware Requirements

None.

Hot Line Service

Allows single-line voice terminal users, by simply lifting the handset, to automatically place a call to a preassigned extension number, public or private network telephone number, or feature access code.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (single-line)	Hot Line Destination Number and Dial Code	5-303
Abbreviated Dialing	Abbreviated Dialing (List 1, 2, 3)	
7103A List	Dial Code (hot line destination)	5-14
System List		5-11
Group List		5-5
Personal List		5-8
Enhanced List		5-2
Data Modules	Special Dialing Option	
Data Line	Hot Line Destination AD List	5-111
MPDM/MTDM		5-128
Netcon (G3s V2, G3i V2 only)		5-133
Processor Interface		5-136
SAP (G3r V2 only)		5-139
PGATE (G3r V2 only)		4-99

- **Station Forms** — On associated Voice Terminal forms, complete the Hot Line Destination field to specify the list entry containing the Hot Line Destination. Complete Abbreviated Dialing List 1,2,3 field.
- **Abbreviated Dialing List Forms** — Assign the Hot Line Destination to the Abbreviated Dialing list.
- **Data Module Forms** — Complete the Special Dialing Option field as “hot-line” where required. Complete the Hot Line Destination Abbreviated Dialing Code field.

Hardware Requirements

None.

Hunting

Checks for the active or idle status of extension numbers in one or more ordered groups. If all members of a group are active on calls, the call can route to another group through Call Coverage or can wait in a queue for an available group member, if a queue is provided.

Refer to "Automatic Call Distribution (ACD)," "Direct Department Calling," "Uniform Call Distribution," or "Call Coverage" for more information. Hunting is implemented via these features, either singularly or in combination with each other.

Inbound Call Management

Provides automated handling of incoming calls to Automatic Call Distribution (ACD) splits, such as telemarketing centers, to increase ACD agent efficiency and tracking. ACD agent terminal displays can be automated and associated with new and transferred calls and assist calls to a supervisor. Incoming call information such as Calling Party Number (CPN), Billing Number (BN), and Dialed Number Identification Service (DNIS) may be displayed on the terminal. Calls can terminate on an Inbound Call Management (ICM) adjunct such as a CONVERSANT® voice system, and using CallVisor ASAI third party call capabilities, route the call accordingly. Or, for example, the adjunct can perform a database search on the caller information (that is, CPN/BN) and retrieve caller data to display on a selected agent's screen based on the service dialed (that is, DNIS).

A CallVisor Adjunct/Switch Applications Interface (ASAI) link between the ICM adjunct and the switch allows the adjunct to control incoming call processing such as: who should receive call, control the routing. If optioned, Direct Agent Calling allows the adjunct to direct a call to a particular ACD agent when required and have the call treated as an ACD call.

Administration



NOTE:

The Inbound Call Management feature is not supported by the G3s V2 ABP configuration.

The Automatic Call Distribution, CallVisor ASAI, and appropriate ASAI Capability Groups options must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered. In addition, if Call Vectoring is to be used with this feature, the Vectoring (Basic) and/or Vectoring (Prompting) options must also be enabled.

In addition to the following administration requirements, refer to the "Automatic Call Distribution," "Call Vectoring," "Call Prompting," and "CallVisor Adjunct/Switch Applications Interface" features (in this chapter) for associated administration requirements. Figure 3-6 (provided with the CallVisor Adjunct/Switch Applications Interface feature coverage) shows the system connections required for an ICM interface link.

To implement this feature, the following form(s) or sections of form(s) must be completed:

Form	Field	Form Instructions (Page #)
Trunk Group (SSDN-PRI) Hunt Groups	Per Call CPN/BN	4-275
	Group Type	5-189
	ACD	
	Queue	
	Vector	
	Measured	
	Supervisor Extension	
	Controlling Adjunct	
	Queue Length	
	Calls Warning Threshold	
	Calls Warning Port	
	Time Warning Threshold	
	Time Warning Port	
Class of Restriction	Direct Agent Calling	5-93
Call Vector	All	5-76
Station (agent stations)	All	5-287

- Trunk Group (ISDN-PRI) Form — Administer the Per Call CPN/BN field on the appropriate ISDN-PRI trunk group. Valid entries are “cpn-only”, “cpn-pref”, “bn-only”, and “bn-pref”. The corresponding information will be sent with a call offered event report to the adjunct. If the field is blank, no CPN/BN information is sent to the adjunct.
- Hunt Group Form — Complete a form for each split to be monitored by the ICM adjunct. Specific entries are:
 - Group Type — “ucd” is usually preferred.
 - ACD — Enter “y”.
 - Queue — Enter “y”.
 - Vector — Enter “y” for adjunct routing.
 - Measured — Enter “internal”, “external”, “both”, or “none”.
 - Supervisor Extension — Enter the supervisor extension, if applicable.
 - Controlling Adjunct — Enter the name of the adjunct.
 - Queue Length — Assign a Queue Length.
 - Calls Warning Threshold — Enter the number of queued calls it takes to activate the queue warning lamp.
 - Calls Warning Port — Enter the location of the auxiliary queue warning lamp.
 - Time Warning Threshold — Enter the age of the oldest queued call that will activate the queue warning lamp.

- Time Warning Port — Enter the location of the auxiliary time warning lamp.
- COR Form (Optional) — Enter “y” in the Direct Agent Calling (DAC) field on the appropriate COR form to enable the DAC feature for the COR. DAC is only allowed if the call originator and the destination agent have a COR that allows the DCA.
- Call Vector Form — If Call Vectoring is to be used, ensure that a Call Vector form has been completed. An ASAI link interface extension number is required for an “adjunct routing” command entered on the form. This extension is the same as that entered on the station form.
- Station Forms — On the appropriate station forms, complete all fields as required to administer agent voice terminals. Queue status feature buttons may be assigned (status lamps are functional after agent login).

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Additional hardware requirements for the ASAI port interface are described with the CallVisor Adjunct/Switch Applications Interface feature coverage (this Chapter).

Individual Attendant Access

Allows users to access a specific attendant console. Each attendant console can be assigned an individual extension number.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Dial Plan	First Digit Table	5-150
Attendant Console	Extension and Name	5-35
Console Parameters	COR and COS	5-101

- Dial Plan Form — Ensure that the First Digit Table Assignments include extension numbers to be assigned individual attendants.
- Attendant Console Form — Enter attendant extension and name. Assign optional Make Busy feature buttons for Hunting and Centralized Attendant Service (CAS) Backup feature button for status indication.
- Console Parameters Form — Assign Class of Restriction (COR) and Class of Service (COS).

Hardware Requirements

None.

Information System Network (ISN) Interface

The AT&T ISN is a packet-switched local area network that links mainframe computers, minicomputers, word processors, storage devices, personal computers, printers, terminals, and communications processors into a single system. The interface to the System is via an Asynchronous Data Unit (ADU).

Figure 3-24 provides a typical ISN interface connection to the System using a port on a TN726B Data Line circuit pack.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Data Module (Data Line)	All	5-107

- Data Module (Data Line) Form — Complete all fields.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

One TN726B Data Line circuit pack is required for every eight ISN interfaces.

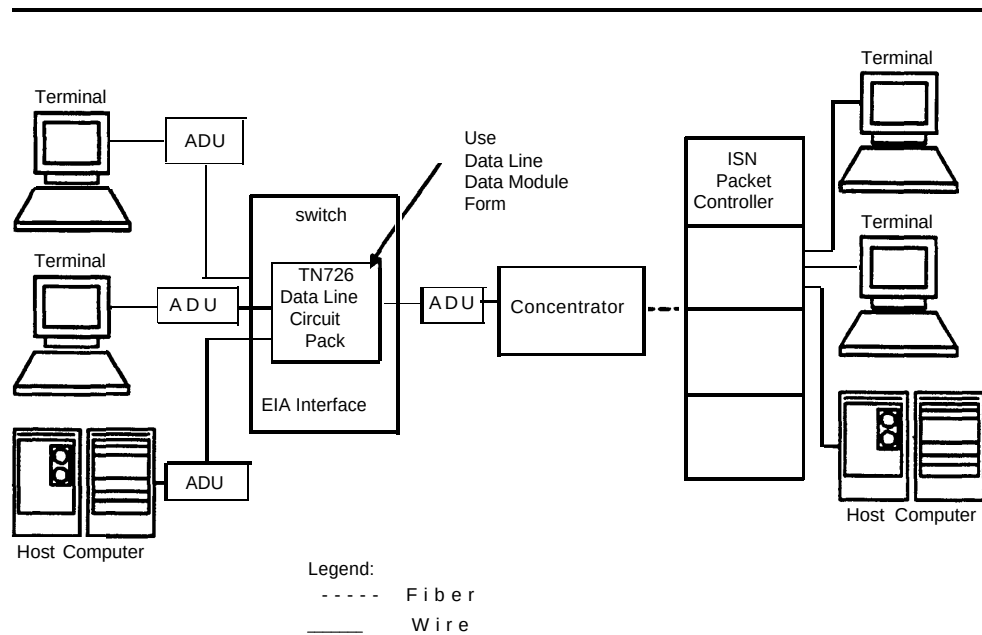


Figure 3-24. Typical ISN Connection to the System

Integrated Directory

Allows internal System users with display-equipped terminals to access the System database, use the touch-tone buttons to key in a name, and retrieve an extension number from the System directory. The directory contains an alphanumeric listing of the names and extension numbers assigned to all voice terminals administered in the System.



NOTE:

The use of Vector Directory Number names and extensions are not supported for this feature.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (Associated Display Module Form)	Display Module Button Assignments directory -next -call-disp	5-287
Attendant Console	Feature/Display Button Assignments -directory -next -call-disp	5-35
7404D Voice Terminal (Associated Data Module Form)	All	5-343

- Station Forms — Enter “y” in the Display Module field. Assign an Integrated Directory (directory) display button.
- Display Module Form — Assign one Integrated Directory (directory) display feature button, if desired. If an Integrated Directory button is assigned as a feature button, you cannot assign an Integrated Button on the Display Module, or vice versa. Assign Next and Return Call (call-disp) buttons also.
- Attendant Console Form — Assign one Integrated Directory display feature button. Assign Next and Return Call (call-disp) display buttons also.
- 7404D Station Form — Assign a “y” to the Display and Data Module fields if a 7404D Messaging Cartridge is attached to the voice terminal. Complete an associated 7404D Data Line Data Module form.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

The 7404D voice terminal requires an optional Messaging Cartridge if the terminal is to be connected to an associated data terminal. (The data terminal provides display capabilities for the 7404D.)

Integrated Services Digital Network — Basic Rate Interface

Allows connection of the system to an Integrated Services Digital Network (ISDN) by using a standard ISDN frame format called the Basic Rate Interface (BRI).

An ISDN provides end-to-end digital connectivity and uses a high-speed interface that provides service-independent access to switched services. Through internationally accepted standard interfaces, an ISDN provides circuit- or packet-switched connectivity within a network and can link to other ISDN-supported interfaces to provide national and international digital connectivity. Two types of ISDN interfaces are currently defined: the Primary Rate Interface (PRI) and the Basic Rate Interface (BRI). This description focuses on ISDN-BRI. (For details on ISDN-PRI, refer to the “Integrated Services Digital Network-Primary Rate Interface” sections in Chapters 3 and 4.

The term “endpoint” is used whenever statements apply to both ISDN-BRI voice terminals and ISDN-BRI data modules.

The ISDN-BRI is a 192-kbps interface that carries two 64-kbps “B-channels,” which transports voice and/or data, and one 16-kbps “D-channel,” which transport data, signaling, and other bits for framing.

An ISDN-BRI device (most commonly a terminal) operates at 192 kbps, and provides bearer service over two 64 kbps B-channels for voice and/or data. An ISDN-BRI device also has one 16-kbps D-channel for signaling and/or data. Although ISDN-BRI supports data transmission on the D-channel, Generic 3 V2 does not support this capability, and only provides signaling on this channel. ISDN-BRI provides much of the same functionality that is provided with the Digital Communications Protocol (DCP).

With ISDN-BRI, there are two possible configurations: passive bus “multipoint” and “point-to-point.” In the passive bus multipoint configuration, the system supports two ISDN-BRI endpoints per port. The ISDN-BRI supports two endpoints per port. In this multipoint configuration, you can have:

- two voice-only endpoints per port
- two data-only endpoints per port
- one data-only endpoint and one voice-only endpoint per port

In each of the multipoint configurations, each endpoint has its own ISDN-BRI interface. In these multipoint configurations, both endpoints use the same wire connected to the switch. One endpoint uses the B1-channel, while the other endpoint uses the B2-channel. Although both endpoints use the B-channels on the same wire, they each have their own extension number. The system is able to distinguish between the two endpoints by using the Service Order Profile Identifier (SPID) of each endpoint. The SPID enables each endpoint in a multipoint configuration to identify itself to the switch. For information on SPID installation, refer to Appendix A in this manual.

ISDN-BRI Data Services

Data transmission on ISDN-BRI is provided by the 8500 Data Module and the Asynchronous Data Module (ADM). The 8500 Data Module is a stand-alone unit that supports asynchronous or synchronous DCE and asynchronous DTE. In asynchronous mode, the 8500 supports packet or circuit-switched data communications, and can be controlled via the front panel or the keyboard of a connected terminal. In synchronous mode, the 8500 supports circuit-switched or nailed-up data communications requires either the Multi-purpose Enhancement Board or the High-Speed Synchronous Enhancement Board, and can only be controlled via the front panel.

The Asynchronous Data Module (ADM) may be used with asynchronous DTE as a data stand for 7500-series ISDN-BRI voice terminals. Consisting of a circuit pack located inside the ISDN-BRI voice terminal, the ADM allows the transmission of integrated voice and data through one voice terminal. The ADM supports the Hayes command set for compatibility with PC communications packages. In addition, data transmission on ISDN-BRI is provided by a BRI terminal adapter or the Asynchronous Data Module.

Administration

NOTE:

ISDN-BRI is not supported by the G3s V2 ABP configuration.

Both the 8500 Data Module and the ADM are administered through station administration forms, using the data module administration page.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (7500 series)	All	5-392
Station (8500 series)	All	5-392
8500 Data Module	All	5-145

- Station Form (7505D, 7506D, and 7505D) — Complete all fields.
- Station Form (8505D) — Complete all fields.
- 8500 Data Module Form — Complete all fields.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

ISDN-BRI services require the following hardware:

- The TN556 ISDN-BRI Line circuit pack, which can support 12 line interfaces each operating at 192 kbps.
- ISDN-BRI Type B and Type D Terminal Management S/T interface terminals.
- The AT&T ISDN 7505D, 7506D, 7507D, and 8503D voice terminals.
- The 8500 Data Module and the Asynchronous Data Module (ADM). The ADM is supported by the AT&T ISDN 7505D, 7506D, and 7507D voice terminals with firmware version FP2.0 or later.

For additional information, refer to the “8500 Data Module,” “Asynchronous Data Module,” and “Data Modules” sections in this chapter and to the “8500 Data Module” and “7500D Series Voice Terminals” sections in Chapter 5.

Integrated Services Digital Network

— Primary Rate Interface

Provides end-to-end digital connectivity within the network and can provide national and international digital connectivity to other Integrated Services Digital Networks (ISDNs) that support the Primary Rate Interface (PRI) standard.

NOTE:

For administration information associated with an ISDN Gateway adjunct (that is, 3B2 or 6386 computer) used in support of the Calling Party Number/Billing Number (CPN/BN) feature, refer the CPN/BN coverage in this chapter.

Administration

NOTE:

ISDN-PRI is not supported by the G3s V2 ABP configuration.

The ISDN-PRI option must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
DS1 Circuit Pack	All	4-64
Signaling Group	All	4-108
Synchronization Plan	All	4-114
Data Module	All	
Processor Interface		5-136
Interface Links	All	4-91
Processor Channel	All	4-101
		or
		4-105
Trunk Group (ISDN-PRI)	All	4-88
CPN Prefix Table	All	4-60
Routing Patterns	All	4-19
Hunt Groups	ISDN Caller Display	5-189
Terminating Extension Group	ISDN Caller Display	5-260

- **DS1 Circuit Pack Form** — Assign all fields as required. For Facility Associated Signaling, up to 31 ports are available for administration as trunk members in an associated ISDN-PRI trunk group. The 32nd port is utilized as a signaling channel. For Non-Facility Associated Signaling, all 32 ports may be used on certain DS1 circuit packs.

The D-channel signaling function for these packs must be provided by a designated DS1 pack on its 32nd channel.

- **Signaling Group Form** — Complete all fields. This form identifies groups of ISDN-PRI DS1 interface B-channels for which a given D-channel (or D-channel pair) will carry the associated signaling information (supports the Facility and Non-Facility Associated Signaling feature). Each DS1 board required to have a D-channel must be in a different signaling group (unless D-channel backup is needed in which case a second DS1 is administered as a backup D-channel).
- **Synchronization Plan Form** — Used to assign primary and secondary external synchronization sources for the DS1 circuit pack. Complete all fields of the form as required.
- **Processor Interface Data Module Form** — Assign up to eight interface links using eight Processor Interface Data Module forms for multi-carrier cabinet Systems and up to four links for single-carrier cabinet Systems. One Processor Interface Data Module form must be completed for each interface link to be assigned.
- **Interface Links Form** — Assign link numbers 01 to 08 for a multi-carrier cabinet System or links 01 to 04 for a single-carrier cabinet System as required. (See *Note following this listing.*)
- **Processor Channel Form** — Enter assigned link numbers and assign associated channel numbers to each link. Complete all fields of the form as required. (See *Note following this listing.*)
- **Trunk Group (ISDN-PRI) Form** — Complete all fields as required.
- **CPN Prefix Table Form** — Complete all fields. This form is used to support the ISDN-PRI Calling Party Number feature.
- **Routing Pattern Form** — Complete all fields including the Supplemental ISDN Routing Information fields as required.
- **Hunt Group Form** — Complete the ISDN Caller Display field by entering either “grp-name” or “mbr-name” to specify whether the hunt group name or member name, respectively, will be sent to the originating user (used in support of the ISDN-PRI Call Identification Display feature).
- **Terminating Extension Group Form** — Complete the ISDN Caller Display field by entering either “grp-name” or “mbr-name” to specify whether the group name or member name, respectively, will be sent to the originating user (used in support of the ISDN-PRI Call Identification Display feature).

**NOTE:**

When first administering the Interface Links/Processor Channel Assignments forms in the System for ISDN:

1. Administer the required fields for ISDN on the interface Links form except the “Enable” field.
2. Administer the required fields on the Processor Channel Assignments form for ISDN.

3. Finally, administer the "Enable" field on the Interface Links form.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a TN767 or TN464 DS1 Tie Trunk circuit pack for assignment of a signaling link and up to 31 ISDN-PRI Trunk Group members. The DS1 provides 32 ports. A TN768 Tone Clock circuit pack is required to provide synchronization for the DS1 circuit pack. Also requires use of a TN765 Processor Interface circuit pack for assignment of associated links.

Voice terminals equipped with displays are required to display ISDN-PRI Call Identification information.

Intercept Treatment

Provides a recorded announcement or routes the call to an attendant for assistance when calls cannot be completed or when use of a feature is denied.

**NOTE:**

A Vector Directory Number (VDN) extension cannot be administered to receive intercept treatment.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	DID/Tie/ISDN Intercept Treatment	5-168
Recorded Announcements	Controlled Restrictions Port Assignments	5-244

■ Feature-Related System Parameters Form — Complete the following:

- DID/Tie/ISDN Intercept Treatment — This entry (extension number or “attd” for the attendant) is to be used for intercepting invalid DID and/or tie trunk calls.
- Controlled Outward Restriction Intercept Treatment — This entry determines the type of intercept treatment the caller receives on outward restricted calls.
- Controlled Termination Restriction (Do Not Disturb) — This entry determines the type of intercept treatment a caller receives when a call is placed to a termination restricted voice terminal.
- Controlled Station-to-Station Restriction — This entry determines the type of intercept treatment the caller receives when a call is placed to a restricted voice terminal.

■ Recorded Announcements Form — Assign intercept announcement extension number, if used.

Hardware Requirements**NOTE:**

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires announcement equipment and a port on a TN742, TN746B, or TN769 Analog Line circuit pack for each announcement device to be assigned. A TN750 Announcement circuit pack can be used to provide up to 16 different announcements. The announcements can be directly recorded onto the TN750 circuit pack (does not require announcement equipment).

Intercom — Automatic

Provides a talking path between two voice terminal users. Calling users press the Automatic Intercom button and lift the handset, or vice versa. The called user receives a unique intercom alerting signal, and the status lamp associated with the Dial or Automatic Intercom button, if provided, flashes.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Intercom Groups Station (multi-appearance)	All	5-203
	Button/Feature Button Assignments -auto-icom (Grp:_DC:_)	5-287

- Intercom Groups Form — Complete all fields as required.
- Station Forms — Assign Auto Intercom (auto-icom) button(s).

Hardware Requirements

None.

Intercom — Dial

Allows multi-appearance voice terminal users to gain rapid access to as many as 32 other voice terminal users within an administered group. Calling voice terminal users lift the handset, press the Dial Intercom button, and dial the 1- or 2-digit code assigned to the desired party. The called user receives alerting tone, and the status lamp associated with the Intercom button, if provided, flashes.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Intercom Groups	All	5-203
Station (multi-appearance)	Button/Feature Button Assignments -dial-icom (Grp: _)	5-287

- Intercom Groups Form — Complete all fields as required.
- Station Forms — Assign Dial Icom buttons on voice terminals for all intercom group members who can originate an intercom call. Anyone in a group can be called, but only those members with an assigned Intercom button can originate an intercom call.

Hardware Requirements

None.

Internal Automatic Answer

Allows specific voice terminals to answer incoming internal calls automatically. Internal Automatic Answer (IAA) is intended primarily for use with hybrid and Digital voice terminals that have a built-in speakerphone, adjunct speakerphone, or headset. IAA cannot be used with analog or BRI voice terminals, or hybrid voice terminals that have only a speaker.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Internal Automatic Answer for Attendant Extended Calls	5-168
Station (multi-appearance)	All	5-287

- Feature-Related System Parameters Form — Enter “y” to enable the IAA feature for Attendant extended calls.
- Station Form — Administer a station form as required for each voice terminal to be assigned. Assign an optional Internal Auto Answer feature button (“int-aut-an”) to each terminal. Consider assignment of the Scroll (“scroll”) and Local/Normal (“disp-norm”) display-type feature buttons to the 7315H and 7317H voice terminals as required.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port interface on a TN762B Hybrid Line circuit pack, or TN754B Digital Line circuit pack, is required for each voice terminal to be assigned.

Inter-PBX Attendant Service

Allows attendant positions for more than one branch location to be concentrated at one central, or main, location. Incoming trunk calls to the branch location, as well as attendant-seeking voice terminal calls, are routed over tie trunks to the attendants at the main location.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Tie Console Parameters (Branch)	Incoming Destination	4-349
	IAS (Branch)	5-101
Trunk Group (Branch)	IAS Tie Trunk Group No.	
Tie	IAS Att. Access Code	
	All	4-349

- Trunk Group (Tie) Form (Main) — Requires a Tie Trunk Group with the Incoming Destination field set to the attendant group access code (typically 0).
- Console Parameters Form (Branch) — Enter “y” in the IAS (Branch) field. The IAS (Branch) and Centralized Attendant Service (CAS) fields cannot both be “y.” Assign an “IAS Trunk Group Number” and an “inter-PBX Attendant Access Code.”
- Trunk Group (Tie) Form (Branch) — Requires a tie trunk group connected to the IAS Main (this is the trunk group referred to as “IAS Tie Trunk Group No.” on the Console Parameters form.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a port on a TN722B, TN767, or TN464D DS1 Tie Trunk circuit pack for each tie trunk to be assigned.

Intra-switch CDR

**NOTE:**

This section describes the implementation of the Intra-switch CDR feature. For administrative information on Call Detail Recording (CDR), refer to the “Call Detail Recording (CDR)” section in this chapter.

An administrable option that allows CDR records to be generated for some internal calls (calls to and from a finite set of extensions on the switch, see “Administration” below).

For an Intra-switch CDR record to be generated, one of the extensions involved in a call (originating or dialed extension) must have been optioned for Intra-switch CDR. Intra-switch CDR will or will not generate a record based on the DIALED number (assuming the originator is not intra-switch optioned); however, the number that is actually displayed in the dialed number field will be determined by the administration to record hunt group/member or VDN information on the System-Parameters CDR form.

Some calls may look like intra-switch CDR calls, but will result in trunk calls. For example, a call from a station that is intra-switch optioned to another station which then forwards its calls to an outgoing trunk will not output an Intra-Switch CDR record, only a Trunk CDR record will be generated.

Administration

To implement the Intra-switch CDR feature, the following forms must be completed.

Form	Field	Form Instructions (Page #)
Intra-switch CDR	All	5-207
System-Parameters CDR	Intra-switch CDR	5-69

Allowed extensions on the Intra-switch CDR form must correspond to Terminating Extension Groups (TEGs), stations, data modules, VDNs, PRI endpoints, access endpoints, or hunt groups. Attendants are not allowed to be optioned on the Intra-switch CDR form. To add the Intra-switch CDR feature to an extension, add the extension to the form. The *change intra-switch-cdr* and *display intra-switch-cdr* commands are supported for this feature.

**NOTE:**

The Intra-switch CDR feature is not supported for CallVisor ASAI stations.

Intraflow and Interflow

Allows Automatic Call Distribution (ACD) calls to be redirected from one split to another split under busy or unanswered conditions. Intraflow provides redirection of ACD calls to other splits within the system. Interflow uses the Call Forwarding All Calls feature to redirect ACD calls to an external location and requires no further administration.

Administration



NOTE:

For G3s V2 ABP configurations, the ACD feature is only available as part of the Basic Call Center Option.

To implement the Intraflow feature, the following form(s) or sections of the form(s) must be completed in addition to ACD administration requirements.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Coverage — Don't Answer Interval for Subsequent Redirection	5-168
Feature Access Codes	Call Forwarding Activation Call Forwarding Deactivation	5-161
Hunt Groups	Inflow Threshold	5-189
Call Coverage Paths	Priority on Intraflow Don't Answer Busy Number of Rings	5-62

- Feature-Related System Parameters Form — Assign the number of times a voice terminal in a Call Coverage path will ring before the call is routed to the next coverage point.
- Feature Access Code Form — Assign the digits a user must dial to activate and deactivate call forwarding.
- Hunt Group Form — Assign “y” to the Priority On Interflow field if calls incoming from this split to a covering split will have priority over calls waiting in the covering split’s queue. Assign the number of seconds in the Inflow threshold field (for the receiving split) that a call will remain in the queue before no more calls will be accepted by the queue (the age of the oldest call that can be in the queue at the receiving split before no intraflow calls will be accepted).

- **Call Coverage Paths Form** — Complete the Coverage Criteria Busy and Don't Answer fields for both inside and outside calls. In the Number of Rings field, assign the number of ring cycles for a call to queue to the hunt group/split before it is redirected to coverage. One ring cycle is about four seconds. This interval also applies to ACD calls that terminate to an agent's terminal.

Hardware Requirements

None.

Last Number Dialed

Automatically redials the last number dialed when users press the Last Number Dialed button or dial the Last Number Dialed feature access code.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes	Last Number Dialed Access Code	5-161
Station (multi-appearance)	Button/Feature Button Assignments -last-numb	5-287
Attendant Console	Feature Button Assignments -last-numb	5-35

- Feature Access Codes Form — Verify Last Number Dialed Access Code field.
- Station Forms — Assign Last Number Dialed (last-numb) button to voice terminal.
- Attendant Console Forms — Assign Last Number Dialed (last-numb) button to the console.

Hardware Requirements

None.

Leave Word Calling

Allows internal system users to leave a short preprogrammed message for other internal users. Users can activate Leave Word Calling (LWC) at any time during a call attempt.

The messages may be displayed (on the attendant console or display equipped voice terminal) in English, French, Italian, Spanish, or a “user-defined” language. Refer to the “Administrable Language Display” feature in this chapter for more information on display languages and administering a “user-defined” language.

Generic 3 V2 also provides voice synthesis (either English or Italian) for the Leave Word Calling feature. The language provided depends on which voice synthesis circuit pack is installed in the System.

⇒ NOTE:

The LWC messages cannot be stored, canceled, or retrieved for Vector Directory Number extensions.

Administration

⇒ NOTE:

For G3s V2 ABP configurations, LWC is available only as part of the Voice Mail Application Support Option. This option is activated when an AT&T voice processing adjunct is purchased.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Max. Number Of Messages Per Station	5-168
Station	Stations With System-Wide Message Retrieval Permission	5-287
	LWC Reception	
	LWC Activation	5-287
	Button/Feature/Button Assignments	
	-lwc-store	5-287
	-lwc-cancel	
	-aut-msg-wt (Ext:_)	5-287
	-call-disp	
	-msg-retr	5-287
	-next	
	-delete-msg	5-287
	-lwc-lock	
	-cov-msg-rt	5-287
	Feature Button Assignments	
Attendant Console	-lwc-store	5-35
	-lwc-cancel	
	-delete-msg	5-35
	-next	
	-call-disp	5-35
	-aut-msg-wt (Ext:_)	
Feature Access Codes	LWC Message Retrieval Lock	5-161
	LWC Message Retrieval Unlock	
	LWC Send A Message	5-161
	LWC Cancel A Message	

NOTE:

Refer to the “Attendant Display” and “Voice Terminal Display” features for additional information on LWC feature-related buttons that can be assigned an attendant console or voice terminal display.

- Feature-Related System Parameters Form — Complete the Maximum Number of Messages Per Station and Stations with System-wide Retrieval Permission fields.
- Station Forms — Complete the LWC Reception and LWC Activation fields (which specify if the voice terminal can receive and/or activate LWC messages, respectively).
 - Assign a Leave Word Calling button, if desired.
 - Assign a Cancel button, if desired, to allow a calling party to cancel a previously left message.

- Automatic Message Waiting (the buttons associated status lamp lights at the same time the message lamp lights at the called voice terminal. A common use is to provide an indication of an extension's messages on a secretary's voice terminal. This lamp also provides an indication of LWC messages left for a DDC group, a UCD group, an ACD split, a TEG, or PCOL group.)
- Attendant Console Form or the Station Form — For each voice terminal or attendant console group that can retrieve LWC messages, optionally assign the following buttons:
 - Message Retrieval (to access one's own messages — voice terminals only)
 - Coverage Msg Retrieval (to access another user's message)
 - Delete Message (to remove a retrieved message)
 - Call Display (to automatically call the person who left the message while displaying a retrieved message)
 - Lock (displays locked or unlocked status of the Message Retrieval)
 - Next (to retrieve the next stored message)
 - Cancel Leave Word Calling (to allow canceling a previously left message)
 - Automatic Message Waiting (the buttons associated indicator is used to indicate a remote message waiting)



NOTE:

Buttons can be assigned on the visual display module or in the "features area" of the terminal or console. If a Message Retrieval or a Coverage Message Retrieval button is specified, a Next Message and a Delete Message button should also be specified.

- Feature Access Codes Form — Verify or assign the following access codes:
 - Leave Word Calling Message Retrieval Lock field
 - Leave Word Calling Message Retrieval Unlock field
 - Leave Word Calling Send a Message field
 - Leave Word Calling Cancel a Message field

Hardware Requirements

Either a TN725B (American English), TN457 (British English), or TN433 (Italian) circuit pack is required for voice synthesis.

Line Lockout

Removes single-line voice terminal extension numbers from service when users fail to hang up after receiving dial tone for 10 seconds (default) and then intercept tone for 30 seconds (default). These intervals are administrable.

Line Lockout occurs as follows:

- A user does not hang up after the other party on a call is disconnected.

In this case, the user will receive dial tone for the administered time period, and then will receive intercept tone for the administered time period. The voice terminal is then taken out of service if the handset is still lifted.

- A user pauses for too long between digits while dialing.

In this case, the user will receive intercept tone for the administered time period. The voice terminal is then taken out of service if the handset is still lifted.

The out-of-service condition remains in effect until the voice terminal user hangs up.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Time before Off-hook Alert	5-168
	Line Intercept Tone Timer	

- Feature-Related System Parameters Form — Enter the desired values for the Time Before Off-hook Alert and Line Intercept Tone Timer.

Hardware Requirements

None.

Lookahead Interflow

Provides a flexible and intelligent Automatic Call Distribution (ACD) load-balancing capability based on programmable call vectors. It enhances the Call Vectoring feature so that calls will not interflow to a remote location that cannot accept the calls. This service is provided by the use of private network Integrated Services Digital Network (ISDN) Primary Rate Interface (PRI) connections. The receiving switch may accept or deny the lookahead calls allowing the sending switch the option to initiate lookahead interflow to an alternate backup location.

⇒ NOTE:

The receiving switch must also have the Call Vectoring and the Lookahead Interflow features active. If it is not, calls may complete to the receiving switch, but vector steps on the originating switch may not be executed. In addition, all Lookahead Interflow calls must connect ISDN-PRI switch-to-switch using private facilities.

The Lookahead Interflow, ISDN-PRI, and Call Vectoring (Basic) options must be enabled on the System-Parameters Customer-Options form.

⇒ NOTE:

It is recommended that this feature only be used over DS1/E1 circuit packs that are administered using Country Protocol Option 1 (even in a private network environment) independent of what country the System is in.

Administration

⇒ NOTE:

The Lookahead Interflow feature is not supported by the G3s V2 ABP configuration.

Refer to the "Call Vectoring" feature coverage in this chapter for associated Call Vectoring administration information.

To implement this feature, the following form(s) or sections of the form(s) must be completed:

Form	Field	Form Instructions (Page #)
Trunk Group ISDN-PRI CPN Prefix Table	-Display, TCM, Lookahead Codeset -Outgoing Display -Ext Len -Ext Code -CPN Prefix	4-275 4-60

- Trunk Group Form (ISDN-PRI) — If the far-end switch can only receive Lookahead InterFlow information in Codeset 7 (for example, System 85 R2V4) the Display, TCM, Lookahead Codeset field must be administered as “7”. Default is “6”.

For those Systems that do not want the call originator's display to be updated on each Lookahead Interflow call attempt, lookahead calls should be routed over trunk groups with the Outgoing Display field set to “n”.

- CPN Prefix Table Form — Administer a CPN Prefix for each Vector Directory Number (VDN) that maps to a call vector that is used to place Lookahead Interflow calls. Failure to administer a CPN/Prefix results in a Lookahead Interflow Dialed Number Identification Service (DNIS) of all spaces being sent to and displayed on the answering agent's terminal.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Existing ISDN-PRI hardware can be used for Lookahead Interflow ISDN-PRI connectivity to the receiving switch. Interconnecting facilities must be ISDN-PRI with no interworking (that is, call connections that use both ISDN-PRI and non-ISDN-PRI facilities to complete) for the full capabilities of the feature to be operational. Lookahead Interflow calls that interwork may interflow successfully, but the ability to do so on an intelligent basis will be lost as will the lookahead DNIS information.

Loudspeaker Paging Access

In addition to (or instead of) the System's Loudspeaker Paging Access feature, a PagePac™ paging system can be used. The following provides administration guidelines for Loudspeaker Paging Access feature and for administering a PagePac paging system.

Loudspeaker Paging Access

Provides attendants and voice terminal users dial access to voice paging equipment. Up to nine individual paging zones and one zone that can be used to activate all nine zones simultaneously can each be accessed using unique trunk access codes assigned each zone. The access codes may be assigned on Abbreviated Dialing feature buttons or, when activated by an attendant, may also be assigned Trunk Group Select button(s) on the console.

This feature is particularly useful when used in conjunction with the Call Park feature. When a user is away from his or her location and receives a call, an incoming call can be answered and then parked by another user. The called party can then be paged and told what extension number to call to receive the incoming call. The called party dials the Answer-Back access code and (after receiving Dial tone) the extension number that the call is parked on.

Refer to the "Loudspeaker Paging Access — Deluxe" feature that integrates the Call Park feature into the use of the Loudspeaker Paging feature.

Administration — Loudspeaker Paging

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance) Attendant Console	Button/Feature Button Assignments	5-287
	DTGS Select or Feature Button Assignments	5-35
Loudspeaker Paging and Code Calling Access	All	5-224
Feature-Related System Parameters	Call Park Timeout Interval	5-168
	Deluxe Paging and Call Park Timeout to Originator	
Dial Plan	First/Second Digit Table	5-150
Console Parameters	Common Shared Extensions	5-101
Class of Service	Console Permission	5-99

- Station/Attendant Console Forms — Up to ten (one per zone) Loudspeaker Paging Access buttons (per multi-appearance voice terminal and attendant console) can be assigned through the Attendant Direct Trunk Group Selection, Abbreviated Dialing, and the Facility Busy Indication features, if required.
- Loudspeaker Paging and Code Calling Access Form — Complete Loudspeaker Paging fields.
- Feature-Related System Parameters Form — Enter in the Call Park Timeout Interval field, the desired time in minutes that a call can remain parked before it is canceled. Enter “n” in the Deluxe Paging and Call Park Timeout to Originator field. (All parked calls that time out are returned to the attendant console.)
- Dial Plan Form — Assign the length (1 to 4 digits) of the trunk access code to be used to activate Loudspeaker Paging Access.
- Console Parameters Form — Complete the Common Shared Extensions fields that are exclusively used for Call Park.
- Class of Service Form — Complete the Console Permission field on those Class of Service forms that will allow associated voice terminal users to park calls on the attendant consoles “Common Shared Extensions.”

Hardware Requirements — Loudspeaker Paging

⇒ NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires loudspeaker paging equipment and a port on a TN763C Auxiliary Trunk circuit pack for each individual paging zone port (maximum of nine) to be assigned. In addition, paging interface hardware consisting of a 278A Adapter and a 24-volt power supply is required per paging zone. (This hardware can be shared with the Code Calling Access feature. Each feature is activated via an assigned trunk access code). Associated wiring information is provided in the wiring section of *DEFINITY Communications System Generic 3 V2 Installation and Test*, 555-230-104.

PagePac Paging

In addition to, or instead of the system loudspeaker paging equipment, a PagePac paging system can be used. A PagePac paging system has an advantage over the System's Loudspeaker Paging Access feature in that a PagePac system requires only one port to provide as many as 39 paging zones. The System's Loudspeaker Paging Access feature requires a separate port for each paging zone with a maximum of nine zones.

PagePac equipment is easy to use. A user simply dials the trunk access code assigned to the PagePac system. This connects the user to the PagePac equipment. If there is only one paging zone, the user then uses the handset of the voice terminal to page someone. If there are multiple zones, the user, after hearing a steady tone, dials a 1- or 2-digit code to access the desired zone(s) before paging.

Administration — PagePac Paging

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group (CPE)	All	4-200
Feature-Related System Parameters	Call Park Timeout Interval	5-168
Dial Plan	First/Second Digit Table	5-150
Console Parameters	Common Shared Extensions	5-101
Class of Service	Console Permission	5-99

- **Trunk Group (CPE) Form** — Complete a CPE Trunk Group form and associated member number to assign a TN763C Auxiliary Trunk port interface to the PagePac paging equipment. Assign the TAC that will be used to access the paging equipment.



NOTE:

Note that the administration of this port and associated PagePac paging zones is not provided for on the Loudspeaker Paging and Code Calling Access form. The port must be administered using a CPE Trunk Group form. Support for single-or multiple-zone paging is provided by the PagePac system and is not administered on the switch. Associated wiring information is provided in the wiring section of *DEFINITY Communications System Generic 3 V2 Installation and Test*, 555-230-104.

- **Feature-Related System Parameters Form** — Enter in the Call Park Timeout Interval field, the desired time in minutes that a call can remain parked before it is canceled. (All parked calls that time out are returned to the attendant console.)
- **Dial Plan Form** — Assign the length (1 to 4 digits) of the trunk access code to be used to activate the paging equipment.
- **Console Parameters Form** — Complete the Common Shared Extensions fields that are exclusively used for Call Park.
- **Class of Service Form** — Complete the Console Permission field on those Class of Service forms that will allow associated voice terminal users to park calls on the attendant consoles “Common Shared Extensions.”

Hardware Requirements — PagePac Paging

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Three different PagePac paging systems are available for use:

- PagePac 20

This is the smallest PagePac system. The basic system provides a single-paging zone with an input source for music over the paging system. The music can also serve as the music for the Music-on-Hold Access feature. Additional add-on hardware is available to provide multi-zone paging for 3, 9, or 39 paging zones.

- PagePac VS

This system provides one to three paging zones. It also permits the paging of all zones simultaneously. Additional hardware is available to provide music and/or talk-back over the paging system.

- PagePac 50/100/200

This system provides up to 24 paging zones. Additional hardware is available to provide music and/or talk-back over the paging system.

Loudspeaker Paging Access — Deluxe

Provides attendants and voice terminal users with integrated dial access to voice paging equipment and Call Park capabilities. Up to nine individual paging zones and one zone that can be used to activate all nine zones simultaneously can each be accessed using unique trunk access codes assigned each zone. The access codes may be assigned on Abbreviated Dialing feature buttons or when activated by an attendant may also be assigned Trunk Group Select button(s) on the console.

This feature is particularly useful in that the Call Park feature is integrated into the use of the feature. When a user is away from their location and receives a call, an incoming call can be answered and then automatically parked by another user. The user dials the Loudspeaker Paging access code and the system then automatically parks the call. The called party can then be paged and told that they have a call. The called party dials the Answer-Back access code to retrieve the call.

⇒ NOTE:

Also, see "Loudspeaker Paging Access."

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance) Attendant Console	Button/Feature Button Assignments	5-287
	DTGS Selector Feature Button Assignments	5-35
Loudspeaker Paging and Code Calling Access	All	5-224
Feature-Related System Parameters	Call Park Timeout Interval	5-168
	Deluxe Paging and Call Park Timeout to Originator	
Dial Plan	First Digit Table	5-150
Console Parameters	Common Shared Extensions	5-101
Class of Service	Console Permission	5-99

- Station/Attendant Console Forms — Up to ten (one per zone)
Loudspeaker Paging Access buttons (per multi-appearance voice terminal and attendant console) can be assigned through the Attendant Direct Trunk Group Selection, Abbreviated Dialing, and the Facility Busy Indication features, if required.
- Loudspeaker Paging and Code Calling Access Form — Complete Loudspeaker Paging fields. Enter "y" in the Deluxe Paging field.

- Feature-Related System Parameters Form - Enter in the Ballpark Timeout Interval field, the desired time in minutes that a call can remain parked before it is canceled. Enter "y" in the Deluxe Paging and Call Park Timeout to Originator field. (All parked calls that timeout are returned to the parking party.)
- Dial Plan Form — Assign the length (1 to 4 digits) of the trunk access code to be used to activate Loudspeaker Paging Access - Deluxe.
- Console Parameters Form — Complete the Common Shared Extensions fields that are exclusively used for Call Park.
- Class of Service Form — Complete the Console Permission field on those Class of Service forms that will allow associated voice terminal users to park calls on the attendant consoles "Common Shared Extensions."

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires loudspeaker paging equipment and a port on a TN763C Auxiliary Trunk circuit pack for each individual paging zone port (maximum of nine) to be assigned. In addition, paging interface hardware consisting of a 278A Adapter and a 24-volt power supply is required per paging zone. (This hardware can be shared with the Code Calling Access feature. Each feature is activated via an assigned trunk access code). Associated wiring information is provided in the wiring section of *DEFINITY Communications System Generic 3 V2 Installation and Test*, 555-230-104.

Malicious Call Trace

Malicious Call Trace (MCT) provides a way for terminal users to notify a pre-define set of users that they may be party to a malicious call. This predefine set of users may then retrieve certain information related to the call. Based on this information, it is possible to identify the source of the malicious call or be capable of providing useful information to personnel at an adjacent switch to aid in tracking down the source of the malicious call.

This feature also provides a method by which an audio recording of the malicious call may be generated.

MCT collects three sets of information depending on whether the malicious call originated within the System or outside of it.

1. If the call originated within the System (the same node or within a DCS node), the calling number will be displayed on the controlling terminal
2. If an ISDN calling number identification is available on the incoming trunk, then the calling number will be displayed.
3. Otherwise, the incoming trunk equipment location will be displayed.

In the latter case, it will be necessary for the customer to call the appropriate connecting switch.

For all three types of calls, the controlling terminal displays other information including the called number, activating number, whether the call is active or not, and, if appropriate, identification of any additional parties that may be on the call.

The complete trace activity for MCT can be divided into three distinct phases: feature activation, feature control and feature deactivation.

Feature Activation

MCT is activated by:

- Pushing an administered MCT-Activate feature button.
- Placing the call on hold, getting a second call appearance, dialing an MCT-Activate Feature Access Code (FAC), and then dialing their extension (or pressing #) after receiving a dial tone.
- Signaling a coworker to activate the feature.
- Inform the MCT Controller who can request tracing the call through tandemed PBXs by coordinating with its MCT Controller the trunk member port ID.

Once activated, the information associated with the call is stored and a group of previously administered terminals is alerted. If an MCT Voice Recorder is connected, it will begin recording the conversation.



NOTE:

Any Bridging, Conference, or Intrusion tone that may have been connected to any party(ies) on the connection will be temporarily removed while the voice recorder is connected.

Upon MCT activation for a Trunk Access Code (TAC), the terminal performing the activation will be checked for an MCT-Control button. If no button is administered on this set, the user will receive intercept. If a button is administered on the set, this terminal will receive a third dial tone to enter the trunk member number of interest for the trunk group identified by the TAC. An invalid trunk member number results in the user receiving intercept. A valid trunk member number results in this user immediately becoming the MCT Controller for a call involving the identified trunk member.

(This particular TAC operation is useful when a user has been asked to trace a call that has tandemed through their switch to terminate on another).



NOTE:

MCT does not generate a call within the system to accomplish the alerting of the controlling terminals. Since the alerting is not a call, it is not impacted by the length or existence of queues associated with the controlling terminals. There are, however, still interactions with real calls at the alerted terminals as described later.

If a trunk is involved in the MCT, this resource will be blocked from being dropped *from the switch-side* to facilitate the tracing activity. Any terminal involved in the call will not be blocked from dropping.

The VIAS feature will voice-out display information for MCT activation, but not for MCT control.

Feature Control

After being alerted of an MCT activation, the first controlling terminal to respond by pushing an administered MCT-Control button is considered the controlling party for the call. Alerting on the remaining members of the set of controlling terminals, if any, will stop.

The initial MCT-Control button push generates a display identifying the called party (both the called extension and the names display information). Subsequent button pushes will cycle through the MCT information. The complete set of MCT information may be displayed repeatedly by continued pushes of the button.

In the case of a malicious call involving a non-ISDN trunk, the controlling party would call personnel at the connecting switch to request a trace be performed. For this to be feasible, it is necessary that the controlling party have available the telephone number for the connecting switch as well as a cross-reference of System trunk port numbers (including DS1 channel number, if appropriate) versus the trunk equipment locations at the connecting switch.

Feature Deactivation

The controlling party may at any time (but presumably after completing the trace) complete the MCT feature activity by dialing the MCT-Deactivate FAC. This deactivation frees any resources involved in the current trace activity that were blocked by the MCT feature and, if appropriate, disconnects the MCT Voice Recorder from the call.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction Station	Access to MCT?	5-93
	Feature Button Assignments - mct-act - mct-contr	5-287
Feature-Related System Parameters	Apply MCT Warning Tone?	5-168
Feature Access Code	MCT Voice Recorder Trunk Group Malicious Call Trace Activation	5-161
Attendant Console	Malicious Call Trace Deactivation	
Malicious Call Trace	Feature Button Assignments	5-35
	Extensions	5-228

- Class of Restriction Form — Permit this station assigned to this COR to access the MCT feature by assigning a “y” in the Access to MCT field.

⇒ NOTE:

Assigning a “n” in this field still allows this station to make entries to the MCT History report.

- Station Form — Assign those stations to have MCT Control Buttons (mct-contr) and MCT-Active Buttons (met-act) in the Feature Button Assignments fields.
- Feature-Related System Parameters Form — Provide an audible tone to the controlling station when an MCT recorder is actively recording a malicious call by assigning a “y” in the Apply MCT Warning Tone field.

Assign the trunk group number of the MCT voice recorder in the MCT Voice Recorder Trunk Group field.

Display those stations with MCT-Control Buttons on the Extensions Administered an MCT Control Button fields.

- **Feature Access Code Form** — Enter the feature access code that activates the MCT feature in the Malicious Call Trace Activation field.

Enter the feature access code that deactivates the MCT feature in the Malicious Call Trace Deactivation field.

- **Attendant Console Form** — Assign those attendants to have MCT Control Buttons (mct-contr) and MCT-Active Buttons (mct-act) in the Feature Button Assignments fields.
- **Malicious Call Trace Form** — Enter the extensions that have an mct-contr button assigned to them. Users assigned to these extensions activate malicious call trace by depressing these buttons; they deactivate the feature by entering a feature access code. Users with a mct-act button can request a call trace with the button, but the mct-contr button activates the feature.

Hardware Requirements

The MCT Feature requires a voice recording device (such as a conventional audio cassette tape recorder) connected to the System via an Auxiliary Trunk circuit pack.



NOTE:

The MCT Voice Recorder and associated Auxiliary Trunk port(s) cannot be shared by other System features.

Manual Message Waiting

Enables multi-appearance voice terminal users, by pressing a designated button on their own terminals, to light the status lamp associated with the Manual Message Waiting button at another multi-appearance voice terminal. Activating the feature causes the lamp to light on both the originating and receiving voice terminals. Either terminal user can cause the lamp to go dark by pressing the button.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Button/Feature Button Assignments -man-msg-wt	5-287

- Station Form — Assign “man-msg-wt” to a voice terminal button.

Hardware Requirements

None.

Manual Originating Line Service

Connects users to the attendant automatically when the user lifts the handset.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Abbreviated Dialing System List	Dial Code (attendant)	5-11
Group List		5-5
Personal List		5-8
Station (single-line)	Abbreviated Dialing-List 1,2, or 3 Hot Line Destination-AD List	5-303

- Abbreviated Dialing List Forms — Verify or assign an attendant code to a list.
- Station Forms — Assign the Abbreviated Dialing List to designated single-line voice terminal. List can be List 1, 2, or 3. Complete Hot-Line Destination field to indicate the Abbreviated Dialing List entry containing the attendant code.

Hardware Requirements

None.

Manual Signaling

Allows a voice terminal user to signal another voice terminal user. The receiving voice terminal user hears a 2-second burst of tone.

NOTE:

A Manual Signaling button cannot point to a Vector Directory Number.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Button/Feature Button Assignments -Signal (extension #or name)	5-287

- Station Forms — Assign Manual Signal buttons as required to the voice terminal.

Hardware Requirements

None.

Messaging Server Interface

The Messaging Server (MS) provides MS-based features to the System such as Directory Service, Message Center Service, and Unified Messaging Services such as Electronic Documentation Communications, UNIX® system mail, Office Telesystem, and DCS Centralized Messaging (principals switch is remote from MS host switch).

Figure 3-24 shows a Messaging Server interface to the System. The SCI Link connectivity (Control Path) is provided via either a MPDM (distance between the System and Messaging Server less than 5,000 feet) or via LADs and an associated MTDM (for distances greater than 5,000 feet). The EIA connectivity (data path) can be implemented via one of the three options shown.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
BX.25 Link Connection (G3r V2 only):		
PGATE	All	4-99
Data Module (X.25)	All	5-141
Interface Links	All (for one MS link)	4-91
Processor Channel Assignment	All	4-101
		or
		4-105
SCI Link Connection		
Data Module	All	
Processor Interface		5-136
MPDM/MTDM		5-128
Processor Channel Assignment	All	4-101
		or
		4-105
Interface Links	All (for one MS link)	4-91
Feature-Related System Parameters	Messaging Server Adjunct (MSA) Connected	5-168
EIA Connection		
Data Module (MPDM)	All	5-128
Other		
Hunt Groups	All	5-189
Station	All	5-287

■ **BX.25 Link Connection**

- PGATE Form — Enter the board location and “rs232” as the cable type.
- Data Module (X.25) Form — Assign DTE/DCE as “dte”.
- Interface Links Form — Complete all fields on the form for one link as required. Assigns a link from the PGATE circuit pack for the MS.
- Processor Channel Assignment Form — Complete the required fields on the form for the MS interface. Enter the appropriate channel assignments and complete all associated field entries.

■ **SCI Link Connection**

- Processor interface Data Module Form — Complete all sections as required. Assigns a link (interface channel) in the digital switch for an MS interface. There are eight links (01-08) available for assignment in multi-carrier cabinet Systems and four links available for single-carrier cabinet Systems.
- Processor Channel Assignment Form — Complete the required fields on the form for the MS interface. Processor channels 1, 2, 3, 4, and 8 as shown on the Processor Channel Assignments implementation instructions are reserved for Message Center Service. Enter the appropriate channel assignments and complete all associated field entries.
- Interface Links Form — Complete all fields on the form for one link as required. Assigns a link from the Processor Interface circuit pack for the MS.
- MPDM or MTDM Form — Complete all sections as required. Assigns a port on a TN754B Digital Line circuit pack to provide an interface between the MS, its associated Modular Processor Data Module, and the digital switch.
- Feature-Related System Parameters Form — Enter “y” in the Message Server Adjunct (MSA) Connected field.

■ **EIA Connection**

- MPDM Form — Complete all sections as required. Assign a port on a TN754B Digital line circuit pack to provide a port interface.

■ **Other**

- Hunt Group Form — Complete all fields as required to assign MS agents to the hunt group.
- Station Form — Assign the PC/PBX Connection per implementation instructions, assign MS agent work stations as required. Complete System voice terminal, and data terminal forms as required for all users.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a TN765 Processor Interface circuit pack. In addition, a port on a TN754B Digital Line circuit pack is required to provide the MS interface from its associated MPDM or MTDM to the digital switch. The EIA connection requires either an MPDM and a port on a TN754B Digital Line circuit pack, an ADU and a port on a TN726B Data Line circuit pack or a modem and a port on a TN742, TN746B, or TN769 Analog Line circuit pack. The BX.25 connection requires a TN577 PGATE circuit pack.

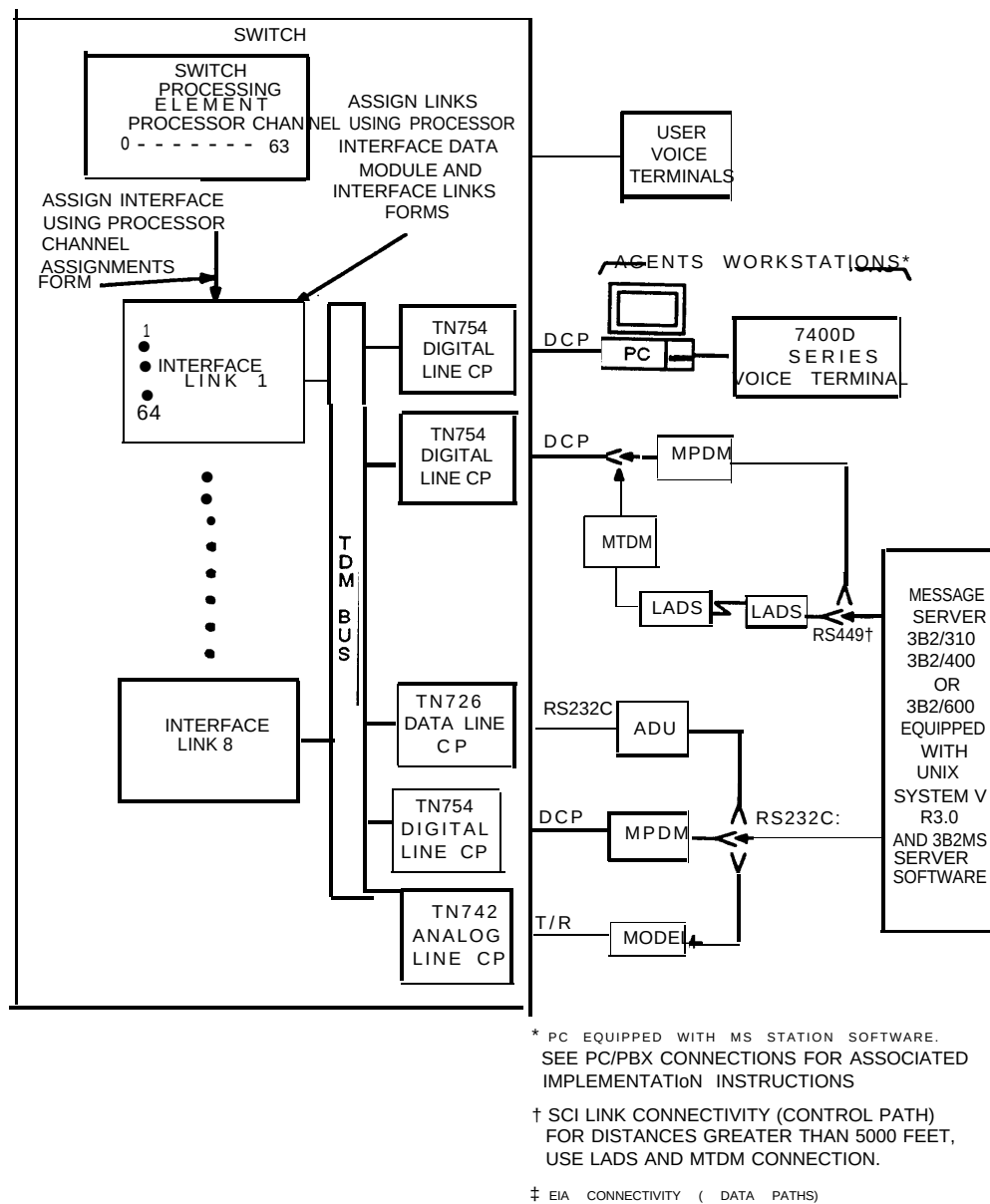


Figure 3-25. Typical Messaging Server Interface Connections

Modem Pooling

Allows switched connections between digital data endpoints (data modules) and analog data endpoints, and acoustic coupled modems. The analog data endpoint can be either a trunk or line circuit.

See Figure 3-26 for an example of integrated and combined modem pooling. Additional information on Modem Pooling is available in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, and in *AT&T System 75 Application Notes — Modem Pooling*, 555-209-007.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Integrated Modem Pooling

Form	Field	Form Instructions (Page #)
Modem Pool Group	All	5-229
Feature Access Codes	Data Origination Access Code	5-161
Data Module MPDM/MTDM	All	5-128

- Modem Pool Group Form — Complete all fields.
- Feature Access Codes Form — Complete the Data Origination access code entry (default is 134) if required. This code is used to indicate a need for a modem pooling conversion resource on an analog data call origination.
- MPDM/MTDM Form — Complete all fields as required when supporting a combined modem pool arrangement. Enter “tdm” in the form’s “Type” field. A MTDM or 7400A Data Module may be used in support of the combined pool.

Combined Modem Pooling

Form	Field	Form Instructions (Page #)
Modem Pool Group	All	5-229
Feature Access Codes	Data Origination Access Code	5-161

- Modem Pool Group Form — Complete all fields.

- **Feature Access Codes Form** — Complete the Data origination access code entry (default is 134) if required. This code is used to indicate a need for a modem pooling conversion resource on an analog data call origination.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port on a TN758 Pooled Modem circuit pack is required for each integrated conversion resource to be supported. Up to 16 TN758s can be used for integrated conversion resources, each providing two ports. Combined conversion requires a port on a TN754B Digital Line circuit pack and a port on a TN742, TN746B, or TN769 Analog circuit pack for each combined resource to be supported.

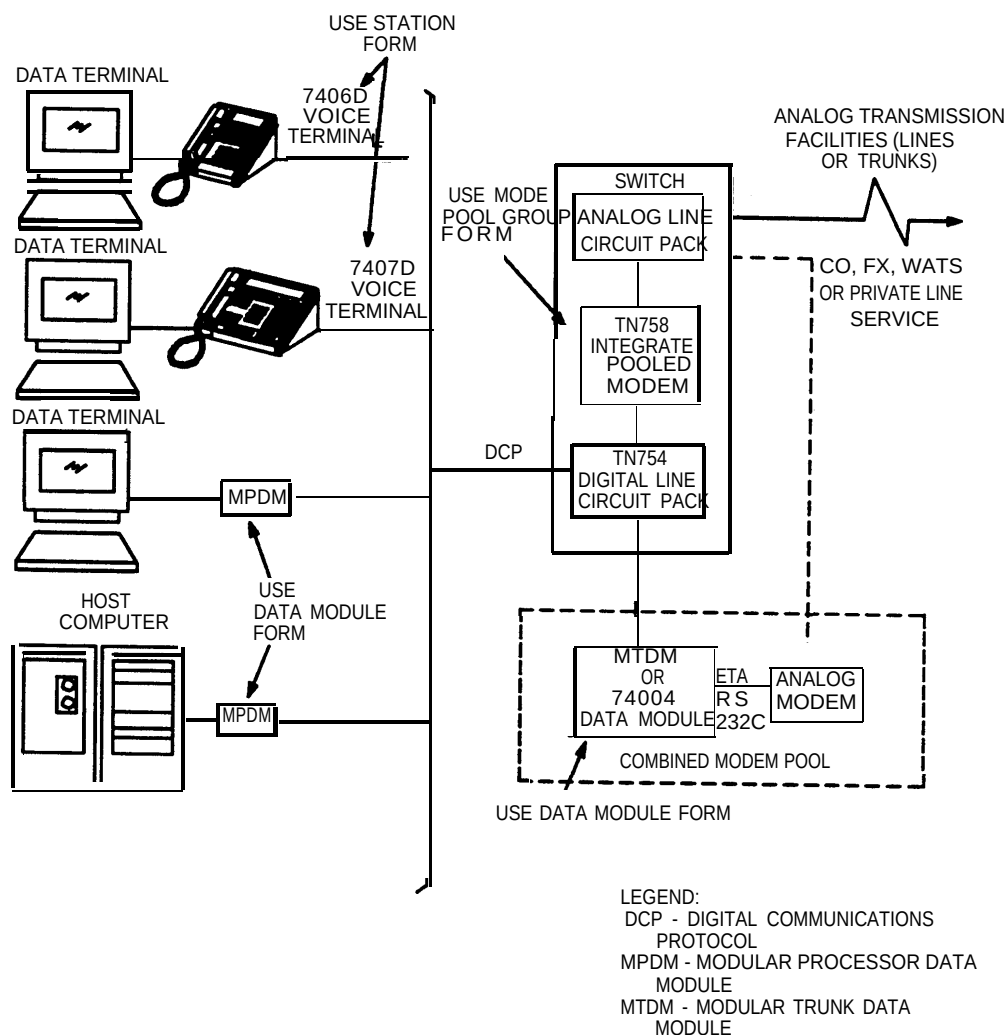


Figure 3-26. Typical Integrated and Combined Modem Pooling Arrangement

Multi-Appearance Preselection and Preference

Provides multi-appearance voice terminal users with options for placing or answering calls on selected appearances.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Idle Appearance Preference	5-287

- Station Forms — Complete Idle Appearance Preference field.

Hardware Requirements

None.

Multiple Listed Directory Numbers

Allows a publicly published number for each incoming only and two-way Foreign Exchange (FX) and local Central Office (CO) trunk group assigned in the System. Also allows up to eight Direct Inward Dialing (DID) numbers to be treated as Listed Directory Numbers (LDNs).

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group	Incoming Destination	
CO		4-178
FX		4-253
Listed Directory Numbers	All	5-222

- Trunk Group Forms — Assign Incoming Destination field for a Central Office or Foreign Exchange Office Trunk Group. The Incoming Destination field entry may be a Vector Directory Number (VDN).
- Listed Directory Numbers Form — Assign up to eight listed directory numbers and an associated night service destination (may be a VDN) if required.

Hardware Requirements

None.

Multuser System Management Access

Allows multiple users to concurrently access System Management. This includes endpoints such as G3-MA, INADS, CMS, and so on.

Refer to the Capacity Table in Appendix C for the maximum number of simultaneous System Management sessions, as well as the maximum number of administration and maintenance commands that may be invoked simultaneously, for each system configuration.

Refer to *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for more information about this feature.

Music-on-Hold Access

Provides music, tone or silence to a party whose call is on hold, waiting in queue, parked, being processed by a vector, or on a trunk call that is being transferred. The music lets the waiting party know that the connection is still in effect.

Administration

The Call Vectoring option must be enabled on the System-Parameters Customer-Options form before the Call Vector forms may be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Music/Tone On Hold Music Port Music (or Silence) on Transferred Trunk Calls	5-168
Trunk Group (CPE)	All	4-200
Call Vector	(vector commands)	5-76

- Feature-Related System Parameters Form — Complete Music on Hold Port and the Music (or Silence) on Transferred Trunk Calls fields.
- Trunk Group (CPE) Form — Complete all fields as required to assign auxiliary trunk ports to interface with a customer provided music source.
- Call Vector Form — Enter up to 32 vector commands as required to provide music and recorded announcements while the call remains unanswered.

⇒ NOTE:

Call Vectoring is not supported by the G3s V2 ABP configuration.

Hardware Requirements

⇒ NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a port on a TN763C Auxiliary Trunk circuit pack, or any supported Analog Line circuit pack. If an Aux. Trunk port is being used as the music source, a 36A voice coupler is required if the music source is not FCC registered. If an Analog Line port is being used as the music source, a KS-23395 voice coupler is required if the music source is not FCC registered. These voice couplers provide an interface and System protection for the music source.

See the wiring section of *DEFINITY Communications System Generic 3 V2 Installation and Test*, 555-230-104, for a description of the Music-on-Hold hardware interface requirements.

The music source may also be provided by a PagePac paging system (see “Loudspeaker Paging Access — Deluxe” feature) when used.

Names Registration

Automatically sends a guest's name and room extension from the Property Management System (PMS) to the System's digital switch at Check-In and automatically removes the information at Check-Out. In addition, the guest's preferred call coverage arrangement (for example, voice mail or hotel operator) will be sent from the PMS to the switch at Check-In and set to the default coverage path for client rooms at checkout.

The name information can be displayed on display-equipped voice terminals to provide a display of the name of the calling party or called party. (Do not administer these type of voice terminals to guest rooms. The guest could dial other guest rooms and obtain the registered names.)

For suite rooms, prearranged call coverage paths can be administered in the switch and the numbers stored within the PMS that would allow one room in the suite to be the coverage point for the other.

Administration

Refer to the "Property Management System Interface" coverage in this chapter for information on the PMS interface and for associated administration guidelines.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Hospitality-Related System Parameters	PMS Protocol Mode Default Coverage Path For Client Rooms Milliseconds Before PMS Link Acknowledgement Timeout	5-184

- Hospitality-Related System Parameters Form — In the PMS Protocol field, assign "normal" (supports 4-digit room numbers) or "transparent" (supports 5-digit room numbers).

In the Default Coverage Path For Client Rooms field, assign a valid call coverage path, or leave blank for no coverage.

In the Milliseconds Before PMS Link Acknowledgment Timeout field, enter the maximum time the System will wait for an acknowledgment from the PMS that a transmitted message was received (100 to 1,000 milliseconds).

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

See “Property Management System Interface” coverage in this chapter.

Network Access — Private

Allows calls to be connected to the following types of networks:

- Common Control Switching Arrangement (CCSA)
- Electronic Tandem Network (ETN)
- Main/Satellite/Tributary Network (M/S/T)
- Enhanced Private Switched Communications Service (EPSCS)
- Tandem Tie Trunk Network (TTTN)

Administration

The Private Networking option must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Groups:	All	
Access		4-130
APLT		4-155
ISDN-PRI		4-275
Tandem		4-324
Tie		4-349
Class of Restriction	Advanced Private Line Termination	5-93
Feature Access Codes	Automatic Alternate Routing Access Code	5-161
AAR Digit Analysis Table	All	4-8
AAR Digit Conversion Table	All	4-12
Node Number Routing	All	4-17
Station	COR	5-287

- Trunk Group Forms — Specify group type as access, aplt, tandem, tie, or ISDN-PRI with Service Type as "access", "tie", or "tandem". Complete COR digit treatment and common type fields on the Tie Trunk Groups associated with a private network. Unless prohibited by the COR, all incoming private network trunks (except CCSA) can access outgoing trunks without attendant or terminal user assistance. All incoming CCSA calls must route to the attendant or a terminal user.
- Class of Restriction Form — Complete the Advanced Private Line Termination field.

- **Feature Access Codes Form** — Assign an AAR access code consistent with user's ability to access these tie trunks.
- **AAR Digit Analysis Form** — Complete each table (Partitioned Group Number) as required. Complete the Dialed String, Minimum, Maximum, Route Pat (Routing Pattern), Call Type, and Node Num fields for each dialed string to be given specific routing considerations.
- **AAR Digit Conversion Form** — Complete the Matching Pattern and associated Replacement String fields for each dialed string (matching pattern) to be modified in part or in whole. These dialed strings will be routed based on the assigned replacement strings.
- **Node Number Routing Form** — Associate a routing pattern with each node in the Extension Number Portability (ENP) subnetwork.



NOTE:

Extension Number Portability is not supported by the G3s V2 ABP configuration.

- **Station Forms** — Assign a COR.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a port on a TN760C Tie Trunk circuit pack or TN722B, TN767, or TN464C DS1 Tie Trunk circuit pack for each trunk assigned.

Network Access — Public

Provides voice terminal users and attendants with access to and from the public network.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group	All	
CO		4-178
DID		4-230
FX		4-253
ISDN-PRI		4-275
WATS		4-375

- Trunk Group Forms — Verify or complete all fields.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a port on a TN747B CO Trunk circuit pack or TN767, or TN464C DS1 circuit pack for each trunk assigned.

Night Service — Hunt Group

Night Service — Hunt Group allows an attendant or a split supervisor to individually place a hunt group in the night service mode. A “hunt-ns” button when pressed, places an associated hunt group in the Night Service mode. All calls terminating on the hunt group or split in the night service mode will redirect to the designated night service extension.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Button/Feature Button Assignments	5-287
Attendant Console	-hunt-ns Feature Button Assignments	5-35
Hunt Group	-hunt-ns Night Service Destination	5-189

- **Station Forms** — Assign “hunt-ns” buttons to designated voice terminals. Up to three hunt group buttons can be assigned to a combination of voice terminals and attendant consoles in each hunt group. The hunt group 2-digit number must be assigned to each button. These buttons should be assigned to feature buttons that have an associated status lamp. The lamp lights when hunt group night service is activated. If the assigned button does not have a status lamp, no visual indications of the hunt group night service status is given.
- **Attendant Console Form** — Assign “hunt-ns” feature button. Up to three buttons can be assigned to a combination of attendant consoles and voice terminals assigned to each hunt group. The hunt group two-digit number must be assigned to each button.
- **Hunt Group Form** — Assign the extension used for night service in the Night Service Destination field.

Hardware Requirements

None.

Night Service — Night Console Service

Directs all calls for the primary and daytime attendant consoles to a night console.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Console Type	5-35

- Attendant Console Form — The night console must be administered identical to the Primary Attendant Console. Specify the console as a “night console” in the Console Type field. Enter “night-only” if the console is dedicated to night service. Enter “day/night” if a day console is also used as the night console.

Hardware Requirements

None.

Night Service — Night Station Service

Redirects incoming attendant-seeking trunk calls to designated extension numbers whenever the system is placed in Night Service.

If the Night Station is busy, a redirected incoming attendant call (including an emergency attendant call) to the station will get a busy tone rather than queueing for the attendant.

Administration

Do not provide Night Console Service with this feature assigned.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Listed Directory Numbers	Night Destination	5-222
Trunk Groups (All)	Night Service	4-123
Hunt Groups	Night Service Destination	5-189
Attendant Console	Feature Button Assignments	5-35
	-hunt-ns -night-ser -trunk-ns	
Station (multi-appearance)	Button/Feature Button Assignments	5-287
	-night-ser -hunt-ns -trunk-ns	

- Listed Directory Numbers (LDN) Form — Enter Night Destination extension that will receive LDN DID calls, and all internal calls, when the System is in the night service mode.
- Trunk Group Forms — Verify that the Night Service extension number of the answering voice terminal or group is specified for each desired trunk group, and where required, for specific trunk members.
- Hunt Group Form — Enter the Night Service Destination extension (or 0 for the attendant) where calls will direct when in the night service mode.
- Attendant Console/Station Forms — Assign feature buttons as required.

Hardware Requirements

None.

Night Service — Trunk Answer From Any Station

Allows voice terminal users to answer all incoming attendant-seeking calls when the attendant has activated the Night button on the primary console and when other voice terminals have not been designated to answer the calls and when a night console is not assigned or operational.

Administration

Do not provide a Night Console Position with this feature assigned.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Groups (All)	Night Service (blank)	4-123
Feature Access Codes	Trunk Answer Any Station Access Code	5-161
Console Parameters	Ext Alert Port (TAAS)	5-101

- Trunk Group Forms — Verify Night Service field is blank for the associated trunk group.
- Feature Access Codes Form — Verify feature access code is assigned for Trunk Answer Any Station Access Code field.
- Console Parameters Form — Assign a port on a TN742, TN746B, or TN769 Analog Line circuit pack to provide connection with an alerting device in the External Alerting Number (TAAS) field.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a port on a TN742, TN746B, or TN769 Analog Line circuit pack. A maximum of five alerting devices can be connected to one port. Also requires an external ringing device(s) positioned so that users can hear them.

Night Service — Trunk Group

Allows an attendant or a designated voice terminal user to individually assign a trunk group or all trunk groups to the night service mode.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Button/Feature Button Assignments -trunk-ns	5-287
Attendant Console	Feature Button Assignments -trunk-ns	5-35
Listed Directory Numbers	Night Destination	5-222

- **Station Forms** — Assign “trunk-ns” to a voice terminal button. Up to three buttons can be assigned to voice terminals in each trunk group. The trunk group number must be assigned to each button.
- **Attendant Console Form** — Assign “trunk-ns” feature button. Up to three buttons can be assigned per console. The trunk group number must be assigned to each button.
- **Listed Directory Numbers Form** — Complete Night Destination field if incoming LDN DID calls are to be redirected to an extension or an attendant when the System is in the night service mode.

Hardware Requirements

None.

Node Number Routing (NNR)

Node Number Routing (NNR) specifies the routing pattern associated with each node in a private network. NNR is a required capability for Extension Number Portability (ENP) and is associated with the Uniform Dial Plan (UDP). UDP extensions can be routed to a specified node using its associated pattern and allows a UDP routing choice based on node numbers or on location codes. AAR and ARS routing forms may also use node number routing in lieu of direct specification of routing patterns.

Administration

**NOTE:**

The type of routing is administered by enabling either Private Networking, Uniform Dialing Plan, or ARS and AAR/ARS Partitioning features on the System-Parameters Customer-Options form.

To implement this feature, the following form(s) or sections of form(s) must be completed.

Form	Field	Form Instructions (Page #)
Node Number Routing	All	4-17

- Node Number Routing Form — For each PGN, associate a routing pattern with each node in the EN P subnetwork.

Hardware Requirements

None.

Off-Premises Station

Allows a voice terminal located outside the building where the switch is located to be connected to the System. If central office trunk circuits, the voice terminal must be analog and must be FCC-registered. Refer to *DEFINITY Communications System Generic 3 V2 System Description and Specifications, 555-230-206*, for cabling distance information for the various voice terminal types.

Administration

To implement this feature, the following form(s) or sections of form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (Analog)	Off Premise Station R Balance Network	5-303

- **Station Forms** — Enter “y” in the Off-Premise Station field and administer the R Balance Network field for each 500, 2500, 7101, 7102A, 7103A, and/or 7104A station as required.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires cross-connecting capabilities and one port on a TN742, TN746B, or TN769 Analog Line or TN767 or TN464 DS1 Tie Trunk circuit pack for each interface to be provided. **Do not** assign an Off-Premises Station port on a 16-port TN746B Analog Line circuit pack.



NOTE:

The use of a Message Waiting Indicator lamp on an Off-Premises Station is not supported.

Outgoing-Trunk to Outgoing-Trunk Transfer



CAUTION:

Abuse of this feature can lead to toll fraud.

Outgoing-Trunk to Outgoing-Trunk Transfer is a trunk-to-trunk transfer enhancement that allows calls in which outgoing trunks are the only parties involved in the call.

Using Outgoing-Trunk to Outgoing-Trunk Transfer, a controlling party, such as a station user or attendant, can initiate two or more outgoing trunk calls and then transfer the trunks together. The transfer operation removes the controlling party from the connection and conferences the outgoing trunks. Alternatively, the controlling party can establish a conference call with the outgoing trunks and then drop out of the conference, leaving the outgoing trunks on the conference connection. At least one outgoing trunk must be administered to support this type of transfer, and provide network answer supervision.



NOTE:

The answer supervision test increases the probability, but does not guarantee, that a disconnect signal will be received from the remote end of the trunk. Outgoing-Trunk to Outgoing-Trunk Transfer calls can result in *locked-up* trunks (trunks which cannot be disconnected except by busying out and releasing the affected trunk circuit, or by removing and reseating the affected trunk board).

To mitigate problems associated with its accidental use, this feature is only administrable on trunk groups and is not a system option.

Administration

To implement this feature, the following form(s) or sections of form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group	Disconnect Supervision - Out	4-123

- Trunk Group Form — Allow Outgoing-Trunk to Outgoing-Trunk Transfer to this trunk group by assigning a “y” to the Disconnect Supervision - Out field. Refer to the individual trunk group forms.

Hardware Requirements

Outgoing-Trunk to Outgoing-Trunk Transfer can be activated for trunk groups with trunks assigned to the following trunk boards:

- Central Office Trunk board (TN747B)
- Analog Tie trunk Board (TN760C)
- DS1 board (TN722B & TN767 & TN464D [Universal DS1])

Personal Central Office Line (PCOL)

Provides a dedicated trunk for direct access to or from the public network for multi-appearance voice terminal users.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Personal Central Office Line Group Station (multi-appearance)	All	4-295
	Button/Feature Button Assignments -per-COLine (Grp:_) -aut-msg-wt (Ext: —)	5-287

- Personal Central Office Line Group (PCOLGs) Forms — Verify or complete all fields.
- Station Forms — Assign (per CO line) buttons to voice terminals in group. If Leave Word Calling (LWC) messages are to be stored for the PCOLG, assign a LWC Remote Message Waiting (aut-msg-wt) feature button with status lamp to one of the voice terminals in the group.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires a port on a TN747B Central Office Trunk circuit pack for each CO, FX, or WATS trunk assigned as a PCOL.

Personal Computer (PC) — 6300

PC/PBX Connection

Provides an integrated voice and data workstation interface from the System to an AT&T PC 6300 or other compatible computer. The connection provides access to a variety of host computers, allowing the PC to act as a terminal for the host.

Figure 3-27 shows a typical 7400D series voice terminal PC/PBX workstation connection, and Figure 3-28 shows a typical 7404D voice terminal (equipped with Message Cartridge) PC/PBX workstation connection.

Administration

To administer a PC/PBX connection, the following forms must be completed.

Form	Field	Form Instructions (Page #)
PC/PBX Connection	All	5-418

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port is required on a TN754 Digital Line circuit pack for each PC/PBX connection to be installed. A TN754 provides eight ports.

Software Requirements

One of the following PC/PBX software packages must be installed on the PC, as appropriate:

■ PC/PBX Connection Package 1

Provides features such as keyboard dialing, personal phone directory, directory dialing, and message retrieval. Hardware requirements include PC, 7404D voice terminal equipped with a Message Cartridge.

■ PC/PBX Connection Package 3

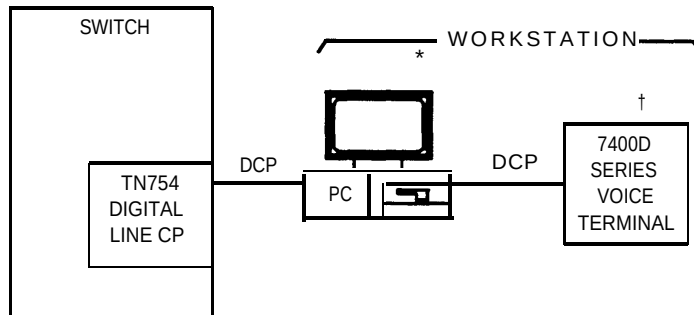
Provides Package 1 services plus additional features (such as call log, higher file transfer rates, and the ability to take notes on a call). Hardware requirements include PC equipped with a DCP card and a 7400D series voice terminal. Package 3 provides an integrated voice and data workstation that supports:

- Dialing calls from the PC
- Use of customized phone features from the PC keyboard
- Creating a personal phone directory in the PC, searching the directory, and dialing voice and data calls from the directory
- Reading phone messages on the PC screen and having the PC automatically dial calls to users that have left messages
- Logging all incoming and outgoing calls (voice and data) and the ability to automatically recall them
- Using an associated speakerphone to make “hands-free” calls
- Use of a security feature so as to keep directory and message information private
- Use of the PC as a terminal connected to a variety of host computers
- Transferring files between the PC and another PC or host computer
- Setting up “script programs” to have the System perform selected data functions automatically
- Using voice and data functions simultaneously. Lets you perform PC application while running the PC/PBX Connection software application in the background

■ **PC/PBX Connection Package 5**

Package 5 is a terminal emulation package that allows the PC to emulate a 3278/3279 terminal. This is a software enhancement to Package 3 and works with Package 3 hardware and software.

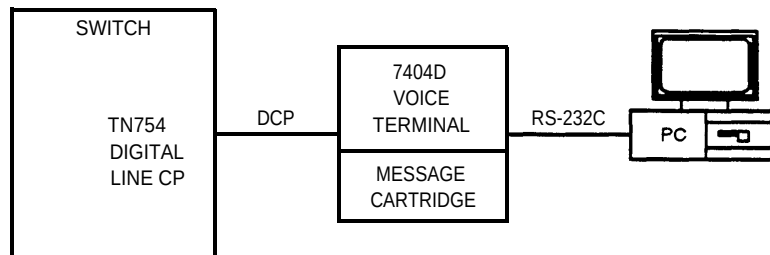
For additional PC/PBX user information, refer to *AT&T PC/PBX Connection Package 3 User's Guide*, 555-016-703. A complete set of documents is available as *AT&T PC/PBX Connection Release 3 Documentation Set*, 555-016-715.



* PC MUST BE EQUIPPED WITH DCP CARD AND APPROPRIATE PC/PBX SOFTWARE.

† 7401D, 7403D, 74040 (WITH OUT MESSAGE CARTRIDGE), 7405D, 74060, OR 74070 VOICE TERMINAL.

Figure 3-27. Typical 7400D Series Voice Terminal PC/PBX Connections



* PC MUST BE EQUIPPED WITH APPROPRIATE PC/PBX SOFTWARE.

Figure 3-28. Typical 7404D PC/PBX Connection

Personalized Ringing

Allows users of certain voice terminals to uniquely identify their own calls. Each user can choose one of a number of possible ringing patterns.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station	Personalized Ringing Pattern	
7303s		5-322
7305s		5-322
7404D		5-343
7406D		5-369
7406+		5-369
7407D		5-369
7407+		5-369
7434D		5-381
CALLMASTER Digital Voice Terminal		5-409

- Station Forms — Complete Personalized Ringing Pattern field for each 7303S, 7305S, 7404D, 7406D, 7406+, 7407D, 7407+, 7434D, and CALLMASTER digital voice terminal.

NOTE:

The 7103A, 7404D, 7406D, 7406+, 7407D, 7407+, 7410D, 7434D, 7505D, 7506D, 7507D, 8503D, 8510D, 8520D, and CALLMASTER digital voice terminal users have the capability of setting their own ringing pattern. In the event of a power failure, the user-specified ringing pattern for a 7404D, 7406D, 7407D, 7410, or CALLMASTER Digital voice terminal is lost. In the case of ISDN-BRI voice terminals, the user-specified ringing pattern is retained even in the event of a power failure.

Hardware Requirements

None.

Port Sensitive Pricing

Provides the ability to purchase fewer administrable ports than the maximum number available for a G3i V2 or G3r V2 configuration. This reduces the overall cost of the System while still providing all other features available for that configuration.

The table below shows the maximum number of ports available for each configuration.

System	Max. Ports
G3r V2	29,000
G3i V2 -386	2,800

NOTE:

Port Sensitive Pricing is not available for G3s V2 or G3vs V2 configurations.

The list below illustrates the features that are considered “ports”:

- All stations with ports
- All stations without ports (Administered Without Hardware)
- External alert
- Analog announcements (non-integrated)
- Combined Modem Pools
- Each BRI station (including passive bus)
- All trunk types including Aux trunks used for music-on-hold and loudspeaker paging (trunk ports do not include D-channel ports, data modules, or access endpoints)

The Port Sensitive Pricing feature is administered by entering the number of ports purchased in the Maximum Ports field on the System-Parameters Customer-Options form.

NOTE:

Only the “init” login has the ability to administer the System-Parameters Customer-Options form.

The value entered in the Maximum Ports field is saved when the *save translation* command is executed.

Priority Calling

Provides a special form of call alerting between internal voice terminal users. The called voice terminal user receives a distinctive alerting signal.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes	Priority Calling Access Code	5-161
Class of Service	Priority Calling	5-99
Attendant Console	Feature Button Assignments -priority	5-35
Station (multi-appearance)	Button/Feature Button Assignments -priority	5-287
Feature-Related System Parameters	Internal/External/Priority Call (ringing patterns)	5-168

- Feature Access Codes Form — Verify or assign Priority Calling Access Code field.
- Class of Service Form — Verify Priority Calling field has correct permission.
- Attendant Console/Station Forms — Assign priority feature buttons as required.
- Feature-Related System Parameters Form — Assign a ringing pattern (one-, two-, or three-burst) for the Priority call type.

Hardware Requirements

None.

Privacy — Attendant Lockout

Prevents an attendant from reentering a multiple-party connection held on the console unless recalled by a voice terminal user.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Console Parameters	Attendant Lockout	5-101

- Console Parameters Form — Enter “y” in Attendant Lockout field.

Hardware Requirements

None.

Privacy — Manual Exclusion

Allows multi-appearance voice terminal users to keep other users with appearances of the same extension number from bridging onto an existing call.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Button/Feature Button Assignments -exclusion	5-287

- Station Form — Assign Manual Exclusion button to voice terminals of members of a Terminating Extension Group and/or Personal Central Office Line Group, as required.

Hardware Requirements

None.

Property Management System Interface

Provides a communications link between the System and a customer-owned Property Management System (PMS). The PMS allows a customer to control certain features used in both a hospital-type and a hotel/motel-type environment.

NOTE:

The following information regarding System Access Ports applies only to the G3r V2 configuration. G3i V2 and G3s V2 do not use System Access Ports.

The system knows of one set of System Access Ports (SAPS) for both incoming and outgoing features. The following features that use SAPS (the number of SAPS that can be potentially used by the feature is in brackets []):

Incoming:

Remote Administration [5]

temporary — used for the duration of the remote administration session (that is, until the administrator logs out).

Outgoing:

CDR [2]

primary and secondary

permanent — established at system restart and never taken down

Property Management System Interface [3]

PMS adjunct, PMS log printer, Wakeup journal printer

permanent — established at system restart and never taken down

Recorded Announcements [1]

(for announcement circuit pack save and restore to mass storage).

temporary — only used while announcement circuit pack is uploading or downloading announcements

Report Scheduler and System Printer [1]

temporary — only used while report is printing

Incoming features can be restricted to using particular SAPS by placing only the desired SAPS in a hunt group and then always dialing that hunt group's extension for incoming features.

Outgoing features always choose from the full set of administered SAPS. Therefore, placing fewer than the full complement of administered SAPS in a hunt group for incoming access is counterproductive in that one or more of those SAPS (in the hunt group) might get chosen for an outgoing application, thus making them unusable for incoming applications. Also, there is no guarantee that those SAPS left out of the hunt group will be used for outgoing applications, and, since they are unusable for incoming applications, they might not be used at all.

Administration

The Hospitality option must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

Also refer to the "Names Registration" feature for associated administration considerations.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Service	Client Room, Console Permission	5-99
Hospitality-Related System Parameters	All	5-184
Attendant Console	Feature Button Assignments	5-35
	-mwn-act	
	-mwn-deact	
	-check-in	
	-check-out	
Feature Access Codes	Hospitality Features	5-161
Station (multi-appearance) (Front Desk Terminal)	Button/Feature Button Assignments	5-287
	-mwn-act	
	-mwn-deact	
	-check-in	
	-check-out	
Data Module	All	
Netcon (G3s V2, G3i V2 only)		5-133
MPDM		5-128
Data Line		5-111
SAP (G3r V2 only)		5-139

- Class of Service Form — Assign "y" to Client Room field for the class of service (COS) to be used for guest voice terminals. For the Console Permission, assign "y" for the Class of Service assigned to the attendant and front desk voice terminal. This allows the attendant or front desk station to control the following items:

- Check-in
- Check-out
- Room change
- Room Swap
- Maid Status

- Hospitality-Related System Parameters Form — Complete all fields.

- Attendant Console/Station Forms — Assign mwn-act (message waiting activation), mwn-deact (message waiting deactivation), check-in, and check-out buttons. These buttons can be assigned to the attendant console and display-equipped front desk voice terminals.
- Feature Access Codes Form — Assign Hospitality Feature Access Codes as required.
- Netcon Data Module Form — Complete all fields as required. Provides a data channel for the PMS interface.
- Modular Processor Data Module Form — Complete all fields. Assign three different PDMs as follows: assign one PDM for the PMS link and one PDM for each printer (Log and Journal).
- Data Line Data Module Form — Complete all fields. Complete this form if the PMS link is connected using a Data Line circuit pack.
- SAP Data Module Form (G3r V2 only) — Complete all fields as required. Provides a data channel for the PMS interface. The system chooses one of the free System Access Ports to use to contact the data module connected directly to the PMS interface. The System Access Port chosen is unpredictable,

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

The PMS link can be connected to a TN754B Digital Line circuit pack using a Processor Data Module (PDM) or a TN726B Data Line circuit pack using an Asynchronous Data Unit. The Journal and Log printers can be connected to a TN754B Digital Line circuit pack via a PDM interface.

Pull Transfer

Enhances the existing Transfer feature by allowing either the calling party or the called party (the party to whom the held party will be transferred) to complete the transfer operation. Unlike the existing Transfer feature, Pull Transfer can only be used by a station user.

As with the Station Pull Transfer covered above, Pull Transfer also applies to satellite PBX stations via TGU/TGE trunks. Pull Transfer is always available on calls involving TGU/TGE trunks even if Station Pull Transfer is not administered on the System.

⇒ NOTE:

To avoid confusion, it is recommended that Station Pull Transfer be administered whenever TGU/TGE trunks are provided.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters Station	Pull Transfer	5-168
	All (including a Flash or Transfer feature button)	5-287

- Feature-Related System Parameters Form — Enter “y” in the Pull Transfer field (page 2 of form) to enable the Pull Transfer feature on a system-wide basis. The default is “n”.
- Station — Assign a Flash feature button or a Transfer feature button (depending on the type of voice terminal) for each voice terminal.

Hardware Requirements

None.

Queue Status Indications

Provides indications of queue status for Automatic Call Distribution (ACD) calls based on the number of calls in queue and time in queue. These indications are provided via lamps assigned to the terminals or consoles of split agents or supervisors. In addition, auxiliary queue warning lamps can be provided to track queue status. Also, display-equipped voice terminals and consoles can display the time in queue of a split's oldest call and the number of calls in that split's queue.

Administration

The Automatic Call Distribution (ACD) option must be enabled on the System-Parameters Customer-Options form before fields on associated forms can be administered.

NOTE:

For G3s V2 ABP configurations, the ACD feature is only available as part of the Basic Call Center Option.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Hunt Groups	Queue Length Calls Warning Threshold Time Warning Threshold Time Warning Port Calls Warning Port	5-189
Station (multi-appearance)	Button/Feature Button Assignments -q-calls -q-time	5-287
Attendant Console	Feature Button Assignments -atd-qcalls -atd-qtime -q-calls -a-time	5-35

- Hunt Groups Form — Assign the thresholds to be reached before the System flashes the queue status buttons and the Auxiliary Warning lamp assigned to the hunt group/split.
 - Assign the time a call can remain in the queue.
 - Assign the number of calls that can be in the queue.
 - Assign ports for the external Auxiliary Warning lamps.

- Station Forms — Assign queued calls and queues time buttons or hunt group (q-time and q-calls) buttons is the attendant's individual Attendant Extension is a member of an ACD split.
- Attendant Console Form — Assign atd-qcalls and atd-qtime buttons.

Hardware Requirements

⇒ NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Each auxiliary queue Warning lamp requires one port on a TN742, TN746B, or TN769 Analog Line circuit pack. A 21 C-49 lamp may be used as an auxiliary queue Warning lamp.

R2-MFC Signaling

Multifrequency Compelled (MFC) signaling is a form of number signaling similar to Dual-Tone MultiFrequency (DTMF) in that tones convey the dialed number.

With MFC, the origination and destination switch exchange call progress tones that have specific meanings according to the MFC protocol. R2-MFC is a version of MFC recommended by the CCITT for signaling between a central office (CO) and a PBX over analog or digital CO, DID, or Tie trunks.

With R2-MFC administration, care must be taken to identify the origination switch and the destination switch. The switch where the call is made is the origination switch; the switch where the call is answered is the destination switch. The origination switch creates *forward* signals; the destination switch creates *backward* signals. Forward signals are classified as group I and group II signals. Backward signals are classified as group A and group B signals. Group I and group A signals comprise the basic signaling set, while more elaborate signaling schemes require group II and group B capabilities.

The sequence below shows a typical interaction between the origination (forward, group I and II signals) and destination switch (backward, group A and B signals).

Forward		Backward
Group I	digit -->	Group A
	A.1	
	digit -->	
	<-- A.1	
	digit -->	
	<-- A.1	
	digit -->	
	<-- A.1	
Group II	digit -->	End of Dial
	<-- A.3	
	II.2 -->	Group B
	<-- B.x	

Group I Signals

Group I signals are a basic set of forward signals generated by the originating switch. Group I signals are as follows:

ani-not-avail

When this MFC tone is sent to the CO in response to the ANI request, it means that the caller's number (ANI) is not available and the CO initiates the disconnect sequence. This signal is used on DOD calls and used in Brazil and Colombia.

digits from 1 to 10

The signals from group I.1 to I.10 are reserved for address digits from 0 to 9.

drop

If this MFC tone is received from the CO, the disconnect sequence is initiated by PBX and the call is dropped.

end-of-ani

When ANI digits are sent to the CO, an MFC tone is sent to indicate the end of ANI digits. This tone is used on DOD calls.

end-of-dial

The CO sends this tone to indicate the end of address digits. The PBX should respond with a request for a group II signal. This tone is used in DID calls.

end-of-digits

This signal is sent if the PBX is making an outgoing call, is sending digits, has received a "next-digit" group A signal from the receiving switch, and the PBX knows there are no more digits to be sent to the far end. This signal may also be sent if the PBX does not have "end-of-ani" assigned, is making an outgoing call, is sending AN I, has received a "call- info-ani" group A signal from the receiving switch, and the PBX knows there are no more ANI digits to be sent to the far end. If both "end-of-digits" and "end-of-ani" are assigned, the PBX will use "end-of-ani" after sending the last AN I digit and "end-of-digits" after sending the last called number digit.

ignored

If this MFC tone is received from the CO, the tone is acknowledged by a corresponding tone (that is, A.1, and so on) from the PBX but no action is taken in the response to this tone and the tone is not counted as a digit. When this tone is received in countries other than Belgium, this tone is acknowledged. In Belgium, this tone is not acknowledged.

maint-call

The CO sends a MFC tone to indicate the call is a maintenance call. This tone may be used on DID calls in Saudi Arabia. If the PBX receives this tone, the PBX prepares the special maintenance call sequences for the CO depending on the type of the maintenance call.

send-congestion

When the PBX receives this signal from the CO on a DID call, it returns a congestion signal (group A) to the CO. This signal is sent in the compel mode rather than in the pulse mode.

Group II Signals

Group II signals area more elaborate set of forward signals generated by the originating switch. Group II signals areas follows:

attendant

If the PBX receives this tone on DID calls, the call should terminate at an attendant regardless of the extension number dialed. On DOD calls, this tone is sent to the CO if the CO requests the calling category information and the originating extension is an attendant. This tone is used on both DID and DOD calls.

busy-rt-attnd

If the PBX receives this tone on DID calls, the call terminates at an attendant if the called extension is busy. If the called destination is not busy, then the call terminates at the called extension. This tone is used on DID calls.

data-call

If the PBX receives this tone on DID calls and the terminating extension is not a data extension, then intercept treatment is given to the caller. On DOD calls, this tone is sent to the CO if the CO requests the calling category information and the originating extension is a data extension. This tone is used on both DID and DOD calls.

drop

If this MFC tone is received from the CO, the disconnect sequence is initiated by PBX and the call is dropped.

maint-call

The CO sends this tone to the PBX on a DID call to indicate the call is a maintenance call. When the PBX receives this tone, it prepares a special maintenance sequence for the call. The sequence it prepares depends upon the type of the maintenance call it expects.

normal

This MFC tone is used to indicate the caller is a normal subscriber. If this tone is received on DID calls, then the call is terminated at the called extension. For an outgoing MFC call that uses group II signaling, this tone is sent to the CO when the CO requests the calling category information and the originating extension is a station. This tone is used in both DID and DOD calls. All countries that use the group II signal use this tone.

send-intercept

When the PBX receives this signal from the CO on a DID call, it returns an intercept signal (group B) to the CO.

Group A Signals

Group A signals are basic backward signals generated by the destination switch. Group A signals areas follows:

call-info-ani

The first tone is sent from the CO to request the calling party's category and additional tones are sent from the CO to request the ANI digits. The tone is used on DOD calls.

congestion

This tone is sent from the CO to indicate that the CO is experiencing the network congestion. When the PBX receives this tone on DOD calls, the PBX drops the trunk and plays reorder tone to the calling party. The tone is used on DOD calls.

drop

If this MFC tone is sent, the disconnect sequence is initiated by the receiving switch.

end-of-dial

This tone is sent to indicate the end of the address digit string. For MFC group II calls, this tone requests a group II signal and switches the sender over to the group B signaling mode. The tone is used on both DID and DOD calls.

last-2-digits

This tone is sent to the PBX to adjust the outpulsing pointer so that the last 3 digits can be resent. The tone is used on DOD calls.

last-3-digits

This tone is sent to the PBX to adjust the outpulsing pointer so that the last 4 digits can be resent. The tone is used on DOD calls.

last-digit

This tone is sent to the PBX to adjust the outpulsing pointer so that last 2 digits can be resent. The tone is used on DOD.

next-digit

This tone is sent to request the next digit. The tone is used on both DID calls and DOD calls.

restart

This tone is sent to the PBX to request the whole digit string again from the first digit. The tone is used on DOD calls.

setup-sppath

This tone is sent to the PBX from the CO to set up the speech path. The tone is used on DOD calls and on DID calls in Belgium.

Group B Signals

Group B signals enhance group A signals for backward signaling from the destination switch. Group B signals are sent to provide the status of the called party. In addition, if the originating switch used group II signals, the destination switch answers with group B signals. Group B signals areas follows:

busy

This tone is sent to indicate that the called party is busy. On DID calls, the tone is sent to the CO to indicate the called party is busy and there is no coverage point to terminate the call. If the PBX receives this tone on DOD calls, it plays busy tone to the calling party and drops the trunk.

congestion

The tone is sent to indicate the system/network is experiencing congestion and the call cannot be terminated successfully. On DID calls, the tone is sent to the CO to indicate that a resource/facility is not available. On DOD calls, if the PBX receives this tone, reorder tone is played to the calling party and the trunk is dropped.

free

This tone is sent to indicate the called party is idle. On DID calls, the tone is sent to the CO to indicate that the called party is idle and the call is terminated successfully. If the PBX receives this tone on DOD calls, it connects the trunk to the calling party.

intercept

The tone is sent to indicate the called party number is not in service or is not correct. On DID calls, if the MFC intercept treatment is set to provide a tone, this tone is sent to the CO to indicate the called number is invalid. If the PBX receives the tone on DOD calls, the PBX plays intercept tone to the calling party and drops the trunk.

MFC Implementations

R2-MFC is implemented by assigning an identifying code to every message. The code contains a group category, like II or A, and a number. For example, B.1 might be "free." In addition, each identifying code is assigned a dual tone. In every country, the tones assigned to the identifying codes are the same. However, the messages assigned to the identifying codes may be different. For example, in Switzerland the "free" message is conveyed by a B.6 dual tone, while in Thailand "free" is conveyed by the B. 1 dual tone. But in both Switzerland and Thailand, B.1 is assigned the same dual tone.

Refer to Appendix B, *Application Notes*, for specific values to be entered in fields when administering R2-MFC in each supported country.

Administration

Multifrequency Signaling must be enabled on the System-Parameters Customer-Options form before associated fields on forms can be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Multifrequency Signaling System Parameters	All	5-233
Trunk Group	Outgoing Dial Type	
CO	Incoming Dial Type	4-178
DID	Expected Digits	4-230
Tie		4-349

- Multifrequency Signaling System Parameters Form — Complete all fields as necessary. Refer to Appendix B, *Application Notes*, for values to be entered in the various fields.
- Trunk Group Forms — Enter the desired Incoming and Outgoing Dial types for CO, DID and Tie trunks. If R2-MFC signaling is desired, enter "mf". For DID and Tie trunk groups, administer the Expected Digits field as required.

Hardware Requirements

A TN744v7 or later Call Classifier circuit pack is required.

Recall Signaling

Allows the user of an analog station to place a call on hold and consult with another party or activate a feature. After consulting with that third party, the user can conference the third party with the original party by another recall signal, or return to the original party by pressing Recall twice or by flashing the switchhook twice.

The recall signaling can be accomplished by pressing the flashhook, using a Ground Key on a Rotary or DTMF station, or by using the Recall Button on a DTMF station.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Flashhook Interval	5-168
	Upper Bound	
	Lower Bound	
Station (Analog)	Switchhook Flash	5-303

- Feature-Related System Parameters Form — Enter “y” in the Flashhook Interval field to enable the feature. Enter the limits in the Upper Bound and Lower Bound fields to establish the length of time during which the System will recognize the press of the flashhook as recall signaling.
- Station (Analog) Forms — Enter “y” in the Switchhook Flash field to enable recall signaling on a per voice terminal basis.

Hardware Requirements

None.

Recorded Announcements

Allows any combination of integrated announcements or announcements recorded on external devices. The external devices must be connected to the switch via analog line or auxiliary trunk interfaces. Integrated announcements are recorded on the TN750B Announcement circuit pack. The external announcement devices are connected via TN742, TN746B, or TN769 Analog Line circuit packs or via a TN763 Auxiliary Trunk circuit pack.

Announcement administration allows the assignment of an extension to an announcement device at an analog or auxiliary trunk port or to an announcement on an integrated announcement circuit pack. A recorded message may be accessed by dialing the extension assigned the announcement. References to announcement extensions may be found on the Hunt Group form, Coverage Path form, Trunk Group (Incoming Destination) form, Call Vector form, and Feature-Related System Parameters form (DID/Tie/ISDN Intercept Treatment and Controlled Restriction fields).

⇒ NOTE:

The following information regarding System Access Ports applies only to the G3r V2 configuration. G3i V2 and G3s V2 do not use System Access Ports.

The system knows of one set of System Access Ports (SAPS) for both incoming and outgoing features. The following features that use SAPS (the number of SAPS that can be potentially used by the feature is in brackets []):

Incoming:

Remote Administration [5]

temporary — used for the duration of the remote administration session (that is, until the administrator logs out).

Outgoing:

CDR [2]

primary and secondary

permanent — established at system restart and never taken down

Property Management System Interface [3]

PMS adjunct, PMS log printer, Wakeup journal printer

permanent — established at system restart and never taken down

Recorded Announcements [1]

(for announcement circuit pack save and restore to mass storage).

temporary — only used while announcement circuit pack is uploading or downloading announcements

Report Scheduler and System Printer [1]

temporary — only used while report is printing

Incoming features can be restricted to using particular SAPS by placing only the desired SAPS in a hunt group and then always dialing that hunt group's extension for incoming features.

Outgoing features always choose from the full set of administered SAPS. Therefore, placing fewer than the full complement of administered SAPS in a hunt group for incoming access is counterproductive in that one or more of those SAPS (in the hunt group) might get chosen for an outgoing application, thus making them unusable for incoming applications. Also, there is no guarantee that those SAPS left out of the hunt group will be used for outgoing applications, and, since they are unusable for incoming applications, they might not be used at all.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Recorded Announcements	All	5-244
Data Module	All	
Netcon (G3s V2, G3i V2 only)		5-133
SAP (G3r V2 only)		5-139
Recorded Announcement (for Integrated Announcements)		5-108
Trunk Groups (All)	Incoming Destination	4-123
Feature-Related System Parameters	DID Intercept Treatment	5-168
Feature Access Codes	Announcement Access Code	5-161
Call Coverage Paths	Point1, Point2, Point3	5-62
Hunt Groups	First and Second Announcement Extensions	5-189
Station	COS	5-287
Call Vectoring	Announcement Command	5-76

- Recorded Announcements Form — Complete all fields as required.
- Recorded Announcement Data Module Form — Complete all fields for a recorded announcement data module.
- Netcon Data Module Form — Complete all fields for a Netcon data module. Provides for the upload/download (save/restore to/from disk/tape/memory card) of TN750 recorded announcements.

- SAP Data Module Form — Complete all fields for a System Access Port data module. Provides for the upload/download (store/restore to/from tape) of TN750 recorded announcements. The system chooses one of the free System Access Ports to use to contact the data module connected directly to the announcement device. The System Access Port chosen is unpredictable.
- CO, DMI-BOS, FX, WATS Trunk Group Forms — Assign a recorded announcement extension number to the Incoming Destination field, as required.
- Feature-Related System Parameters Form — Assign a recorded announcement extension number to the DID Intercept Treatment field, as required.
- Feature Access Codes Form — Assign announcement access code.
- Call Coverage Path Form — Assign a recorded announcement extension number to a coverage point (Point1, Point2, Point3), as required.
- Hunt Groups Form — Assign a recorded announcement extension number to the First and Second Announcement Extension fields, as required.
- Station Forms — Verify that the voice terminal has a class of service (COS) that allows console permission (Perms) so that the user can enter an announcement.
- Call Vectoring Form — Assign announcements using the announcement command.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Each external announcement to be provided requires a port on a TN742, TN746B, or TN769 Analog Line circuit pack, or the TN763 Auxiliary Trunk circuit pack. The external recorded announcement equipment and music sources are not provided with the System. Each access of an integrated announcement requires a port on the TN750 Announcement circuit pack. Since the integrated announcement is recorded onto the TN750 circuit pack, no external announcement equipment is required.

Recorded Telephone Dictation Access

Permits voice terminal users, including Remote Access and incoming tie trunk users, to access dictation equipment.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group (CPE)	All fields if the trunk group is not assigned, or assign trunk port for digital switch interface.	4-200
or 2500 Voice Terminal	All	5-303

- Trunk Group (CPE) Form — Verify or assign an auxiliary trunk group and associated trunk port.
- Station Form — Assign a port and extension number to 2500-series voice terminal form. Enter “n” in the tests field to prevent interference with dictation equipment operation.

Hardware Requirements

⇒ NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires telephone dictation machines and, depending on the type of machine, one port on a TN742, TN746B, or TN769 Analog Line circuit pack or one port on a TN763C Auxiliary Trunk circuit pack for each dictation machine to be interfaced.

Redirection on No Answer

Redirection on No Answer is an enhancement to the ACD feature and related Call Vectoring/Call Prompting features. Redirection on No Answer is administered on a per split hunt group basis for ACD type hunt groups.

Redirection on No Answer applies when a split or direct agent ACD call is delivered to a manual answering agent extension from an ACD split. When Expert Agent Selection (EAS) is active, Redirection on No Answer applies to calls distributed from skills.

When Redirection on No Answer is not enabled, an ACD call that is routed to a manual answering extension may not be answered. This can occur if an agent has left their position while remaining in the available state (has not entered AUX-Work mode or logged out). Also, if the "agent" line is terminated to a Voice Response Unit (VRU) or other adjunct and the adjunct port has failed, a call distributed to the failed port will continue to ring indefinitely.

With Redirection on No Answer active, the nonanswering agent, or failed port, will be made unavailable, notification will be made, and the ACD call will be routed back to the split/skill so another agent can answer. Direct Agent calls are routed to the agent's coverage path.

Typically, Redirection on No Answer will be used with VRU applications in auto-available split (AAS) configurations. The Redirection on No Answer feature is then used to detect VRU failures and provide alternate operation when failures are detected. The Call Vectoring feature can optionally be used to provide maximum flexibility in selecting alternate treatments.

Redirection on No Answer can be assigned to the converse vector command split connected to the CONVERSANT, or equivalent, VRU ports. The converse hunt group will be ACD type, vector controlled, and will have AAS assigned. When Redirection on No Answer times out on a call ringing a VRU port that queued through the converse command, the AAS agent will be logged out and the call will be redirected back to the converse split to be distributed to the next available agent or VRU port. Under complete VRU failure, all VRU ports will eventually be logged out and vector processing will bypass that step for new calls.

NOTE:

Redirection on No Answer timed out calls in a vector, or non-vector, controlled split are re-queued at the highest priority so that Redirection on No Answer calls will be distributed before any other split calls.

Notification of Redirection on No Answer timeout occurring for an agent/port on the split will be indicated by an administered Redirection on No Answer (Noans-alt) lamp lighting and by an exception report to R3 V2 CMS. The Redirection on No Answer lamp remains lit until cleared by operation of the associated button.

To return an AAS port to service, the agent port must be readministered as a member of the AAS split so that the agent port will be logged in again. To do this for traditional ACD, the agent must first be removed as a member of the split and then resubmit the split hunt group form with the agent readministered. Alternatively, the agent port may be readministered in a different location in the list of split members on the split hunt group form. The *list unstaffed-agents* command may be used to get a list of all AAS agents that have been logged out.



NOTE:

The *list unstaffed-agents* command lists all AAS agents that have been logged out for **ANY** reason, not just AAS agents that were logged out due to Redirection on No Answer timeout.

For EAS Skills, agents are administered on a separate Agent LoginID form rather than on the Hunt Group form. Therefore, readminister the Agent LoginID form to have the AAS agent automatically logged in again. To determine which EAS agents are logged out (unstaffed), use the *list agent-loginid* command.

Alternatively, for both traditional ACD and for EAS Skills, the AAS agent station may be busied-out using the G3-MT *busyout station* command, and subsequently released using the *release station* command. Releasing the AAS agent station will automatically log-in the AAS agent. If all AAS agent ports on the circuit pack have experienced a Redirection on No Answer timeout, the entire circuit pack may be busied-out and released to automatically log-in the AAS agents.

Redirection on No Answer cannot be assigned to adjunct or AUDIX controlled splits.

Administration

ACD must be enabled on the System-Parameters Customer-Options form before associated fields on forms can be administered.



NOTE:

For G3s V2 ABP, the ACD feature is only available as part of the Basic Call Center option.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Hunt Group	ACD AAS Vector Controlling Adjunct Message Center Redirect On No Answer (Rings)	5-189
Station (multi-function)	Button Assignments -noans-ahrt	5-287

- Hunt Group Form — Enter “y” in the ACD field. Enter “y” in the AAS field if this Hunt Group is to serve as an Auto-Available Split. Enter “y” in the Vector field if this Hunt Group is to be vector controlled. The Vectoring (Basic) option must be enabled on the System-Parameters Customer-Options form. Enter “none” in the Controlling Adjunct field. Enter “none” or “msa” in the Message Center field. Enter the number of rings (1 to 20, or leave blank) before a call will redirect back to the split/skill.
- Station (Multi-Function) Forms — Assign Noans-Ahrt feature buttons as required.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

TN742 or TN746B Analog Line circuit packs are required to connect Voice Response Units to ACD splits. The TN742 provides 8 ports and the TN746B provides 16 ports.

Release Link Trunk Group

A Release Link Trunk Group is used to implement the Centralized Attendant Service feature.

Administration

NOTE:

The Release Link Trunk Group and Centralized Attendant Service features are not supported by the G3s V2 ABP configuration.

To assign a Release Link Trunk Group, the following form must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group (RLT)	All	4-303

- Trunk Group (RLT) Form — Complete all fields as required to assign trunks that are used to implement Centralized Attendant Service. Associated release link trunks can only originate calls going out, although signaling direction is always two-way. There is no dial access or incoming destination. The trunk-type is always release link. Outgoing and incoming dialing type is always tone and the disconnect timing is 280 ms.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port is required on a TN722B, TN767, or TN464D circuit pack for each trunk to be assigned in the Trunk Group. A TN722B or TN767 provides 24 ports, and a TN464D provides 32 ports.

Remote Access

Permits authorized callers using the public network to access the System and then use its features and services.

Remote Access users can dial into the System using Central Office, Foreign Exchange, WATS, and ISDN-PRI trunks. In addition, a dedicated Remote Access Direct Inward Dialing number can be provided.

NOTE:

AT&T has designed the Remote Access feature incorporated in this product that, when properly administered by the customer, will enable the customer to minimize the ability of unauthorized persons to gain access to the network. It is the customer's responsibility to take the appropriate steps to properly implement the features, evaluate and administer the various restriction levels, protect access codes and distribute them only to individuals who have been advised of the sensitive nature of the access information. Each authorized user should be instructed concerning the proper use and handling of access codes.

In rare instances, unauthorized individuals make connections to the telecommunications network through use of remote access features. In such an event, applicable tariffs require that the customer pay all network charges for traffic. AT&T cannot be responsible for such charges, and will not make any allowance or give any credit for charges that result from unauthorized access.

Even if the Remote Access feature is not enabled, it is theoretically possible for an unauthorized person to gain access to the System via the INADS port and enable the Remote Access feature, thereby gaining access to the System's resources.

To counteract this possibility, this feature may be "permanently" disabled if Remote Access is not currently used and there is no anticipated future need for the feature.

NOTE:

Once Remote Access is "permanently" disabled, it will require Services intervention to turn the feature back on.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Remote Access	All	5-247
Trunk Groups:	or	
CO	Permanently Disable?	4-178
FX	incoming Destination	4-253
ISDN-PRI	Night Service	4-275
WATS		4-375
DID		4-230
Authorization Code - COR Mapping	All	5-55

- Remote Access Form — Complete all fields. This provides Remote Access via Direct Inward Dialing if the assigned Remote Access Extension number is within the range of numbers dialable from the local central office.

If the Remote Access feature is not going to be enabled, and there is no anticipated future need for the feature, the Permanently Disable field may be set to “y”.

- Trunk Group Forms:

- Optionally, on a per-trunk group basis, verify or set the Incoming Destination field to the Remote Access Extension number to provide the feature via a dedicated trunk group (Trunk Group Form for incoming trunk groups, except Direct Inward Dialing).
- Optionally, on a per-trunk group basis, verify that Incoming Destination section is equal to “0” (attendant). Verify or set Night Service field to the Remote Access Extension number to provide Remote Access for attendant seeking calls whenever the Night key is pressed and an Alternate Console Position is not provided (Trunk Group form for incoming trunks, except Direct Inward Dialing).
- Complete DID trunk group form as required.

- Authorization Code - COR Mapping Form (optional) — Assign 4-to 7-digit authorization codes (with CORs 0 through 95).
 - In the authorization code (AC) field, enter the 4- to 7-digit authorization code the user must dial. The number of digits entered must agree with the number assigned to the Authorization Code Length field on the Feature-Related System Parameters form.
 - In the Class of Restriction field, enter the desired COR number from 0 through 95. This is the replacement COR to be used to modify the user’s calling privileges and is effective after the corresponding authorization code has been dialed.



NOTE:

The use of 7-digit authorization codes is strongly recommended to prevent unauthorized access to remote access capabilities.

Hardware Requirements

None.

Remote Administration

⇒ NOTE:

See *Security Handbook*, 555-025-600, for suggestions on preventing unauthorized access to system ports.

Allows the System to be administered from a remote terminal located on the customer's premises. A local administration terminal is one that is located on-premises within 50 feet of the System cabinet. A terminal located more than 50 feet from the System cabinet is considered remote. A remote administration terminal can be on-premises or off-premises. The remote terminal can perform the same functions as the local terminal.

⇒ NOTE:

The following information regarding System Access Ports applies only to the G3r V2 configuration. G3i V2 and G3s V2 do not use System Access Ports.

The system knows of one set of System Access Ports (SAPS) for both incoming and outgoing features. The following features that use SAPS (the number of SAPS that can be potentially used by the feature is in brackets []):

Incoming:

Remote Administration [5]

temporary — used for the duration of the remote administration session (that is, until the administrator logs out).

Outgoing:

CDR [2]

primary and secondary

permanent — established at system restart and never taken down

Property Management System Interface [3]

PMS adjunct, PMS log printer, Wakeup journal printer

permanent — established at system restart and never taken down

Recorded Announcements [1]

(for announcement circuit pack save and restore to mass storage).

temporary — only used while announcement circuit pack is uploading or downloading announcements

Report Scheduler and System Printer [1]

temporary — only used while report is printing

Incoming features can be restricted to using particular SAPS by placing only the desired SAPS in a hunt group and then always dialing that hunt group's extension for incoming features.

Outgoing features always choose from the full set of administered SAPS. Therefore, placing fewer than the full complement of administered SAPS in a hunt group for incoming access is counterproductive in that one or more of those SAPS (in the hunt group) might get chosen for an outgoing application, thus making them unusable for incoming applications. Also, there is no guarantee that those SAPS left out of the hunt group will be used for outgoing applications, and, since they are unusable for incoming applications, they might not be used at all.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

On-Premises Remote Administration

Form	Field	Form Instructions (Page #)
Data Module	All	
Netcon (G3s V2, G3i V2 only)		5-133
SAP (G3r V2 only)		5-139
DLDM		5-111
Hunt Groups	Group Extension Group Members Assignments	5-189

Off-Premises Remote Administration

Form	Field	Form Instructions (Page #)
Data Module	All	
Netcon (G3s V2, G3i V2 only)		5-133
SAP (G3r V2 only)		5-139
DLDM		5-111
Hunt Groups	Group Extension Group Members Assignments	5-189
Modem Pool Group	All	5-229
Trunk Group (DID System): DID or CO	All	4-230
Trunk Group (Non-DID System): CO	All	4-178
	All	4-178

- Netcon Data Module Form — Complete all appropriate fields. Provides a data channel for the Administration terminal interface.
- System Access Port Data Module Form — Complete all appropriate fields. Provides a data channel for the G3-MT terminal interface. The system chooses one of the free System Access Ports to use to contact the data module connected directly to the G3-MT. The System Access Port chosen is unpredictable.
- Data Line Data Module Form — Complete all appropriate fields.
- Hunt Groups Form — Complete Group Extension and Group Members Assignment fields.

If the System will be remotely administered from an on-premises terminal, no additional translations are required. However, if the System will be remotely administered from an off-premises location via a dial-up facility, complete the following step.

- Modem Pool Group Form — Complete all appropriate fields.
- Trunk Group Form — Complete Trunk Group forms as follows:
 - *DID equipped Systems* — Using a Direct Inward Dialing (DID) trunk form, translate a new trunk group containing one DID trunk. The NAME (Tel. number) assigned in the GROUP MEMBER ASSIGNMENTS field must be the same DID number assigned to the Uniform Call Distribution (UCD) hunt group (see next item).
 - *DID equipped Systems using a non-DID trunk* — Using a CO trunk form, translate a new trunk group. In the INCOMING DESTINATION field and NIGHT SERVICE field, enter the UCD hunt group extension number (see next item).
 - *Non-DID equipped Systems* — Calls made from Remote (off-premises) terminal will be to the Local Directory Number (LDN). If not translated previously, translate a trunk group containing the LDN.
 - *Non-DID equipped Systems* — Calls made from Remote (off-premises) terminal will be to a trunk dedicated to Remote Administration. Using a CO trunk form, translate a new trunk group. In both the INCOMING DESTINATION and NIGHT SERVICE fields, enter the UCD group extension number (see Hunt Group form).

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

On-Premises Remote

- Requires a port on a TN726B Data Line circuit pack and an associated Asynchronous Data Unit (ADU) and System Access Port (for G3r V2 Systems).
- 513 BCT, 610 BCT, 615 MT terminal, 4410 terminal, or 4425 terminal.

Off-Premises Remote

- Requires a port on a TN726B Data Line circuit pack and associated ADU.
- Modem Pooling (see Modem Pooling).
- DID Trunk Group — Requires a port on a TN753 DID Trunk circuit pack.
- CO Trunk Group — Requires a port on a TN747B CO Trunk circuit pack.
- 513 BCT, 610 BCT, 615 MT terminal, 4410 terminal, or 4425 terminal.
- Separate CO line to Processor circuit pack for Alarm Origination/Remote Administration.

Report Scheduler and System Printer

Allows the System Administrator to schedule selected G3-MT (that is, System Access Terminal) commands to be printed by an associated printer. Reports are scheduled at 15-minute intervals for any combination of days of the week. Reports are scheduled using the *schedule* command line option on the G3-MT (for example, *list config all [sched]*). Up to a maximum of 50 individual reports can be scheduled.



NOTE:

The following information regarding System Access Ports applies only to the G3r V2 configuration. G3i V2 and G3s V2 do not use System Access Ports.

The system knows of one set of System Access Ports (SAPS) for both incoming and outgoing features. The following features that use SAPS (the number of SAPS that can be potentially used by the feature is in brackets []):

Incoming:

Remote Administration [5]

temporary — used for the duration of the remote administration session (that is, until the administrator logs out).

Outgoing:

CDR [2]

primary and secondary

permanent — established at system restart and never taken down

Property Management System Interface [3]

PMS adjunct, PMS log printer, Wakeup journal printer

permanent — established at system restart and never taken down

Recorded Announcements [1]

(for announcement circuit pack save and restore to mass storage).

temporary — only used while announcement circuit pack is uploading or downloading announcements

Report Scheduler and System Printer [1]

temporary — only used while report is printing

Incoming features can be restricted to using particular SAPS by placing only the desired SAPS in a hunt group and then always dialing that hunt group's extension for incoming features.

Outgoing features always choose from the full set of administered SAPS. Therefore, placing fewer than the full complement of administered SAPS in a hunt group for incoming access is counterproductive in that one or more of those SAPS (in the hunt group) might get chosen for an outgoing application, thus making them unusable for incoming applications.

Also, there is no guarantee that those SAPS left out of the hunt group will be used for outgoing applications, and, since they are unusable for incoming applications, they might not be used at all.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Report Scheduler/System Printer Connected to MPDM/MTDM:

Form	Field	Form Instructions (Page #)
Data Module	All	
Netcon (G3s V2, G3i V2 only)		5-133
SAP (G3r V2 only)		5-139
MPDM/MTDM		5-128
Feature-Related System Parameters	System Printer Parameters	5-168
	Printer Extension	
	Lines per Page	

Report Scheduler/System Printer Connected to DCE Jack on the Control Carrier:

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	System Printer Parameters	5-168
	Printer Extension	
	Lines per Page	

Report Scheduler/System Printer Connected To Data Line Circuit Pack via Asynchronous Data Unit (ADU):

Form	Field	Form Instructions (Page #)
Data Module	All	
Netcon (G3s V2, G3i V2 only)		5-133
SAP (G3r V2 only)		5-139
DLDM		5-111
Feature-Related System Parameters	System Printer Parameters	5-168
	Printer Extension	
	Lines per Page	

Complete the following forms if the Report Scheduler/System Printer is connected to an MPDM/MTDM:

- Netcon Data Module Form — Complete all fields as required. This form activates a physical channel on the TN777 Network Control circuit pack. An associated MPDM/MTDM Data Module form must also be completed to assign the associated MTDM interface from the Report Scheduler/System printer to the switch.
- SAP Data Module Form — Complete all fields as required. An associated MPDM/MTDM Data Module form must also be completed to assign the associated MTDM interface from the Report Scheduler/System printer to the switch. The system chooses one of the free System Access Ports to use to contact the data module connected directly to the system printer. The System Access Port chosen is unpredictable.
- MPDM/MTDM Form — Complete all fields if a 700A-type MPDM is to used. This form is used to assign the Report Scheduler/System Printer to a port on a TN754B Digital Line circuit pack.
- Feature-Related System Parameters Form — Complete the Printer Extension (enter valid extension) and Lines per Page (24 to 132 with 60 as the system default) fields associated with the System Printer Parameters.

Complete the following form if the Report Scheduler/System Printer is connected to the DCE jack on the Control Cabinet:

- Feature-Related System Parameters Form — complete the Printer Extension (enter "eia") and Lines per Page (24 to 132 with 60 as the system default) fields associated with the System Printer Parameters.

Complete the following forms if the Report Scheduler/System Printer is connected to a TN726B Data Line circuit pack via ADU (Asynchronous Data Unit):

- Data Line Data Module Form — Complete all fields as required. The Data Line circuit pack provides an alternative to using an MPDM and is the preferred method. A Data Line circuit pack must be assigned if a port is not available using the Circuit Pack Administration form as shown in “Circuit Pack Administration” in Chapter 5 of this manual. Up to eight ports are available. A Z3A Asynchronous Data Unit (ADU) is required at the printer input.
- Netcon Data Module Form — Complete all fields as required. This form activates a physical channel on the TN777 Network Control circuit pack.
- SAP Data Module Form — Complete all fields as required. This form activates a physical channel on the TN777 Network Control circuit pack.
- Feature-Related System Parameters Form — Complete the Printer Extension (enter valid extension) and Lines per Page (24 to 132 with 60 as the system default) fields associated with the System Printer Parameters.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A single asynchronous System printer connection dedicated for use by the Report Scheduler is required. Other printers in the System include those connected to the G3-MT, the CDR printer, and the journal printer. These printers are not used by the Report Scheduler. Currently, the Report Scheduler printer must be a serial input AT&T 572 or compatible printer.

The type of interface depends on how the Report Scheduler/System printer is connected to the digital switch.

- If the printer is connected to the switch via MPDM, the MPDM must be connected to a port on a TN754B Digital Line circuit pack when used.
- If the printer is connected to a TN726B Data Line circuit, a TN726B port and an Z3A ADU is required.
- If the printer is connected to the DCE jack on the back of the Control Cabinet, the appropriate cable (not to exceed 60 feet) is required.

Restricted/Unrestricted Call Lists

Used to control outgoing call access. The Class of Restriction (COR) assigned the facility being used to place a call is checked to determine if it is associated with the System's Restricted Call List (RCL) and/or one or more Unrestricted Call Lists (UCLs). The System can have one RCL and up to ten UCLs. All lists are administered on the Toll Analysis form. Dialed Strings and associated Min/Max fields on the form can be marked as being members of the RCL and/or UCLs as required.

A call attempt from a facility whose COR is administered as being associated with the RCL and whose dialed string matches a RCL Dialed String will be denied. The caller will receive intercept treatment.

A UCL is only accessed if the facilities COR's Calling Party Restriction field is "all-toll" or "tac-toll" and the COR's UCL field references one or more UCLs. A call from a facility whose COR meets the above conditions will complete if the COR is associated with a UCL whose dialed string matches the dialed number.

NOTE:

The call **will not** complete if the COR is also associated with the RCL and whose dialed string also matches the dialed number. The RCL takes precedence over the UCL.

For additional information, an Authorization Check Flowchart is provided with the Toll Analysis form coverage in Chapter 5. The chart depicts the checks that call processing uses in determining call restrictions. (Other features that are administered on the Toll Analysis form include Restriction-Toll and CDR Account Code Dialing.)

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Toll Analysis	Dialed String	4-117
	Min/Max	
	RCL	
	UCL (1-10)	
Class of Restriction	RCL	5-93
	UCL (1 -10)	

- Toll Analysis Form — Complete the Dialed String, Min/Max, RCL, and UCL List fields as required.
- Class of Restriction Form — Complete the Restricted Call List and Unrestricted Call List fields on each COR form as required.

Hardware Requirements

None.

Restriction — Controlled

Allows an attendant or voice terminal user with console permission to activate and deactivate the following restrictions for an individual voice terminal or a group of voice terminals:

- **Outward** — The voice terminal(s) cannot be used for placing calls to the public network. Such call attempts can receive an announcement, attendant, extension, or intercept tone.
- **Total** — The voice terminal(s) cannot be used for placing or receiving calls. Direct Inward Dialing calls can receive an announcement, attendant, extension, or intercept tone.
- **Station-to-Station** — The voice terminal cannot receive or place station-to-station calls. Such call attempts can receive an announcement, attendant, extension, or intercept tone.
- **Termination** — The voice terminal cannot receive any calls. Incoming calls can receive an announcement, attendant, extension, or intercept tone.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes	User Control Restrict Activation and Deactivation Group Control Restrict Activation and Deactivation	5-161
Feature-Related System Parameters	Controlled Outward Restriction Intercept Treatment Controlled Termination Restriction (Do Not Disturb) Controlled Station-to-Station Restriction	5-168

- **Feature Access Codes Form** — Verify or assign User Control Restrict Activation and Deactivation and Group Control Restrict Activation and Deactivation fields.
- **Feature-Related System Parameters Form** — Assign the type of interface treatment the caller receives when the call is outward restricted. Assign the type of intercept treatment the caller receives when the call is placed to a termination restricted voice terminal. Enter the type of intercept treatment the caller receives when the call is placed to a restricted voice terminal.

Hardware Requirements

None.

Restriction — Miscellaneous Terminal

Restricts a caller from accessing a preselected group of voice or data terminals. The restriction is controlled by the Class of Restriction (COR) assigned to the calling party's voice terminal and the COR assigned to preselected groups of voice and data terminals. The calling party's COR either allows or denies access to the COR assigned to the called facility.

⇒ NOTE:

When a call is to a Vector Directory Number (VDN) extension, the COR of the caller and the VDN are compared to determine if the associated Call Vector can be accessed. After the vector is accessed, the COR of the VDN is used for further call permission checking.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction	All	5-93
Station	COR	5-287
Remote Access	COR	5-247
Hunt Groups	COR	5-189
Terminating Extension Group	COR	5-260
Trunk Groups (All)	COR	4-123
Vector Directory Number	COR	5-262

■ Class of Restriction Forms:

- Voice/Data Terminals — Verify or establish a COR for a group of voice or data terminals.
- Originating Facility — Verify or establish a COR for each originating facility that is to be restricted from calling the miscellaneous trunk group types. (These CORs can be different.) To assign this capability on the originating facilities COR form(s), the calling permission field associated with the CORs of the trunk groups to be restricted must have an "n".

- Station Forms — Assign the same COR to the miscellaneous group of voice terminals. Include the associated data module form if station has a DTDM.

- Remote Access Form — Assign the miscellaneous COR to barrier codes.

- Hunt Group Form — Assign the miscellaneous COR to UCD/DDC groups.

- Terminating Extension Group Form — Assign the miscellaneous COR to the group.
- Trunk Groups Forms — Assign the selected COR to the incoming trunk groups and/or terminals. (CORs already assigned can be used if all users with the CORs will be restricted.)
- Vector Directory Number Form — Assign the miscellaneous COR to the appropriate VDNs.

Hardware Requirements

None.

Restriction — Miscellaneous Trunk

Restricts users at specified voice terminals from accessing preselected groups of trunks, such as CO, CPE, and so on. Any or all trunk groups can be in a given miscellaneous trunk restriction group. The restriction is controlled by the Classes of Restriction (CORs) assigned to the facility or item of hardware that originates the call and the trunk group being accessed. The calling party's COR can either allow or deny access to the COR assigned the calling facility. AAR and ARS access to a trunk group (pattern/preference) are not subject to miscellaneous trunk restrictions.

⇒ NOTE:

When a call is to a Vector Directory Number (VDN) extension, the COR of the caller and the VDN are compared to determine if the associated Call Vector can be accessed. After the vector is accessed, the COR of the VDN is used for further call permission checking.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction	All	5-93
Trunk Groups (All)	COR	4-123
Station	COR	5-287

■ Class of Restriction Forms

- Trunk Groups to be Restricted — Verify or establish a COR for various trunk group types that are to be restricted. Assign the same COR to each group.
- Originating Facility — Verify or establish a COR for each originating facility (that is, voice terminal, and so on) that is to be restricted from calling the miscellaneous trunk group types. (These CORs can be different.) To assign this capability on the originating facilities COR form(s), the calling permission field associated with the CORs of the trunk groups to be restricted must have an "n".

■ Trunk Group Forms — Assign an appropriate (the same to each) COR to each trunk group to be restricted.

■ Station Forms — Assign the appropriate CORs to the voice terminals. (CORs already assigned can be used if all users with the CORs will be restricted.)

Hardware Requirements

None.

Restriction — Toll

Restricts users at specified voice terminals from placing public network calls to certain numbers designated as toll calls by the System Administrator.

User Toll Restriction is administered on Class of Restriction forms as follows:

- **All Toll** — Denies the calling party the ability to make both ARS and trunk access calls to certain toll areas as defined on the System's Toll Analysis form, unless the exchange is on a Unrestricted Call List (UCL). The UCL is defined on the Toll Analysis form and appropriate UCL numbers are assigned on the Class of Restriction forms.
- **TAC Toll** — Denies the calling party from making CO or FX trunk access calls to certain toll areas as defined on the Toll Analysis form, unless the exchange is on a UCL associated with the calling party's Class of Restriction (COR).

If the System is connected to a central office that uses a step-by-step switch, all seven of the digits that are normally dialed for a local call may not be required by the central office to route the call. For example, the central office may only require the last five of the normally dialed seven digits. If all seven digits are dialed, the step-by-step switch uses digit absorption to absorb the unneeded digits.

Digit absorption can be provided within the System to emulate the absorption at the central office. This prevents users from bypassing toll restriction by dialing unneeded digits. For example, assume that the central office absorbs leading 7s before processing a number and that a toll-restricted user wants to call someone in area code 201. The user could dial 77-1-201 plus seven more digits. The Toll Restriction feature would not recognize the call as a toll call and the central office would route the call. With digit absorption, the 77 is absorbed by the System before Toll Restriction is used. Thus, the call would be denied, as intended. Up to five digit absorption lists can be assigned.

⇒NOTE:

Note that if a Digit Absorption list (see Digit Absorption in Chapter 5) is assigned to a CO or FX trunk group, then entries on the Toll Analysis form (Chapter 5) may or may not be used to determine if a TAC call routed over one of these trunk groups is a toll call. The following rules apply:

- If the Digit Absorption list causes no digits to be absorbed for a particular call, then the Toll Analysis Form is used.
- If the Digit Absorption list causes one or more digits to be absorbed for a particular call, and the first non-absorbed digit is either "0" or "1", and the caller is toll restricted, then the call is denied.
- If the Digit Absorption list causes one or more digits to be absorbed for a particular call, and the first non-absorbed digit is NOT "0" or "1", then the Toll Analysis Form is used.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Toll Analysis	All	4-117
Class of Restriction	All	5-93
Console Parameters	COR	5-101
Station	COR	5-287
Data Module (DLDM)	COR	5-111
Attendant Console	COR	5-35
Trunk Group (CO) or	Toll Restricted	4-178
Trunk Group (FX)	Toll Restricted	4-253
Digit Absorption	All	4-62

- **Toll Analysis Form** — Complete all entries as required to administer certain dialed digit string to the System's Toll List. Enter "x" in the associated Toll List field to associate the dialed string to the toll list. Complete appropriate Unrestricted Call List fields to assign certain dialed digit strings as unrestricted.
- **Class of Restriction Form** — Verify or establish CORs with a Calling Party Restriction of "all-toll" or "tac-toll". Complete the Unrestricted Call List fields (enter appropriate UCL numbers from the System's Toll Analysis form).
- **Station, Data Line Data Module, and Console Parameters Forms** — Assign an applicable COR to each voice terminal, data module, and attendant console group that is to be toll restricted.
- **Trunk Group (CO and FX) Forms** — Verify or assign appropriate Foreign Exchange (FX) and Central Office (CO) trunk groups as toll restricted; enter "y" in the Toll Restriction field (default). Enter "n" if you want to disable toll restriction to trunk access code type calls on this trunk group.
- **Digit Absorption Form** — Complete all appropriate fields. The Digit Absorption list number must be assigned to the appropriate CO and/or FX trunk groups.

Hardware Requirements

None.

Restriction — Voice Terminal — Inward

Restricts callers at specified voice terminals from receiving public network, attendant-originated, and attendant-extended calls. A denied call is routed to intercept tone, a recorded announcement, or the attendant for direct inward dialing (DID) calls.

NOTE:

When a call is to a Vector Director Number (VDN) extension, the Class of Restriction (COR) of the caller and the VDN are compared to determine if the associated Call Vector can be accessed. After the vector is accessed, the COR of the VDN is used for further call permission checking.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction Station	Called Party Restriction (Inward) COR	5-93 5-287

- Class of Restriction Form — Verify or establish COR with Called Party Restriction of “Inward.”
- Station Forms — Assign COR to voice terminal.

Hardware Requirements

None.

Restriction— Voice Terminal — Manual Terminating Line

Restricts callers at specified voice terminals from receiving calls other than those from an attendant. Local CO, Foreign Exchange, and Wide Area Telecommunications Service calls are routed to the attendant. Direct Inward Dialing (DID) calls are routed to an announcement or the attendant Tie trunk, and voice terminal calls are routed to intercept treatment. The voice terminal user can originate calls and activate features.

⇒ NOTE:

When a call is to a Vector Directory Number (VDN) extension, the Class of Restriction (COR) of the caller and the VDN are compared to determine if the associated Call Vector can be accessed. After the vector is accessed, the COR of the VDN is used for further call permission checking.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction Station	Called Party Restriction (Manual) COR	5-93 5-287

- Class of Restriction Form — Verify or establish COR with Called Party Restriction of “Manual.”
- Station Forms — Assign COR to voice terminal.

Hardware Requirements

None.

Restriction — Voice Terminal — Origination

Restricts callers at specified voice terminals from originating calls. Voice terminal users can receive calls.

⇒ NOTE:

When a call is to a Vector Directory Number (VDN) extension, the Class of Restriction (COR) of the caller and the VDN are compared to determine if the associated Call Vector can be accessed. After the vector is accessed, the COR of the VDN is used for further call permission checking.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction Station	Calling Party Restriction (Origination) COR	5-93 5-287

- Class of Restriction Form — Verify or establish COR with Calling Party Restriction of "Origination."
- Station Forms — Assign COR to voice terminal.

Hardware Requirements

None.

Restriction — Voice Terminal — Outward

Prevents specified voice terminal users from placing calls to the public network. Calls can be placed to other voice terminal users, to the attendant, and over tie trunks.

**NOTE:**

When a call is to a Vector Directory Number (VDN) extension, the Class of Restriction (COR) of the caller and the VDN are compared to determine if the associated Call Vector can be accessed. After the vector is accessed, the COR of the VDN is used for further call permission checking.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction Station	Calling Party Restriction (Outward) COR	5-93 5-287

- Class of Restriction Form — Verify or establish COR with Calling Party Restriction of “Outward.”
- Station Forms — Assign COR to voice terminal.

Hardware Requirements

None.

Restriction — Voice Terminal — Public

Restricts callers at specified voice terminals from receiving public network calls. A denied call is routed to intercept tone, a recorded announcement, or the attendant.

Calls can redirect to a public-restricted voice terminal. The COR of the originally called extension number is the only one checked.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction Station	Called Party Restriction (Public) COR	5-93 5-287

- Class of Restriction Form — Verify or establish COR with Called Party Restriction of “Public”.
- Station Forms — Assign COR to voice terminal.

Hardware Requirements

None.

Restriction — Voice Terminal — Termination

Restricts voice terminal users on specified extension numbers from receiving any calls. Voice terminal users can originate calls. Direct Inward Dialing or Advanced Private Line Termination calls are routed to a recorded announcement or the attendant.

**NOTE:**

When a call is to a Vector Directory Number (VDN) extension, the Class of Restriction (COR) of the caller and the VDN are compared to determine if the associated Call Vector can be accessed. After the vector is accessed, the COR of the VDN is used for further call permission checking.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction Station	Called Party Restriction (Termination) COR	5-93 5-287

- Class of Restriction Form — Verify or establish COR with Called Party Restriction of “Termination.”
- Station Forms — Assign COR to voice terminal.

Hardware Requirements

None.

Ringback Queuing

Places outgoing calls in an ordered queue (first-in, first-out) when all trunks are busy. The voice terminal user is automatically called back when a trunk becomes available. The voice terminal receives a distinctive 3-burst alerting signal (Priority Calling) when called back.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Trunk Groups (All)	Queue Length	4-123
Feature-Related System Parameters	Automatic Callback-No Answer Timeout Interval	5-168
Feature Access Codes	Automatic Callback Activation/Deactivation	5-161
Station (multi-appearance)	Buttons/Feature Button Assignments -auto-cback	5-287

- Trunk Group Forms for outgoing Trunk Groups — Verify or assign queuing to Queue Length field.
- Feature-Related System Parameters Form — Specify Automatic Callback-No Answer Timeout Interval (rings) field.
- Feature Access Codes Form — Verify or assign Automatic Callback Activation and Deactivation fields.
- Station Forms — Assign Auto Callback buttons to multi-appearance voice terminals, as desired.

**NOTE:**

Automatic Callback and Ringback Queuing share the same intervals, codes, and buttons.

Hardware Requirements

None.

Ringer Cutoff

Allows users of multi-appearance voice terminals to turn on or off certain audible ringing signals. Visual alerting is not affected by this feature.

When this feature is enabled, only Priority ringing, Intercom ringing, and Manual Signaling ringing will ring at the voice terminal. Internal, external, and redirection notification will not ring. When this feature is disabled, the voice terminal will have normal ringing,

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (multi-appearance)	Button/Feature Button Assignments -ringer-off	5-287

- Station Forms — Assign “ringer-off” to a voice terminal feature button. One button may be assigned per voice terminal.

Hardware Requirements

None.

Security Violation Notification

The Security Violation Notification (SVN) feature provides the capability to immediately detect a possible breach of the System's System Management or Remote Access, and to notify a designated referral destination upon detection. It is intended to detect Generic 3 Management Terminal (G3-MT) or Generic 3 Management Application (G3-MA) login failures and Remote Access (barrier code) failures based on customer-administrable thresholds. Once a threshold is reached, for either of these avenues of access (System Management login or Remote Access barrier code), the System will initiate a referral call to an assigned referral point (attendant console or station equipped with a display module).

An audit trail of the security infractions, containing relevant information about each failed attempt to access the System, will be available through the *monitor security-violations* command. This command will refresh the information that is displayed every 30 seconds, providing an up-to-date view of fallacious system access activity.

Information about invalid login attempts is collected at two levels:

- On an immediate basis, when an invalid login attempt is made, the *Security Violation Notification (SVN)* feature can be used to send a priority call to a designated referral point (attendant console or station equipped with a display module) so that there is some chance of apprehending the violator during the attempted violation. Upon notification, the security administrator can request the Security Violations Status Report, which will show details of the last 16 security violations of each type.
- On a historical basis, the number of security violations of each type are collected and reported in the Security Violations Measurements Report. This report shows summary information since the last time that the counters were reset by the *clear measurements security-violations* command. It does not show details of the individual security violations,

The Security Violations Measurement Report (historical) is generally available in all systems without special prerequisites.

The Security Violations Status Report (immediate) is available only when the Security Violation Notification (SVN) feature (local and/or remote) has been enabled on Page 2 of the Feature-Related System Parameters form.

Commands are available for displaying and clearing the Security Violation Report. To display the report, enter:

list measurements security-violations [print] or [schedule]

To reset all counters of the Security Violation Report to zero, enter:

clear measurements security-violations

**NOTE:**

Security measurements are accumulated until they are cleared.

Options: There are no options for these commands.

A typical Security Violation Measurements Report and a detailed description of the meaning of the data presented in the report are provided in *DEFINITY Communications System Genetic 3 V2 System Reports*, 555-230-511.

Status Report

The Security Violations Status Report provides current status information for invalid G3-MT or G3-MA login or Remote Access (barrier code) attempts. Invalid G3-MT or G3-MA login attempts will log the time the violation occurred, the login entered, the port that was accessed during the failed login attempt, and the extension assigned to the port (if one exists). Invalid barrier code attempts will log the time the violation occurred, the number of the trunk group that was accessed, the trunk group member number, and the extension assigned to Remote Access. A total of 16 entries will be maintained for each type of invalid access (local or remote).

To display the Security Violation Status Report, enter:

monitor security-violations [print]

Options: There are no options for this command.

A typical Security Violation Status report and a detailed description of the meaning of the data presented in the report are provided in *DEFINITY Communications System Generic 1 and Generic 3i System Reports*, 555-204-510.

Administration

To implement this feature the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Security Violation Notification Parameters	5-168
Station (multi-appearance)	Button/Feature Button Assignments (Isvn-call) (rsvn-call)	5-287

- Feature-Related System Parameters — Complete all appropriate Security Violation Notification Parameters on Page 2 of the form.

After completing Page 2 of the Feature-Related System Parameters form, you must then administer and activate any previously unadministered call-appearance buttons as the "lsvn-call" and "rsvn-call" buttons for the Referral Destination extension.

**NOTE:**

If the lsvn-call or rsvn-call feature button is deactivated, login and remote access violations can still be viewed at the G3-MT or G3-MA via the *monitor security violations* command.

Additional Considerations

When implementing the Security Violation Notification feature, bear in mind the following:

- A maximum of one Referral Destination may be administered per switch.
- The Call Coverage, Call Forwarding, and Call Pickup (such as within pickup group) features are not supported for SVN.
- CAS attendants will not receive referral calls from branch locations.
- Referral Destination must be local because SVN does not support a DCS network interface.
- Unlike ACA, Priority Calling is supported for the SVN feature.
- Unlike ACA, Speech Synthesis Circuit pack functionality currently is not supported for SVN.

Hardware Requirements

None.

Send All Calls

Allows users to temporarily direct all incoming calls to coverage regardless of the assigned Call Coverage redirection criteria. Send All Calls also allows covering users to temporarily remove their voice terminals from the coverage path.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes	Send All Calls Activation and Deactivation	5-161
Station (multi-appearance)	Button/Feature Button Assignments -send-calls	5-287
Call Coverage Paths	All	5-62

- Feature Access Codes Form — Assign an Activation and a Deactivation access code for Send All Calls.
- Station Forms — Assign a Send All Calls button.
- Call Coverage Paths Form — Complete all fields as required to establish the call redirection criteria.

Hardware Requirements

None.

Service Observing

Allows a specified user, such as a supervisor, to observe a call that involves other users while the call is in progress.

Service Observing can be initiated on an idle station (before an incoming call) or on an active station (during an active call).

While observing a call, the specified user can toggle between a listen-only and a listen/talk connection to the call. Service Observing cannot be used toward a Vector Directory Number (VDN) extension.

NOTE:

The use of Service Observing features may be subject to federal, state, or local laws, rules or regulations or require the consent of one or both of the parties to the conversation. Customers should familiarize themselves and comply with all applicable laws, rules and regulations before using these features.

Administration

The optional Service Observing feature must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Class of Restriction Feature-Related System Parameters Station (multi-appearance)	Service Observing	5-93
	Service Observing Warning Tone	5-168
	Button/Feature Button Assignment -serv-obsrv	5-287
Attendant Console	Feature Button Assignments -serv-obsrv	5-35

- Class of Restriction Form — Complete Service Observing field.
- Feature-Related System Parameters Form — Assign “y” to Service Observing Warning Tone field.
- Station Forms — Assign one serv-obsrv (service observing) button.
- Attendant Console Form — Assign a serv-obsrv button per attendant console.

Hardware Requirements

None.

Single-Digit Dialing and Mixed Station Numbering

Allows easy access to internal hotel/motel services and provides the capability to associate room numbers with guest-room voice terminals.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Dial Plan	All	5-150
Feature-Related System Parameters	Short Interdigit Timeout	5-168

- Dial Plan Form — Refer to the DCS section in this chapter.
- Feature-Related System Parameters Form — Assign timer value for the Short Interdigit Timeout timer.

Hardware Requirements

None.

Software Defined Data Network

Software Defined Data Network (SDDN) provides virtual private line connectivity via the AT&T switched network (4ESS switch). Access to the service is provided by the Integrated Services Digital Network (ISDN) Primary Rate Interface (PRI) feature. These services complement the Software Defined Network (SDN) voice services.

SDDN offers an attractive alternative to the traditional design of data communications networks through high-speed data networking, extensive functionality, advanced call handling capabilities, and network flexibility.

SDDN also offers the Automatic Restoration capability, which restores disrupted administered connections between access/data endpoints. (Access endpoints are nonsignaling trunks, and data endpoints are devices that connect the switch to data terminal/communications equipment.) This restoration is achieved within seconds of a service disruption so that critical data applications can remain operational. The Auto Restoration function is described in more detail in the Administered Connections feature description provided in *DEFINITY Communications System Genetic 3 V2 Feature Description*, 555-230-204. Also refer to the “Administered Connection/Access Endpoint” section elsewhere in this chapter for additional information associated with SDDN and Administered Connections.

SDDN is well-suited for data communications applications that have one or more of the following characteristics:

- Have a time window for completion (performed during night, morning, or other specified time periods).
- Have requirements for high-speed data or high-volume data.
- Have restoration requirements. These are critical applications that must remain operational in the event of a network failure.
- Have multiple endpoint destinations (require serial or nonsimultaneous communication between an originating point and several endpoints).
- Would benefit from network flexibility (traffic patterns show daily or seasonal variations, and may change as the network grows).

Administration

Refer to the “Administered Connection/Access Endpoint” and “Integrated Services Digital Network-Primary Rate Interface” features (in this chapter) for administration information and associated hardware requirements.

Subnet Trunking

Provides modification of the dialed number so an Automatic Alternate Routing (AAR) or Automatic Route Selection (ARS) call can route over alternate trunk groups.

Administration

The Private Network Access or Automatic Route Selection features, as appropriate, must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Routing Patterns	No. Del. Digits Inserted Digits	4-19
Feature-Related System Parameters	Off Premises Tone Detect Timeout Interval	5-168

- Routing Patterns Form — Specify the number of digits to delete. Special characters, if any, are included in the inserted digits string.
- Feature-Related System Parameters Form — Specify the number of seconds (5 to 25) that a call progress tone receiver will wait to detect a call progress tone from off-premises during dialing.

Hardware Requirements

None.

Tandem Trunk Group

A Tandem Trunk Group provides the System with the ability to communicate with another tandem PBX switch. This trunk group will send and receive Traveling Class Marks (TCMs) as well as outpulse 7-digit RNX-XXXX dialing.

NOTE:

An ISDN-PRI trunk group whose Service Type field is "tandem" can also function as a tandem trunk group.

Administration

To assign a Tandem Trunk Group, the following form must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group (Tandem)	All	4-324

- Trunk Group (Tandem) Form — Verify or complete all fields.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port is required on a TN722B, TN760D, TN767, or TN464D circuit pack for each trunk to be assigned in the Access Trunk Group. A TN760D provides four ports, a TN722B or TN767 provides 24 ports, and a TN464D provides 32 ports.

Terminating Extension Group

Allows an incoming call to ring (either audible or silent alerting) as many as four voice terminals at one time (cannot be a Vector Directory Number extension). Any user in the group can answer the call.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Terminating Extension Group Station (multi-appearance)	All Button/Feature Button Assignments -term-x-gr (Grp:_) -exclusion -send-term (Grp:_) -aut-msg-wt (Ext:_) Bridged Call Alerting	5-260 5-287

- Terminating Extension Group Form — Complete all fields.
- Station Forms — Assign Term Grp, Exclusion, Send Term, and Leave Word Calling Remote Message Waiting (aut-msg-wt) buttons to voice terminals as required. Enter either “y” or “n” in the Bridged Call Alerting field to enable or disable the audible signal on a bridged call appearance.

Hardware Requirements

None.

Terminal Translation Initialization (TTI)

The Terminal Translation Initialization (TTI) feature associates an Administered Without Hardware terminal translation to a valid port. A user can then enable this terminal by dialing a special digit sequence (Feature Access Code, TTI security code, and extension) from a terminal connected to the port. A user can also disassociate a terminal from its port location by dialing a similar disassociate digit sequence.

This feature also includes the administration necessary to change unadministered ports in the switch to "TTI Ports" or ports from which the TTI association sequence can occur.

This feature can also be used in station and data module moves from office to office.

NOTE:

Station User records cannot be shared between TTI ports and EAS LoginID extensions. This causes a reduction in the number of possible TTI ports allowed by the System depending on the number of EAS LoginIDs that are administered.

For example, if 2,000 EAS LoginIDs are administered, the maximum number of TTI ports allowed is reduced by 2,000.

Once attributes are assigned on the Station, Attendant Console, or Data Module forms and TTI is enabled on the Feature-Related System Parameters form, each station receives dial tone once plugged in. To activate a station, the Feature Access Code, TTI Security Code, and this extension number must be dialed at this extension.

TTI operates in the following states:

- **Disabled** — TTI is turned off for the System. Any TTI port translations are removed.
- **Voice** — TTI is enabled, the default translation generated for a TTI port will be for a voice or voice/data terminal, and the activation/deactivation sequence is expected to come from a station keypad.
- **Data** — TTI is enabled, the default translation generated for a TTI port will be for a voice/data terminal or data module, and the activation/deactivation sequence is expected to come from terminal dialing.
- **Suspend** — TTI was previously enabled for Voice or Data but TTI port generation is temporarily prevented. Existing TTI port translations are not removed, but no further translations are allowed until returned to a Voice or Data state.
- **Resume** — Allows the TTI state to return to what it was before it was manually suspended.

All TTI translations are saved during a *save translations* operation. If a *save translations* operation is requested while the System is actively generating TTI port translations as a result of turning the TTI system parameter on, the save request will be denied until the TTI port translation is completed or aborted.

Likewise, if an attempt is made to turn TTI on when a save operation is in progress, the attempt will be denied until the save is completed.

Administration

TTI must be enabled on the System-Parameters Customer-Options form before associated fields on forms may be administered.

To implement this feature for stations, attendants, and data modules, complete the following forms.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	TTI Enabled	5-168
	TTI State	
	TTI Security Code	
Station	All	5-287
Attendant Console	All	5-35
Data Module	All	5-107

- Feature-Related System Parameters Form — Enable TTI by entering “y” in the TTI Enabled field.

Assign the type of translations desired at this time (voice or data) in the TTI State field.

Enter a 1-to 7-digit security code in the TTY Security Code field.

- Station Form — Assign each station's attributes and place an “X” in the Port field.
- Attendant Form — Assign each attendant console's attributes and place an “X” in the Port field.
- Data Module Form — Assign each attendant console's attributes and place an “X” in the Port field.

Hardware Requirements

Data Modules require an associated display terminal to dial into the System and activate the extension.

Tie Trunk Group

Provides the System with the ability to communicate with another PBX over dedicated private trunks. This trunk group can also be used to connect to a 4ESS switch to support MEGACOM service, MEGACOM 800 service, or MEGACOM 800 DNIS services.



NOTE:

An ISDN-PRI trunk group whose Service Type field is "tie" can also function as a tie trunk group.

Administration

To assign a Tie Trunk Group, the following form must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group (Tie)	All	4-349

- Trunk Group (Tie) Form — Verify or complete all fields.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port is required on a TN722B, TN760D, TN767, or TN464D circuit pack for each trunk to be assigned in the Trunk Group. A TN760D provides four ports, a TN722B or TN767 provides 24 ports, and a TN464D provides 32 ports.

Time of Day Routing

Provides the most economic routing of Automatic Route Selection (ARS) and Automatic Alternate Routing (AAR) calls, based on the time of day that a call is made. Up to eight Time of Day (TOD) Routing plans can be administered in the System.

Administration

The optional Time of Day Routing and ARS Partitioning features must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following term(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Time of Day Routing	All	4-25
ARS Analysis	All	4-41
AAR Analysis	All	4-8
Node Number Routing	All	4-17
Class of Restriction	Time of Day Plan Number	5-93
Station (multi-appearance) (7400D series equipped with a display)	Button/Feature Button Assignments -man-overid -clk-overid	5-287
Attendant Console	Feature Button Assignments -man-overid -clk-overid	5-35

- Time of Day Routing Form — Complete up to eight Time of Day Routing forms as required.
- ARS Analysis Form — Complete an ARS Analysis form for each PGN as required.
- AAR Analysis Form — Complete an AAR Analysis form for each PGN as required.
- Node Number Routing Form — Complete a Node Number Routing Table for each PGN as required.
- Class of Restriction Form — Complete the Time of Day Plan Number (1 through 8) field on each COR form as required.
- Station Forms — Assign Immediate Manual Override (man-overid) and Clocked Manual Override (clk-overid) feature buttons to 7400D series voice terminals equipped with a display.

- Attendant Console Form — Assign Immediate Manual Override (man-overid) and Clocked Manual Override (clk-overid) feature buttons as required.

Hardware Requirements

None.

Trunk Flash

Allows a feature/function button on a multi-function voice terminal or attendant console to be assigned as a "Flash" button. Pressing this button while connected to a trunk (which must have been administered to allow trunk flash) causes the System to send a flash signal out over the connected trunk.

When used by a CAS attendant connected to an RLT trunk, the flash controls certain CAS features at the CAS Branch switch. When used by a multi-function voice terminal or non-CAS attendant connected to a CO, FX, or WATS trunk, the flash controls operation of certain features (such as add-on) at the connected CO.

NOTE:

The Trunk Flash feature is not available on Personal Central Office Line (PCOL) groups.

This feature may also be activated by dialing the Trunk Flash FAC as administered on the Feature Access Codes form.

To use this feature, the following conditions must be met:

- The trunk group must be enabled for the Trunk Flash feature. Generic 3 V2 supports the Trunk Flash signal for incoming, outgoing, or two-way call directions on selected two-wire analog (ground-start or loop-start) or digital (DS1) trunks.

NOTE:

If the trunk group is a DS1 trunk in Italy, the Trunk Flash feature will apply only to outgoing calls.

The trunk group types may be "co", "fx", and/or "wats".

- The Trunk Flash (Flash) button on selected multifunction voice terminals (stations) or attendant consoles must be administered, and/or the Flash Access Code must be administered.
- At the time the Trunk Flash (flash) button is pressed, the call can only involve one trunk line. This trunk line must have been administered with the Trunk Flash feature.

NOTE:

If the trunk is not directly connected to the far end/Central Office (CO) providing the customized services, use of the Trunk Flash signal may cause the call to be disconnected by the far end/CO.

Calls made after the Flash are not recorded in CDR records.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (MET* Sets)	All	5-296
10 Button		
20 Button		
30 Button		
Station (multi-appearance)	All	
7303S		5-324
7305S		5-324
7309H		5-322
7401D		5-343
7403D		5-343
7404D		5-343
7405D		5-356
7406D		5-369
7407D		5-369
7434D		5-381
CALLMASTER Terminal (602A1)		5-409
Station (Terminals)		
515BCT		5-313
Attendant Console	All	5-35
Feature Access Codes	Flash Access Code	5-161
Trunk Group		
CO	All	4-178
FX	All	4-253
WATS	All	4-375

*MET= Multi-Button Electronic Telephone

- Station Form — Administer a station form for each one of the above voice terminals to be assigned. Assign a Trunk Flash feature button (Flash) to each terminal.
- Attendant Console Form — Complete all fields as required. Assign a Trunk Flash feature button (Flash) to each attendant console.
- Feature Access Codes Form — Assign the Flash Access Code.
- Trunk Group Form — For Central Office, Foreign Exchange, and/or WATS trunk groups, the “Trunk Flash?” field must be administered on the appropriate Trunk Group form(s).

Hardware Requirements

None.

Trunk Group Busy/Warning Indicators to Attendant

Provides the attendant with a visual indication that the number of busy trunks in a group has reached an administered level. A visual indication is also provided when all trunks in a group are busy.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Direct Trunk Group Select Buttons	5-35
Trunk Groups:	Busy Threshold	
Access		4-130
APLT		4-155
CO		4-178
CPE		4-200
DMI-BOS		4-209
FX		4-253
ISDN-PRI		4-275
RLT		4-303
Tandem		4-324
Tie		4-349
WATS		4-375

- Attendant Console Form — Trunk group must be assigned to one of the first six Direct Trunk Group Button Assignments for a Basic Attendant Console (301A) or up to 12 Button assignments for an Enhanced Attendant Console (302A).
- Trunk Group Forms — Assign Busy Threshold (Warning) field.

NOTE:

Refer to the "Attendant Direct Trunk Group Selection" feature description for additional information.

Hardware Requirements

None.

Trunk Identification by Attendant

Allows an attendant or display-equipped voice terminal user to identify a specific trunk being used on a call. This capability is provided by assigning a Trunk ID button to the attendant console or voice terminal.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Feature Button Assignments -trk-id	5-35
Station (7400D Series)	Display Language Button/Feature Button Assignments -trk-id Display Language	5-287

- Attendant Console Form — Assign a Trunk ID button. Assign the desired Display Language (English, French, Italian, Spanish, or “user-defined”). Refer to “Administrable Language Display” in this chapter for information on administering the “user-defined” language.
- Station Forms — Assign a Trunk ID feature button to stations equipped with a display or have an associated data terminal providing voice terminal displays. Assign the desired Display Language (English, French, Italian, Spanish, or “user-defined”). Refer to “Administrable Language Display” in this chapter for information on administering the “user-defined” language.

Hardware Requirements

None.

Trunk Groups



NOTE:

Refer to the Capacity Table located in Appendix C for the maximum number of trunks that can be assigned in each System configuration.

The following trunk groups can be assigned:

- Access
- Advanced Private Line Termination (EPCS or CCSA access)
- Central Office (CO)
- Customer Provided Equipment
- Digital Multiplexed Interface — BOS
- Direct Inward Dialing (DID)
- Direct Inward Outward Dialing (DIOD)
- Direct Outward Dialing
- Foreign Exchange (FX)
- Integrated Services Digital Network-Primary Rate Interface (ISDN-PRI)
- Personal Central Office Line (PCOL)
- Release Link Trunk (RLT)
- Tandem
- Tie (Analog or DS1)
- Wide Area Telecommunications Service (WATS) or 800 Service

Each trunk group type is covered separately in this chapter. Refer to the specific trunk group coverage for additional information.

Trunk-to-Trunk Transfer

Allows the attendant or voice terminal user to connect an incoming trunk call to an outgoing trunk.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Trunk-to-Trunk Transfer	5-168

- Feature-Related System Parameters Form — Complete Trunk-to-Trunk Transfer field.

Hardware Requirements

None.

Uniform Call Distribution

Provides direct access to a group of voice terminals, data modules, data line circuit ports, or modems by either lines or trunks. Access to a group of like resources, such as modems, is through a single group extension number, which minimizes the dialing of a busy resource. Calls are handled on a "most idle" basis for the hunt group number.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Recorded Announcements	As Required	5-244
Recorded Announcement Data Module	All	5-108
Call Coverage Paths	All	5-62
Hunt Groups	All	5-189
Trunk Groups (All)	Incoming Destination Night Service	4-123

- Recorded Announcements Form — Assign recorded announcement extension numbers, if used.
- Recorded Announcement Data Module Form — Complete all fields if recorded announcements are used (TN750 circuit pack).
- Call Coverage Paths Form — Verify or assign Call Coverage Path for the group, if used.
- Hunt Groups Form — Complete all fields.
- Trunk Group Forms — If this feature is to be provided via DID, the assigned hunt group extension number must be accessible via DID. Enter the extension number assigned to the hunt group in the trunk group Incoming Destination and/or Night Service fields.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

If the optional Auxiliary Queue Warning lamp is used, requires one port on a TN742, TN746B, or TN769 Analog Line circuit pack for each Auxiliary Queue Warning lamp. A 21C-49 indicator lamp may be used as a warning lamp. This lamp is approximately two inches in diameter and has a clear beehive lens. The lamp operates on ringing voltage and can be mounted in any convenient location.

Each delay announcement requires announcement equipment and a port on a TN763C Aux Trunk circuit pack, or TN742, TN746B, or TN769 Analog Line circuit pack. If music is to be provided after the delay announcement, a music source and a port on the TN763C Auxiliary Trunk circuit pack are also required. The announcement and music equipment are not provided as part of the System equipment.

Refer to the “Recorded Announcements” and “Trunk Groups” features for additional administration and hardware requirements.

Uniform Dial Plan (UDP)

The Uniform Dial Plan (UDP) provides a common 4-or 5-digit dial plan that can be shared among a group of switches. Inter-switch dialing and intra-switch dialing are both accomplished via 4- or 5-digit dialing. UDP is used with Electronic Tandem Networks, Main/Satellite/Tributary and Distributed Communications System (DCS) configurations. Additionally, UDP can be used alone to provide uniform 4- or 5-digit dialing between two or more private switching systems without Main/Satellite/Tributary or DCS configurations.

Unrestricted 4-or 5-digit numbering plans are available for DID, DCS, PRI, and LDN calls by steering calls on all dialed digits.

⇒ NOTE:

A UDP Numbering Plan can be either 4 digits or 5 digits, but not both.

Any extension number associated with a UDP endpoint may reside on any switch via an Extension Number Portability (ENP) subnetwork [refer to "Extension Number Portability (ENP) Numbering Plan" elsewhere in this chapter]. This allows extensions to be moved from one switch to another while retaining the original extension number (as long as these switches are part of the ENP subnetwork). It also allows users to retain their ETN/SDN/CCSA/EPSCS numbers when they are moved within the ENP subnetwork. This capability allows the movement of an extension to a different switch without the need to purchase additional blocks of DID numbers at the new switch. As a result, corporate directories need not be updated as often since subscribers' numbers do not change.

⇒ NOTE:

Extension numbers associated with devices that must be local to the switch cannot be ported.

Administration

⇒ NOTE:

The Uniform Dial Plan feature is not supported by the G3s V2 ABP configuration.

The optional UDP feature must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

To implement this feature, the following form(s) or sections of form(s) must be completed.

Form	Field	Form Instructions (Page #)
Dial Plan	Uniform Dial Plan	
	UDP Extension Search Order	5-150
Second Digit Table	All	5-150
Uniform Dialing Plan	All	4-396
AAR Analysis	All	4-8
AAR Digit Conversion	All	4-12
ARS Analysis	All	4-41
ARS Digit Conversion	All	4-45
Node Number Routing	Route Pat	4-17
ENP Numbering Plan	All	4-73
Routing Patterns	All (AAR & ARS)	4-19

- **Dial Plan Form** — Enter “4-digit” or “5-digit” in the Uniform Dialing Plan field.
Enter “local-extensions-first” or “udp-table-first” in the UDP Extension Search Order field to specify where the System should search for a dialed extension first.
- **Second Digit Table Form** — Specify which extensions are valid UDP extensions (the corresponding first digit must be assigned as a “miscellaneous” type in the first digit table).
- **Uniform Dialing Plan Form** — Administer the Ext Codes for non-home extensions in the ENP subnetwork as ENPNode (node number routed). Also, administer Ext codes for “UDPCode” and/or “AARCode” processing.
- **AAR Analysis Form** — Complete appropriate fields as described under Automatic Alternate Routing (AAR).
- **AAR Digit Conversion Form** — Complete appropriate fields as described under Automatic Alternate Routing (AAR).
- **ARS Analysis Form** — Complete each table (Partitioned Group Number) as required. Complete the Dialed String, Minimum, Maximum, Route Pat (Routing Pattern), Call Type, and Node Num fields for each dialed string to be given specific routing considerations.
- **ARS Digit Conversion Form** — Complete the Matching Pattern and associated Replacement String fields for each dialed string (matching pattern) to be modified in part or whole. These dialed strings will be routed based on the assigned replacement strings.
- **Node Number Routing Form** — Assign the routing pattern associated with each node number in the EN P subnetwork.
- **ENP Numbering Plan Form** — Associate the leading one or two digits of extensions in the ENP subnetwork with a 3-digit ENP code, used to construct a 7-digit AAR-like ENP number.

- Routing Patterns Form — Complete appropriate fields as described under Automatic Alternate Routing (AAR).

Hardware Requirements

None.

VDN In a Coverage Path

VDN In a Coverage Path (VICP) is an enhancement to Call Coverage and Call Vectoring that allows assignment of Vector Directory Numbers (VDNs) as the last point in coverage paths. With this feature administered, calls that go to coverage can be processed by vectoring/prompting to extend Call Coverage treatments while retaining covered call characteristics.

NOTES:

A VDN is not allowed as a member of a coverage answer group. A vector cannot route a covered call to a coverage answer group; this group can only be a point in a coverage path.

If a VDN is removed from the System using the *remove vdn <extension>* command, the VDN will be automatically removed from any coverage paths.

VICP is useful for a number of applications including:

- Using a VDN in an agent's coverage path for Direct Agent or personal calls to the agent.
- Off-premises routing of coverage calls using the *route to* command.
- Coverage point for access to AUDIX/Message Center providing alternate treatments based on time of day, caller selection, or failure/overload conditions.

Administration

Vectoring (Basic) and/or Vectoring (Prompting) must be enabled on the System-Parameters Customer-Options form before associated fields on forms may be administered.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Call Coverage Paths	All	5-62
Call Vector	All	5-76
Vector Directory Number	All	5-262

- Call Coverage Path Form — Complete all fields as required. Enter the extension of the VDN to be used as a coverage point in the Point 1, Point 2, and Point 3 fields.
- Call Vector Form — Complete all fields as required.
- Vector Directory Number Form — Complete all fields to assign the desired Vector Directory Numbers.

Hardware Requirements

None.

Visually Impaired Attendant Service (VIAS)

Provides voice feedback in either Italian or British English to a visually impaired attendant. The language selected is automatically determined based on which voice synthesis circuit pack is installed in the System.

Each voice phrase is a sequence of one or more single-voiced messages.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Feature Button Assignments VIAS Act/Deact Console stat display stat last oper last voice mess direct trunk group	5-35

- Attendant Console Form — Administer Feature Button Assignments as required.

Hardware Requirements

The TN457 circuit pack is required for British English voice feedback, and the TN433 will provide Italian voice feedback. The TN725 (American English) circuit pack cannot be used.

Voice Message Retrieval

Allows attendants, voice terminal users, and remote access users to retrieve Leave Word Calling (LWC) and Call Coverage messages in the form of a voice output, which may be in English or Italian depending on which voice synthesis circuit pack is installed in the System.

Administration

NOTE:

For G3s V2 ABP configurations, LWC and Linked Call Coverage Paths are available only as part of the Voice Mail Application Support Option. This option is activated when an AT&T voice processing adjunct is purchased. G3s ABP does not support LWC, but if you buy ABP and the Voice Mail Application Option, then you also get Leave Word Calling.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes	LWC Message Retrieval Lock	5-161
	LWC Message Retrieval Unlock	
Feature-Related System Parameters	Voice Coverage Message Retrieval Access Code	5-168
	Voice Principal Message Retrieval Access Code	
Station	Stations With System-Wide Retrieval Permission	5-287
	Security Code	

- Feature Access Codes Form — Assign Leave Word Calling Message Retrieval Lock/Unlock codes. Assign Voice Coverage/Principal Message Retrieval Access Codes.
- Feature-Related System Parameters Form — Complete Stations With System-wide Retrieval Permission field.
- Station Forms — Complete the Security Code field for each voice terminal.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

Requires either a TN725B (American English), TN457 (British English), or TN433 (Italian) Speech Synthesizer circuit pack.

No additional software is required.

Voice Response Integration

Integrates the Call Vectoring feature with the capabilities of Voice Response Units (VRUs) such as the AT&T CONVERSANT Voice Information System (CVIS). Voice Response Integration (VRI) allows voice response scripts to be executed that permit the passing of data between the System and a VRU while the caller remains in split queue.

The principal capabilities of VRI are as follows:

- The ability to execute a VRU script while retaining control of the call in vector processing on DEFINITY.
- The ability to execute a VRU script while remaining in split queue and retaining position in queue.
- The ability to pool VRU ports for multiple applications (formerly possible only when ASAI was present).
- The ability to use a VRU as a flexible external announcement device.
- The ability to pass data between DEFINITY and a VRU.
- The ability to tandem VRU data through DEFINITY to an ASAI host.

These capabilities are provided by the new *converse* Call Vectoring command. Although the *converse* vector step can be used for other purposes, it is specifically designed to improve the integration of VRUs with DEFINITY ACD splits.

⇒ NOTE:

The System will not prevent a *converse* step from delivering a call to a split or skill of human agents though this is not the intent of the *converse* command and is not supported.

While executing a VRU script, callers retain their position in the queue. If an agent becomes available, the line to the VRU is dropped and the calling party is connected to the available agent.

VRI allows the VRU to be used as a flexible external announcement device. The maximum number of callers that may be connected simultaneously varies with each VRU; however, as an example, up to 48 callers can be connected simultaneously to a CVIS (though only one caller can be connected to each port).

⇒ NOTE:

If a call is queued to a nonconverse split before a *converse* step is executed, the caller will be immediately connected to an agent in the nonconverse split when an agent becomes available to service the call. Any VRU script being executed at that time will be interrupted.

When designing an application where it is necessary for a caller to complete the VRU script before talking to an agent, place the *converse* step before any other step that queues the call.

Converse Vector Step Syntax

The syntax of the converse vector step is dependent on whether or not the EAS option is enabled.

If EAS is not optioned:

converse on split <number> pri <priority> passing <data_1> and <data_2>

If EAS is optioned:

converse on skill <number> pri <priority> passing <data_1> and <data_2>

⇒Where:

<number> is any valid vector controlled hunt group, split or skill number

<priority> is set to l(ow), m(edium), h(igh) or t(op)

<data_X> can each be any of the following:

- A string of digits (0-9), or "*" (Maximum length of 6)
- The keyword "vdn"
- The keyword "ani"
- The keyword "digits" (if Call Prompting enabled)
- The keyword "qpos"
- The keyword "none"
- A single "#"

Administration

Vectoring (Basic) must be enabled on the System-Parameters Customer-Options form before associated fields on forms may be administered.

⇒NOTE:

Voice Response Integration is not supported by G3s V2 ABP configurations.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes	Converse Data Return Code	5-161
Feature-Related System Parameters	Converse First Data Delay	5-168
	Converse Second Data Delay	
Call Vectoring	All	5-76

- Feature Access Codes Form — Enter the Feature Access Code for Converse in the Converse Data Return Code field.
- Feature-Related System Parameters Form — Enter the delay required before the System outputs digits to the VRU in the Converse First Data Delay field. Enter the delay required before the System outputs a second set of digits to the VRU in the Converse Second Data Delay field.
- Call Vectoring Form — Complete all fields as required.

Hardware Requirements

NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

TN748 General Purpose TTR circuit packs are required to return data from the VRU to the DEFINITY Switch.

Voice Terminal Display

Provides multi-appearance voice terminal users with updated call and message information. This information is displayed on a display-equipped terminal. The information displayed depends upon the display mode selected by the user.

Administration

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (7400D Series Voice Terminal)	Data Module Display Module Display Language	5-287

- Station Form for 7400D Series Voice Terminals — Complete the Data Module and Display Module fields. Complete all fields of the associated Data Module and Display Module forms. One “Normal” button must be assigned on the Display Module form or as a feature button.

The display buttons may also be administered as voice terminal feature buttons if required.

Assign the desired Display Language (English, French, Italian, Spanish or “user-defined”). Refer to “Administrable Language Display” in this chapter for information on administering the “user-defined” language.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port on a TN754B Digital Line circuit pack must be assigned to the 7400D series voice terminal before this feature can be implemented. The voice terminal must have a built-in display, a digital display module, or obtain the display via an associated data terminal. All digital voice terminals (includes 7400D series and CALLMASTER digital voice terminal) can be provided an interface to a data terminal via 7400B Data Module. The 7403D and 7405D sets can interface a data terminal via an optional Digital Terminal Data Module (DTDm), the 7404D requires an optional Messaging Cartridge, and the 7406D requires an optional 703A Data Stand.

Voice Terminal Alerting Options

Provides the capability to support various ringing treatments for multi-appearance voice terminals (Digital, Hybrid, and CALLMASTER) that are off-hook and idle (no calls on a station or all calls on hold) or active on a call.



NOTE:

The Voice Terminal Alerting Options feature is not available on attendant consoles or analog voice terminals.

For Digital and Hybrid sets, the options available are:

- “continuous” — All calls terminated to this station will ring continuously.
- “single” — If a station is off-hook and active or off-hook and idle and a call is terminated to that station, it will receive one ring cycle then ring silently.
- “if-busy-single” — If a station is off-hook and idle and a call is terminated to that station, it will ring continuously. If a station is off-hook and active and a call is terminated to that station, it will receive one ring cycle and then ring silently.
- “silent” — If a station is off-hook and active or off-hook and idle and a call is terminated to that station it will just ring silently.



NOTE:

If “silent” is specified, *no* type of call will audibly alert (including Automatic Callback, Ringback Queueing, Priority Call, and Dial Intercom calls). This is not the case with an administered Ringer Cutoff button.

For CALLMASTER sets, the options available are:

- “continuous” — All calls terminated to this station will ring continuously.
- “single” — All calls terminated to this station receive one ring cycle then ring silently.
- “if-busy-single” — If a station is idle and a call is terminated to that station, the call will ring continuously. If a station is active on a call and another call is terminated to that station, the call will receive one ring cycle and then ring silently.
- “silent-if-busy” — If a station is active on a call and another call is terminated to that station the call will receive no audible ring and will just ring silently. If a station is idle and a call is terminated to that station, the call will ring continuously.

Administration

The G3V2 option must be enabled on the System-Parameters Customer-Options form before this feature can be administered for Digital or Hybrid voice terminals.

To implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Station (Digital, Hybrid)	Active Station Ringing	5-287
Station (CALLMASTER)	Idle/Active Ringing	5-287

- **Station Forms** — For Digital and Hybrid sets, enter “single”, “if-busy-single”, “silent”, or “continuous” in the Active Station Ringing field as desired. For CALLMASTER sets, enter “single”, “if-busy-single”, “silent-if-busy”, or “continuous” in the Idle/Active Ringing field as desired.

Hardware Requirements

None.

Voice Terminals

The following provide administrative guidelines for the System's voice terminals. Refer to the referenced forms for specific instructions associated with a voice terminal type.

Administration

To administer Voice Terminals, the following forms must be completed.

Form	Field	Form Instructions (Page #)
Station	All	
10-, 20-, or 30-MET Voice Terminal		5-296
500 Voice Terminal		5-303
510D Personal Terminal		5-313
515 BCT		5-313
2500 Voice Terminal		5-303
7101 A Voice Terminal		5-303
7102A Voice Terminal		5-303
7103A Voice Terminal		5-303
7104A Voice Terminal		5-303
7303S		5-324
7305S		5-324
7309H Voice Terminal		5-324
7313H Voice Terminal		5-324
7314H Voice Terminal		5-332
7315H Voice Terminal		5-332
7316H Voice Terminal		5-332
7317H Voice Terminal		5-332
7401D Voice Terminal		5-343
7401+ Voice Terminal		5-343
7403D Voice Terminal		5-343
7404D Voice Terminal		5-343
7405D Voice Terminal		5-356
7406D Voice Terminal		5-369
7406+ Voice Terminal		5-369
7407D Voice Terminal		5-369
7407+ Voice Terminal		5-369
7410D Voice Terminal		5-343
7410+ Voice Terminal		5-343

Form	Field	Form Instructions (Page #)
Station	All	
7434D Voice Terminal		5-381
7444D Voice Terminal		5-381
7505D Voice Terminal		5-392
7506D Voice Terminal		5-392
7507D Voice Terminal		5-392
8110 Voice Terminal		5-303
8503D Voice Terminal		5-392
8510D Voice Terminal		5-392
8520D Voice Terminal		5-392
602A1 CALLMASTER Digital Voice Terminal		5-409

- Station Forms — Verify or complete all fields as required.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

MET Sets (10-, 20-, 30-MET)

A port in a TN735 circuit pack is required for each 10-, 20-, or 30- Multi-Button Electronic Telephone (MET) to be assigned. A TN735 provides four ports.

Analog Voice Terminals (500, 2500, 7101A, 7102A, 7103A, 7104A)

A port is required on a TN742, TN746B, or TN769 Analog Line circuit pack, or a TN767 DS1 Tie Trunk for each analog Voice Terminal to be assigned. A TN742 and TN769 provides eight ports. The TN746B provides 16 ports for in-building use only. A TN767 provides 24 ports.

Hybrid Voice Terminals (7302H, 7303H, 7303S, 7305H, 7305S, 7309H)

A port is required in a TN762 Hybrid Line circuit pack for each hybrid voice terminal to be assigned. A TN762 provides eight ports.

Digital Voice Terminals [7401D, 7401+, 7403D, 7404D, 7405D, 7406D, 7406+, 7407D, 7407+, 7410D, 7410+, 7434D, 602A1, 7505D (BRI), 7506D (BRI), 7506D (BRI), 7507DBRI), 8503D (BRI), and 8510D (BRI)]

A port is required on a TN754 Digital Line circuit pack for each 7401D, 7401+, 7403D, 7404D, 7405D, 7406D, 7406+, 7407D, 7407+, 7410D, 7410+, 7434D, and 603A1 digital voice terminal to be assigned. In the case of the 7505D, 7506D, 7507D, 8503D, and 8510D ISDN-BRI voice terminals (digital, but non-DCP), a port is required on a TN556 ISDN-BRI Line circuit pack.

The TN556 ISDN-BRI Line circuit pack provides 12 ports. When administered in multipoint (passive bus) configuration, a port may be shared by two endpoints. Each endpoint may be a voice-only or stand-alone data endpoint. For ISDN-BRI applications, a TN778 Packet Control circuit pack is also required to provide ISDN-BRI connectivity. The Packet Control circuit pack provides ISDN signaling links with Link Access Protocol for the D-channel.

510D Personal Terminal and 515 Business Communications Terminal (BCT)

A port is required on a TN754 Digital Line circuit pack for each 510D or 515 BCT to be assigned. A TN754 provides eight ports.

Wide Area Telecommunications Service (WATS) Trunk Group

A WATS Trunk Group provides for trunk connections between the System and a WATS (or 800 Service) office.

Administration

To assign a WATS Trunk Group, the following form must be completed.

Form	Field	Form Instructions (Page #)
Trunk Group (WATS)	All	4-375

- Trunk Group (WATS) Form — Complete all fields as required.

Hardware Requirements



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

A port on a TN747B CO Trunk, or TN767 or TN464 DS1 Interface circuit pack is required for each WATS trunk to be assigned. A TN747 provides eight ports, a TN767 provides 24 ports, and a TN464D provides 32 ports.

Wideband Switching

The Wideband Switching feature provides wideband and ISDN data communications for various applications including video conferencing, data backup, scheduled batch processing (for example, nightly file transfers), and primary data interfaces by providing end-to-end connectivity between endpoints at data rates from 128 to 1536 kbps over a T1 facility, or up to 1984 kbps over an E1 (European Standard) facility.

Applications involving high-speed data or video are most likely to use Wideband Switching,

For additional information on the Wideband Switching feature, see the *DEFINITY Communications System Wideband Technical Reference*, 555-230-230, and *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204.

DEFINITY switches can be configured for Wideband Switching in various ways, including:

- A T1 facility typically provides 1 D-channel and 23 B-channels.
- An E1 facility typically provides 1 D-channel and 30 B-channels.

Each facility channel (DS0) can provide 64 kbps transmission rates. Standard data services for use by Wideband are listed below:

- **H0, H11, H12** — Provide a fixed data rate through use of a prearranged number of channels and codepoints (see the table below) to be used by wideband service.
- **NxDS0** — A multirate data service that can handle the entire range of wideband data rates.

The table below summarizes the ISDN channel types with the associated data rates that support Wideband Switching.

Table 3-12. ISDN Channel Types and Wideband Associated Data Rates

Channel Type	Number of Channels	Data Rate
H0	6	384 kbps
H11	24	1536 kbps
H12	30	1920 kbps
NxDS0 (T1)	2-24	128 to 1536 kbps
NxDS0 (E1)	2-31	128 to 1984 kbps

Any endpoint with an ISDN-PRI interface equivalent can be administered for Wideband Switching applications. Typically, a Universal DS1 (UDS1) circuit pack and an ISDN-PRI terminal adapter (such as the ASCEND® wideband compatible terminal adapter) are used on the line-side for Wideband Switching applications. On the switch-side, a UDS1 circuit pack is the interface for network facilities carrying wideband calls.

Facility associated signaling (FAS) is a switching method where the D-channel carries the signaling only for those channels on the same physical interface. Non-facility associated signaling (NFAS) is another method that allows multiple T1 or E1 facilities to share a single D-channel for signaling.

Using NFAS, one facility is configured for 23 (T1) or 30 (E1) B-channels and one D-channel. The other T1/E1s in the NFAS group are administered for 24 (T1) or 31 (E1) B-channels. The DEFINITY switch implements the NxDS0 standard (where N is a positive integer and DS0 is an abbreviation for Digital Signal Level 0, a single 64 kbps channel in a T1 or E1 facility) by configuring the T1s or E1s with the NFAS method to provide up to 1536 kbps or 1984 kbps transmission rates, respectively. The NFAS method is sometimes modified to provide a primary D-channel on one facility and backup on a second facility. All other facilities are configured for 24/31 B-channels. (This D-channel backup method allows all the facilities to share the primary or backup D-channel, as required.)

Wideband trunk allocation is performed using one of three allocation algorithms: fixed, flexible, or floating.

- Fixed allocation provides contiguous channel aggregation, and the starting channel is constrained to a predetermined starting point. Used only for H0, H11, and H12 calls.
- Flexible allocation allows a wideband call to occupy non-contiguous positions within a single T1 or E1 facility. Used for NxDS0 calls.
- Floating allocation enforces contiguous channel aggregation, but the position of the first channel is not constrained like it is in fixed allocation. Used for NxDS0 calls.

Administration

The Wideband Switching feature must be enabled on the System-Parameters Customer-Options form before associated fields on forms may be administered.

Depending on the desired application, to implement this feature, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Access Endpoint	All	5-16
PRI Endpoint	All	5-241
Trunk Group (ISDN-PRI)	All	4-275
Routing Patterns	All	4-19

- Access Endpoint Form — Complete all fields as required.
- PRI Endpoint Form — Complete all fields as required.
- Trunk Group (ISDN-PRI) Form — Complete all fields as required.
- Routing Patterns Form — Complete all fields as required.

Hardware

The TN464C (or later) UDS1 circuit pack is required for Wideband Switching.

Forms for Network Features and Services

4

This chapter contains System forms and associated instructions required to implement the following network-type features and services.

- Automatic Route Selection (ARS)
- Automatic Alternate Routing (AAR)
- Centralized Attendant Service (CAS)
- Distributed Communications System (DCS)
- DS1 Trunk Service
- Integrated Services Digital Network (ISDN) - Primary Rate Interface (PRI)
- Trunk Groups

In addition, administration commands required to access the forms are provided along with each form's coverage. In some cases, just the most commonly used commands are given. Chapter 2 provides a complete listing of the System's administration commands and describes the "make-up" of the command line. Specifically, the "action," "object," and "qualifier" command words are described in detail.

The forms included in this chapter are primarily dedicated to networking and do not include multiuse forms that support other functional areas such as voice or data management. All other forms required to implement the System, including those multiuse forms (such as Dial Plan, Feature Access Codes) that support networking and voice and data management, are included in "Forms for System Features and Services" in Chapter 5.

Refer to "System Features, Functions, and Services" in Chapter 3 for a complete listing of all forms and/or related fields on forms that must be completed or considered when implementing the above network-type features and services.

Blank forms are provided in the Blank Forms Package and may be reproduced as required. The copies are used as worksheets when using this manual to assign features and services. The completed hard-copy forms are later used with administration commands provided in Chapter 2 to implement the System. The forms should then be retained as part of the System's hard-copy records.

Automatic Alternate Routing (AAR)

This section contains the network-type forms and associated instructions dedicated primarily to implementing the Automatic Alternate Routing (AAR) feature.

Automatic Alternate Routing provides alternative routing choices for private on-network calls. The feature automatically selects the most desirable and least expensive (by a customer-specified order) route over various trunking facilities for private network calls. AAR also provides digit modification to allow on-network calls to route through the public network when an on-network route is not available.

The network of PBXs interconnected with private line facilities that use the AAR feature are referred to as an Electronic Tandem Network (ETN). An ETN is a four-level hierarchical network of PBXs. There are two levels of Tandem switches and two levels of subtending PBXs. The first level of Tandems are called fully interconnected tandem switches, and the second level of Tandems are called the final groups of tandem switches. The third level of PBXs, homing directly on a Tandem switch, are called Main PBXs, and the last level of PBXs homing on a Main are called Satellites or Tributaries. The Tandem switches contain most of the intelligence for routing and digit manipulation.

Typically, AAR simplifies dialing. Users need only dial the AAR access code (normally 8) followed by an ETN or Public Network Destination Number (PNDN). The feature selects the route and does whatever digit manipulation is necessary. In addition, AAR selects the most cost-effective On-Net or Off-Net route. If the first-choice route is not available, another route is chosen automatically. For outgoing ISDN calls, route selection is dependent on Bearer Capability Class (BCC), Facility Restriction Level (FRL), and type of facility.

AAR assumes a Uniform Numbering Plan, and its capabilities include flexible Digit Analysis, Partitioning, Time of Day Routing, Automatic Overflow to DDD, Trunk-to-Trunk Signaling, Traveling Class Marks, and Sub-Net Trunking. An additional capability allows a user to dial an ETN address to reach a specific foreign country location. The call is routed On-Net to an appropriate exit point, where digit insertion is used for conversion to the appropriate access code, country code, city code, and exchange.

AAR can access the same trunk groups and share the same set of routing patterns as ARS when activated.

Refer to "Automatic Alternate Routing" in Chapter 3 for a complete listing of all System forms and/or fields on forms that must be completed or considered when implementing AAR. Forms such as the Dial Plan, Class of Restriction, Feature Access Codes, and Feature-Related System Parameters that support both networking and other functional areas such as voice and data management may also require implementation.

The AAR RNX Translation Table and Ten-Digit to Seven-Digit Conversion Tables that were previously used have been replaced with two new forms (AAR Digit Analysis and AAR Digit Conversion). Now, a more flexible private networking arrangement is supported that allows a better interworking with Generic 2 and other communications systems. The System can now be administered to include RN, RNX, and RXX dial plans, where R = 2 to 9, N = 2 to 9, and X = 0 to 9 (and any other forms).

ETN addresses for DCS or UDP destinations remain limited to a 7-digit format. This means that the location code part for UDP/DCS is a 3-digit code of the form XXX and the extension number is a 4- or 5-digit number in the XXXX format (where XXXX are the last four digits). For other destinations, ETN addresses are not limited to the 7-digit RNX format. ETN addresses can be administered as 18 or fewer digits in length and the AAR location codes (PBX codes) of the format RN, RX, XX, RNX, RXX, XXX, and RNXX (or any other form) are supported.

AAR Forms

The following AAR forms are provided in this section. Since AAR and ARS share several common forms, reference to the appropriate form is provided, where applicable.



NOTE:

Either the Private Networking or Uniform Dialing Plan option on the System-Parameters Customer-Options form must be enabled before associated AAR forms can be administered.

- AAR Digit Conversion Table
- AAR Analysis Table
- Remote Home Number Plan Area (form information provided in the ARS section)
- Node Number Routing (form information provided in the Node Number Routing section)
- Routing Patterns (form information provided in the ARS section)
- Time of Day Routing (form information provided in the ARS section)

The following provides an overview of the System's AAR forms and their purpose. A description of the forms and how software uses their associated data entries to process a call are described.

Figures 4-1 through 4-3 (see Automatic Route Selection feature description) are a high-level presentation on the use of the various System forms in the processing of AAR and Automatic Route Selection (ARS) calls. ARS call processing is included here because of the interrelationship that exists between the two features when both have been activated in a System. If your System does not have the ARS optioned for, all call processing functionality using ARS as shown on the flow diagram is not available.

The forms are shown in the general order that software accesses them when processing a call. Actual software processing may differ in some cases. The flow diagram does not show all software processes and decision-making routines that occur. It is intended only to show the use of the forms and their various parameters in call processing.

The flow diagram assumes that the associated optional features have been enabled on the System-Parameters Customer-Options form. For those features not enabled, consider the flow as through the associated form(s) and through any decision making blocks that occur as a result of using the form. The optional features include:

- Automatic Route Selection
- Private Networking (AAR)
- ARS Partitioning
- Time of Day Routing

Immediately following the flow diagram is a summary of each of the forms (Figures 4-4 through 4-6) and the parameters that may be administered on the forms. Use this summary as a “quick reference” when you need an overview of what is on each form.

Following this introduction are detailed instructions for completing each unique AAR form. Refer to the “Automatic Route Selection” coverage in Chapter 3 for instructions on forms that are shared between the two features (Remote Home Numbering Plan Area, Time of Day Routing, and Routing Patterns).

As shown in Figures 4-1 through 4-3, an AAR call begins with the dialing of an AAR access code (typically 8). If the facility (such as voice terminal) is Origination or Outward restricted or the user (by COR assignment to the facility) is Controlled Outward or Total Restricted, intercept treatment is provided. Second Dial Tone is provided to the calling party if AAR/ARS Dial Tone is optioned for on the Feature-Related System Parameters form. The caller then dials an ETN or Public Network Destination number.

The dialed digits are compared to numbers entered on the ARS Digit Conversion and ARS Digit Analysis forms. A number of specified digits are deleted and replaced by another digit string. Then, the digit analysis proceeds in the specified AAR, ARS, or extension network. Certain dialed digit strings may be routed (via their replacement strings) to the attendant, an announcement, another extension, an AAR/ARS route, intercept, or even reorder (a fast busy tone indicating that an extension is temporarily out of service) if required. If an analysis match is found, call processing continues based on how the ARS Partitioning and Time of Day Routing (TDR) options are administered on the System-Parameters Customer-Options form as follows:

- ARS Partitioning Enabled and TDR Not Enabled:

The Partitioned Group Number (PGN) of the calling party (1 to 8, administered via COR assignment to station) is used to make the choice of an AAR Analysis Table form with a PGN of the same number (1 to 8).

■ ARS Partitioning Enabled and TDR Enabled:

The Time of Day Plan Number of the calling party (1 to 8, administered via COR assignment to station) is used to make the choice of a Time of Day (TOD) Routing form of the same number (1 to 8). On the form, a Plan Number (1 to 8) is identified based on the day and time of day. This Plan Number is used to select an AAR Analysis Table form with a PGN of the same number (1 to 8).

■ ARS Partitioning and TDR Not Enabled:

The AAR Analysis Table form (only one form in the System when ARS Partitioning and TDR not enabled) is accessed for continued call processing.

The AAR Analysis Table form is used to map dialed strings to routing patterns and/or node numbers. Each dialed string entry on the form is associated with a routing pattern and/or node number, and a call type (aar). Refer to Table 4-1 in the AAR Analysis Table information for default translations associated with typical dialed strings. Refer to the AAR Analysis Table information for the various Call Type options available.

For regular AAR calls, if Remote Home Numbering Plan Area (RHNP) translations are required for certain dialed strings, r1 to r32 is entered in the appropriate Routing Pattern field on the AAR Analysis Table form. The RHNP form is used for translating 3-digit codes in the range 000 to 999. The table is used typically for the DDD of central office codes in a nonlocal NPA. The first three dialed digits are translated on the AAR Analysis Table form and, where appropriate, the form points to a RHNP table (1 to 32) for further analysis based on the next three digits.

If the AAR Analysis table points to an RHNP table, the next three dialed digits are compared with 3-digit codes in the selected RHNP table. Each code on the table may have an administered reference to a routing pattern number.

The Routing Pattern form is used to route a call over one of six possible trunk groups. The total number of Routing Patterns varies depending on system configuration. Refer to the Capacity Table in Appendix C for maximum limits allowed. Based on entries on the form, up to 23 leading digits may be deleted from the dialed number and up to 36 (after digit deletion) may be inserted. Up to 52 digits may be outputted (includes special symbols “~w”, “~p”, and “~m”). When they are used, special symbols count as two digits each.

Compatibility checks ensure that the calling party's FRL is greater than or equal to the routing preference's FRL, the BCC of the calling party matches the BCC specified for the routing preference (ISDN calls only), the facility type is okay for the call type, and there is an unused circuit (trunk port) available in the selected trunk group. With all checks complete and okay, digits are outputted over the selected trunk group member.

AAR Trunking Facilities

Off-Net facilities can include trunks such as CO, FX, and WATS. These trunks may be used to carry public network calls. On-Net facilities can include trunks such as tie, tandem, and private ISDN-PRI trunks. These trunks are dedicated to the private network.

Tandem trunks are used to interconnect two tandem nodes in an ETN. Traveling Class Marks (TCMs) are appended to AAR/ARS numbers outpulsed on these trunks. (TCMs represent the originating user's FRL or the FRL of the user's Access trunk group.) Access trunks are used to connect a subtending main PBX to a tandem node. Tie trunks are used to interconnect a satellite/tributary and the homing main PBX. An ETN tandem node can, however, directly access main and tributary PBXs that are homed on another tandem node using bypass Access trunks.

Sub-Net Trunking

Provides a means to modify dialed digits sent over the private or public network. Address manipulation may be required when the first choice route of a routing pattern is busy and the call must be placed over alternate facilities. The alternate facilities may require that one or more initially dialed digits be deleted and other digits inserted to form a new digit string that is compatible with the dialing plan of the intermediate network nodes. Sub-net Trunking is typically used for:

- Routing a call from a tandem PBX to a subtending PBX
- Reaching a final PBX and then "hopping off" to public network facilities (this is better accomplished by digit conversion)
- Overflowing to DDD

AAR Analysis Table

This form is used to map customer dialed numbers (dialed strings) to routing patterns, using up to 18 digits. The AAR Analysis Table replaces the RNX Translation Table that was used in previous releases of the System.

NOTE:

The Private Networking (AAR) feature must be enabled on the System-Parameters Custom-Options form before associated AAR forms can be administered.

Administration Commands

The following administration commands can be used to access the AAR Analysis Table form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	aar analysis	Enter digits between 0 to 9, 'x' or 'X' (dialed string) ['part' 1-8] ['min'(1-MAX)]
display	aar analysis	Enter digits between 0 to 9, 'x' or 'X' (dialed string) ['part' 1-8] ['min' (1-MAX)] ['print' or 'schedule']
list	aar analysis	['start' string] ['count' 1-MAX] ['route'(1-max or r1-r32)], ['part' (1 -8)], ['node' (1-MAX)], ['to-node' (1-MAX)], ['print' or 'schedule']
list	aar route-chosen	Enter dialed number, ['partition' (1-8)], ['print' or 'schedule']

* Some qualifiers are available with G3i V2 only.

Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on the form.

- **Percent Full** — 3-character display-only field. Displays the percentage of the System's memory resources that have been used. A common pool of memory resources is shared between the ARS and AAR Analysis tables.

If the Percent Full field display indicates that the System memory resources are in jeopardy of becoming full (100%) perform any of the following to “free-up” memory resources:

- Delete unnecessary entries from any of the shared resources tables
- Utilize RHNPA tables for 6-digit AAR routing

- **Partitioned Group Number** — When completing a paper form, enter the PGN to be associated with this table. Valid entries are 1 to 8; default is 1.
- **Dialed String** — Enter the dialed string of significant digits (do not use a toll prefix unless absolutely necessary). Up to 18 characters consisting of the digits 0 through 9 are allowed. A wildcard letter “x” or “X” may be used to substitute for any digit occurring in the string at the character position where used. Default is blank.

**NOTE:**

The user-dialed digits are matched to the Dialed String field entry that most closely matches the dialed number (referred to as the “longest match”). For example, if a user dials 297-1234 and the AAR Analysis Table has dialed string entries of 297-1 and 297-123, the match is on the 297-123 entry. In addition, an exact match is made on dialed string entries of the same number of digits in cases where wildcard characters (Xs) are used. For example, if 424 is dialed and the table has Dialed String entries of 424 and X24, the match is on the 424 entry.

As an example of Dialed String entries and associated Min and Max field entries (fields described below), RNXS 200 through 299 can be assigned on the AAR Analysis Table in either of the following ways:

Dialed String	Min. #of Digits	Max. #of Digits
2	7	7
	or	
20	7	7
21	7	7
22	7	7
...	...	...
29	7	7
	or	
2xx	7	7
	or	
20x	7	7
21x	7	7
22x	7	7
...	...	...
29x	7	7

- **Min** — Enter the minimum number of digits needed to validate and route the call. Default is blank.
- **Max** — Enter the maximum number of digits that can be used to validate and route the call. Default is blank.
- **Rte Pat** (Routing Pattern) — Enter the routing pattern number on a pointer to an associated Remote Home Number Plan Area (RHNPA) form (r1 to r32) to be used to route the call once all identifying digits have been received. Default is blank.

- **Call Type** — Enter “aar” for regular AAR calls. Enter “iaar”, or “uuar” if the administered routing pattern contains preferences which are public network ISDN trunks requiring Type of Number encodings “international” or “unknown” respectively. Default is blank.
- **Node Number** — The number of the destination node if node number routing or DCS are used.

Table 4-1 provides a listing of the AAR Analysis default translations.

Table 4-1. AAR Analysis Default Translations

Dialed String	Total Digits		Rte Pattern	Call Type	Node Num
	Min.	Max.			
2	7	7	200	aar	-
3	7	7	200	aar	-
4	7	7	200	aar	-
5	7	7	200	aar	-
6	7	7	200	aar	-
7	7	7	200	aar	-
8	7	7	200	aar	-
9	7	7	200	aar	-

[illegible]

Screen 4-1. AAR Analysis Table Form

AAR Digit Conversion Table

This form is used to convert private network numbers to other private network or ARS numbers and is essential to converting Home AAR numbers into extension numbers. Its purpose is to steer some AAR calls to other switches in the private network or even to change the dialed digits to a public network number and route the call via the ARS feature (by specifying the call type "ars" in the network). Also, this feature can block or intercept certain private network calls to the attendant group.

The form allows for the replacement of all or part of a dialed digit string with a modified string and/or change of analysis type. The modified string represents an alternative equivalent address and results in the call being analyzed according to the network type. If the number dialed is defined as "AARCode" in the Uniform Dialing Plan, or if the AAR Access Code is dialed, this table is accessed during call processing.

The AAR Digit Conversion feature enhances the capabilities of the AAR feature so that public network calls and private network calls can be changed to local, private, or public network destinations. The calls are then routed via the resulting analysis type.

NOTE:

The Private Networking feature must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

Administration Commands

The following administration commands can be used to access the AAR Digit Conversion Table form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	aar digit-conversion	Enter digits between 0 to 9 'x' or 'X'
display	aar digit-conversion	Enter digits between 0 to 9 'x' or 'X' ['print' or 'schedule']
list	aar digit-conversion	Enter ['start' matching pattern] ['count' (1 -MAX)] ['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (") indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form.

 NOTE:

When the form is accessed via the display (change, and so on) command, the entries are sorted separately in the order of the matching pattern. Specific digits are sorted before the wildcard character “x” or “X”.

- **Percent Full** — 3-character display-only field. Displays the percentage of the System’s memory resources that have been used. A common pool of memory resources is shared between the ARS and AAR Digit Conversion tables.

If the Percent Full field display indicated that the System memory resources are in jeopardy of becoming full (100%), perform any of the following to “free-up” memory resources:

- Delete unnecessary entries from any of the shared resources tables.
- Reduce dialed string field entries to shortest possible length that accomplishes the desired function.

- **Matching Pattern** — Enter a 1- to 18-digit string to be matched against a dialed number. Matching Pattern entries must be unique within the table. The string may contain the digits 0 through 9 and wild card character “x” or “X”, which is used to match any digit in the range of 0 through 9. If a Prefix Digit is required for 10-digit DDD numbers, then the Prefix Digit¹ must be present in the Matching Pattern string for the match to succeed.

If the associated Replacement String field has an entry, the Matching Pattern field must have an entry.

- **Min** — The minimum number of digits in the dialed string.
- **Max** — The maximum number of digits in the dialed string.
- **Del** — The number of digits to delete from the beginning of the dialed string.
- **Replacement String** — Enter a 1-to 18-digit string that will replace the deleted portion of the dialed number. The string may contain the digits 0 through 9, a “#” character, or be blank (no entry). The “#” character, when used, must be at the end of the digit string and is used to signify end of dialing.

 NOTE:

A blank replacement string has the effect of just deleting the leading digits from the dialed digit string. The “#” character in the replacement string signifies the end of the modified digit string so that any digits dialed by the user after the inserted portion of the string are ignored by the ARS/AAR features.

- **Net** — The network in which to analyze the resulting number. Enter “ext”, “aar”, or “ars”. The resulting digit string will then be analyzed as an extension number, an AAR address, or an ARS address respectively.
- **Conv** — Enter “y” or “n”. To allow further conversion enter “y”.

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AAR DIGIT CONVERSION TABLE

Percent Full :

Matching Pattern	Min	Max	Del	Replacement String	Net	Conv
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-

Screen 4-2. AAR Digit Conversion Table Form

To reduce repetition, Page 2 is not shown. For a complete set of forms, refer to the "Blank Forms Package."

AAR/ARS Remote Home Numbering Plan Area (RHNPA)

This form is used when additional 3-digit translations are required in addition to translations performed on the AAR/ARS Analysis Table. Codes in the range of 000 through 999 may be processed. The RHNPA form is typically used for the direct distance dialing of central office codes in a nonlocal NPA. Digit translations for this type of call begins on the ARS or AAR (AAR/ARS) Analysis Table. Typically, the first three digits representing a nonlocal NPA number are translated using the AAR/ARS Analysis Table and, where appropriate, the table then points to an RHNPA Table for the next 3-digit translation. For example, "r1", "r10", or "r32" entries on a AAR/ARS Analysis Table point to respective RHNP Tables 1, 10, or 32. The next three digits dialed represent a central office code in the FNPA. These digits are translated by the RHNPA Table and routed via the assigned routing pattern to the central office. Digit translation requiring both the Digit Analysis and RHNPA Tables is sometimes referred to as 6-digit translations (three digits are translated via the Digit Analysis Table and the next three digits translated via the RHNPA Table). The RHNPA Table can be used with any call type requiring additional 3-digit translations.

The RHNPA form is used to assign 3-digit codes and associated routing pattern numbers for up to 32 RHNPA tables. One form is required for each block of 100 codes in the range 000 through 999.

The RHNPA form provides a choice of up to 12 routing patterns for the block of 000 through 999 codes.

Administration Commands

The following administration commands can be used to access the RHNPA Table form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	rhnpa	Enter RHNPA and office code n:xyy n(1-MAX) x(0-MAX) y(0-MAX) y(0-MAX)
display	rhnpa	Enter RHNPA and office code n:xyy n(1-MAX) x(0-MAX) y(0-MAX) y(0-9) ['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (") indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on the form:

- **RHNPA TABLE** — Enter the applicable table number from 1 to 32. Up to eight forms may be required for each table, one for each hundreds block, 2 to 9.
- **CODE** — Enter the desired hundreds block; that is, 000 through 099, 100 through 199, 200 through 299, ..., 800 through 899, 900 through 999. A separate form is required for each hundreds block.
- **Pattern Choices** — Enter a pattern number representing the routing patterns that can be accessed by the RHNPA's identified on this screen form only. Each screen form on each RHNPA Table may have 12 different Pattern Choices. Pattern choices listed on one screen form automatically defaults to the other forms of the same table. If one pattern will be used most often (that is, accessed by the greatest number of office codes in this block), assign that pattern as choice 1. Otherwise, the correlation between Pattern Choice Numbers and Patterns is completely arbitrary.
- **Code-Pattern Choice Assignments (from 1-12 above)** — Enter a Pattern Choice number from the list above in the field associated with each Office Code. The Code fields represent the last two digits of the codes within the hundreds block. The Pattern Choice Assignment points to the Pattern Choice above, which contains the Routing Pattern to be used.

RHNPA TABLE: _		Page 1 of 1
CODE : x00 - x99		
Pattern Choices		
1: _	3: _	5: _ 7: _ 9: _ 11: _
2: _	4: _	6: _ 8: _ 10: _ 12: _
Code-Pattern Choice Assignments (from 1-12 above)		
00: 1_	10: 1_	20: 1_ 30: 1_ 40: 1_ 50: 1_ 60: 1_ 70: 1_ 80: 1_ 90: 1_
01: 1_	11: 1_	21: 1_ 31: 1_ 41: 1_ 51: 1_ 61: 1_ 71: 1_ 81: 1_ 91: 1_
02: 1_	12: 1_	22: 1_ 32: 1_ 42: 1_ 52: 1_ 62: 1_ 72: 1_ 82: 1_ 92: 1_
03: 1_	13: 1_	23: 1_ 33: 1_ 43: 1_ 53: 1_ 63: 1_ 73: 1_ 83: 1_ 93: 1_
04: 1_	14: 1_	24: 1_ 34: 1_ 44: 1_ 54: 1_ 64: 1_ 74: 1_ 84: 1_ 94: 1_
05: 1_	15: 1_	25: 1_ 35: 1_ 45: 1_ 55: 1_ 65: 1_ 75: 1_ 85: 1_ 95: 1_
06: 1_	16: 1_	26: 1_ 36: 1_ 46: 1_ 56: 1_ 66: 1_ 76: 1_ 86: 1_ 96: 1_
07: 1_	17: 1_	27: 1_ 37: 1_ 47: 1_ 57: 1_ 67: 1_ 77: 1_ 87: 1_ 97: 1_
08: 1_	18: 1_	28: 1_ 38: 1_ 48: 1_ 58: 1_ 68: 1_ 78: 1_ 88: 1_ 98: 1_
09: 1_	19: 1_	29: 1_ 39: 1_ 49: 1_ 59: 1_ 69: 1_ 79: 1_ 89: 1_ 99: 1_

Screen 4-3. RHNPA Table Form (Page 1 of 1)

Node Number Routing

Used to specify the routing pattern associated with each node in a public or private network. NNR is a required capability for Extension Number Portability (ENP) and is associated with the Uniform Dial Plan (UDP).

Administration Commands

The following administration commands can be used to access the Node Number Routing form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	node-routing	Enter digits between 1-MAX ['partition' 1-8]
display	node-routing	Enter digits between 1-MAX ['partition' 1-8]
list	node-routing	Enter digits between 1-MAX ['partition' 1-8]

* Brackets [] indicate the qualifier is optional. Single quotes (") indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on the form.

- **Partitioned Group Number**— This read-only field displays the partitioned group number associated with the node numbers being administered. The partitioned group number is either specified on the command line or defaults to partitioned group number 1.
- **Node Number** — This display-only field lists the node number to be changed.

NOTE:

Two pages are displayed at a time for a total of 200 nodes (100 per page). For example, entering *change node-routing 87* displays nodes 1 through 199, and entering *change node-routing 751* displays nodes 100 through 299. However, entering *change node-routing 999* displays nodes 900 through 999 on one page.

- **Route Pat** — Enter the routing pattern associated with the corresponding node number. This field is repeated the same number of times as there are node numbers on the page; default is blank.

change node-routing 87 partition 2

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NODE NUMBER ROUTING
Partitioned Group Number: 2

Route Pat	Route Pat	Route Pat	Route Pat	Route Pat	Route Pat	Route Pat
	15: —	30: —	45: —	60: —	75: —	90: —
1: —	16: —	31: —	46: —	61: —	76: —	91: —
2: —	17: —	32: —	47: —	62: —	77: —	92: —
3: —	18: —	33: —	48: —	63: —	78: —	93: —
4: —	19: —	34: —	49: —	64: —	79: —	94: —
5: —	20: —	35: —	50: —	65: —	80: —	95: —
6: —	21: —	36: —	51: —	66: —	81: —	96: —
7: —	22: —	37: —	52: —	67: —	82: —	97: —
8: —	23: —	38: —	53: —	68: —	83: —	98: —
9: —	24: —	39: —	54: —	69: —	84: —	99: —
10: —	25: —	40: —	55: —	70: —	85: —	
11: —	26: —	41: —	56: —	71: —	86: —	
12: —	27: —	42: —	57: —	72: —	87: —	
13: —	28: —	43: —	58: —	73: —	88: —	
14: —	29: —	44: —	59: —	74: —	89: —	

Screen 4-4. Node Number Routing Form (Page 1 of 2)

To reduce repetition, Page 2 of this form is not shown. For a complete set of forms, refer to the "Blank Forms Package."

AAR/ARS Routing Patterns

The digit translations performed on a Public Network Destination Number by the AAR/ARS Digit Analysis and RHNPA Tables cause a specific routing pattern to be selected for routing the call. The routing pattern contains a sequence of trunk groups on which an attempt is made to route the call. The trunk groups in a pattern are generally arranged by increasing cost of using the facility and are tested for compatibility and availability in that order.

A Routing Pattern form is used to implement one routing pattern each of which can contain alternate trunk routes (the maximum number of routing patterns and alternate trunk routes varies by System configuration; refer to Appendix C for maximum values allowed). This form supports the Automatic Route Selection (ARS), Automatic Alternate Routing (AAR), Generalized Route Selection, and the Call by Call Service Selection features.

Administration Commands

The following administration commands can be used to access the Routing Pattern form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	route-pattern	1-MAX
display	route-pattern	1-MAX [print]
list	route-pattern	Enter ['trunk' (1 -MAX)] ['service'/feature name string] ['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (") indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on the form:

- **Pattern Number** — This is a display-only field when the form is accessed using an administration command such as *change* or *display*. When completing a paper form, enter a routing pattern number.
- **Grp No.** — Enter the desired trunk group number to specify which trunk group will be associated with the entries on this line of the form.
- **FRL** — Enter the Facility Restriction Level (FRL) 0 to 7 (0 being the least restrictive and 7 being the most restrictive) to be assigned this routing preference (this line of parameters on the form). Trunk group FRLs are changeable from pattern to pattern. The calling party's FRL must be greater than or equal to this FRL to access the associated trunk group.

Valid entries are 0 to 7 or blank.

 NOTE:

For System security reasons, it is recommended that the most restrictive FRL possible be used.

- **NPA** — This entry is not required when used for AAR. For ARS applications, enter the NPA of the distant end (terminating end). For WATS trunks, the term NPA is the same as the home NPA. For tie trunks, the NPA field is left blank. Valid entries are three digits in the form: first digit (2 through 9), second digit (0 through 9), third digit (0 through 9); default is blank.
- **Prefix Mark** — Not required for AAR. For ARS, enter a number from 0 to 4 as indicated below. This specifies when the prefix digit 1 is outpulsed. Valid entries are 0 to 4 or blank; default is 0.

For a WATS trunk, the Prefix Mark is the same as the local CO trunk. For tie trunks, the Prefix Mark field is left blank.

 NOTE:

Prefix Mark operations only apply to fnpa or hnpa call types (ARS).

0 Indicates that the Prefix digit 1 is never outpulsed for 10-digit user-dialed FNPA calls, but leaves a userdialed Prefix digit 1 for 7-digit HNPA calls. Prefix Mark 0 also leaves 1s on 10-digit calls that are not administered as FNPA- or HNPA-types.

 NOTE:

FNPA and HNPA are North American Numbering Plan terms.

1 Indicates that the Prefix digit 1 is outpulsed if and **only if** the call is a 10-digit call. Prefix Mark 1 should be selected for those HNPAs that require users to dial 1 to indicate a toll call.

2 Indicates that the Prefix digit 1 is outpulsed for **all** toll calls, 7- and 10-digit.

3 Indicates that the Prefix digit 1 is outpulsed for **all** toll calls. These calls are always outpulsed as 10-digit numbers, even those within the HNPA.

4 Indicates that the user-dialed Prefix digit 1 is always suppressed.

 NOTE:

This capability is required, for example, when routing ISDN-PRI calls to an AT&T 4ESS. If the prefix digit 1 were not suppressed, then the 4ESS would reject such calls.

 NOTE:

Prefix Marks 2 and 3 must refer to a Toll Table (see "Toll List" below).

- **Toll List** — Not required for AAR. For ARS, enter a number that references the ARS Toll Table associated with the terminating NPA of the trunk group. This field must be completed if the Prefix Mark field is “2” or “3”. Default is blank.
- **No. Del. Digits** — Enter the total number of digits to be deleted from the dialed string when this trunk group is selected for call routing. Default is blank.

Any nonblank entry in this field (including “0”) causes any user-dialed IXC code to be deleted in addition to the number of digits specified.

⇒ NOTE:

Use the Prefix Mark field on this form to suppress toll prefixes following user-dialed IXC codes. This capability is useful when the call is routed via ISDN-PRI trunks to a 4ESS office. The 4ESS will reject a call if the IXC code is sent along with the address digits.

- **Inserted Digits** — Enter the actual digits to be inserted. Up to 52 digits may be outpulsed. This includes 36 digits inserted plus up to 18 digits originally dialed. These digits may be divided into groups separated by a two-digit wait-for-dial-tone separator. The “~w” is used for pause, “~p” for the second dial tone, and “~m” for end-to-end signaling. Valid entries are 0 through 9, “~w”, “~p”, and “~m”.

⇒ NOTE:

The special character “~p” (pause should not be used unless absolutely necessary as the first character in the string. Typical misuse can result in calls such as Abbreviated Dialing or Last Number Dialed calls not completing to the far end.

- **IXC** — Displayed when ISDN-PRI is enabled on the System-Parameters Customer-Options form. For ISDN-PRI preference trunks, enter the last two-to-four digits to represent an equal access Inter-exchange Carrier code number (such as 10XX, 10XXX, or 10XXXX).

⇒ NOTE:

This length should match the format established on the Inter-Exchange Carrier (IXC) Codes form.

This field is used by all calls that route via an IXC, and is also used for Call Detail Recording (CDR). If an IXC is not specified, a call is transmitted by the presubscribed common carrier.

⇒ NOTE:

The IXC field must be blank for non-ISDN preference trunk groups. If you need to send an IXC code for a non-ISDN preference trunk group, then enter this IXC value in the Inserted Digits field.

- **BCC Value** (required by Generalized Route Selection feature) — Displayed when ISDN-PRI is enabled on the System-Parameters Customer-Options form. Enter “y” (default) or “n” in the appropriate BCC column (0, 1, 2, 3, 4, or W) to specify whether or not the BCC is valid for the associated route. The following defines the BCC values:

BCC VALUE	DESCRIPTION
0	Voice-Grade Data and Voice
1	56-kbps Data (Mode 1)
2	64-kbps Data (Mode 2)
3	64-kbps Data (Mode 3)
4	64-kbps Data (Mode 0)
W	128 to 1984-kbps Data (Wideband)

**NOTE:**

Refer to the “Generalized Route Selection” in *DEFINITY Communications System G3 V2 Feature Description*, 555-230-204, for a detailed description of BCCs and their use to provide specialized routing for various types of voice and data calls. The BCC value is used to determine compatibility when non-ISDN-PRI facilities are connected to ISDN facilities (ISDN-PRI Interworking feature).

- **TSC** — Enter “y” to allow incoming Non-Call Associated TSC requests to be tandemed out and to allow the establishment of Call Associated TSCs associated with B-channel connections of that preference. To achieve feature transparency, DCS+ calls should be routed via a routing pattern that has an ISDN-PRI *Used for DCS* trunk group as a first preference.
- **CA-TSC Request** — Appears when the TSC field is “y”. A CA-TSC uses the call reference value of the call control data packets to exchange user information messages associated with an ISDN B-channel connection. CA-TSCs are a finite system and trunk group resource; there is a trade-off between the two possible entries of a small time-lag with the first and the usage generated by the second. Valid entries are:

- as-needed (Recommended for most situations.) No CA-TSC will be established along with the B-channel call. If a CA-TSC is needed due to feature activation somewhere in the lifetime of this B-channel call, then the CA-TSC will be established at that time and remain active for the duration of the call.
- at-set up Causes a CA-TSC to be established at the same time the initial B-channel connection is established. In other words, a CA-TSC is set up for each and every B-channel call **whether or not that CA-TSC is ever needed.**
- none Disallows the establishment of CA-TSCs associated with B-channel connections of the current preference (tandeming of NCA-TSC setup requests, however, are still permitted).

⇒ NOTE:

With "as-needed", the need to establish the CA-TSC causes a slight delay in the invocation of the Call Associated feature. This delay is not present with "at-setup" because the CA-TSC is already established at call setup and is ready to be used immediately upon feature invocation.

- **ITC** (Information Transfer Capability) — Used to administer the type of traffic (restricted, unrestricted, or both) that is allowed to be carried by this routing preference. If the ITC field is administered as "rest" (restricted), then only calls that are originating from restricted endpoints may access this routing preference. If the ITC field is administered as "unre" (unrestricted), then only calls that are originating from unrestricted endpoints may access this routing preference. If the ITC field is administered as "both", then calls originating from both restricted and unrestricted endpoints may access the facility.
The ITC field must be set to "unre" or "both" if the BCC W field is set to "y".
- **BCIE** (Bearer Capability Information Element) — Used to determine how to create the Information Transfer Capability codepoint in the Bearer Capability IE of the SETUP message. The BCIE field only applies to ISDN-PRI trunks and is displayed and administrable only if the ITC field is administered as "both". Valid entries are "ept" (endpoint) and "unr" (unrestricted); default is "ept".
- **Service/Feature** (required by the Call by Call Service Selection feature) — Displayed when ISDN-PRI is enabled on the System-Parameters Customer-Options form. Enter up to 15 characters that represent the Service/Feature that is carried by a call in this routing pattern (see the Network Facilities form for all predefined and administered Services/Features); default is blank.
- **Band** (required by the Call by Call Service Selection feature) — Enter a number that represents the OUTWATS band number. This field is displayed when the Services/Features field has a value of "outwats-bnd"; default is blank.

Pattern Number: _										Page 1 of X	
Grp. No.	FRL	NPA	Prefix Mark	Toll List	No. Digits	Del. Digits	Inserted Digits	IXC			
1.	-	-	-	-	-	-	-				
2.	-	-	-	-	-	-	-				
3.	-	-	-	-	-	-	-				
4.	-	-	-	-	-	-	-				
5.	-	-	-	-	-	-	-				
6.	-	-	-	-	-	-	-				

	BCC Value						CA-TSC Request	ITC	BCIE	Service/Feature	Band:
	0	1	2	3	4	W					
1 .	-	-	-	-	-	-	-	both	ept	-	-
2 .	-	-	-	-	-	-	-			-	-
3 .	-	-	-	-	-	-	-			-	-
4 .	-	-	-	-	-	-	-			-	-
5 .	-	-	-	-	-	-	-			-	-
6 .	-	-	-	-	-	-	-			-	-

Screen 4-5. Routing Pattern Form (Page 1 of X)

To reduce repetition, the remaining pages of this form are not shown. For a complete set of forms, refer to the "Blank Forms Package."

Implementation Notes:

This is a three-page form for G3r V2 configurations only. For G3i V2 and G3s V2 configurations, only one page will be displayed.

The IXC, BCC Value, TSC, CA-TSC Request, ITC, BCIE, and Service/Feature fields are only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

The BCIE field is displayed only when "both" is entered in the ITC field.

The CA-TSC Request field is displayed only if "y" is entered in the TSC field.

The Band field is only displayed if the Service/Feature field is "outwats-band",

When using the list command, the ITC field is displayed when one or more of the BCC data preferences is "y".

AAR/ARS Time of Day Routing

This form is used to assign the Time of Day (TOD) routing plan. The plan provides for routing of ARS and AAR calls based on the time of day that each call is made. Up to eight TOD routing plans may be administered, each scheduled to change up to six times a day for each day in the week.

The TOD routing plan selected for a call is controlled by the Time of Day Plan Number administered to the COR assigned the facility (station) that a user is calling from. The COR is inspected to identify the TOD plan number (1 to 8) to be used to process the call. On the TOD Routing Plan, a "Plan #" (1 to 8, based on the time of day and the day) is identified. This plan number is used to select an AAR/ARS Analysis Table with the same Partitioned Group Number (1 to 8). On the Analysis Table a routing pattern is identified to route the call.



NOTE:

The following optional features must be enabled on the System-Parameters Customer-Options form before this form can be administered: Automatic Route Selection (ARS) and/or Private Networking, ARS Partitioning, and Time of Day Routing.

Administration Commands

The following administration commands can be used to access the Time of Day Routing Plan form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
display	time-of-day	['print' or 'schedule']
display	time-of-day	1-MAX (plan number) ['print' or 'schedule']
change	time-of-day	[time of day routing plan (1-MAX)]

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on the form:

- **Time of Day Routing Plan** — Specifies the TOD routing plan number. Up to eight of these plans can be administered. Enter a plan number from 1 to 8 when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.

- **Act Time** — Specifies the time that the routing plan administered in the next field (PGN #) will become effective. The time is represented in military time. It is recommended that activation times for the same day must be listed in increasing order. Valid entries are 00:00 – 23:59; default is “00:00”. There must be at least one entry for each day.
- **PGN #** — Specifies the AAR/ARS Digit Analysis Tables with a PGN of the same number that contains routing patterns that will be in effect from the activation time until the activation time of the next scheduled plan change. The Table selected and the routing pattern used is based on the number dialed; default PGN is 1. Enter a Partitioned Group number that points to the appropriate AAR/ARS Analysis Table to be used. There must be at least one entry for each day.

⇒ **NOTE:**

It is possible to point to an AAR/ARS Analysis Table associated with a PGN that is different than that assigned the facility that the caller is using. Proceed with caution when making these assignments.

TIME OF DAY ROUTING PLAN X												Page 1 of 1
	Act Time	PGN #	Act Time	PGN #	Act Time	PGN #	Act Time	PGN #	Act Time	PGN #	Act Time	PGN #
Sun	00:00	1	- : -	-	-:-	-	-:-	-	-:-	-	- : -	-
Mon	00:00	1	- : -	-	-:-	-	-:-	-	-:-	-	- : -	-
Tue	00:00	1	- : -	-	-:-	-	-:-	-	-:-	-	- : -	-
Wed	00:00	1	- : -	-	-:-	-	-:-	-	-:-	-	- : -	-
Thu	00:00	1	- : -	-	-:-	-	-:-	-	-:-	-	- : -	-
Fri	00:00	1	- : -	-	-:-	-	-:-	-	-:-	-	- : -	-
Sat	00:00	1	- : -	-	-:-	-	-:-	-	-:-	-	- : -	-

Screen 4-6. Time Of Day Routing Form (Page 1 of 1)

Implementation Note:

Up to eight Time of Day Routing Plans (1 to 8) may be administered. The plan selected for processing a call is determined by examining the COR assigned the facility that the call is originating from. CORs may be administered with Time of Day Plan Numbers where required.

Automatic Route Selection (ARS)

This section contains the network-type forms and associated instructions dedicated primarily to implementing the Automatic Route Selection (ARS) feature.

ARS routes calls over the public network based on the preferred route (normally on a customer-specified order and typically the least expensive) available at the time the call is placed. The number of routes ARS provides for any given public network call varies depending on system configuration. Refer to the Capacity Table in Appendix C for maximum allowed values. The following trunk group types can be accessed by ARS:

- Foreign exchange — Used to emulate local calling in an area not served by the local central office.
- Local central office — Used for local calls and to provide access to long-distance carriers. Access to the long-distance carrier can be provided automatically by the central office or by a carrier access code.
- Integrated Services Digital Network (ISDN) - Primary Rate Interface (PRI) — Used for calls over an ISDN and provides users access to a variety of switched nodal services such as MEGACOM telecommunications service, INWATS, and ACCUNET digital service and allows access to other interexchange carriers.
- Tie trunks — Used to provide access to an Electronic Tandem Network (ETN), or to an Enhanced Private Switched Communications Service (EPSCS), or Common Control Switching Arrangement (CCSA) office.
- Wide Area Telecommunications Service (WATS) — Used to provide calling to predefine geographic areas at a rate based on expected usage.

For the following discussion:

- Area Code = NPA = NIX (where N = 2 to 9, I = 0 or 1, X = 0 to 9)
- Central Office (CO) Code = NNX (where N = 2 to 9, X = 0 to 9) or NIX (see Area Code)
- Foreign Number Plan Area (FNPA) Code — see Area Code
- Home Number Plan Area (HNP) Code — see Office Code
- Partitioned Group Number (PGN) = 1 to 8
- Service Codes = X11 (where X = 0 to 9)

The ARS HNP and FNPA Tables and Ten-Digit to Seven-Digit Conversion forms that were previously used have been replaced with two new forms (ARS Digit Analysis and ARS Digit Conversion). Previous assumptions about domestic numbering plan format and length have been removed, providing the following:

- A more flexible accommodation of future changes to the North American Numbering Plan by administration changes rather than software changes.

- Now able to handle NXX area codes (planned to be introduced in 1995); currently, there are 160 area codes in the form NIX.
- Increased ability to analyze and route international calls.
- A wildcard capability on the forms that allows, for example, routing by exchange, across all area codes (such as XXX976).

Refer to “Automatic Route Selection” in Chapter 3 for a complete listing of all System forms and/or fields on forms that must be completed or considered when implementing ARS. Forms such as the Dial Plan, Class of Restriction, Feature Access Codes, and Feature-Related System Parameters that support both networking and other functional areas such as voice management and data management may also require implementation.

Automatic Route Selection also supports the following features:

- Automatic Alternate Routing — Provides automatic routing of ETN calls over private or public network facilities.
- Call by Call Service Selection — Allows users to gain access to a variety of switched nodal services such as MEGACOM service, WATS, ACCUNET digital service, and various interexchange carriers.
- Generalized Route Selection — Provides separate routes for voice and data calls. Also provides for the integration of voice and data over the same trunking facilities, when required.

ARS Forms

The following ARS forms are included in this section:

NOTE:

The Automatic Route Selection option must be enabled on the System-Parameters Customer-Options form before the ARS forms can be administered.

- ARS Analysis
- ARS Digit Conversion
- Remote Home Numbering Plan Area (RHNP)
- Automatic Route Selection Toll Table
- Routing Patterns
- Time of Day Routing

The following provides an overview of the System’s ARS forms and their purpose. A description of the forms and how software uses their associated data entries to process a call are described. In addition, dialing patterns such as operator dialed calls, Prefix 1 Direct Distance Dialing (DDD) calls, special service calls, international calls, and interexchange carrier calls are described.

Figures 4-1 through 4-3 are a high-level presentation on the use of the various System forms in the processing of ARS and Automatic Alternate Routing (AAR) calls. AAR call-processing is included here because of the interrelationship that exists between the two features when both have been activated in a System. If your System does not have Private Networking (AAR) optioned for, disregard all call processing functionality using AAR as shown on the flow diagram.

The forms are shown in the general order that software accesses them when processing a call. Actual software processing may differ in some cases. The flow diagram does not show all software processes and decision-making routines that occur. It is intended only to show the use of the forms and their various parameters in call processing.

The flowchart assumes that the associated optional features have been enabled on the System-Parameters Customer-Options form. For those features not enabled, consider the flow as through the associated form(s) and through any decision-making blocks that occur as a result of using the form. The optional features include:

- Automatic Route Selection
- Private Networking (AAR)
- AAR/ARS Partitioning
- Time of Day Routing

Immediately following the flow diagram is a summary of each of the forms (Figures 4-4 through 4-6) and the parameters that may be administered on the forms. Use this summary as a “quick reference” when you need an overview of what is on each form.

Following this introduction are detailed instructions for completing each form.

As shown in Figures 4-1 through 4-3, an ARS call begins with the dialing of an ARS access code (typically 9). If the facility (such as voice terminal) is Origination or Outward restricted or the user (by COR assignment to the facility) is Controlled Outward or Total Restricted, intercept treatment is provided. Second Dial Tone is provided to the calling party if AAR/ARS Dial Tone is optioned for on the Feature-Related System Parameters form. The caller then dials a “1” (if “ARS Prefix 1 required?” is administered on the System’s Dial Plan form), if the call is a 10-digit FNPA call or dials one of a variety of dialing patterns including 7-digit numbers, 10-digit DDD numbers, International Direct Distance Dialing (IDDD) numbers, service codes, Customer-Dialed Operator-Serviced (CDOS) numbers, and Inter-Exchange Carrier (IXC) numbers.

The dialed digits are compared to numbers entered on the ARS Digit Conversion and ARS Digit Analysis forms. If a match occurs, the conversion is performed and the resulting number is reanalyzed in the specified “net”. Dialed digit strings may be routed (via their conversion) to the attendant, an announcement, an extension, an AAR/ARS route, or intercept if required. If an analysis match is found, the dialed string is compared with digit string entries on the System’s Toll Analysis form for a relationship with the System’s Toll List, Restricted Call List, or

Unrestricted Call List (see "Toll Analysis" later in this chapter). Calls that are not allowed to complete are given intercept treatment. If the call is allowed, call processing continues based on how the ARS Partitioning and Time of Day Routing (TDR) options are administered on the System-Parameters Customer-Options form as follows:

■ ARS Partitioning Enabled and TDR Not Enabled:

The Partitioned Group Number (PGN) of the calling party (1 to 8, administered via COR assignment to station) is used to make the choice of an ARS Analysis form with a PGN of the same number (1 to 8).

■ ARS Partitioning Enabled and TDR Enabled:

The Time of Day Plan Number of the calling party (1 to 8, administered via COR assignment to station) is used to make the choice of a Time of Day (TOD) Routing form of the same number (1 to 8). On the form, a Plan Number (1 to 8) is identified based on the day and time of day. This Plan Number is used to select an ARS Analysis form with a PGN of the same number (1 to 8).

■ ARS Partitioning and TDR Not Enabled:

The ARS Analysis form (only one form in the System when ARS Partitioning and TDR not enabled) is accessed for continued call processing. The PGN displayed will be a "1".

The ARS Analysis form is used to map dialed strings to routing patterns or node numbers. Each dialed string entry on the form is associated with a routing pattern and a call type (such as HNPA, FNPA, operator, service, and so on). Table 4-2 provides default translations for typical dialing strings. Operator, Inter-Exchange Carrier, 7-digit (first 2 to 9 with a total of seven digits min/max) are initially defaulted to routing pattern 1. If, for certain dialed digit strings, Remote Home Numbering Plan Area (RHNP) translations are required, an appropriate entry of r1 to r32 is entered in the Routing Pattern field on the ARS Analysis Table form. The RHNP form is used for translating 3-digit codes in the range 000 to 999. The table is used typically for the DDD of central office codes in a nonlocal NPA. The first three digits of a nonlocal FNPA are translated on the ARS Analysis Table form and, where appropriate, the form points to a RHNP table (1 to 32) where further translations occur.

If the ARS Analysis table points to an RHNP table, the next three dialed digits are compared with codes in the selected RHNP table. Each code on the table may have an administered reference to a routing pattern number.

The Routing Pattern form is used to route a call over one of 16 possible trunk groups. Based on entries on the form, up to 23 leading digits may be deleted from the dialed number and up to 36 (after digit deletion) may be inserted. Up to 56 digits may be outpulsed (includes special symbols "~w", "~p", and "~m"). When used, special symbols count as two digits each. An ARS Toll Table, when referenced from the routing pattern, is used to specify whether HNPA and FNPA calls are toll or local type calls.

Finally, compatibility checks ensure that the calling party's FRL is greater than or equal to the routing preference's FRL, the BCC of the calling party matches the BCC specified for the routing preference if ISDN-PRI is optioned for on the System Parameters Customer Options form, and there is an unused circuit (trunk port) available in the selected trunk group. When all checks are okay, digits are outputted over a selected trunk group member.

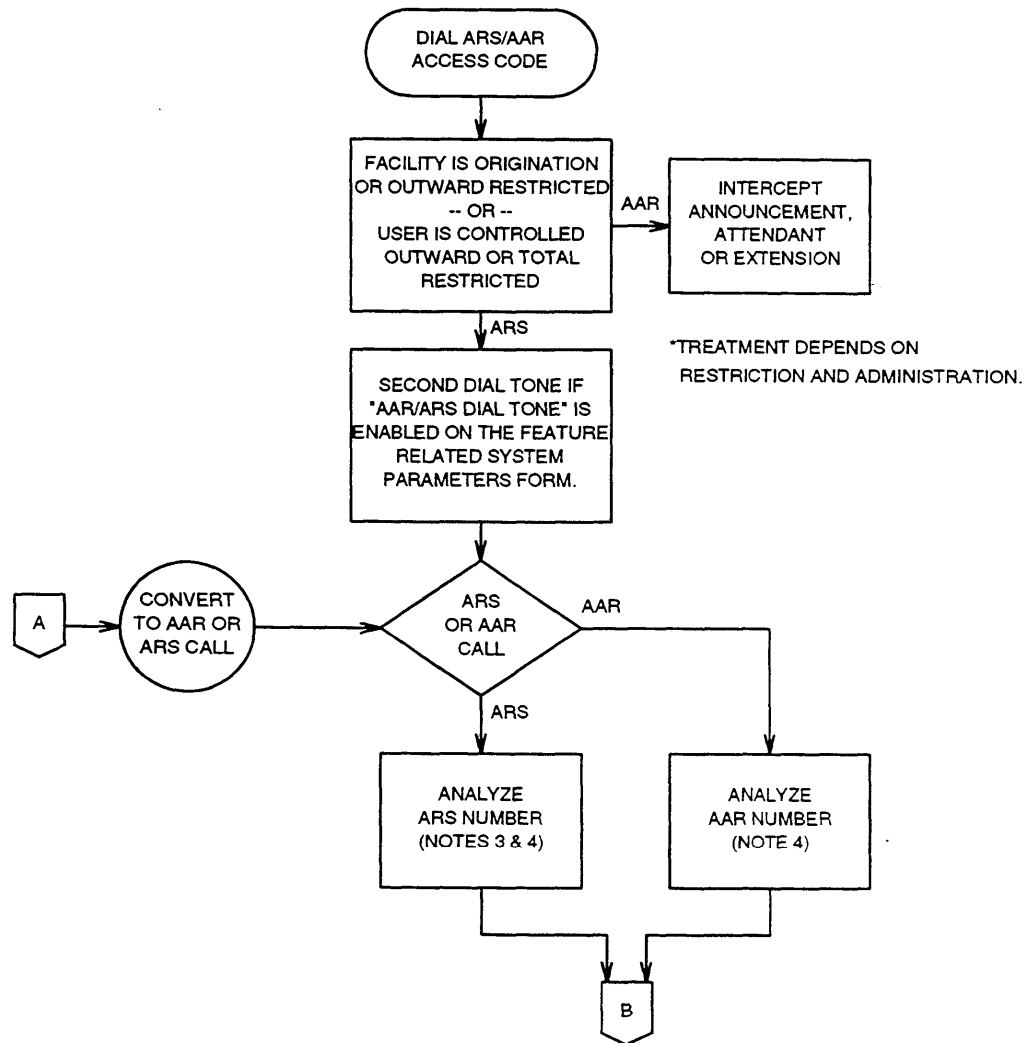


Figure 4-1. ARS Call Processing — Flow Diagram (Sheet 1 of 3)

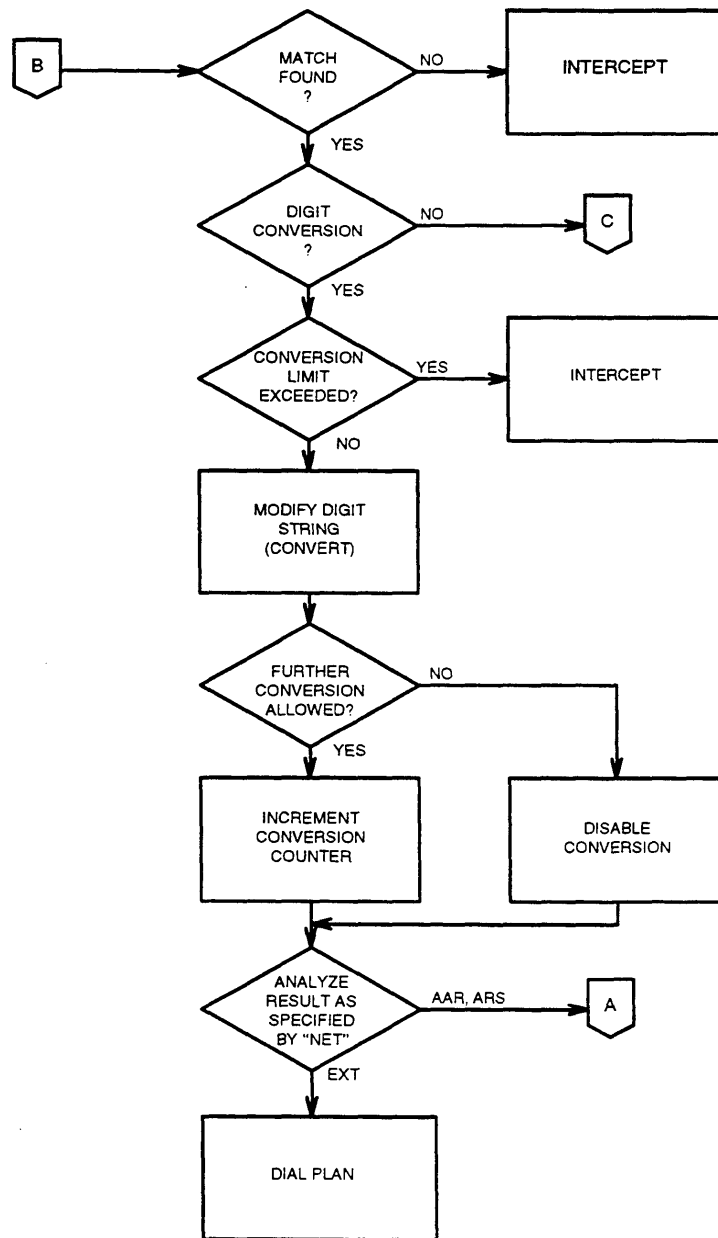


Figure 4-2. ARS Call Processing — Flow Diagram (Sheet 2 of 3)

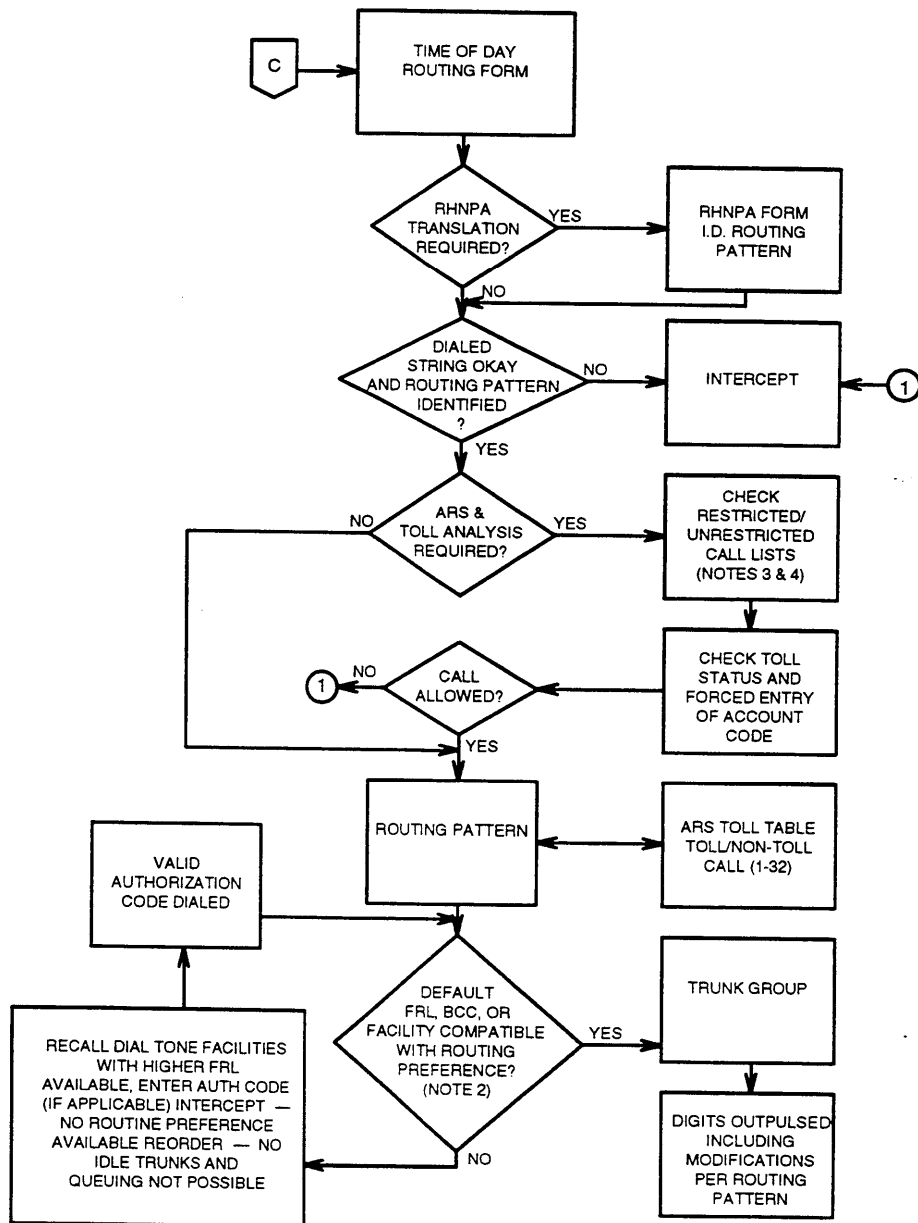


Figure 4-3. ARS Call Processing — Flow Diagram (Sheet 3 of 3)

NOTES:

1. IT IS RECOMMENDED THAT PNDN THAT ARE DIALED AFTER AN AAR ACCESS CODE BE ADMINISTERED TO HAVE A "1" PREFIX. A DEFAULT ENTRY ON THE AAR DIGIT CONVERSION FORM WILL CAUSE THESE CALLS TO "CROSSOVER" TO ARS.
2. LOCAL USER IS A SUBTENDING PBX - DEFAULT FRL IS THE FRL ASSIGNED TO THE INCOMING ACCESS TRUNK GROUP.

ATTENDANT EXTENDED CALL - DEFAULT FRL IS THE FRL ASSIGNED THE ATTENDANT GROUP, NOT THE FRL ASSIGNED THE USER'S STATION OR FACILITY.

REMOTE ACCESS USER - DEFAULT FRL IS THE FRL ASSOCIATED WITH AN AUTHORIZATION CODE, IF ENTERED. OTHERWISE, THE FRL ASSOCIATED WITH THE BARRIER CODE IS USED. IF NO BARRIER CODE OR AUTHORIZATION CODE IS USED, THE DEFAULT BARRIER CODE'S FRL IS USED.
3. ARS ANALYSIS WILL IDENTIFY BOTH AN IXC CODE AND/OR TOLL PREFIX "1" IN THE ARS NUMBER, AND CAN SELECTIVELY IGNORE EITHER OR BOTH TO OBTAIN AN ANALYSIS MATCH. THE ORDER OF SEARCH IS:
 1. TRY TO MATCH NUMBER AS DIALED,
 2. IF AN IXC CODE AND A PREFIX ARE PRESENT, IGNORE THE PREFIX AND TRY TO MATCH.
 3. IF AN IXC IS PRESENT, IGNORE IT AND TRY TO MATCH.
 4. IGNORE BOTH AN IXC CODE AND PREFIX AND TRY TO MATCH.
4. BOTH ANALYSIS (ROUTING) AND DIGIT CONVERSION TABLES ARE SEARCHED FOR THE SINGLE BEST MATCHING ENTRY. ARS DIGIT CONVERSION IS PERFORMED BEFORE DIGIT ANALYSIS. CRITERIA, IN ORDER, ARE:
 1. CORRECT NUMBER OF DIGITS (MIN/MAX)
 2. MOST MATCHING DIGITS
 3. EXPLICIT DIGIT OVER WILDCARD DIGIT (FROM LEFT TO RIGHT)
 4. DIGIT CONVERSION OVER ROUTE

LEGEND:

AAR - AUTOMATIC ALTERNATE ROUTING
ARS - AUTOMATIC ROUTE SELECTION
BCC - BEARER CAPABILITY CLASS
COR - CLASS OF RESTRICTION
FRL - FACILITY RESTRICTION LEVEL
PNDN - PUBLIC NETWORK DESTINATION NUMBER (such as, DDD, IDDD,
SERVICE CODE 411, 911, and so on)
RHNPA - REMOTE HOME NUMBER PLAN AREA

ARS DIGIT CONVERSION FORM
PERCENT FULL: _
MATCH ●●●● REPLACE ●●●● CONV

AAR DIGIT CONVERSION FORM
PERCENT FULL: _
MATCH ●●●● REPLACE ●●●● CONV

TIME OF DAY ROUTING FORM (1)
PLAN NO. (1-8)
ACT TIME PLN # TIME PLN #
SUN 00:01 (1-8) ●●●● 00:01 (1-8)
●
●
●
SAT

ARS ANALYSIS FORM
PARTITIONED GROUP NO. 1
PERCENT FULL: _
DIALED TOTAL ROUTE CALL NODE
STRING MIN MAX PAT TYPE NUM
— — — — —
— — — — —
— — — — —

- CONVERTS A MATCHED DIGIT STRING FOR AAR/ARS PROCESSING
- MATCHING STRING FIELD -1 TO 18 CHARACTERS
- MINIMUM NUMBER OF DIGITS IN THE STRING
- MAXIMUM NUMBER OF DIGITS IN THE STRING
- NUMBER OF DIGITS TO DELETE FROM THE BEGINNING OF THE DIALED STRING
- REPLACEMENT STRING FIELD -1 TO 18 CHARACTERS
- NETWORK IN WHICH TO ANALYZE THE RESULTING NUMBERS
- INDICATE WHETHER FURTHER CONVERSION IS ALLOWED
- PROCESSES CALL BASED ON THE TIME OF DAY. THE TIME OF DAY NUMBER (1-8) OF A LOCAL CALLING USER IS USED TO CHOOSE AN ASSOCIATED TOO FORM (PLAN NO. 1-8).
- FOR USERS THAT ENTER A BARRIER CODE OR AN AUTHORIZATION CODE, THE COR SPECIFIED BY THE BARRIER OR AUTHORIZATION CODE IS USED TO SELECT A TOD PLAN.
- EIGHT FORMS MAXIMUM, EACH ASSOCIATED WITH A DIFFERENT PLAN NO. (1-8).
- A DIFFERENT PLAN NUMBER CAN BE REFERENCED UP TO SIX TIMES A DAY FOR EACH DAY OF THE WEEK
- THE PLAN NUMBER (1-8) IS USED TO IDENTIFY AN ASSOCIATED ARS/AAR ANALYSIS FORM WITH AN EQUIVALENT PARTITIONED GROUP NUMBER (1-8).
- MATCHES USER DIALED OR MODIFIED DIGIT STRINGS ROUTING PATTERNS (1-640). USES UP TO 18 DIGITS
- MIN - MINIMUM NUMBER OF DIGITS NEEDED TO VALIDATE AND ROUTE THE CALL
- MAX - MAXIMUM NUMBER OF DIGITS NEEDED TO VALIDATE AND ROUTE THE CALL.
- ROUTE PAT - THE ROUTING PATTERN TO USE FOR A CALL (1-840; R1-R32; DENY NODE NUMBER).
- CALL TYPE:
 - INT (INTERNATIONAL)
 - IOP (INTERNATIONAL OPERATOR ASSISTED)
 - OP (OPERATOR ASSISTED)
 - FNPA (10-DIGIT CALL)
 - HNPA (7-DIGIT CALL)
 - SVC (SERVICE CALL)
 - NATL (NO SPECIAL ATTRIBUTE - USED FOR INTERNATIONAL APPLICATIONS)
- NODE NUMBER

Figure 4-4. ARS Forms Summary (Sheet 1 of 3)

AAR ANALYSIS FORM

PARTITIONED GROUP NUMBER: 1
PERCENT FULL: __

DIALED STRING	MIN	MAX	ROUTE PAT	CALL TYPE	NODE NUM

(8)

- MATCHED USER DIALED OR MODIFIED DIGIT STRINGS TO ROUTING PATTERNS (1-840). USES UP TO 18 DIGITS.
- MIN MINIMUM NUMBER OF DIGITS NEEDED TO VALIDATE AND ROUTE THE CALL.
- MAX MAXIMUM NUMBER OF DIGITS NEEDED TO VALIDATE AND ROUTE THE CALL.
- ROUTE PAT THE ROUTING PATTERN TO USE FOR A CALL (1640, r1-r32, DENY, NODE)
- CALL TYPE IS AAR.
- NODE NUMBER

NODE NUMBER ROUTING

PARTITIONED GROUP NUMBER: __

ROUTE PAT		ROUTE PAT
1 0 0	—	1 4 0
1 0 1	—	1 4 1
1 0 2	—	1 4 2
1 0 3	—	1 4 3

- BY PARTITION, SPECIFY THE ROUTING PATTERN TO REACH EACH NODE.

REMOTE HOME NUMBER PLAN
(RHNPA) FORM

RHNPA TABLE (1-32)

CODE X00 X99

PATTERN CHOICE

1 :	—	1 1 :	—
2 :	—	1 2 :	—
0 1 :	—	9 0 :	—
0 9 :	—	9 9 :	—

(10)

(2)

(1)

- MAY BE USED FOR DDD OF:
CO CODES IN AN FNPA
INTERNATIONAL NUMBERS
INTER-EXCHANGE CARRIER CODES
3-DIGIT TRANSLATIONS OF NUMBERS (000-999)
- TEN PAGES MAXIMUM PER TABLE (32 TABLES MAX.)
- UP TO 12 OF THE 840 POSSIBLE ROUTING PATTERNS CAN BE REFERENCED ON EACH TABLE.
- EACH PAGE SUPPORTS 100 CODES IN THE RANGE 000-099, 100-199, . . .900-999.

TOLL ANALYSIS FORM

PERCENT FULL: __

DIALED STRING	TOTAL MIN	MAX	RCL	TOLL LIST	SMDR FEAC	UCL 1-----10

- USED FOR ARS AND NON-ARS SYSTEMS.
- USED TO ASSIGN DIALED NUMBERS TO THE RESTRICTED CALL LIST (RCL), UNRESTRICTED CALL LIST (UCL), SMDR FEAC, AND TOLL LIST.
- MIN MINIMUM NUMBER OF DIGITS TO COLLECT.
- MAX MAXIMUM NUMBER OF DIGITS TO COLLECT.
- RCL RESTRICTED CALL LIST. ALL ENTRIES OF "X" AND THEIR ASSOCIATED DIALED STRINGS ARE REFERRED TO AS THE SYSTEM'S RCL
- TOLL LIST ALL ENTRIES OF "X" AND THEIR ASSOCIATED DIGIT STRINGS ARE REFERRED TO AS THE SYSTEM'S TOLL LIST.
- SMDR REAC USED TO INDICATE THAT A SMDR ACCOUNT CODE MUST BE DIALED BEFORE A CALL THAT MATCHES THE "DIALED STRING" ENTRY
- UCL ALL ENTRIES OF "X" THAT ARE ASSOCIATED WITH A PARTICULAR UCL NUMBER AND THEIR ASSOCIATE DIGIT STRINGS ARE REFERRED TO AS THE UNRESTRICTED CALL LIST (1-10).

Figure 4-5. ARS Forms Summary (Sheet 2 of 3)

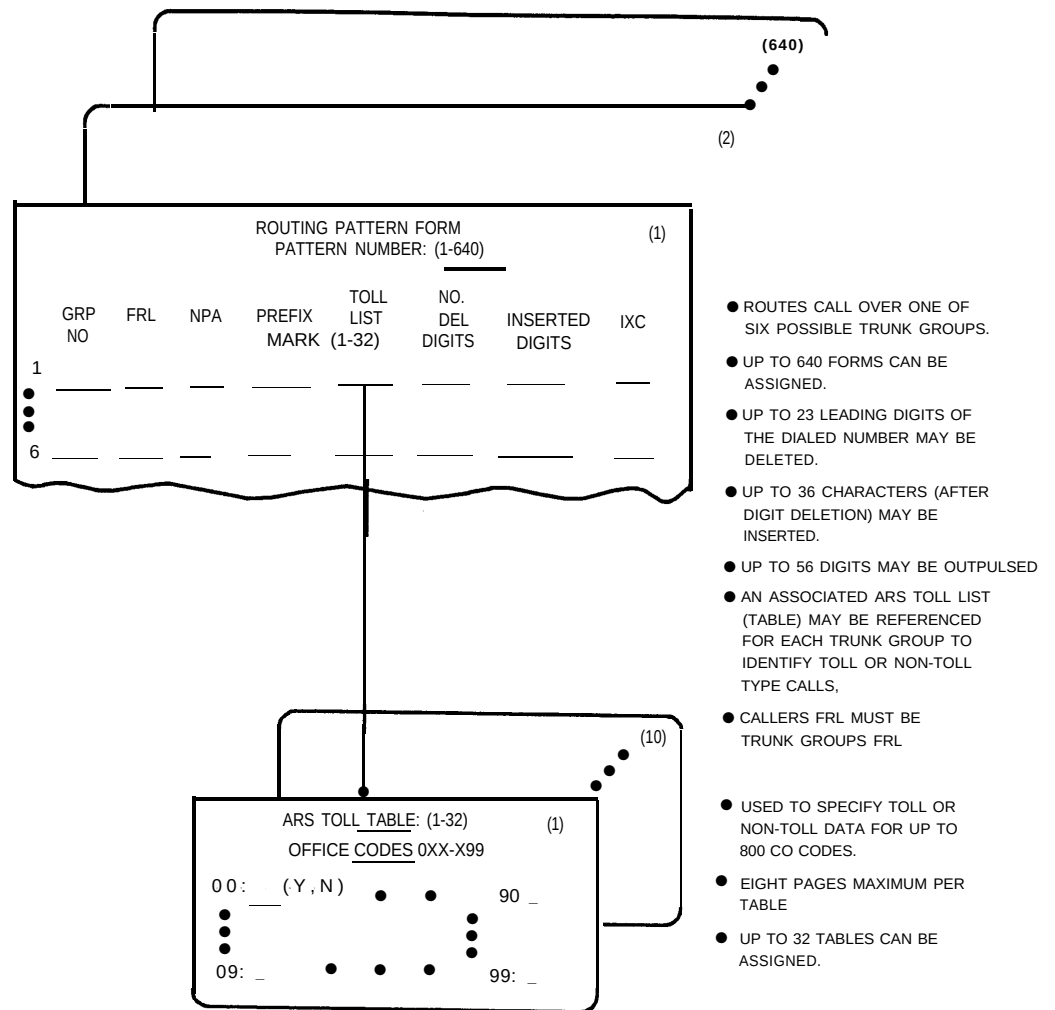


Figure 4-6. ARS Forms Summary (Sheet 3 of 3)

Dialing Patterns

The System can be administered to recognize different types of dialing patterns on outgoing calls and can route the call accordingly. The following dialing patterns are supported.

NOTE:

Refer to Table 4-2 for default translations associated with the following.

- **Operator Assistance Calls** — The first digit following the ARS access code is a 0. If a 0 is dialed by itself to access an operator, a special interdigit time-out occurs, the route for dial 0 calls is selected and a 0# is outpulsed. If the user dials another 0, the route for 00 is selected, and a 00# is outpulsed. The call is routed to the toll operator (if one exists) instead of the local operator in this case.
- **DDD Calls with Prefix Digit 1 Required** — The Prefix Mark field (on the System's Routing Pattern form) can be administered as follows for each of the six possible routing choices on each form:

⇒ **NOTE:**

Prefix Mark operations only apply to fnpa or hnpa call types.

- 0 Do not outpulse prefix digit 1.

⇒ **NOTE:**

Prefix Mark 0 suppresses a user-dialed Prefix digit 1 for 10-digit FNPA calls, but leaves a user-dialed Prefix digit 1 for 7-digit HNPA calls. This capability is required, for example, when routing ISDN-PRI calls to an AT&T 4ESS. If the prefix digit 1 were not suppressed, the 4ESS would reject such calls.

- 1 Outpulse Prefix digit 1 for 10-digit calls. Prefix Mark 1 should be selected for those HNPAs that require users to dial 1 to indicate a toll call.
- 2 Outpulse prefix digit 1 for all toll calls and 7- and 10-digit calls whether the user dials 1 or not.
- 3 Outpulse prefix digit 1 all toll calls. These calls are always outpulsed as 10-digit numbers, even those within the HNPA.
- 4 Suppress a user-dialed Prefix digit 1.

⇒ **NOTE:**

This capability is required, for example, when routing ISDN-PRI calls to an AT&T 4ESS. If the prefix digit 1 were not suppressed, then the 4ESS would reject such calls.

⇒ **NOTE:**

Prefix Marks 2 and 3 must refer to a Toll Table.

One reason to dial a "1" prefix digit is to indicate a 7-digit toll call within the HNPA. This is particularly useful when there is a toll CO code in the HNPA, in addition to the same CO code (non-protected) in an adjacent NPA that can be accessed locally by dialing a 7-digit number. To permit 7-digit dialing for both calls, the toll call is prefixed by "1". When the user dials a "1" prefix followed by a 7-digit number, it will be treated as a toll call in the HNPA (even if the ARS Toll Table indicates local). When the user dials the same number without the "1" prefix, it is treated as a local call across the NPA boundary.

- **DDD Calls with Prefix Digit 1 Not Required** — The first digit of a long-distance call following the ARS access code may or may not be a 1 (dialing the "1" prefix before a 10-digit call is optional). In Systems where the 1 prefix is dialed (even though not required), the prefix will be ignored.
- **Operator Assisted and International Calls** — The first digits following the ARS access code area "0" (operator), 00 (toll operator), and optionally followed by a 10-digit DDD number, or by 01 or 010 (international operator) for international dialing and optionally followed by international destination address digits. Because of the variable number of digits required for these calls, an inter-digit time-out is used to recognize end of dialing.

The System employs a short inter-digit timer and a long inter-digit timer during the dialing process. If the digits dialed so far are a valid address (such as "0") but more digits may follow, the short inter-digit timer will be started. If dialing does not continue before the timer expires, it is assumed that no more digits will follow. To override the short or long inter-digit timer for faster call processing, the originator may dial "#" to indicate end of dialing. A 10 second long inter-digit timer is used when the digits dialed so far are not a valid destination. Time-out of this timer results in Intercept tone to the caller. The user may, however, dial the "#" character on any of these calls to cancel the time-out interval and indicate end of dialing. The use of the "#" symbol to indicate end of dialing is applicable only with touch-tone stations and data modules.

A trailing "#" is outputted for a range of digits in the dialed string (such as, international calls) except when outputting dial pulses. An option on the trunk group form can be used to suppress "#" outputting. The dialed digits, including the prefix 0 and the trailing "#", are always outputted as dialed except that "#" is never outputted when outputting dial pulses.

- **International Direct Distance Dialing** — An international telephone number consists of a Country Code (CC) plus the National Number (NN). The NN is simply the number used when calling within the country. In the North American Numbering Plan (NANP), NN is a 10-digit address. The CC is one to three digits, and the combination of CC and NN is up to 12-digits. In the NANP, the System is alerted to the fact that an international number is being dialed by use of a special prefix code as follows:
 - 011 — indicates that the caller is making a station paid direct international call and CC plus NN digits follow. The term IDDD (International Direct Distance Dialing) is normally associated with 011 plus (011+) station calls.
 - 01 — indicates that the caller desires operator assistance in an international call, such as person-to-person, credit card, collect call, and so on, and CC and NN digits follow. The term ICDO (International Customer-Dialed and Operator-Serviced) reflects the nature of 01+ dialing options.

A "01+" (ICDOS) call is similar to "0+" or "00+" (operator-assisted North American Network) call, whereas a "011 +" (IDDD) call is similar to a "1+" call.

- **Special Service Codes** — The first digit following the ARS access code is a special system or service code. Such codes consist of only three digits in the form X11 (where X = 0 to 9) with or without dialing the 1 prefix digit. These are recognized as complete addresses, if no further digits are dialed, and are routed to the appropriate facility. The inter-digit time-out determines whether the call is a 3- or 7-digit call. For example, if the user dials 911, the call will route to the police/emergency operator, and if the user dials 811-XXXX, the call will be translated as a 7-digit call for the repair bureau corresponding to the last four digits (811 is a service code for repair).
- **Call Dialed with Inter-Exchange Carrier (IXC) Access** — The first digits following the ARS access code is a 5- or 7-digit IXC code. The System then makes a determination of the number of digits to collect based on the digits following the code. The IXC code may be followed by a DDD or IDDD number. This gives the user control over which carrier or facilities should be used for routing the call. However, the call will be routed based on administration of the IXC code in the ARS Analysis Table (see ARS Analysis Table).

The System supports three general IXC access arrangements that are commonly referred to as Feature Group A, B, and D (FG A, FG B, FG D). From a callers perspective, the major differences between use of the various groups are:

- To select an IXC, FG A and FG B require the dialing of seven digits (NXX-XXXX or 950-0/1XXX, respectively) but FG D requires just five digits (10XXX).
- Single-stage dialing is supported for FG D, but FG A and FG B require 2-stage dialing. (Two-stage dialing means that there is a pause for dial tone between the two groups of dialed digits.) FG A and FG B calls are analyzed and routed just like normal calls.
- No customer identification digits are required for FG D.
- A touch-tone telephone is required to enter a Personal Identification Number code when using FG A or FG B. (These digits are not collected or analyzed by the PBX.) A dial pulse or touch-tone telephone may be used with FG D.

System default translation used for IXC call types are shown on Table 4-2.

ARS Analysis Table

This form is used to map customer-dialed numbers (dialed strings) to routing patterns, using up to 18 digits.

NOTE:

The Automatic Route Selection feature must be enabled on the System-Parameters Custom-Options form before associated ARS forms can be administered.

Administration Commands

The following administration commands can be used to access the ARS Analysis Table form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	ars analysis	Enter digits between 0-9, 'x' or 'X' (dialed string) ['part' 1-8] ['min' 1-MAX]
display	ars analysis	Enter digits between 0-9, 'x' or 'X' (dialed string) ['part' 1-8] ['min' 1-MAX] ['print' or 'schedule']
list	ars analysis	[start-dialed string] ['count' 1-MAX ['rp' 1-MAX or r1-r32] ['part' 1-8] ['node' (1-MAX), ['70-node'(1-MAX)] ['print' or 'schedule']
list	ars route chosen	Enter dialed number, [partition (1-8)], ['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on the form.

- **Percent Full** — 3-character display-only field. Displays the percentage of the System's memory resources that have been used. A common pool of memory resources is shared between the ARS and AAR Analysis tables, the ARS and AAR Digit Conversion tables, and the Toll Analysis table.

If this field display indicates that the System memory resources are in jeopardy of becoming full (100%), perform any of the following to "free-up" memory resources:

- Delete unnecessary entries from any of the shared resources tables.
- Utilize RHNPA tables for 6-digit ARS routing.
- Reduce dialed string field entries to shortest possible length that accomplishes the desired function.

- **Partitioned Group Number (PGN)** — When completing a paper form, enter the PGN to be associated with this table. Default is 1.
- **Dialed String** — Enter the dialed string of significant digits (do not use a toll prefix unless absolutely necessary). Up to 18 characters consisting of the digits 0 to 9 are allowed. A wildcard letter “x” or “X” may be used to substitute for any digit occurring in the string at the character position where used. Valid entries are 0 to 9, “x”, “X”, or blank; default is blank.

⇒ **NOTE:**

The user-dialed digits are matched to the Dialed String field entry that most closely matches the dialed number (referred to as the “longest match”). For example, if a user dials 957-1234 and the ARS Analysis Table has dialed string entries of 957-1 and 957-123, the match is on the 957-123 entry. In addition, an exact match is made on dialed string entries of the same number of digits in cases where wildcard characters (Xs) are used. For example, if 411 is dialed and the table has Dialed String entries of 411 and X11, the match is on the 411 entry.

- **Min** — Enter the minimum number of digits needed to validate and route the call. Default is blank.
- **Max** — Enter the maximum number of digits needed to validate and route the call. Default is blank.
- **Rte Pat** (Routing Pattern) — Enter the routing pattern number, a pointer to an associated Remote Home Number Plan Area (RHNP) form (r1 to r32) to be used to route the call once all identifying digits have been received, “node” to use node number routing, “n/a” to indicate that routing is not applicable to this PGN, “deny” to block the call, or blank; default is blank.
- **Call Type** — Valid call types are:

Call Type	Description
fnpa	10-digit NANP call(11 digits with Prefix Digit “1”)
hnpa	7-digit NANP call
int	international
iop	international operator
natl	non-NANP domestic call
op	operator
svc	NANP service
unk	non-NANP domestic or international call

⇒ **NOTE:**

In the table above, NANP stands for *North American Numbering Plan*.

- **Node Num** — The number of the destination node for the dialed string, if node number routing is used.

Table 4-2 provides a listing of all ARS Analysis default translations.



NOTE:

Any dialed digit string not accounted for on the table is considered invalid and the call is routed to intercept. These default translations are used for call processing regardless of whether ARS has been optioned for on the switch.

The translations shown on Table 4-2 appear only once in the switch's memory but are displayed in sorted order (including additions) on each of the eight possible ARS Analysis Table forms when displayed.

Table 4-2. ARS Analysis Default Translations

Dialed String	Total Digits		Route Pattern	Call Type	Node Num
	Min.	Max.			
0	1	1		op	-
0	8	8		op	-
0	11	11		op	-
00	2	2		op	-
01	10	23		iop	-
011	10	23		int	-
1	11	11		fnpa	-
10XXX0	6	6		op	-
10XXX0	16	16		op	-
10XXX00	7	7		op	-
10XXX01	15	23		iop	-
2	7	7	1	hnpa	-
3	7	7	1	hnpa	-
4	7	7	1	hnpa	-
5	7	7	1	hnpa	-
6	7	7	1	hnpa	-
7	7	7	1	hnpa	-
8	7	7	1	hnpa	-
9	7	7	1	hnpa	-
20	10	10		fnpa	
21	10	10		fnpa	
30	10	10		fnpa	
31	10	10		fnpa	
90	10	10		fnpa	
91	10	10		fnpa	
X11	3	3		svc	-

Legend:

fnpa - foreign number plan area (10-digit call)
hnpa - home number plan area (7-digit call)
int - international
iop - international operator
op - operator
svc - service
X - any digit (0 to 9)

Page 1 of 1

ARS DIGIT ANALYSIS TABLE

partitioned Group Number: Percent Full:

Dialed String	Total Min	Total Max	Rte Pat	Call Type	Node Num	Dialed String	Total Min	Total Max	Rte Pat	Call Type	Node Num
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-
	-	-	-	-	-		-	-	-	-	-

Screen 4-7. ARS Analysis Table Form

ARS Digit Conversion Table

This form is used to convert public network numbers (ARS). Its purpose is to save toll charges and to allow users to dial all calls using a public network number. Also, unauthorized public network calls can be routed to an attendant or given intercept tone.

The form allows for the replacement of all or part of a dialed digit string with a modified string. The modified string represents an alternative equivalent address and results in the call being analyzed according to the modified string and specified type. If the ARS Access Code is dialed (or a number is converted to ARS), this table is accessed during call processing.

The ARS Digit Conversion feature enhances the capabilities of the ARS feature so that outgoing public network calls and private network calls can be changed to local, private, or public network destinations. The calls are then analyzed via the UDP, AAR, or ARS feature, respectively.

The Automatic Route Selection feature must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

Administration Commands

The following administration commands can be used to access the ARS Digit Conversion Table form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	ars digit-conversion	Enter digits between 0–9 'x' or 'X'
display	ars digit-conversion	Enter digits between 0–9, 'x' or 'X' ['print' or 'schedule']
list	ars digit-conversion	Enter ['start' matching pattern] ['count' (1-MAX)][['print' or 'schedule']]

* Brackets [] indicate the qualifier is optional. Single quotes (") indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form.

NOTE:

When the form is accessed via an administration command such as *display* or *change*, the entries are sorted separately in the order of the matching pattern. Specific digits are sorted before the wildcard character "x" or "X".

- **Percent Full** — 3-character display-only field. Displays the percentage of the System's memory resources that have been used. A common pool of memory resources is shared between the ARS and AAR Digit Conversion tables.

If the Percent Full field display indicated that the System memory resources are in jeopardy of becoming full (100%), perform any of the following to "free-up" memory resources:

- Delete unnecessary entries from any of the shared resources tables.
- Utilize RHNPA tables for 6-digit ARS routing.
- Reduce dialed string field entries to shortest possible length that accomplishes the desired function.

- **Matching Pattern** — Enter a 1-to 18-digit string to be matched against a dialed number. Matching Pattern entries must be unique within the table. The string may contain the digits 0 to 9 and wildcard character "x" or "X" which is used to match any digit in the range of 0 to 9.

If the associated Replacement String field has an entry, the Matching Pattern field must have an entry.

- **Min** — The minimum number of digits in the dialed string.
- **Max** — The maximum number of digits in the dialed string.
- **Del** — The number of digits to delete from the beginning of the dialed string (this may be "0"). In ARS analysis, any ignored digits (for example, IXC's or prefixes) are also deleted.
- **Replacement String** — Enter a 1- to 18-digit string that will replace the deleted portion of the dialed number. The string may contain the digits 0 to 9, a "#" character, or be blank (no entry). The "#" character, when used, must be at the end of the digit string and is used to signify end of dialing.

 NOTE:

A blank replacement string has the effect of just deleting the matched portion of the dialed digit string. The "#" character in the replacement string signifies the end of the modified digit string so that any digits dialed by the user after the matched portion of the string are ignored by the AAR/ARS features. Deletion of digits and blank replacements are used to crossover from ARS to AAR.

- **Net** — The network in which to analyze the resulting number. Enter "ext", "aar", or "ars".
- **Conv** — Enter "y" or "n". To allow further conversion enter "y".

Table 4-3 provides several ARS Digit Conversion examples.

The following conditions are assumed: ARS Access Code = 9, AAR Access Code = 8, Home RNX = 222, Prefix "1" required on all long-distance DDD calls, Dashes ("-") shown on table are for readability only.

Table 4-3. AAR/ARS Digit Conversion Examples

Actual Digits Dialed	Min/Max	Matching Pattern	Digits Deleted	Replacement String	Modified Address	Network Used	Note
DDD Call to ETN:							
9-1-303-538-1345	11/11	1-303-538	7	362	362-1345	AAR	1
Terminating local DDD call to an internal station:							
1-201-957-5567	11/11	1-201-957	7	none	5567	Ext	2
957-5567	7/7	957	3	none	5567	Ext	2
Unauthorized call to intercept							
9-1-212-976-7777	11/11	1-XXX-976	11	#	blank	Ext	3
International Calls to Attendant							
9-011-91-672530	4/23	011-91	none	222-0111#	222-0111	AAR	4
International DDD Calls to Attendant							
9-011-91-672530	4/23	011-91	Note 5	4 5 6 7 #	4567	Ext	5,6
Call to Local NPA:							
1-201-956-2222	11/11	1-201-956	7	956	956-2222	ARS	7

Notes:

1. Routing pattern associated with RNX 362 will be selected.
2. Call terminated to 222, Extension 5567.
3. "#" Signifies the end of dialing. All calls to CO code 976 are blocked.
4. Call routed to local switch (RNX 222), then the attendant (0111). May also be used to block unauthorized IDDD calls. Route call to announcement by replacing 0111 with an announcement extension.
5. The "#" sign in a replacement string ends the digit string so nondeleted digits are discarded as well.
6. Call routed to announcement extension.
7. Call routed to local CO.



NOTE:

The dialed digits within the Min/Max range are matched to the Matching Pattern that most closely matches the dialed number (called the longest match). For example, if the dialed string is 957-1234 and matching patterns 957-1 and 957-123 are in the table, the match is on pattern 957-123. If a match is found (with the same number of digits) on entries both employing and not employing wildcard characters (Xs), the match not employing wildcard characters is used. For example, if 411 is dialed and the table has Matching Pattern entries of 411, X11, 4X1, and 41X are used, the match is on the 411 entry.

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ARS DIGIT CONVERSION TABLE

Percent Full : _

Matching Pattern	Min	Max	Del	Replacement String	Net	Conv
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-
	-	-	-		-	-

Screen 4-8. ARS Digit Conversion Table Form

To reduce repetition, Page 2 of this form is not shown. For a complete set of forms, refer to the "Blank Forms Package."

ARS Toll Table

This form is used to specify whether calls to central office codes listed on the table are, with respect to the distant end of the trunk group, toll or non-toll calls.

The form is used to assign Toll Tables as required for ARS subnet trunking. One form is required for each block of 100 central office codes.

Administration Commands

The following administration commands can be used to access the ARS Toll Table form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	ars toll	n:xxx (1-MAX:office code) n:xyy: n(1-MAX); ':' ;x(2-MAX;
display	ars toll	n:xxx (1-MAX:office code) ['print' or 'schedule']

Brackets [] indicate the qualifier is optional. Single quotes (") indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on the form:

- **ARS TOLL TABLE** — At the command line, enter the Toll Table number. Up to eight forms may be required for each table, one for each hundreds block, 2 to 9.
- **OFFICE CODES** — At the command line, enter a hundreds block, that is, 200 to 299 through 900 to 999. A separate form is required for each hundreds block. *
- **00: through 99:** — Enter "n" beside each central office code to be designated as non-toll. These fields represent the last two digits of the codes within the hundreds block. If no changes are made, the codes are implemented as toll-type codes (default).

ARS TOLL TABLE: _										Page 1 of 1	
OFFICE CODES: x00-x99											
00: y	10: y	20: y	30: y	40: y	50: y	60: y	70: y	80: y	90: y		
01: y	11: y	21: y	31: y	41: y	51: y	61: y	71: y	81: y	91: y		
02: y	12: y	22: y	32: y	42: y	52: y	62: y	72: y	82: y	92: y		
03: y	13: y	23: y	33: y	43: y	53: y	63: y	73: y	83: y	93: y		
04: y	14: y	24: y	34: y	44: y	54: y	64: y	74: y	84: y	94: y		
05: y	15: y	25: y	35: y	45: y	55: y	65: y	75: y	85: y	95: y		
06: y	16: y	26: y	36: y	46: y	56: y	66: y	76: y	86: y	96: y		
07: y	17: y	27: y	37: y	47: y	57: y	67: y	77: y	87: y	97: y		
08: y	18: y	28: y	38: y	48: y	58: y	68: y	78: y	88: y	98: y		
09: y	19: y	29: y	39: y	49: y	59: y	69: y	79: y	89: y	99: y		

Screen 4-9. ARS Toll Table Form (Page 1 of 1)

ATMS Trunk Test Schedule

Automatic Transmission Measurement System (ATMS) provides advanced maintenance procedures for monitoring system trunk facilities. This system performs transmission tests on system trunks to determine if trunks are performing satisfactorily. These tests can be initiated in two different manners: demand and/or scheduled. The *demand* test command can be entered by the system user directly from the System Administration Terminal (SAT) to initiate a test immediately. The *schedule* test command schedules tests, via a schedule form, to automatically initiate tests at a predetermined time.

At least one TN771C circuit pack is required because of the Local Area Network (LAN) bus maintenance which the board performs. The number of TN771C circuit packs administrable on the switch is limited by the number of EPNs and PPNs in a switch network. Each PPN will contain one TN771C and each EPN may contain one TN771C. Each TN771C circuit pack supports testing of one analog trunk at a time. The number of OTL and TTL circuit packs required in a System depends on:

1. the frequency that the customer requires their trunks to be tested
2. the number of trunks
3. the number of TTL devices on far-end switches that are available to test against
4. the time per day that can be used for testing

The number of concurrent tests that can be run is limited by the number of OTLs available and is also dependent on the type of test command, demand or scheduled. Demand test are limited to three concurrent tests, while scheduled tests are limited to four concurrent tests (such as 4 active OTLs). If more than four tests are needed simultaneously, the requests are queued and run on a round-robin basis. The number of TTLs that can be administered is limited by the number of available ports.

For G3r V2, up to 30 test schedules are available for use. Each schedule consists of 60 trunk group/member fields. This allows up to 1,800 different trunk group/member combinations to be scheduled for testing. For G3iV2, up to five test schedules are available for use. Each schedule consists of 10 trunk group/member fields. This allows up to 50 different The administration of this feature is basically a two-step process:

1. test times are defined for each schedule
2. trunks are assigned to these test times

After the described administration has been completed, connections and measurements are automatically made by the switch software at the specified time and day without any additional user intervention. Schedules ready to run will be queued and run in a round-robin (FIFO) manner. Scheduled tests run until all trunk groups/members in the schedule have been tested or until the scheduled test duration is exceeded.

Test schedules assigned the same run time will be selected to run based on the schedule number (smaller schedule numbers first).



NOTE:

If schedules are assigned at the same time, it is unlikely that all scheduled tests will complete during the allotted time if other schedules are vying for the same resources.

Determining Schedule Times

Trunk test schedules should run during trunk idle times (when resource consumption is low). The trunk idle times will be the time frames available for testing each node¹ connected to the switch.

Once the idle times are determined, the next step is to compute the time required for testing the trunks between each node. Time requirements between each node are based on the quantity of trunks between nodes and the time needed to test each trunk to that node. Only outgoing trunks from the originating system need to be considered. Currently, there is no way to test incoming-only trunks in the near-end mode.

The characteristics of a trunk along with the test objectives are used to determine the total test time per trunk. The trunk characteristics might determine the type of test to run:

- **Digital Facilities**

For digital facilities that go between switching systems without needing digital channel banks (for example, Generic 3 to Generic 3), a supervision-only test is recommended to detect an initial tone from a TTL. For digital facilities that go between an analog CO switch and a digital PBX switch via a channel bank, all tests might be considered.

- **2-Wire Facilities**

For 2-wire facilities such as local CO trunks, only loss and noise measurements are recommended since echo is usually not controlled on these facilities.

- **4-Wire Facilities**

For 4-wire facilities such as interlocation tie trunks between different locations, all measurements are appropriate. For 4-wire facilities such as intralocation tie trunks (only wire conductors between switches), loss measurements may not be meaningful because of the short distances.

Test objectives might determine the per trunk test time, such as:

* Nodes may be Central Office switches, AT&T PBX switches, or other non-AT&T switches. All nodes in the network used for terminating test calls must have TTL capabilities.

- How often you want to test various trunk groups. For example, you may want to test network trunks daily, but test non-network trunks only weekly. You may want to test more frequently immediately after installation and less frequently thereafter.
- You may want to test daily to all TTLs with free access and weekly to those with cost access.

After these objectives and characteristics have been considered, the test time for a trunk group is figured using the following formula:

$$TT = q[dt + nt + ttt]$$

⇒ Where:

- TT = the Trunk group test time in seconds
- q = the Number of trunks in the trunk group
- dt = the Dial time in seconds
 For Touch Tone: 0.1 times (# of dialed digits)
 For Rotary: 0.7 times (# of dialed digits) + 0.1 times (sum of dialed digits, with 0 equal to 10)
- nt = the Network time (always 2 seconds)
- ttt = the Transmission test time (see table below)

Transmission Test Lines	
Test Type	Time (sec)
All Tests	
56A (old)	35
100	20
102	2
105 (ZLC12,SN261)	65
56A (new)	65
All Tests Except Return Loss	
56A (old)	30
100	10
LC/SN	30
105 or new 56A	50
All Tests Except Self	
56A (old)	20
105 (ZLC12,SN261)	35
56A (new)	35
All Tests Except Self & Return Loss	
56A (old)	15
105 or new 56A	25
Supervision Tests	
All types	2

ATMS Test Schedule Example

Assume that the above variables have the following values as an example in figuring the total test time for a trunk group:

q= 100
dt = 0.7 seconds (7 digits *0.1 seconds/digit)
nt = 2 seconds
ttt =65 seconds(105 test type)

The total OTL time required for this trunk group is 6,770 seconds.

Each trunk groups test time is assigned to an idle hour slot. The sum total of all test times assigned to a particular node should not exceed the idle time available for testing that node. If the total test time exceeds the trunk idle hours, the following options are available:

- Additional TTLs can be added on the far-end nodes.
- The trunk group members can be split across schedules which test portions of a trunk group on alternate weeks.



NOTE:

When setting up test times, the analog port in the TN771C cannot serve as an OTL and TTL at the same time.

Managing OTL/TTL Resources

Trunk group testing can occur concurrently when multiple boards exists. The number of available OTL resources determines the number of tests that can occur concurrently. Some internal limits have been set to control the number of concurrent tests. For background scheduling, the limit is four concurrent tests and the foreground demand test is limited to the number of maintenance users that can be operating simultaneously, which is currently set to three. Altogether, seven concurrent tests can run at the same time. If the number of OTL resources are less than the number of schedules being tested, the schedules are queued and tested sequentially.

OTLs are assigned to test schedule entries (a test entry is an individual trunk within a trunk group member/range field). Whenever an OTL is requested for test assignments, it is dedicated to the first available untested schedule entry on the test queue. An OTL remains dedicated to a schedule until all test entries in the schedule have been tested. When the last test entry in the schedule has been tested, the OTL is assigned to the next untested schedule entry. A throttle parameter is provided which limits the number of OTLs that can be assigned per schedule.

When multiple OTL boards exist and the test schedule entries terminate at the same location, there must be a one-to-one correspondence between every OTL and TTL. When multiple OTLs terminate at the same TTL, the contention for the TTL will cause some tests to abort due to the far-end TTL being busy. One way to avoid this condition is to make sure that the number of far-end TTL resources

equals the number of near-end OTLs used for testing. If this is not possible, limit the number of OTLs tested within each schedule with the OTL Throttle field to prevent entries within the same test schedule from originating multiple tests to a far-end system that can only support a single TTL resource. (This does not prevent entries from different schedules for competing for the same TTL resource.) In general, find the group within the schedule that has the fewest TTLs at the far end, and set the OTL Throttle field to this value.

⇒ NOTE:

If the OTL Throttle value is greater than the actual number of system OTLs, a test may be aborted due to the unavailability of an OTL resource,

If the OTL Throttle value for a schedule is 4, the next queued schedule cannot be run until all the entries from the current schedule are complete. This is because OTL resources are assigned to test schedule entries and not to test schedules. The use of the OTL throttle parameter can limit the number of entries being tested within the same test schedule and can, therefore, allow trunk group entries from different schedules to be tested concurrently.

OTL Throttle Value Example

To illustrate the use of the OTL Throttle value, assume that the tests take the same amount of time to run and are administered as follows:

Schedule #	Test Time	OTL Throttle	Trunk Group	Members in Trunk Group
1	1 am	4	10	4
			11	2
2	1 am	1	12	1
3	1 am	4	13	4

All schedules are set to run at the same time. When the schedules are started, Schedule 1 is assigned 4 OTLs and Schedules 2 and 3 are put into a queue waiting for an OTL assignment. For the first round of tests the OTLs are assigned as follows:

OTL #	Assigned to Schedule #	Trunk Group/Member Assignment
1	1	10/1
2	1	10/2
3	1	10/3
4	1	10/4

For the second round of tests the OTLs are assigned as follows:

OTL #	Assigned to Schedule #	Trunk Group/Member Assignment
1	1	11/1
2	1	11/2
3	2	12/1
4	3	13/1

For the third round of tests the OTLs are assigned as follows:

OTL #	Assigned to Schedule #	Trunk Group/Member Assignment
1	3	13/2
2	3	13/3
3	3	13/4
4		

After this round of tests, all schedules have been tested and the OTLs are put back into an inactive state waiting for the next test schedule to start.

Administration Commands

The following administration commands can be used to access the ATMS Trunk Test Schedule form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	test-schedule	['schedule_number'] [next]
change	test-schedule	['schedule_number']
display	test-schedule	['schedule_number']
list	test-schedule	
remove	test-schedule	['schedule_number']

* Brackets [] indicate the qualifier is optional. Single quotes (") indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form.

- **Schedule** — Display-only field shows the current schedule number.
- **Schedule Time** — Enter the hour and minute that test are to begin in 24-hour time conventions. A time of "00:00" represents midnight. This time must be greater than the current time.

- **Schedule Date** — Enter the month (1 to 12), day (1 to 31), and year on which testing will begin; default is the system date. This date must be equal to or greater than the current date.
- **Schedule Test Days (SU:, MO:, TU:, WE:, TH:, FR:, SA:)** — Enter a “y” next to the days of the week on which this schedule will run.
- **Interval** — **Enter the length** of this schedule in weeks. If this field is 0 (default), the schedule runs on the specified days **only once**.
- **OTL Throttle** — Enter the number of concurrent tests run within a schedule. This guarantees that all trunk members within a schedule are tested serially or if multiple trunk members are tested from the same schedule.
- **Test Type** — Enter one of the following types of test to be performed on the trunk group/members in this schedule:
 - full (Default) Runs the most comprehensive test and collects all associated measurements for each TTL type.
 - supv Performs a supervision test and will only confirm the presence of the test set at the far end. No measurements will be taken for this test.
 - no-st Runs the “full” test, but skips any self-test sequences. This saves about 20 seconds on the type 105 test and will not have any effect on type 100 or 102 tests.
 - no-rl Runs the “full” test, but skips any return loss sequences. This saves about 20 seconds on the type 105 test and will not have any effect on type 100 or 102 tests.
 - no-st/rl Runs the “full” test, but skips all self-test and return loss sequences. This saves about 40 seconds on the type 105 test and will not have any effect on type 100 or 102 tests.
- **Duration** — Enter the maximum number of hours (1 to 24) a schedule can remain active. Schedules continue to run until all trunk group/members for that particular schedule are tested or until the schedule duration is reached. If the duration is reached before all trunk groups/members can be tested, the schedule will stop.
- **Trk Grp** — Enter the trunk group numbers to be tested when this schedule runs. There is no limit to the number of times that a trunk group can appear on any particular schedule, or to the number of different schedules in which a trunk group can appear. Default is blank.
- **Bgn Mbr** — Enter the beginning member number of the trunk group to be tested; default is 1.
- **End Mbr** — Enter the ending member number of the trunk group to be tested. This value must be greater than or equal to the value of the beginning member field.

Screen 4-10. ATMS Trunk Test Schedule Form (Page 1 of 1)

Centralized Attendant Service

Allows services performed by attendants in a private network of switching systems to be concentrated at a central, or main, location. Each branch in a Centralized Attendant Service (CAS) has its own listed directory number (LDN) or other type of access from the public network. Incoming trunk calls to the branch, as well as attendant-seeking voice terminal calls, are routed to the centralized attendants over release link trunks (RLTs).

The only network-type form that requires implementation in support of the Centralized Attendant Service feature is the Release Link Trunk Group form. The form and its associated instructions are provided in the Trunk Groups section of this chapter.

Refer to "Centralized Attendant Service" in Chapter 3 for a complete listing of all System forms and/or fields on forms that must be completed or considered when implementing Centralized Attendant Service. Forms such as the Attendant Console, Console Parameters, Feature Access Codes, etc., that support both networking and other functional areas such as voice and data management may also require implementation,



NOTE:

The Centralized Attendant Service (branch) or Centralized Attendant Service (main) feature, as applicable, must be enabled on the System-Parameters Customer-Options form before the Centralized Attendant feature can be implemented.

CPN Prefix Table

This form is used to support the ISDN Call Identification Display feature. The feature provides a name/number display for display-equipped stations within an ISDN-PRI network. The System uses the calling party's name/number information and displays it on the called party's display, if provided. Likewise, the called party's name/number can be displayed on the calling party's display.

The ISDN-PRI option must be enabled on the System-Parameters Customer-Options form before this form can be administered.

The CPN (Calling Party Number) Prefix Table provides the following:

- Allows the calling party's number to be displayed on the called party's display and the connected party's number to be displayed at the calling party's display. The information display may be disabled for privacy reasons.
- Allows a 10-digit CPN number to be displayed instead of the calling party's number.

Administration Commands

The following administration commands can be used to access the CPN Prefix form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier
change	isdn	cpn-prefix
display	isdn	cpn-prefix

Form Instructions

Make assignments as required for the following fields on each page of the form.

Pages 1 through 8 of the Form

- **Ext Len** — Specifies the number of digits the extension can have. Enter a number from 0 to 5 that corresponds to the extension lengths allowed by the dial plan, or leave blank.
- **Ext Code** — Allows for groups of extensions to be administered. The Ext Code can be up to five digits long depending on the Ext Len field entry. The entry cannot be greater than the Ext Len field entry. For example, in the case of a 4-digit Ext Len field entry, an Ext Code of 12 is the equivalent of all extensions of the form 12XX, excluding any explicitly listed longer codes. If a code of 123 is also listed, the 12 code is equivalent of all extensions of the form 12XX except extensions of the form 123x. The coding precludes having to list all the applicable 12XX extensions. Valid entries are digits 0 through 9, "attd" for attendant, or blank.

**NOTE:**

When "0" alone is entered, the Ext Len field must be "1" and the DDD number must be 10 digits long.

- **CPN Prefix** — Specifies the number that is added to the beginning of the extension to form a 10-digit CPN number. The CPN Prefix can be a 6-to 10-digit number, or can be blank. If it is a 10-digit number, the extension number is not used to formulate the 10-digit CPN number. Only digits are allowed in the CPN Prefix column. Leading spaces, or spaces in between the digits, are not allowed.

If the number of digits in the CPN Prefix plus the extension length exceeds ten, excess leading digits of the extension are deleted when formulating the 10-digit CPN number. If the number of CPN Prefix digits plus the extension length is less than ten, the entry is disallowed except for a blank entry. If the CPN Prefix entry is left blank, no calling party number information is provided to the called party and no connected party number information is provided to the calling party.

- **Total CPN Length** — Enter the total number of digits to send. Valid entries are 0 to 15, or blank.

Page 1 of 8

CPN PREFIX TABLE							
Ext Len	Ext Code	CPN Prefix	Total CPN Length	Ext Len	Ext Code	CPN Prefix	Total CPN Length
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

Screen 4-11. CPN Prefix Table Form (Page 1 of 8)

To reduce repetition, the remaining pages of this form are not shown. For a complete set of forms, refer to the "Blank Forms Package."

Digit Absorption

This form is used to implement up to five digit absorption lists. The form may be required for each CO and FX trunk group connected to a step-by-step central office. Each outgoing digit string from the switch to the step-by-step office is treated per entries in the "Absorption Treatment Assignment" section of the form.

Administration Commands

The following administration commands can be used to access the Digit Absorption form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	digit-absorption	0-4
display	digit-absorption	0-4 [print or schedule]

* Brackets [] indicate the qualifier is optional.

Form Instructions

Make assignments as required for the following fields on the form:

- **List Number** — This is a display-only field when accessed during administration using a command such as *change* or *display*. When completing a paper form, enter a list number 0, 1, 2, 3, or 4. The list number is referenced via field entry on the associated trunk group. Up to five different Digit Absorption forms may be administered.
- **ABSORPTION TREATMENT ASSIGNMENT** — Enter a desired treatment letter (A through F); default is A. All choices for the digits 0 through 9 must be taken from the same group (Group I or Group II).

DIGIT ABSORPTION		Page 1 of 1		
List Number: _				
ABSORPTION TREATMENT INFORMATION (All selections must be from same group)				
	Choice	Meaning		
Group I.	A	Digit not absorbed.		
	B	Digit absorbed repeatedly.		
	C	Digit absorbed once with no further absorption.		
Group II.	A	Digit not absorbed.		
	D.	Digit absorbed only if it is the first digit.		
	E	Digit absorbed only if it is the second digit and the first digit was already absorbed.		
	F	Digit absorbed only if it is the first or second digit.		
ABSORPTION TREATMENT ASSIGNMENT (Select treatment (A-F) for each digit below)				
0: A	2: A	4: A	6: A	8: A
1: A	3: A	5: A	7: A	9: A

Screen 4-12. Digit Absorption Form (Page 1 of 1)

DS1 Trunk Service

The maximum number of DS1 circuit packs (TN722, TN722B, TN767, TN464B, or TN464 [any suffix]) that may be administered in the system will vary depending on system configuration. Refer to the Capacity Table in Appendix C for maximum values.

Hardware Environment

DS1 Circuit Packs Scope of Usage

Both domestic and international DS1 circuit packs are supported in G3 V2. These boards include those that provide both 24- and 32-channel operation.

Refer to Appendix B, *Application /Votes*, for a complete listing of DS1 circuit packs and country support.

DS1 Circuit Pack Usage

- The TN722 and TN722B DS1 trunks may only be used for data and voice applications in non-ISDN capacity.
- The TN767 24-channel DS1 may be used for data and voice in non-ISDN and ISDN applications.
- The TN464B DS1 trunks may be used for data and voice in non-ISDN and ISDN 32-channel applications.
- TN464C and TN464D DS1 trunks may be used for data and voice in non-ISDN and ISDN 24- and 32-channel applications.

Wideband Switching, and its associated Roll About Video feature, require the use of the TN464C (or later release) UDS1 circuit pack.

Roll About Video allows the sharing of video equipment between offices using wideband video rates. Two or more rooms are provisioned for video connectivity to the Switch but have no video equipment. A shared portable video unit is simply rolled into any of these rooms, plugged into the wall jack, and is operational.

Signaling Parameters

The following table lists some of the operational and signaling parameters for each DS1 interface. This is not a complete list of all the parameters; this is a list of ones which when grouped together make it easier to understand the DS1's capabilities and administrable choices. This table reflects the enforced combinations of these parameters.

DS1 Circuit Packs					
Board Code	Allowed Trunk Members	Bit Rate	Commanding	Signaling Mode	Trunk Type[1]
TN722	1-23 1-24	1.544	mulaw	common-chan robbed-bit	Tie, DMI-BOS, CO[2] Tie
TN722B	1-23 1-24	1.544	mulaw	common-chan robbed-bit	Tie, DMI-BOS, CO[2] CO/DID/Tie
TN767	1-23 1-24 1-23 (24th is D-chan) 1-24	1.544	mulaw	common-chan robbed-bit isdn-pri[5] isdn-ext[5]	Tie, DMI-BOS, CO[2] CO/DID/Tie ISDN ISDN
TN464B[3]	1-30 1-31 1-31	2.048	alaw/mulaw[4] alaw	CAS isdn-pri isdn-ext	CO/DID/Tie ISDN ISDN
TN464C,D	1-23 1-24	1.544	mulaw	common-chan robbed-bit	Tie, DMI-BOS, CO[2] CO/DID/Tie
	1-23 (24th is D-chan) 1-31 (16th is D-chan)	1.544[5] 2.048	alaw/mulaw	isdn-pri	ISDN
	1-24 1-31	1.544[5] 2.048	alaw/mulaw	isdn-ext	ISDN
	1-30	2.048	alaw/mulaw	CAS	CO/DID/Tie

NOTES:

- CO is any of the following trunk types: co, fx, wats.
Tie is any of the following trunk types: access, tie, tandem, rlt, aplt.
- Common-Chan DS1 boards used in CO trunk groups must have a Trunk type of "auto/..."
- The TN464B's Commanding is based upon the system level commanding administered by the user.
- ISDN-PRI calls are not guaranteed to work for the TN464B if the system's Commanding is set to mu-law.
- Mixed Mode signaling is allowed. This means that if the Signaling Mode is "isdn-ext", or "isdn-pri", a port from that circuit pack may be used in any trunk group that allows "robbed-bit" signaling.

The DS1 interface board TN767 provides 24 ports that correspond to the 24 DS0 channels. A DS1 "frame" contains 193 bits (8 bits per channel times 24 channels plus 1 frame bit). The DS1 frame rate is the same as the switch frame rate, 8,000 frames per second.

The TN722, TN722B and TN767 allow all or a subset of the following signaling options. Each signaling option is described below.

- In the "common-channel" signaling mode, 23 channels are available for voice or data, including AVD and DMI services, and signaling information for all channels is multiplexed on the 24th-channel.
- In the "robbed-bit" mode, all 24 channels may be used for voice, and the least significant bit of the eight-bit channel codes is "robbed" in every sixth frame to transmit signaling status for the corresponding channels. This is known as in-band signaling.

- In the "isdn-pri" signaling mode, each DS1 circuit pack provides a maximum of 23 trunks (channels). Trunks of either Robbed Bit signaling or ISDN-PRI can be assigned to the same span resulting in mixed signaling types. For ISDN-PRI configuration the 24th channel is always reserved as an out-of-band signaling channel.
- In the "isdn-ext" signaling mode, the board still uses ISDN signaling, but the 24th channel on the board will not be used as a D-channel, but it will be used as a B-channel (bearer channel). All trunks on this board will be signaled either using inband robbed-bit signaling, or by an ISDN D-channel on another DS1 interface.

The DS1 interface boards TN464C and TN464D provide 24 channels using the above signaling modes. The TN464B and TN464C or later release provide 32 channels using the following signaling options.

- In the "CAS" signaling mode, 30 channels are available. Channel 16 is reserved for the signaling, and channel 0 is reserved for framing; however, the user will administer from 1-30. The mapping to the correct channel will be made internally.
- In the "isdn-pri" signaling mode, each DS1 circuit pack provides a maximum of 30 trunks. For the ISDN-PRI 32-channel configuration, the 16th channel is always reserved as an out-of-band signaling channel.
- In the "isdn-ext" signaling mode, the board still uses ISDN signaling, but the 16th channel on the board will not be used as a D-channel, but it will be used as a B-channel (bearer channel). This will allow the total 31 channels to be used as B-channels. All trunks on this board will be signaled by an ISDN D-channel on another DS1 interface.

Other Circuit Packs

For ISDN capabilities the Processor Interface (PI) board is required. The PI board terminates layer 2 (LAPD) of the PRI protocol.

Administration Commands

The following administration commands can be used to access the DS1 Circuit Pack form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	ds1	[P]Css**
change	ds1	[P]Css(board)
display	ds1	[P]Css
list	measurements ds1	location
list	measurements ds1-log	location
remove	ds1	[P]Css

* Brackets [] indicate the qualifier is optional.

** [P] — part of qualifier representing pnn
C — part of qualifier representing carrier (A-F)
SS — part of qualifier representing slot number

Form Instructions

Make assignments as required for the following fields on the form:



CAUTION:

Once administered it may not be possible to make changes to fields without removing associated translations.

- **Location** — This is a display-only field when the form is accessed using an administration command such as *add* or *change*. Enter the DS1 Interface circuit pack port location when completing a paper form. Enter seven characters.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through XX (depending on circuit pack type)

The location should also be identified for record purposes on the Port Assignment Record and the Circuit Pack Administration form.

- **Name** — Enter the name of the DS1 link (limit 15 characters). Typically, this is the destination of the link.
- **Bit Rate** — Enter “1.544” for the 24-channel DS1 rate. Enter “2.048” for the 32-channel DS1 rate (TN464 only).

**NOTE:**

Once an *add ds1* operation is complete (that is, the DS1 form has been submitted) the Bit Rate field can not be changed. To change the Bit Rate, execute a *remove ds1* command followed by an *add ds1* command then readminister the DS1 form.

- **Line Coding** — Enter “b8zs” (bipolar eight zero substitution), “zcs” (zero code suppression), “hdb3” (high density bipolar 3) or “none”. This method must match the method used on the other end of the link. This entry indicates which line coding format will be used to ensure that the data meets T1 carrier requirements. When the DS1 circuit pack is used for ISDN, the ISDN D-channel data is inverted when “zcs” is entered and not inverted when “b8zs” is used.

Bipolar eight zero code suppression (b8zs) is an alternate line coding technique which uses a bipolar violation to ensure adequate “ones” density in a bit sequence. Eight zeros in an 8-bit sequence triggers the bipolar violation.

Zero code suppression (zcs) is a line coding method that checks for all zeros in an 8-bit time slot, and if all zeros exist, bit 2 is changed from a 0 to a 1. This method of line coding ensures adequate timing recovery of regenerative 56 kbps or less digital facilities.

High Density Bipolar 3 (hdb3) and “none” are only applicable when the Bit Rate field is “2.048”.

- **Line Compensation** — Enter a number from 1 to 5 as follows (default is “1”):

- For 22-gauge ABAM cable terminated on a DSX-1 cross-connect:

Compensation	Length (feet)
1	000-133
2	133-266
3	266-399
4	399-533
5	533-655

- For 22-gauge ABAM cable terminated on DS1 terminal equipment such as a D4 Channel Bank or another System:

Compensation	Length (feet)
1	0000-0266
2	0266-0532
3	0532-0798
4	0798-1066
5	1066-1310

- **Framing Mode** — Enter “d4” or “esf” (default). This mode must match the method used on the other end of the link. The network diagram should indicate which choice for the particular DS1/T1 -span. D4 is a framing format of 12 frames for analog representation on T1 carrier using DS1 signals.
- **Signaling Mode** — Enter “CAS”, “common-chan”, “robbed-bit”, “isdn-pri”, or “isdn-ext” (default is “common-chan”). This mode must match the method used on the other end of the link.

Common Channel Signaling (common-chan) is an industry-standard signaling technique in which the signals on one facility control the operation of several facilities. When applied to DS1 operation, it is a signaling technique in which any 1 of the channels carries the signals for the other channels. AT&T implementation of common channel signaling uses the last channel for carrying the signals. This signaling technique is a much broader concept than 24th channel signaling and is not limited to DS1 facilities. When the System is configured for Facility Associated Signaling, the 24th channel signaling technique uses the 24th channel in a DS1 facility to carry signals for the remaining 23 channels; also known as “clear channel”, “out-of-band”, or Alternate Voice Data (AVD) signaling.

Robbed-Bit Signaling (robbed-bit) is a per-channel signaling technique for transmitting signaling bits within each band on each of the channels in a DS1 facility. The least significant bit in every sixth transmitted information frame is “robbed” and replaced by a signaling bit. Also called “in-band” signaling. For voice tie trunks, enter “robbed-bit” and “common-chan” for alternate voice data (avd) trunks.

The choice of “isdn-pri” requires that the TN767 or TN464 (any suffix) DS1 Interface circuit pack be used. This choice will enable ISDN-PRI signaling to be carried over the last channel of the DS1 interface, and will cause the DMI-BOS field not to be displayed and the Connect field to be displayed on the form.

The choice of “isdn-ext” also requires use of the TN767 or TN464 (any Suffix) DS1 Interface circuit pack. This choice will enable the TN767 or TN464 to use ISDN signaling, but the 24th channel will not be used as a D-channel. When the System is configured for Non-Facility Associated Signaling, all channels on a DS1 facility may be used for voice and/or data. The signaling for these channels is provided by the 16th channel (for 32-channel facilities) or the 24th channel (for 24-channel facilities) on another DS1 facility. The System may be configured for Facility and Non-Facility Associated Signaling at the same time. Refer to the “Facility and Non-Facility Associated Signaling” feature in Chapter 3.

- **Interface** — Only displayed when the Connect field is “pbx”. Specify whether the PBX corresponds to the “network” or “user” side of the interface, which is needed for the ISDN-PRI Layer 2 protocol and is also used at Layer 3 to handle glare conditions. For other cases, the required entry is inferred from the Connect field entry: a “host” connection implies a “network” interface, and a “network” connection implies a “user” interface.

⇒ NOTE:

When the far end is a DEFINITY Generic 3i or Generic 3r system, the Interface field on one end of the connection must be "user" and the other end must be translated as "network".

For PRI private network protocol layer 2 operations, two other values are possible: "peer-master" and "peer-slave." Entering either of these values causes two additional fields to appear: "Peer Protocol" and "Side." Valid entries are "network," "peer-master," "peer-slave," or "user" (System default).

- **Peer Protocol** — This field is displayed if the value "peer-master" or "peer-slave" is chosen for the *Interface* field. This allows you to administer the PEER level protocol that will operate in the private network. At this time, "ecma" is the only possible value; it is the default value as well.
- **Side** — This field appears if the value "peer-master" or "peer-slave" is chosen as the *Interface* field value. The default value of the field changes depending upon which value *Peer Protocol* contains. The default "a" is paired with "peer-master" and the default "b" is paired with peer-slave. This minimizes possible misadministration that could occur. The combinations of "peer-master/a" and "peer-slave/b" are the optimal ones for layer 2 and 3 operations. The opposing combinations are not recommended.
- **Connect** — Only displayed when the Signaling Mode field is "isdn-pri". Specify what is on the far end of the PBX to control Layer 3 protocol properly. If "pbx" is entered, the Interface field is displayed. When "line-side" is entered, this implies that the Switch is acting as the network side of the isdn-pri interface. This is required to support the Roll About Video capability. Valid entries are "network" (System default), "host", "line-side", and "pbx".
- **Country Protocol** — Enter 1 to 17 to indicate the type of protocol and signaling that must be used on the line. These are determined by the country where the trunk terminates. Refer to Appendix B, *Application Notes*, for a complete listing of country codes.

⇒ NOTE:

Although defined, country codes 12 (France) and 13 (Germany) are not supported and, if entered, will cause an error message to be displayed.

- **Interconnect** — Enter "pbx" or "CO". If pbx is selected, the trunk will operate as a tie trunk. If CO is selected, the trunk will operate as a CO or DID trunk.
- **CRC** — Enter "y" to indicate that a cyclic redundancy check is to be performed on transmissions that the board receives.
- **Interface Commanding** — Enter "alaw" or "mulaw". This field is displayed only if the board is a TN464C or later.

- **Idle Code** — Enter the 8-digit string to be sent out on idle DS0 channels. The string to be entered depends upon the country where the trunk terminates. Refer to the individual country coverage in Appendix B for valid entries in this field.
- **DMI-BOS** — Only displayed when the Signaling Mode is “common-chan” and a TN722B or TN767 circuit pack has been installed. Enter “y” (default) to activate the Digital Multiplexed Interface Bit Oriented Signaling (DMI BOS) mode.

Digital Multiplexed Interface/Bit-Oriented Signaling (DMI/BOS) is a 24th channel signaling scheme using a DS1 facility that uses 23 message channels and 1 signaling channel (24th). DMI/BOS has greater capacity (ability to carry 64 kbps channels) than the 24th-channel Robbed-Bit Signaling scheme. Entering “n” indicates the DS1 will provide the AT&T proprietary format; “y” indicates the DS1/DMI interface will provide the DMI format.
- **Slip Detection** — Enter “y” to enable the slip-rate status of this circuit pack to be used by maintenance software to determine whether an excessive frame slip rate exists. Enter “n” (default) when DMI is used or when testing is not required.

⇒ NOTE:

Those DS1/T1 facilities that are used to provide the primary and secondary synchronization references should be administered for slip detection “y.” Typically, those other DS1/T1 spans that are used for data applications and which are used as synchronization service should also be administered for slip detection. This excludes all T1 -spans connecting channel banks, unless the channel bank is eternally timed. Normally, those DS1/T1 spans that are used exclusively for voice and that are not designed as the primary or secondary synchronization source, should be administered for slip detection “n”. Refer to the network synchronization diagram to determine which option to choose.

The digital switch maintains a slip count record for each DS1 interface. The slip count is used to determine if the T1 -span is experiencing errors and, if so, the severity of the errors (type alarm). Option “y” enables switching between the primary, secondary, or internal high-accuracy clock.

⇒ NOTE:

If as many as 50 percent of those spans that are administered for slip detection are experiencing slips (with respect to the primary), then a decision is made to switch to the secondary.

- **Remote Loop-Around Test** — Enter “y” to allow testing or “n” to deny testing. This test is not possible unless the DS1 is connected to appropriate equipment such as a DSX-1 cross-connect or a DMI interface. The response should be “n” (default) unless the testing is extremely important.

- **Alarm When PRI Endpoint Detached** — Displayed only when the Connect field is “line-side”. Enter “y” if the UDS1 circuit pack is connected to Roll About Video equipment. Normally if the video equipment is disconnected, off-board alarms are raised to indicate the loss of connectivity from the System. By entering “y” in this field, when the UDS1 circuit pack detects a loss of signal, it is assumed the equipment was disconnected by the user and no alarms will be raised.

Valid entries are “y” (default), and “n”.

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DS1 CIRCUIT PACK

Location: PCSS	Name:
Bit Rate: 1.544	Line Coding: zcs
Line Compensation: 1	Framing Mode: esf
Signaling Mode: common-chan	
Connect: pbx	Interface: user
Interconnect: CO	Country Protocol: 1
	Peer Protocol: ecma
	Side: a
Interface Companding: mulaw	CRC: n
Idle Code: 11111111	
DMI BOS?: y	

MAINTENANCE PARAMETERS

Slip Detection? n	Remote Loop-Around Test? n
	Alarm When PRI Endpoint Detached? _

Screen 4-13. DS1 Circuit Pack Form

Implementation Note:

The screen above shows all the DS1 fields. The fields that appear on a particular screen will vary depending upon the type of board being administered, the speed, signaling mode, and so on.

Extension Number Portability (ENP) Numbering Plan

This form is used to convert a 4- or 5-digit Uniform Dialing Plan (UDP) extension to an AAR-like 7-digit ENP number. Conversion of a 5-digit UDP extension is done by replacing the leading digit (10 thousands digit) with a 3-digit ENP code; the conversion of a 4-digit UDP extension is done by prepending a 3-digit ENP code to the UDP extension. UDP extensions are converted to ENP numbers if the dialed extension is of type "ENPNode" on the Uniform Dialing Plan form. The 3-digit ENP conversion codes are specified by ENP Numbering Plan administration. The ENP Numbering Plan specifies which 3-digit ENP code is to be used with each extension starting with the same one or two leading digits. ENP codes are different from AAR location codes because they are location-independent within the ENP subnetwork. That is, each 3-digit ENP code is administered to be home (AAR digit conversion to extension) on every node within the ENP subnetwork.

This feature allows stations to be moved across PBXs/Locations while retaining the original extension number, as long as these PBXs are part of the ENP subnetwork.

NOTE:

Only one ENP code is required for a 4-digit UDP; 5-digit UDP requires only one ENP code for each different leading digit of extensions used within the ENP subnetwork.

DCS message signaling links are not required to support ENP. As a result, many multiple switch configurations are possible with ENP. Typically, the ENP network will be a subnetwork of a UDP or ETN network.

NOTE:

The UDP field on the System-Parameters Customer-Options form and on the Dial Plan forms must be administered to "y" before ENP Numbering Plan administration is allowed. If the UDP field is not administered to "y", then enp-number-plan is not even listed as an option to the administrator; if UDP is administered to "y", then the form is available, but the command is denied if the UDP field is not also administered to "y" on the Dial Plan form.

The UDP plan length is also administered on the Dial Plan form. This plan length determines if an additional check should be made when the ENP Numbering Plan form is submitted.

All ENP codes specified in the ENP Numbering Plan should be administered as home in AAR Digit Conversion administration, but there is no automatic cross-checking to verify that ENP codes have been administered correctly in AAR.

Administration Commands

The following administration commands can be used to access the ENP Numbering Plan form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	enp-number-plan	
display	enp-number-plan	['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form.

- **ENP Code** — Assign a 3-digit code to translate each 4- or 5-digit UDP extension that is node number routed to a 7 digit, AAR-like number used for outpulsing a call within an ENP sub network. This field maps each leading digit of a UDP extension to an ENP Code or blank.

Page 1 of 1									
EXTENSION NUMBER PORTABILITY NUMBERING PLAN									
ENP Code	ENP Code	ENP Code	ENP Code	ENP Code	ENP Code	ENP Code	ENP Code	ENP Code	ENP Code
0x: —	1x: —	2x: —	3x: —	4x: —	5x: —	6x: —	7x: —	8x: —	9x: —
00: —	10: —	20: —	30: —	40: —	50: —	60: —	70: —	80: —	90: —
01: —	11: —	21: —	31: —	41: —	51: —	61: —	71: —	81: —	91: —
02: —	12: —	22: —	32: —	42: —	52: —	62: —	72: —	82: —	92: —
03: —	13: —	23: —	33: —	43: —	53: —	63: —	73: —	83: —	93: —
04: —	14: —	24: —	34: —	44: —	54: —	64: —	74: —	84: —	94: —
05: —	15: —	25: —	35: —	45: —	55: —	65: —	75: —	85: —	95: —
06: —	16: —	26: —	37: —	46: —	56: —	66: —	76: —	86: —	96: —
07: —	17: —	27: —	37: —	47: —	57: —	67: —	77: —	87: —	97: —
08: —	18: —	28: —	38: —	48: —	58: —	68: —	78: —	88: —	98: —
09: —	19: —	29: —	39: —	49: —	59: —	69: —	79: —	89: —	99: —

Screen 4-14. Extension Number Portability Numbering Plan Form (Page 1 of 1)

Fiber Link Administration

This form is used to administer Fiber Links, each of which is identified by a fiber number.

**NOTE:**

Fiber Link Administration only applies to G3r V2 configurations.

Port Cabinets (PCs) are connected via direct fiber link connections or through a Center Stage Switch (CSS) to provide the inter-port cabinet connectivity required for voice/data information transfer. The CSS is composed of "Switch Nodes" that can be interconnected in one or two levels to provide a network of up to 22 PCs. The CSS provides circuit-switched connectivity among PCs for voice and data communications as well as packet-switched connectivity. Fiber Link administration permits an administration of translation data associated with a Switch Connection (such as optical fiber, metallic cable, or DS1C boards and DS1 facility links between two endpoints). The two fiber endpoints can be:

1. An Expansion Interface (EI) board in a PC
2. A Switch Node Interface (SNI) board in a Switch Node Carrier

**NOTE:**

Only one G3-MT may administer fiber links at a time; others may display fiber link information.

Administration Commands

The following administration commands can be used to access the Fiber Link Administration form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	fiber-link	link number or ['next']
change	fiber-link	link number
display	fiber-link	link number
list	fiber-link	link number
remove	fiber-link	link number

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Port Network Connectivity (PNC) has three different reliability configurations (one for each system reliability configuration) as follows:

System Configuration	PNC
Standard Reliability	Simplex Fibers
High Reliability	Simplex Fibers to EPNs and Simplex Fibers between PPN and EPN
Critical Reliability	Duplicated Fibers

Simplex PNC

For Simplex PNC, PNC Duplication is disabled on the System-Parameters Customer-Options form and Operation of Duplication is disabled on the System-Parameters Duplication Parameters form.

Administration of PNC Duplication

The PNC Duplication feature is enabled on the System-Parameters Customer-Options form and Operation of Duplication is enabled on the System-Parameters Duplication Parameters form. When PNC Duplication is enabled on the System-Parameters Customer-Options form, the following administration forms change:

- **Cabinet Form** — Additional fields appear to allow administration of switch nodes to A-PNC and B-PNC sides of the CSS. The B-PNC is the duplicated hardware for the A-PNC. Either the A-PNC or the B-PNC can provide full customized service. B-PNC cannot be used in a simplex PNC configuration. Pairing of switch nodes is also defined here.
- **Fiber Link Form** — Additional fields appear to allow administration of fiber links on the B-PNC side of the CSS. If an endpoint on the A-PNC side is administered as an SNI, its corresponding endpoint on the B-PNC side is determined (if Switch Nodes are paired in the cabinet form prior to this administration) and displayed. However, administration of the duplicate B-PNC link will not be enforced until duplication is in full operation.
- **System-Parameters Duplication Parameters Form** — An additional field appears to enable operation of PNC duplication.

Form Instructions

Page 1 of the Form

Basic Fiber Link Administration

The following fields appear:

- **Fiber Link #** — Display-only field. From the command line, enter a 1- to 3-digit number to uniquely identify a switch connection in the system and its duplicate if appropriate.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of an SNI or EI board that is the first endpoint of the fiber link.

- **Board Type** — Display-only field that shows the type of board in Endpoint-1.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of an SNI or EI board that is the second endpoint of the fiber link.
- **Board Type** — Display-only field that shows the type of board in Endpoint-2.
- **Is one endpoint remotod via a DS1 Converter Complex** — Enter “y” to specify that a DS1 Converter complex is used to remote one endpoint. if a “y” is entered, A-PNC DS1 attributes must be administered on Page 2 of this form.

Page 1 of 1

FIBER LINK ADMINISTRATION

Fiber Link # :

ENDPOINT-1 (A-PNC) Board Location: _____ Board Type: XXX	ENDPOINT-2 (A-PNC) Board Location: _____ Board Type: XXX

Is one endpoint remotod via a DS1 Converter Complex? _

Screen 4-15. Fiber Link Form (Basic Administration)

Duplicated Fiber Link Administration

The following fields appear when Administration of PNC Duplication is enabled on the System-Parameters Customer-Options form:

- **Fiber Link #** — Display-only field. From the command line, enter a 1 - to 3-digit number to uniquely identify a switch connection in the system and its duplicate if appropriate.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of a board in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.
- **Board Type** — Display-only field that shows the type of board in Endpoint-1. The board type in Endpoint-1 (A-PNC) and Endpoint-1 (B-PNC) must be the same.

- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of a board in the second endpoint of the duplicate fiber link. Endpoint-2's duplicate along with Endpoint-1's duplicate make up the duplicate fiber link called the B-PNC link.
- **Board Type** — Display-only field that shows the type of board in Endpoint-2. The board type in Endpoint-2 (A-PNC) and Endpoint-2 (B-PNC) must be the same.
- **Is one endpoint remotored via a DS1 Converter Complex?** — Enter "y" to specify that a DS1 converter complex is used to remote one endpoint. If a "y" is entered, A-PNC and B-PNC DS1 attributes must be administered on Pages 2 and 3 (respectively) of the form.

Page 1 of 1

FIBER LINK ADMINISTRATION

Fiber Link # :

ENDPOINT-1 (A-PNC)	ENDPOINT-2 (A-PNC)
Board Location: _____ Board Type: XXX	Board Location: _____ Board Type: XXX
ENDPOINT-1 (B-PNC)	ENDPOINT-2 (B-PNC)
Board Location: _____ Board Type: XXX	Board Location: _____ Board Type: XXX
Is one endpoint remotored via a DS1 Converter Complex? _	

Screen 4-16. Fiber Link Form (Duplicated Administration)

DS1C Converter Complex Administration

The following DS1 Converter Complex fields appear on Page 2 when the Is one endpoint remotored via a DS1 Converter Complex field is "y".

- **DS1C-1 Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of the converter board connected to the first endpoint of the fiber link.
- **Facility Installed** — Enter "y" in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is physically installed. At least facility A must be installed within the converter complex.
- **Passes Far-end Clock** — Enter "y" in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is

suitable to be used as a clock source. If the DS1 signal does not come directly from the far end converter board or the network (such as when the signal is converted from digital to analog and then back to digital), enter "n".

This field determines whether the DS1 converter board can use receive DS1 signal timing to time the transmit fiber signal. This is necessary for passing timing from a master PN to a slave PN across a Converter Complex.

- **Digital Data Compatible** — Enter "y" in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is suitable for transmission of digital data. At least facility A must be suitable for transmission of digital data. If Customer Premises Equipment that alters digital data exists on this facility (such as with a channel expansion multiplexer), enter "n".
- **DS1C-1 Line Compensation** — Enter the line compensation (1 to 5) in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility connected to ENDPOINT-1 (see the following table).

The DS1 line signal is pre-equalized at the transmitter so that DS1 line pulses are the correct amplitude and shape when they reach the Network Interface. The amount of equalization necessary is determined by the distance to the Network Interface (when the endpoint supplies a DSX-1 interface) and also by the type of wiring used to connect to the Network Interface. The types of wiring allowed are 22 gauge ABAM (shielded twisted pair) cable, 24 gauge Premises Distribution System (PDS) wiring, and 26 gauge PDS wiring.

Equalizer Setting	Distance to DSX-1 Interface (feet)	
	22 AWG ABAM & 24 AWG PDS	26 AWG PDS
1	1 to 133	0 to 90
2	133 to 266	90 to 180
3	266 to 399	180 to 270
4	399 to 533	270 to 360
5	533 to 655	360 to 450



NOTE:

The line equalization setting defaults to 2 and remains in effect until changed by administration. Because incorrect equalizer settings cause a potentially higher error rate on the DS1 facility, it is necessary to provide the correct settings based on the distance to the Network interface.

- **DS1C-2 Line Compensation** — Enter the line compensation (1 to 5) in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility connected to ENDPOINT-2 (see the previous table).

The DS1 line signal is pre-equalized at the transmitter so that DS1 line pulses are the correct amplitude and shape when they reach the Network Interface. The amount of equalization necessary is determined by the distance to the Network Interface (when the endpoint supplies a DSX-1 interface) and also by the type of wiring used to connect to the Network Interface. The types of wiring allowed are 22-gauge ABAM (shielded twisted pair) cable, 24-gauge Premises Distribution System (PDS) wiring, and 26-gauge PDS wiring.

- **Line Coding** — Enter the line coding format, "zcs" (default) or "b8zs", in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility.

When ZCS line coding is used, all-zero bytes are prevented from being transmitted on the DS1 facility because a 1 is arbitrarily written into the second position of each byte. Thus, if no measures are taken to prevent it, ZCS line coding results in data corruption. The DS1C board protects the packet facility (one of up to four facilities dynamically allocated by the DS1C board) from corruption through a special escape mechanism.

When B8ZS line coding is used, it maintains DS1 facility's ones-density requirements by encoding a zero data byte into a specific unique pattern of bipolar violations on the DS1 line. The opposite end recognizes this pattern and replaces it with a zero data byte when the data is recovered at the receiving end. Note that the ESF framing mode and B8ZS line coding are the preferable modes of operation.

**NOTE:**

B8ZS line coding is presently *not* universally supported by the network. When DS1 facilities are provided by the Network, they will typically contain multiplexer. In most cases, these multiplexer will contain a bipolar violation monitor that removes bipolar violations which destroys B8ZS-encoded data. DS1 facilities must be confirmed to support B8ZS before this line coding is optioned.

- **Framing Mode** — Enter the framing format, "esf" (default) or "d4", in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility.

**NOTE:**

The D4 format is supported by the Converter boards, but because of problems inherent with this format (specifically, inability to frame on a bit stream that contains data that emulates the D4 framing pattern), its use should be discouraged.

- **DS1C-2 Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of the converter board connected to the second endpoint of the fiber link.

FIBER LINK ADMINISTRATION				
A-PNC DS1 CONVERTER (DS1C) ATTRIBUTES				
DS1C-1				
(This board should be physically connected to the board specified in ENDPOINT-1 A-PNC field in the first page.)				
Board Location: _____	DS1 CONVERTER FACILITIES			
	A	B	C	D
Facility Installed?	X	_	_	_
Passes Far-end Clock?	X	_	_	_
Digital Data Compatible?	X	_	_	_
DS1C-1 Line Compensation:	_	_	_	_
DS1C-2 Line Compensation:	_	_	_	_
Line Coding: _____				
Framing Mode: _____				
DS1C-2				
(This board should be physically connected to the board specified in ENDPOINT-2 A-PNC field in the first page.)				
Board Location: _____				

Screen 4-17. Fiber Link Form (DS1C Converter Complex Administration)

Duplicated DS1C Converter Complex Administration

Page 3 appears when the Is one endpoint remotod via a DS1 Converter Complex field is "y" and duplication is enabled.

- **DS1C-1 Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of the converter board connected to the first endpoint of the fiber link.
- **Facility Installed** -Display only field.
- **Passes Far-end Clock** — Enter "y" in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is suitable to be used as a clock source. If the DS1 signal does not come directly from the far-end converter board or the network (such as when the signal is converted from digital to analog and then back to digital), enter "n".

This field determines whether the DS1 converter board can use receive DS1 signal timing to time the transmit fiber signal. This is necessary for passing timing from a master PN to a slave PN across a Converter Complex.

- **Digital Data Compatible** — Enter “y” in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is suitable for transmission of digital data. At least facility A must be suitable for transmission of digital data. If Customer Premises Equipment that alters digital data exists on this facility (such as with a channel expansion multiplexer), enter “n”.
- **DS1C-1 Line Compensation** — Enter the line compensation (1 to 5) in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility connected to ENDPOINT-1 (see the following table).

The DS1 line signal is pre-equalized at the transmitter so that DS1 line pulses are the correct amplitude and shape when they reach the Network Interface. The amount of equalization necessary is determined by the distance to the Network Interface (when the endpoint supplies a DSX-1 interface) and also by the type of wiring used to connect to the Network Interface. The types of wiring allowed are 22-gauge ABAM (shielded twisted pair) cable, 24-gauge Premises Distribution System (PDS) wiring, and 26-gauge PDS wiring.

Equalizer Setting	Distance to DSX-1 Interface (feet)	
	22 AWG ABAM & 24 AWG PDS	26 AWG PDS
1	1 to 133	0 to 90
2	133 to 266	90 to 180
3	266 to 399	180 to 270
4	399 to 533	270 to 360
5	533 to 655	360 to 450

⇒ **NOTE:**

The line equalization setting defaults to 2 and remains in effect until changed by administration. Because incorrect equalizer settings cause a potentially higher error rate on the DS1 facility, it is necessary to provide the correct settings based on the distance to the Network interface.

- **DS1C-2 Line Compensation** — Enter the line compensation (1 to 5) in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility connected to ENDPOINT-2 (see the previous table).

The DS1 line signal is pre-equalized at the transmitter so that DS1 line pulses are the correct amplitude and shape when they reach the Network interface. The amount of equalization necessary is determined by the distance to the Network Interface (when the endpoint supplies a DSX-1 interface) and also by the type of wiring used to connect to the Network Interface. The types of wiring allowed are 22-gauge ABAM (shielded twisted pair) cable, 24-gauge Premises Distribution System (PDS) wiring, and 26-gauge PDS wiring.

- **Line Coding** — Enter the line coding format, “zcs” (default) or “b8zs”, in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility.

When ZCS line coding is used, all-zero bytes are prevented from being transmitted on the DS1 facility because a 1 is arbitrarily written into the second position of each byte. Thus, if no measures are taken to prevent it, ZCS line coding results in data corruption. The DS1C board protects the packet facility (one of up to four facilities dynamically allocated by the DS1C board) from corruption through a special escape mechanism.

When B8ZS line coding is used, it maintains DS1 facility's ones-density requirements by encoding a zero data byte into a specific unique pattern of bipolar violations on the DS1 line. The opposite end recognizes this pattern and replaces it with a zero data byte when the data is recovered at the receiving end.

⇒ NOTE:

B8ZS line coding is presently *not* supported by the network. When DS1 facilities are provided by the Network, they will typically contain multiplexer. In most cases, these multiplexer will contain a bipolar violation monitor that removes bipolar violations which destroys B8ZS-encoded data. DS1 facilities must be confirmed to support B8ZS before this line coding is optioned.

- **Framing Mode** — Enter the framing format, “esf” (default) or “d4”, in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility.

⇒ NOTE:

The D4 format is supported by the Converter boards, but because of problems inherent with this format (specifically, inability to frame on a bit stream that contains data that emulates the D4 framing pattern), its use should be discouraged.

- **DS1C-2 Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of the converter board connected to the second endpoint of the fiber link.

FIBER LINK ADMINISTRATION
B-PNC DS1 CONVERTER (DS1C) ATTRIBUTES

DS1C-1

(This board should be physically connected to the board specified in ENDPOINT-1 B-PNC field in the first page.)

Board Location: _____ DS1 CONVERTER
FACILITIES

	A	B	C	D
Facility Installed?	X	X	X	X
Passes Far-end Clock?	x	-	-	-
Digital Data Compatible?	x	-	-	-
DS1C-1 Line Compensation:	-	-	-	-
DS1C-2 Line Compensation:	-	-	-	-
Line Coding:	_____			
Framing Mode:	-	_____		

DS1C-2

(This board should be physically connected to the board specified in ENDPOINT-2 B-PNC field in the first page.)

Board Location: _____

Screen 4-18. Fiber Link Form (Duplicated DS1C Converter Complex Administration)

Hop Channel Assignments

This form is used to assign Hop Channels. The maximum number of connections that may be established between channels on the System's interface links varies depending on System configuration. Refer to the Capacity Table in Appendix C for the maximum values allowed per configuration.

Administration Commands

The following administration commands can be used to access the Hop Channel Assignment form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	communication-interface	hop-channels
display	communication-interface	hop-channels ['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Observe the following when assigning hop channels:

- The Link/Chan pair must not be assigned to a local processor channel on the Processor Channel Assignments form.
- The four associated hop channel fields must be either filled in or left blank.

Make assignments as required for the following fields on each page of the form:

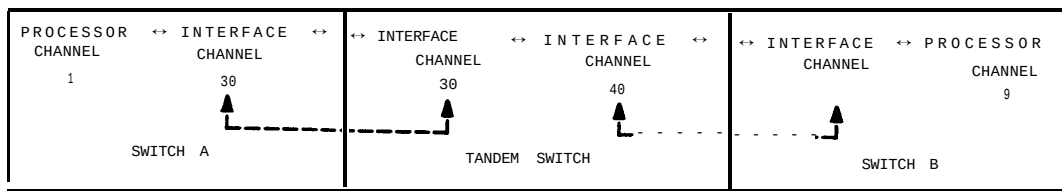
Pages 1 through X of the Form



NOTE:

This is a two-page form for G3s V2 and G3i V2 configurations and a four-page form for G3r V2 configurations.

- **Link** — Enter an interface link number in each field.
- **Chan(nel)** — This field is labeled "Channel" for G3r V2 configurations and "Chan" for G3s V2 and G3i V2 configurations. Enter a channel number in each field.
- **Priority** — Displayed for G3s V2 and G3i V2 configurations only. Enter "high" or "low" to indicate whether the hop channel has high or low priority. Priorities should be assigned based on the operational speed of the links and the number of hops in the network channel.



THE INTERFACE CHANNELS ON THE TANDEM SWITCH SHOULD MATCH THE INTERFACE CHANNELS ON SWITCHES A AND B. THE PROCESSOR CHANNELS DO NOT HAVE TO MATCH.

Figure 4-7. Interface Channel Assignments Between Switches

HOP CHANNEL ASSIGNMENT				Page 1 of 4	
Link/Channel A	Link/Channel B	Link/Channel A	Link/Channel B		
1 : — —	— —	17: — —	— —		
2 : — —	— —	18: — —	— —		
3 : — —	— —	19: — —	— —		
4 : — —	— —	20: — —	— —		
5 : — —	— —	21: — —	— —		
6 : — —	— —	22: — —	— —		
7 : — —	— —	23: — —	— —		
8 : — —	— —	24: — —	— —		
9 : — —	— —	25: — —	— —		
10 : — —	— —	26: — —	— —		
11 : — —	— —	27: — —	— —		
12 : — —	— —	28: — —	— —		
13 : — —	— —	29: — —	— —		
14 : — —	— —	30: — —	— —		
15 : — —	— —	31: — —	— —		
16 : — —	— —	32: — —	— —		

Screen 4-19. Hop Channel Assignment Form (G3r V2)

To reduce repetition, Pages 2 through 4 are not shown. For a complete set of forms, refer to the "Blank Forms Package."

[illegible]

Integrated Services Digital Network — Primary Rate Interface

This section contains the network-type forms and associated instructions required to implement the Integrated Services Digital Network (ISDN) - Primary Rate Interface (PRI) feature. See “Integrated Services Digital Network - Primary Rate Interface” in Chapter 3 for a complete listing of all forms and/or fields on forms that must be completed or considered when implementing ISDN-PRI. Forms such as the Dial Plan, Class of Restriction, and Feature-Related System Parameters that support both networking and other functional areas such as voice and data management may also require implementation.

ISDN-PRI provides end-to-end digital connectivity within the network and can provide national and international digital connectivity to other ISDNs that support the PRI standard. An ISDN-PRI trunk group can carry calls for various switched services and/or features such as MEGACOM 800 service, MEGACOM service, outwats, and long-distance service (LDS). Interexchange carrier calls may also be processed. The trunk group uses common channel signaling and integrated voice and data transmission.

ISDN-PRI supports the following (refer to each feature description in Chapter 3 for a complete listing of forms to be administered):

- Call by Call Service Selection feature
- Distributed Communications System connectivity
- Electronic Tandem Network (ETN) connectivity
- Generalized Route Selection feature
- ISDN Call Identification Display — Calling Party Number/Billing Number (CPN/BN)
- Administered Connection/Access Endpoint feature (supports administered connections over a Software Defined Data Network)
- Interworking (mixture of ISDN-PRI and non-ISDN-PRI trunking)
- Facility/Non-Facility Associated Signaling
- Wideband Switching (H0, H11, H12, and NxDS0)

The following ISDN-PRI forms are provided in this section.

- ISDN-PRI Trunk Group
- Network Facilities (supports the Call by Call Service Selection feature)
- CPN Prefix Table (used by the ISDN Call Identification Display feature)
- Signaling Group (group of B-channels for which a given D-channel or D-channel pair will carry the signaling information)

ISDN TSC Gateway Channel Assignments

This form is required when the switch is to act as a gateway between a switch that supports the Temporary Signaling Connections (TSC) feature and a non-TSC-compatible PBX. The gateway provides interface protocols necessary for communications to exist between a switch administered with Non-Call Associated TSCs in a Signaling Group on the ISDN side and a processor channel (BX.25) on the non-ISDN side. A NCA-TSC is a type of virtual connection established for exchanging user information messages on ISDN D-channels. There is no B-channel related to the connection.

Administration Commands

The following administration commands can be used to access the ISDN TSC Gateway Channel Assignments form. [In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command. You may also wish to refer to the "Signaling Group" and "Processor Channel Assignment" forms.

Action	Object	Qualifier*
change	isdn tsc-gateway	
display	isdn tsc-gateway	['print']

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on each page of the form:

- **Sig Group** — Used to indicate the Signaling Group that the NCA-TSC belongs to. Default is blank.
- **Adm'd NCA TSC Index** — Used to indicate the administered NCA-TSC that acts as one endpoint of the gateway. Default is blank.
- **Processor Channel** — Used to indicate the processor channel to which the administered NCA-TSC index will be mapped. This processor channel is used as another endpoint of the connection in this gateway assignment. The default is blank.
- **Application** — Used to indicate the feature this gateway is used for. Gateway channels can be used for DCS+ or ISDN-PRI DCS AUDIX feature. Valid entries are "audix" or "dcs"; default is blank.

Page 1 of 2									
ISDN TSC GATEWAY CHANNEL ASSIGNMENT									
Sig Group	Adm'd TSC	NCA Index	Processor Channel	Appli- cation	Sig Group	Adm'd TSC	NCA Index	Processor Channel	Appli - cation
1 :	—	—	—	—	17:	—	—	—	—
2 :	—	—	—	—	18:	—	—	—	—
3 :	—	—	—	—	19:	—	—	—	—
4 :	—	—	—	—	20:	—	—	—	—
5 :	—	—	—	—	21:	—	—	—	—
6 :	—	—	—	—	22:	—	—	—	—
7 :	—	—	—	—	23:	—	—	—	—
8 :	—	—	—	—	24:	—	—	—	—
9 :	—	—	—	—	25:	—	—	—	—
10 :	—	—	—	—	26:	—	—	—	—
11 :	—	—	—	—	27:	—	—	—	—
12 :	—	—	—	—	28:	—	—	—	—
13 :	—	—	—	—	29:	—	—	—	—
14 :	—	—	—	—	30:	—	—	—	—
15 :	—	—	—	—	31:	—	—	—	—
16 :	—	—	—	—	32:	—	—	—	—

Screen 4-21. ISDN TSC Gateway Channel Assignment Form

To reduce repetition, Page 2 of this form is not shown. For a complete set of forms, refer to the "Blank Forms Package."

Interface Links

This form is used to identify, describe, and enable Interface Links. There is one Interface Link form per System. Interface Links provide a physical interface between the System and the other nodes in a DCS, ISDN, a Message Server Adjunct, a CMS, an ISDN Gateway adjunct (supports CPN/BN), or AUDIX.

Administration Commands

The following administration commands can be used to access the Interface Links form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	communication-interface	links
display	communication-interface	links ['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

- **Link** — This is a display-only field. Indicates the interface link number that connects to another node in a DCS network, a Message Server, CMS, ISDN Gateway, or AUDIX. Interface Links always terminate on a port in a PGATE board for G3r V2 configurations or on the PI board for G3i V2 configurations.
- **Enable** — Enter "y" to enable the link. A "n" (default) suppresses any message flow over the link.
- **Est Conn** — Displayed for G3i V2 configurations only. Enter "y" if the System is responsible for any part of the call setup required for the link between the System and the far-end data module.

If the physical link is through a pair of MPDMs or MTDMs, then each switch terminating the link must set up a connection between its Processor Interface Data Module and MPDM/MTDM.

If the physical link is over a DS1 interface, it is possible (except for ISDN signaling links) for one switch to set up the entire connection (see Destination below). In this case, the other switch will not initiate any part of the connection between the two endpoints. Typically when using a DS1 interface, the Enable field will be set to "y" on both the originating and terminating switches but only one link between the two switches will have the Est Conn field set to "y". The originating switch is defined as having the Est Conn field set to "y".

If the link is to be used for ISDN signaling, enter "y".

- **X.25 Extension** — Displayed for G3r V2 configurations only. Automatically displays the extension of a previously administered X.25 data module connected to the Adjunct.
- **PI Ext** — Displayed for G3i V2 configurations only. This is the data extension assigned on the Processor Interface Data Module form. This is a display-only field. If the data module has not been administered, this field will be blank.
- **Destination Number** — Displayed for G3r V2 configurations only. To connect the Adjunct via the cable on the back of the PGATE board, enter "external".

 NOTE:

If a value other than "external" is used, the associated X.25 data module must have a baud rate of "switched".

This field can be left blank assuming the other side will call it; however, it is equivalent and preferable to put in the actual digits of the other side and set the Establish Connection field to "n". This allows you to identify which X.25 data module on the remote switch is expected to call this data module.

- **Prot** — Displayed for G3i V2 configurations only. Enter the protocol type that is to be established on the link. Valid entries are "bx.25", and "isdn". Default is "bx.25".
- **Establish Connection** — Displayed for G3r V2 configurations only. This field is displayed when a string of digits is entered in the Destination Number field. Enter "y" if the System is responsible for any part of the call setup required for the link between the System and the far-end data module.
- **Destination** — Displayed for G3i V2 configurations only. Leave blank if the System is not involved in establishing any part of the connection (may not be a VDN extension).

For BX.25 links [allowable entries are extension number, TAC (for DS1 data link), or "eia" (link 1 only)]:

 NOTE:

An "eia" entry is valid only for Simplex systems.

- ▶ Enter the extension number in the Digits field that is used to set up a connection or part of a connection between the local and far-end data modules for the link.
- ▶ If the BX.25 link is through a pair of PDMs or TDMs, then the extension of the PDM/TDM is used as the destination address.
- ▶ If the BX.25 link is through a DS1 interface and the local switch is establishing the connection, enter the TAC if the far-end trunk group is administered with an incoming destination (for example, the far-end data module extension). Otherwise, enter the TAC followed by the far-end data module extension.

For ISDN-PRI links:

- Enter the DS1 circuit pack address that has been previously administered as using ISDN signaling in the Brd field.

If the last channel on the DS1 circuit pack is used for Facility Associated Signaling, it cannot be administered as a member of the trunk group. A DS1 circuit pack address can only appear once as a destination address on the form. Allowable entries are the 5-character DS1 circuit pack location. The first character identifies the network (1 through 3, default is "1" if no entry); the second character identifies the carrier (A through E); the third and fourth characters identify the slot number in the carrier (01 through 20 for multi-carrier cabinets depending on carrier type or 01 through 18 for single-carrier cabinets depending on cabinet type).

- **Connected Data Module** — Displayed for G3r V2 configurations only.
- **DTE/DCE** — Displayed for G3i V2 configurations only. Enter "DTE" or "DCE" to define the type of interface. This field is only administrable if the Prot field is "bx.25." If one endpoint of a link is DTE, then the other must be DCE, and vice versa. The assignments must be coordinated on a network-wide level. Endpoint Switch Links are generally DTE and Tandem links are generally DCE. If both endpoints are of the same type (that is, endpoints or tandem), then the assignment of which is DTE and which is DCE is arbitrary. Typically, when using a DS1 interface, the originating switch should be administered as "DTE" and the terminating switch as "DCE." Default is DTE.
- **Identification** — Enter a 15-character name for the link. It is used for identification purposes only. It may be used to identify the destination machine or the field may be left blank.
- **Link 1 [eia] - Connected to** — Displayed only when "eia" is entered in the Destination field and applies only to Link 1. This field defines the physical characteristics of the device connected to the eia port and only refers to the physical layer of the protocol (which lines send and receive data, and so on) and not to the link layer which is controlled by the DTE/DCE field. Valid entries are "dte" and "dce" (default).
- **Clocking** — Displayed only when "eia" is entered in the Destination field and applies only to Link 1. This field sets the clocking for the physical layer of the protocol. Entering "internal" states the clocking is provided by the eia port, and "external" (default) states that clocking is provided by the other end of the link. One end of the link should be set to "internal" and the other end should be set to "external".

Page 1 of 1

INTERFACE LINKS								
Link	Enable	Est Conn	PI Ext	Prot	Destination		DTE/ DCE	Identification
					Digits	Brd		
1:	—	—	_____	_____	_____	_____	_____	_____
2:	-	—	_____	_____	_____	_____	_____	_____
3:	-	—	_____	_____	_____	_____	_____	_____
4:	—	—	_____	_____	_____	_____	_____	_____
5:	—	—	_____	_____	_____	_____	_____	_____
6:	-	—	_____	_____	_____	_____	_____	_____
7:	-	—	_____	_____	_____	_____	_____	_____
8:	-	—	_____	_____	_____	_____	_____	_____

Link 1 [eia] - Connected to : _ Clocking : _____

Screen 4-22. Interface Links Form (G3i V2)—Example Only**Implementation Note:**

The Connected to and Clocking fields are only displayed when “eia” is entered in the Destination field.

Page 1 of 1

INTERFACE LINKS						
Link	Enabled	X.25 Extension	Destination Number	Establish Connection	Connected Data Module	Identification
1:	—	_____	_____	—	_____	_____
2:	—	_____	_____	—	_____	_____
3:	—	_____	_____	—	_____	_____
4:	—	_____	_____	—	_____	_____
5:	—	_____	_____	—	_____	_____
6:	—	_____	_____	—	_____	_____
7:	—	_____	_____	—	_____	_____
8:	—	_____	_____	—	_____	_____
9:	—	_____	_____	—	_____	_____
10:	—	_____	_____	—	_____	_____
11:	—	_____	_____	—	_____	_____
12:	—	_____	_____	—	_____	_____
13:	—	_____	_____	—	_____	_____
14:	—	_____	_____	—	_____	_____
15:	—	_____	_____	—	_____	_____
16:	—	_____	_____	—	_____	_____

Screen 4-23. Interface Links Form (G3r V2)— Example Only**Implementation Note:**

The Establish Connection field is only displayed when a string of digits is entered in the Destination Number field.

Network Facilities

This display-only form of the Network Facilities Services/Features supports the Call by Call Service Selection feature for ISDN-PRI trunks. All administration on this form is performed by the Technical Support Center (TSC).

Administration Commands

NOTE:

The Network Facilities form is not available for G3s V2 ABP configurations.

The following administration commands can be used to access the Network Facilities form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

NOTE:

The *change* command is only available for services personnel via entry of an appropriate login and password.

Action	Object	Qualifier*
change	isdn network-facilities	
display	isdn network-facilities	['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

The Network Facilities form consists of the Predefine Services/Features listed in Table 4-4, as well as 12 additional fields for new Services/Features.

Table 4-4. Predefine Services/Features — Network Facilities

Administration Mnemonic	Description
accunet	ACCUNET Switched Digital Service — part of ACI (AT&T Communications ISDN) phase 2.
i800	international 800 Service — allows a subscriber to receive international calls without a charge to the call originating party.
inwats	INWATS — provides OUTWATS-like pricing and service for incoming calls.
lds	Long-Distance Service — part of ACI (AT&T Communications ISDN) phase 2.
outwats-bnd	OUTWATS Band-WATS— is a voice-grade service providing both voice and low speed data transmission capabilities from the user's location to defined service areas commonly referred to as bands. Currently, the widest band is 5.
megacom	MEGACOM service — an AT&T communications service that provides unhandled longdistance services using special access (PBX to 4 ESS switch) from an AT&T communications node.
megacom-800	MEGACOM 800 service — an AT&T communications service that provides unhandled 800 service using special access (4 ESS switch to PBX) from an AT&T communications node.
multiquest	AT&T MULTIQUEST Telecommunications Service — dial 700 service. A terminating users service supporting interactive voice service between callers at switched access locations and service providers directly connected to the AT&T Switched Network (ASN).
operator	Network Operator — provides access to the network operator.
sdn	Software Defined Network (SDN) — an AT&T communications offering that provides a virtual public network using the public switched network. SDN can carry voice and data between customer locations as well as off-net locations.
sddn	Software Defined Data Network — provides a virtual private line connectivity via the AT&T switched network (4 ESS switch). Services include voice, data, and video applications. These services complement the SDN service.
sub-operator	Presubscribed Common Carrier Operator— provides access to the presubscribed common carrier operator.
wats-max-bnd	Maximum Banded Wats — a WATS-like offering for which a user's calls are billed at the highest WATS band subscribed to by the user.

⇒ NOTE:

ISDN-PRI must be enabled on the System-Parameters Customer-Options form before associated fields on forms may be administered.

Form Instructions

Make assignments as required for the following fields:

- **Name** — Contains up to 15 alphanumeric characters to specify the name of the indicated Service/Feature.
- **Facility Type** — A “0” indicates that the associated entry is a feature, and a “1” indicates the associated entry is a service.
- **Facility Coding** — Contains five binary values that specify the ISDN-PRI encoding value of the associated Service/Feature.

The additional Services/Features area on the form is available for new services and features.

Page 1 of 1

NETWORK-FACILITIES

Predefined Services/Features					
Name	Type	Coding	Name	Type	Coding
sub-operator	0	00110	mega800	1	00010
operator	0	00101	megacom	1	00011
outwats-bnd	1	00001	inwats	1	00100
sdn	1	00001	wats-max-bnd	1	00101
accunet	1	00110	lds	1	00111
i800	1	01000	multiquest	1	10000

Additional Services/Features					
Name	Type	Coding	Name	Type	Coding
_____	-	_____	_____	-	-
_____	-	_____	_____	-	-
_____	-	_____	_____	-	-
_____	-	_____	_____	-	-
_____	-	_____	_____	-	-
_____	-	_____	_____	-	-

Screen 4-24. Network Facilities Form

Packet Gateway (PGATE) Board

The following form is used to administer the Packet Gateway (PGATE) board.



NOTE:

The PGATE form is only displayed for G3r V2 configurations.

Administration Commands

The following administration commands can be used to access the PGATE form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	pgate	Enter the board cabinet, carrier, and slot:
change	pgate	Enter the board cabinet, carrier, and slot.
display	pgate	Enter the board cabinet, carrier, and slot.
remove	pgate	Enter the board cabinet, carrier, and slot.

Form Instructions

Make assignments as required for the following fields on the form:

Page 1 of the Form

- **Board Location** — Enter five characters. The first two represent the cabinet (01 to 22). The third represents the carrier (A through E). The fourth and fifth are the slot numbers within the carrier (01 to 20 for medium cabinets, 01 to 18 for XE cabinets).
- **Name** — Enter up to 15 alphanumeric characters as the name of the adjunct with which the PGATE board communicates.
- **Application** — A display-only field indicating that the communications protocol used to transmit messages over the PGATE is "X.25".
- **External Cable Type** — A display-only field indicating that "rs232" is the type of physical interface being used between the PGATE port and the adjunct.
- **Port Configuration** — A display-only field indicating that the port is configured for "rs232" communication.

PACKET GATEWAY BOARD		Page 1 of 1
Board Location: _____	Name: _____	
Application: X.25		
External cable type: rs232		
Port configuration: 1) rs232 2) rs232 3) rs232 4) rs232		

Screen 4-25. Packet Gateway Board Form

Processor Channel Assignment for G3r V2 Installations

This form is used to assign Processor Channels to the System's interface links and hop channels for G3r V2 configurations.

Administration Commands

The following administration commands can be used to access the Processor Channel Assignment form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	communication-interface	processor channels
display	communication-interface	processor channels ['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Pages 1 to 8 of the Form

- **Proc Chan** — This field is display-only and indicates each of the processor channels.
- **Application** — Enter the type of application that connects to this processor channel. Valid entries are noted in the Application Entry column in Table 4-5.

Table 4-5. G3r V2 Processor Channel Applications

Application Entry	Processor Description
audix	AUDIX
cpn/bn	CPN/BN (ISDN Gateway)
dcs	DCS
gateway	ISDN Over PRI D-channel Gateway
mis	CMS
msaamwl	MSA Automatic Message Waiting Lamp
msack	Switch/MSA Clock Synchronization
msahlwc	MSA High Priority Leave Word Calling
msallwc	MSA Low Priority Leave Word Calling
msamcs	MSA Message Center Service

- **Interface Link** — Enter the interface link (1 to 16) to connect the processor channel to.
- **Interface Chan** — This field, together with the Interface Link field, identifies the link/channel pair that is associated with the local processor channel. Enter a number from 1 to 64 to identify the interface channel that is associated with the local processor channel. The Interface Link/Channel association establishes a network channel to the remote machine. (This field and the Interface Chan field must be assigned as a pair or both left blank).

**NOTE:**

Once a Link/Channel Pair is assigned on the Processor Channel Assignments form, the pair cannot be assigned on the Hop Channel Assignments form (see "Hop Channel Assignments" elsewhere in this chapter).

- **Local Port** — The port (1 to 64) on which this PBX expects the connection to be established.
- **Remote Port** — The port (1 to 64) on which the far end expects the connection to be established.

For a far end, this Remote Port entry should match the far end's Local Port entry. Generally, the local and remote port values are administrable on both ends of the connection, and it is required that the local port (administered on one end) match the remote port (administered on the other). The terms "local port" and "remote port" are called different things on different switches and adjuncts, so care must be taken to make sure the correct numbers match. (For example, the terminology "remote processor channel" on the G3i switch is equivalent to "remote port" on the G2 switch.) In addition, the "logical channel" (sometimes called the "interface channel") must be the same at both ends of the connection.

For each application, the following table shows the expected "Application Field" value, and what values on the far end must be matched with the values on the local machine for remote port, local port, and logical channel. The specifications in the table are those used on the far end adjunct or switch. For example:

- On other switches and the AUDIX adjunct the logical channel and local and remote port values are administrable, so whatever values are administered on the far-end must be matched appropriately (see table) on the local switch.
- For CMS and the ISDN Gateway (CPN/BN) adjuncts, the logical channel is administrable through the X.25 package administration. The local port and remote port can be administered via the application (for example, CMS or ISDN Gateway) package.
- On the 3B2 messaging server adjunct (MSA) five processor channels (for each of the five different "msa" application types) must be administered. The logical channel and remote port are dictated by the application field. Only the message server number is administrable (to indicate which of the 7 possible message servers this is) on the MSA itself. The local port depends upon the MSA number (to indicate the port the MSA will direct the connection to). The values shown in the next table are for MSAs numbered 1 through 7, respectively.

Application	Application Field Value	Logical Channel Value	Local Port Value	Remote Port Value
System 75	dcs	IF chan. no.	remote proc. chan. no.	proc. chan. no.
Definity G1	dcs	IF chan. no.	remote proc. chan. no.	proc. chan. no.
Definity G3i	dcs	IF chan. no.	remote proc. chan. no.	proc. chan. no.
System 85	dcs	IF chan. no.	remote port no.	local port no.
Definity G2	dcs	IF chan. no.	remote port no.	local port no.
Definity G3r	dcs	IF chan. no.	remote port no.	local port no.
AUDIX	audix	logical chan. no.	switch port no.	audix port no.
CMS	mis	logical chan. no.	remote port no.	local port no.
ISDN Gateway	cpn/bn	logical chan. no.	remote port no.	local port no.
MSA	msamcs	1	1,10,15,30,38,46,54	1
MSA	msahlwc	2	2,11,16,31,39,47,55	2
MSA	msallwc	3	3,12,17,32,40,48,56	3
MSA	msaamwl	4	4,13,18,33,41,49,57	4
MSA	msaclk	8	8,9,14,19,37,45,53	8

- Adjunct Name — The AUDIX or MSA Application chooses which Adjunct this processor channel is communicating with (names are from the Adjunct Names form).

- **Machine-ID** — Enter the Machine ID number (1 to 99, or blank) associated with the port if the Application field is “dcs”, “audix”, or “cpn/bn”. When supporting AUDIX, the Machine ID must agree with the AUDIX field entry on the AUDIX System Translations — Switch-Connection form (part of AUDIX translations). Typically, with just one AUDIX, this entry is “1”.

PROCESSOR CHANNEL ASSIGNMENT							Page 1 of 8
Proc Chan	Application	Interface Link	Chan	Local Port	Remote Port	Adjunct Name	Machine-ID
1:	_____	—	—	—	—	_____	—
2:	_____	—	—	—	—	_____	—
3:	_____	—	—	—	—	_____	—
4:	_____	—	—	—	—	_____	—
5:	_____	—	—	—	—	_____	—
6:	_____	—	—	—	—	_____	—
7:	_____	—	—	—	—	_____	—
8:	_____	—	—	—	—	_____	—
9:	_____	—	—	—	—	_____	—
10:	_____	—	—	—	—	_____	—
11:	_____	—	—	—	—	_____	—
12:	_____	—	—	—	—	_____	—
13:	_____	—	—	—	—	_____	—
14:	_____	—	—	—	—	_____	—
15:	_____	—	—	—	—	_____	—
16:	_____	—	—	—	—	_____	—

Screen 4-26. G3r V2 Processor Channel Assignment Form (Page 1 of 8)

To reduce repetition, Pages 2 through 8 of this form are not shown. For a complete set of forms, refer to the “Blank Forms Package.”

Processor Channel Assignment for G3i V2 Installations

Used to assign Processor Channels to the System's interface links for G3i V2 configurations.

Administration Commands

The following administration commands can be used to access the Processor Channel Assignment form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	communication-interface	processor channels
display	communication-interface	processor channels ['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Pages 1 through 4 of the Form

- **Proc Chan** — This field is display-only and indicates each of the 64 processor channels.
- **Appl.** — Enter the type of application that connects to this processor channel. Valid entries are noted in the Entry column in the "Processor Channel Applications" table that follows.



NOTE:

MSA applications, if administered, must be assigned to fixed processor and remote processor (MSA) channels (1, 2, 3, 4, and 8, respectively) as shown on the table. Therefore, it is recommended that channels 1, 2, 3, 4, and 8 be reserved for Messaging Server Adjunct (MSA) connectivity since the MSA uses fixed channel numbers.

Channel 10 should be reserved for MIS and Channel 59 for AUDIX.

When the Management Information System (MIS) adjunct processor is a Messaging Server Adjunct, the Appl field must be "msamis". For MIS 3B adjunct processors, the Appl field is set to "mis".

If the Appl field is administered as "isdn", then no other channels may use the interface link specified for this processor channel. A link used for ISDN-PRI cannot be multiplexed to provide other applications.

When "OCM" is used, the associated interface link may be used to interface either an Outbound Call Management (OCM) adjunct or and ISDN Gateway adjunct (supports CPN/BN applications) but not both.

If a processor channel is not assigned, leave this field blank.

Table 4-6. G3i V2 Processor Channel Applications

Appl. Entry	Processor Description	Channel	Priority
audix	AUDIX	59	high (h)
dcs	DCS	-	high (h)
isdn	ISDN-PRI	-	high
mis	MIS	10	low (l)
msaamwl	MSA Automatic Message Waiting Lamp	4	low (l)
msack	Switch/MSA Clock Synchronization	8	high (h)
msahlwc	MSA High Priority Leave Word Calling	2	high (h)
msallwc	MSA Low Priority Leave Word Calling	3	low (l)
msamcs	MSA Message Center Service	1	high (h)
msamis	MSA/MIS	-	low (l)
OCM	Outbound Call Management	-	high

- **Interface Link** — Enter a number from 1 to 8 for multi-carrier cabinets (1 to 4 for single-carrier cabinets) to identify the interface link/channel pair used to establish a connection to the remote machine. (This field and the Interface Chan field must be assigned as a pair or both left blank except when the Appl field is "isdn".) This is the link number assigned on the Processor Interface Data Module form.
 - **Interface Chan** — This field, together with the Interface Link field, identifies the link/channel pair that is associated with the local processor channel. Enter a number from 1 through 64 to identify the interface channel that is associated with the local processor channel. The Interface Link/Channel association establishes a network channel to the remote machine. (This field and the Interface Chan field must be assigned as a pair or both left blank except when the Appl field is "isdn".)
- Once a Link/Channel Pair is assigned on the Processor Channel Assignments form, the pair cannot be assigned on the Hop Channel Assignments form (see "Hop Channel Assignments" in this chapter).
- **Priority** — Enter "h" (high) or "l" (low) to indicate the priority of this processor channel. High-priority channels have precedence over the low-priority channels. Assignments should be made based on the operational speed of the links and the number of hops in the network channel. Enter the appropriate priority (as per the "Processor Channel Applications" table).

- **Remote Proc Chan** — Cannot be assigned when the Appl field is “isdn”. Enter the processor channel number (1 through 64) of the remote switch that connects to the local processor channel.
- **Machine-ID** — Enter the Machine ID number associated with the port if the Appl field is “dcs”, “audix”, or “ocm”; otherwise, leave this field blank. Machine-IDs are administered as part of the Uniform Dial Plan (UDP). Valid entries are 1 through 99 or leave blank. When supporting AUDIX, the Machine ID must agree with the AUDIX field entry on the AUDIX Data Link form (part of AUDIX translations). Typically, with just one AUDIX, this entry is “1”.

Page 1 of 4

PROCESSOR CHANNEL ASSIGNMENT						
Proc Chan	Appl.	Interface Link Chan	Priority	Remote Proc Chan	Machine-ID	
1:	_____	- -	_____	_____	_____	_____
2:	_____	- -	_____	_____	_____	_____
3:	_____	- -	_____	_____	_____	_____
4:	_____	- -	_____	_____	_____	_____
5:	_____	- -	_____	_____	_____	_____
6:	_____	- -	_____	_____	_____	_____
7:	_____	- -	_____	_____	_____	_____
8:	_____	- -	_____	_____	_____	_____
9:	_____	- -	_____	_____	_____	_____
10:	_____	- -	_____	_____	_____	_____
11:	_____	- -	_____	_____	_____	_____
12:	_____	- -	_____	_____	_____	_____
13:	_____	- -	_____	_____	_____	_____
14:	_____	- -	_____	_____	_____	_____
15:	_____	- -	_____	_____	_____	_____
16:	_____	- -	_____	_____	_____	_____

Screen 4-27. G3i V2 Processor Channel Assignment Form (page 1 of 4)

To reduce repetition, Pages 2 through 4 of this form are not shown. For a complete set of forms, refer to the “Blank Forms Package.”

Signaling Group

This form is used to identify groups of ISDN DS1 interface B-channels for which a given D-channel or D-channel pair will carry associated signaling information. The Non-Facility Associated Signaling (NFAS) feature allows a D-channel to convey signaling information for B-channels that are located on DS1 facilities other than the one containing the D-channel. With NFAS, a signaling group does not necessarily correspond to a single DS1 interface. The Signaling Group form is administered to show how B-channels and D-channels are related.

The Signaling Group form also supports the Facility Associated Signaling feature. The form is used to establish the fact that a D-channel will carry signaling information for all B-channels on its associated DS1 interface and for no others.

In addition, the form is used to administer Temporary Signaling Connections (TSC) used in support of DCS Over ISDN-PRI D-channel (includes ISDN-PRI D-channel DCS AUDIX).

Administration Commands

The following administration commands can be used to access the Signaling Group form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	signaling-group	1-MAX or 'next'
change	signaling-group	1-MAX
display	signaling-group	1-MAX ['print' or 'schedule']
list	signaling-group	1-MAX ['print' or 'schedule']
remove	signaling-group	1-MAX

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

- **Group Number** — Display-only field when the form is accessed using an administration command such as *display* or *change*. Enter a group number when completing a paper form.
- **Associated Signaling** — Enter "y" (default) to indicate Facility Associated Signaling (FAS) or "n" to indicate Non-Facility Associated Signaling. (As stated earlier, for FAS the D-channel can only carry signaling information for B-channels located on the same DS1 circuit pack).

- **Primary D-channel** — Enter a 6- to 7-character port number associated with the DS1 Interface circuit pack port:

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Port	16 or 24

The port number is used to assign the primary D-channel in the Signaling Group. For 24-channel facilities, the 24th port is assigned as the D-channel. For 32-channel facilities, the 16th port is assigned as the D-channel. Default is blank.

- **Secondary D-channel** — Displayed when Associated Signaling is “n” (indicates NFAS). Enter a 6- to 7-character port number associated with the DS1 Interface circuit pack port used for secondary D-channel signaling:

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Port	16 or 24

The port number is used to assign the secondary D-channel in the Signaling Group. For 24-channel facilities, the 24th port is assigned as the D-channel. For 32-channel facilities, the 16th port is assigned as the D-channel. Default is blank.

- **Max Number of NCA TSC** — The maximum number of simultaneous Non-Call Associated Temporary Signaling Connections (NCA-TSCs) that can exist in the Signaling Group. This number includes all NCA-TSCs that are administered on this form and those NCA-TSCs that tandem through the switch in-route to another switch in the network. Refer to the Capacity Table in Appendix C for maximum values allowed for each System configuration. Default is 0.
- **Max number of CA TSC** — The maximum number of simultaneous Call Associated Temporary Signaling Connections (CA-TSCs) that can exist in the Signaling Group. Typically, the number of ISDN-PRI trunk group members controlled by the Signaling Group. Default is 0.

- **Trunk Group For NCA TSC** — The ISDN-PRI trunk group number whose incoming call handling table will be used to handle incoming NCA-TSCs through the signaling group. Enter the assigned ISDN-PRI trunk group number whose call handling table will be used to route the incoming NCA TSCs. Default is blank.
- **Trunk Group for Channel Selection** — Enter the assigned trunk group number. Default is blank.
- **Trunk Brd** — Displayed when Associated Signaling is “n” (indicates NFAS). Enter a 5-character DS1 Interface circuit pack number that has trunk members belonging to this Signaling Group:

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20

Default is blank.

- **Interface ID** — Displayed when Associated Signaling is “n” (indicates NFAS). Enter an interface ID for the corresponding DS1 Interface circuit pack. In an NFAS Signaling Group, an Interface ID must be assigned to each DS1 facility so that it can be referenced by both interfacing switches. When a call is established between switches, the Interface ID at each end is used to determine which B-channel is to be used to establish the call. The Interface ID numbers on both ends must be the same.

Pages 2 through 5 of the Form

- **Service/Feature** — The service type for all administered NCA-TSCs assigned in this Signaling Group. Valid entries are: “accunet”, “i800”, “inwats”, “lds”, “mega800”, “megacom”, “multiquest”, “nca-tsc”, “operator”, “sdn”, “sub-operator”, “wats-max-bnd”, and [user-defined services]. Default is blank.
- **As-needed Inactivity Time-out (min)** — The inactivity time-out for as-needed NCA-TSCs assigned in the Signaling Group. An as-needed administered NCA-TSC staying inactive in this time period will be removed from service. Default is blank.
- **TSC Index** — Display-only field. Specifies the administered NCA-TSCs assigned. The administered NCA TSC index represents one DCS or DCS AUDIX logical channel connecting any two PBXs. The Index number ranges from 1 to 64.
- **Local Ext** — Used to assign an extension on the switch to the administered NCA-TSC. Enter an unassigned extension number.

⇒ NOTE:

The extension cannot be previously assigned to another administered NCA-TSC, station, or data module, and so on.

- **Enabled** — Enter “y” to enable the administered NCA-TSC.
- **Establish** — Used to indicate the strategy for establishing this administered NCA-TSC. An entry of “permanent” means that the administered NCA-TSC can be established by either the near end or the far end. An entry of “as-needed” means the administered NCA-TSC will be established the first time the administered NCA-TSC is needed. It can be set up either by the near end or far end switch. Valid entries are “permanent” and “as-needed”. Default is blank.
- **Dest. Digits** — Used to route the administered NCA-TSC to the far end switch. Valid entries are digits 0 through 9 and the “+”, “*”, and “#” special characters, and can include up to 15 digits. Default is blank.

⇒ NOTE:

These digits are sent as entered to the far end; no routing or other digit manipulation is performed.

- **Appl.** — Specifies the application this administered NCA-TSC is going to be used for. Valid entries are “audix”, “dcs”, and “gateway”. The “audix” entry is used for ISDN-PRI D-channel DCS AUDIX feature. The “dcs” entry is used for the DCS Over ISDN-PRI D-channel feature. The “gateway” entry is used when the administered NCA-TSC will be used as one end in the gateway channel connecting to a BX.25 link. If “gateway” is entered, then the ISDN TSC Gateway Channel Assignments form must be completed. Default is blank.
- **Adjunct Name** — Only displayed for G3r V2 configurations. Displayed when the Appl. field is “audix”. Enter the name of the AUDIX as it appears on the “Adjunct Names” form.
- **Machine ID** — Used to indicate the far end PBX or the AUDIX machine this administered NCA-TSC is to be connected to. Default is blank.

SIGNALING GROUP				Page 1 of 5
Group Number : _	Associated Signaling? n	Max number of NCA TSC: _		
	Primary D-Channel: _____	Max number of CA TSC: _		
	Secondary D-Channel: _____	Trunk Group for NCA TSC: _		
Trunk Group for Channel Selection: _				
Trunk Brd	Interface ID	Trunk Brd	:Interface ID	
1: _____	-	11: _____	_____	
2: _____	-	12: _____	_____	
3: _____	-	13: _____	_____	
4: _____	-	14: _____	_____	
5: _____	-	15: _____	_____	
6: _____	-	16: _____	_____	
7: _____	-	17: _____	_____	
8: _____	-	18: _____	_____	
9: _____	-	19: _____	_____	
10: _____	-	20: _____	_____	

Screen 4-28. Signaling Group Form (Page 1 of 5)**Implementation Note:**

The Secondary D-channel, Trunk Brd, and Interface ID fields are only displayed if the Associated Signaling field is "n" (indicates NFAS).

ADMINISTERED NCA TSC ASSIGNMENT							Page 2 of 5	
Service/Feature: _____				As-needed Inactivity Time-out min): _				
TSC	Local						Adj.	Mach.
Index	Ext.	Enabled	Established	Dest.	Digits	Appl.	Name	ID
1:	_____	-	_____	_____	_____	_____	_____	-
2:	_____	_____	_____	_____	_____	_____	_____	-
3:	_____	-	_____	_____	_____	_____	_____	-
4:	_____	-	_____	_____	_____	_____	_____	-
5:	_____	-	_____	_____	_____	_____	_____	-
6:	_____	-	_____	_____	_____	_____	_____	-
7:	_____	-	_____	_____	_____	_____	_____	-
8:	_____	-	_____	_____	_____	_____	_____	-
9:	_____	-	_____	_____	_____	_____	_____	-
10:	_____	-	_____	_____	_____	_____	_____	-
11:	_____	_____	_____	_____	_____	_____	_____	-
12:	_____	-	_____	_____	_____	_____	_____	-
13:	_____	-	_____	_____	_____	_____	_____	-
14:	_____	-	_____	_____	_____	_____	_____	-
15:	_____	-	_____	_____	_____	_____	_____	-
16:	_____	-	_____	_____	_____	_____	_____	-

Screen 4-29. Signaling Group Form (Page 2 of 5)

Implementation Note:

To reduce repetition, Pages 3 through 5 of this form are not shown. For a complete set of forms, refer to the "Blank Forms Package."

The Adj Name field applies only to G3r V2 configurations and is displayed when the Appl field is "audix".

Synchronization Plan

Used to assign primary and secondary external synchronization sources. This provides synchronization between the switch and digital facilities that the switch is connected to. When the switch is connected to digital facilities, the switch (both Processor Cabinets and Expansion Cabinets) must be synchronized to the incoming data rate of 8,000 frames per second. This timing information reference may be derived from DS1 facilities or from a Stratum 3 external clock. Loss of the reference signal, excessive phase changes, and variation in timing frequency can cause loss of data or dropped data connections. When no external digital facilities, including Stratum 3 external clocks, are present or when a switch is the "master" node of a network providing timing to the rest of the network, the timing can come from an oscillator on the switch's tone/clock circuit pack.

⇒ NOTE:

The Synchronization Plan may not be required for some digital connections. The switch's internal clock may suffice.

Administration Commands

The following administration commands can be used to access the Synchronization Plan form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	synchronization	—
display	synchronization	['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Stratum** — Enter the stratum level to be used for synchronization. Valid entries are "3" or "4" (default).

⇒ NOTE:

Stratum 3 capability is only possible when using a TN780 Tone Clock circuit pack.

- **Port Network** — Displayed when the Stratum field is "3". This is a display-only field.

- **Primary** — Only displayed when the Stratum field entry is “4”. Note that the Primary and Secondary synchronization sources (DS1 facilities) must be on the same Port Cabinet (that is, PPN, EPN1, or EPN3). Enter a 4- or 5-character DS1 circuit pack location number for the DS1 circuit pack that will function as the primary synchronization source.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20

A blank entry means no external source. The clock circuit packs internal source is the implicit last choice. Only one switch in the network can function as the primary synchronization source.

- **Secondary** — Only displayed when the Stratum field entry is “4”. Note that the Primary and Secondary synchronization sources (DS1 facilities) must be on the same Port Cabinet (that is, PPN, EPN1, or EPN3). Enter a 4- or 5-character DS1 circuit pack location number for the DS1 circuit pack that will function as a secondary synchronization source.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20

The system will automatically select the secondary circuit pack if the primary circuit has a failure.

Pages 1 through X of the Form

NOTE:

This is a two-page form for G3i V2 configurations and a six-page form for G3r V2 configurations.

- **Location/Name/Slip** — Only displayed if the Stratum field entry is “4”. Identifies the location, name, and slip detection parameter for each DS1 circuit pack administered via the DS1 Circuit Pack form. These fields are display-only.

Instructions for administering a DS1/DMI interface are provided in *AT&T Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Interface Service Manual*,

555-025-101.

Page 1 of X					
SYNCHRONIZATION PLAN					
SYNCHRONIZATION SOURCE (DS1 circuit pack location)					
Stratum: _					
Port Network: _					
Primary: _			Secondary: _		
Location	Name	Slip	Location	Name	Slip
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
NOTE: TN722B & TN464B DS1 sources result in stratum 4, type II synchronization					

Screen 4-30. Synchronization Plan Form (Page 1 of X)**Implementation Notes:**

To reduce repetition, the remaining pages of this form are not shown. For a complete set of forms, refer to the "Blank Forms Package".

The Port Network field is only displayed when Stratum is "3".

The Primary and Secondary fields are only displayed when Stratum is "4".

This is a six-page form for G3r V2 configurations and a two-page form for G3i V2 configurations.

Toll Analysis

**NOTE:**

The Toll List associated with this form has neither relationship nor interaction with the ARS Toll Table described in Chapter 4.

This form is used to associate dialed strings to the System's Restricted Call List (RCL), Unrestricted Call List (UCL), and Toll List. In addition, dialed strings can be associated with the CDR Forced Entry of Account Codes feature (Calls from facilities whose COR is administered to include Forced Entry of Account Codes will be required to include an account code if the dialed string matches a dialed string field associated with "CDR Feac").

**NOTE:**

To maximize System security, it is recommended that toll calling areas be restricted as much as possible through the use of the RCL (Restricted Call List) and Toll List fields on this form.

Administration Commands

The following administration commands can be used to access the Toll Analysis form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	toll	Enter digits between 0–9, 'x', or 'X' ['rein' 1-23]
display	toll	Enter digits between 0–9, 'x', or 'X' ['rein' 1-23] ['print' or 'schedule']
list	toll toll-list	['start' dialed-string] ['count' (1-1000)] ['print' or 'schedule']
list	toll toll-all	['start' dialed-string] ['count' (1-1000)] ['print' or 'schedule']
list	toll restricted-call	['start' dialed-string] ['count' (1-1000)] ['print' or 'schedule']
list	toll unrestricted-call [1-1 0]	['start' dialed-string] ['count' (1 –1000)] ['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

- **Percent Full** — This is a 3-character display-only field. The field displays the percentage of the system memory resources that are being used. A common pool of memory resources is shared between the ARS/AAR Digit Conversion, ARS/AAR Digit Analysis, and Toll Analysis Tables. If the Percent Full display indicates that the common pool of memory resources is in jeopardy of becoming full (100%), perform any of the following to "free-up" resources:

- Delete unnecessary entries from any of the shared resources tables.
 - Utilize the RHNPA table for 6-digit ARS routing.
 - Reduce dialed string field entries to the shortest possible length that accomplishes the desired function.
- **Dialed String** — Enter up to an 18-character dialed digit string. Valid entries include the digits 0 through 9 and the wildcard character “x” or “X”. The wildcard letter “x” or “X” may be used to substitute for any digit in the string. A Dialed String, when entered, must be associated with at least one RCL, UCL, CDR Forced Entry Account Code (CDR FEAC), or Toll List.
 - **Min** — Enter the minimum number of digits to collect (1 to 18). The user can actually dial up to 23 digits (match is on first 18). Default is blank.
 - **Max** — Enter the maximum digits to collect. The value must be greater than or equal to the Min value. Default is blank,
 - **RCL** — Enter “x” to assign the Dialed String to the Restricted Call List (RCL). Default is blank. All entries of “x” and their associated dialed strings are referred to as the System’s Restricted Call List. The RCL can be assigned to any COR. A call attempt from a facility whose COR is marked as being associated with the RCL and whose dialed string matches a RCL dialed string field will be denied. The caller will receive intercept treatment.
 - **Toll List** — Enter “x” to assign the Dialed String to the Toll List. Default is blank. All entries of “x” and their associated dialed strings are referred to as the System’s Toll List. The Toll List is a list of dialed strings used for toll restriction analysis.

When a user calls from a facility whose COR has a Calling Party Restriction of “all-toll” or “tac-toll”, the System checks the Toll Analysis form for the user’s dialed string. If a match occurs and the Toll List field is “x”, the call will be denied unless the string is also associated with an Unrestricted Call List that is also assigned the facility’s COR. Refer to the “COR” instructions in this chapter for definitions of the Calling Party Restrictions. Also refer to the “Unrestricted Call List” field description for additional information about UCLs.



NOTE:

Toll analysis can ignore IXC codes and/or the toll prefix to find a match.

Table 4-7 shows the System’s default toll list assignments.

Table 4-7. Default Toll List Assignments

Dialed String	Min	Max	Toll List
0	1	23	x
1	4	23	x
20	10	10	x
21	10	10	x
30	1 0	10	X
31	10	10	X
40	10	10	x
41	10	10	x
50	10	10	x
51	10	10	x
60	10	10	x
61	10	10	x
70	10	10	x
71	10	10	x
80	10	10	x
81	10	10	x
90	10	10	x
91	10	10	x

- **CDR FEAC** — Enter “x” to assign the dialed string to the CDR Forced Entry of Account Code feature. Default is blank. Users who place calls from facilities whose COR is marked as being associated with Forced Entry of Account Codes and whose dialed string matches an CDR FEAC dialed string field will be required to enter an account code before the call will complete.
- **Unrestricted Call List** — Enter “x” in the appropriate field to assign the dialed string to one of the System’s Unrestricted Call Lists (UCL). Default is blank for all fields.

A UCL (up to 10 in the System) is a list of dialed strings that can be dialed from a facility whose COR assignment includes the UCL List number. The UCL number or numbers are assigned on appropriate COR forms and associate the COR with the UCL List(s). A toll call from a facility that is “all-toll” restricted, for example, will complete if the facilities COR is associated with a UCL whose dialed string field matches the dialed number.

NOTE:

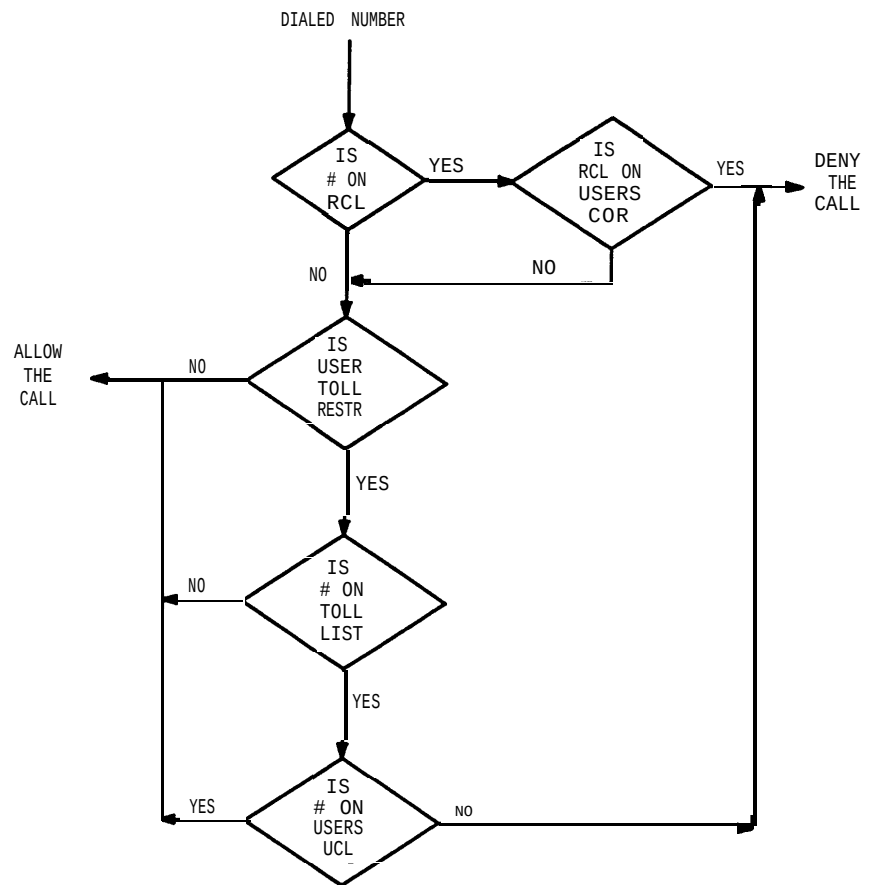
The call *will not* complete if the COR is also associated with the System’s RCL and whose dialed string also matches the dialed number. The RCL takes precedence over the UCL.

The following Authorization Check Flowchart depicts the order of call-processing functions that occur as a result of user dialed numbers and associated entries on the Toll Analysis form and the user's COR form.

As shown on the flowchart, RCLs have priority over UCLs. Checks are made as follows:

1. The first check determines if the dialed string is associated with the Restricted Call List (RCL) on the Toll Analysis form. If it is, the RCL field on the COR form associated with the calling party's station is checked. If the field is "y", the call is denied; otherwise, checking continues.
2. The next check determines if the Calling Party Restriction field on the COR form is "all-toll" or "tat-toll". If it is, checking continues; otherwise the call is allowed.
3. The next check determines if the dialed string is associated with the Toll List on the Toll Analysis form. If it is, checking continues; otherwise, the call is allowed.
4. The next check determines if the dialed string is associated with a Unrestricted Call List number on the Toll Analysis form. If it is, the COR form is checked to determine if the UCL number is entered on the UCL field on the form. If it is, the call is allowed; otherwise, the call is denied.

In summary, calls from facilities are processed based on the COR assigned the facility, the COR'S association with the System's RCL, UCL, and Toll List, and the specific digits dialed.



THIS FLOWCHART DOES NOT REFLECT
ANY FEATURE INTERACTIONS THAT
MIGHT TAKE PLACE, SUCH AS WITH
AUTHORIZATION CODES

Figure 4-8. Authorization Check Flowchart

[illegible]

Screen 4-31. Toll Analysis Form

Implementation Note:

Entries on the form do not have to be input in a sorted order. Subsequent displays of the form will show all entries in a sorted increasing order.

Trunk Groups

This section contains the forms and instructions required to implement trunk groups in the System. Refer to the Capacity Table in Appendix C for the maximum number of trunks and trunk groups for each System configuration.

If the Hospitality Parameters Reduction Option is enabled on the System-Parameters Customer-Options form, up to 50 trunk groups may be administered.



NOTE:

The Hospitality Parameter Reduction feature is not available in the G3s V2 configuration.

Trunks and Access Endpoints consume the same resource. Therefore, the sum of trunks and Access Endpoints cannot exceed the total number of trunks allowed for a particular System configuration.

The following trunk group forms are included in this section:

- Access Trunk Group
- Advanced Private Line Termination (APLT) Trunk Group
- Central Office Trunk Group
- CPE Trunk Group
- Digital Multiplexed Interface (DMI) — BOS Trunk Group
- Direct Inward/Outward Dialing (DIOD)
- Direct Inward Dialing Trunk Group
- Foreign Exchange Trunk Group
- Integrated Services Digital Network-Primary Rate Interface Trunk Group
- Personal Central Office Line Trunk Group
- Release Link Trunk Group
- Tandem Trunk Group
- Tie Trunk Group
- Wide Area Telecommunications Service (WATS) Trunk Group

Trunking — General

The following provides a reference source for various trunk-related terms. Refer to this material for additional information when administering the System's trunk group forms. In addition, refer to *AT&T Network and Data Services Reference Manual*, 555-025-201, and *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DM1/ISDN-PRI Reference*, 555-025-101.

Trunk Characteristics

A trunk is named for its transmission characteristics and can be analog or digital depending on the type of signals it carries. One transmission characteristic is signaling, which is the transmission of supervision, address, alerting, or other switching information between switches.

A trunk is further classified as one of the following:

- 1-way incoming trunk — A local trunk that can be selected (seized) by the far-end connected switch.
- 1-way outgoing trunk — A trunk that can be seized by the local switch to call the far-end switch.
- 2-way trunk — A trunk that can be seized at either end of the connected switches.

Transmission of Supervision

Supervisory signaling establishes or sets up the connection of the local switch to the distant switch. In general, supervisory signaling can be thought of in two phases: the seizure signal (the originating office's signal for a request for service from the distant office) and the start dial signal (the distant office's acknowledgment that it is ready to accept dialing from the originating office).

The following four types of supervision signaling are used in trunks:

1. **E & M (Ear & Mouth) supervision** — A symmetric signaling scheme used on private network trunks in which dc voltage levels are sent over E and M leads. The E and M leads are separate from the transmission path (T & R leads). E & M signals indicate on-/off-hook states of each end of the connection path. E & M signaling is further divided into types (Type I-V). DIMENSION PBX systems use only Type I and DEFINITY, System 75, and System 85 can use Type I or V. Type I is signaling from the trunk interface to the far end over the M lead using nominal -48 volts for off-hook and local ground for on-hook. Signaling from the far end is over the E lead using far-end ground for off-hook and open for on-hook. Type V is signaling in both directions by means of open for on-hook and ground for off-hook.
2. **GS (Ground Start) supervision** — A supervisory signaling scheme used on public network trunks in which ground is applied on the Tip (T) lead by the CO and on the Ring (R) lead by the PBX. For example, the calling

PBX on a call to a central office using an outgoing trunk interface seizes the outgoing trunk by placing a ground on the trunk interface R lead. The CO recognizes the trunk seizure as a request for service and grounds the trunk T lead to indicate to the calling PBX that the CO is ready to receive digits. Ground Start trunks are preferred over trunks using Loop Start signaling (description follows) for the following reasons:

- The tip ground seizure that the distant switch sends minimizes the interval during which a 2-way trunk can be seized from both ends (called glare) since the System (PBX) can make trunks busy to outgoing calls almost immediately.
 - Ground Start trunks provide a positive indication of a distant switch's disconnect. The removal of the tip ground can be acted upon by the PBX:
 - to prevent a station line from being connected to CO dial tone by remaining off-hook after completing a call. This prevents a restricted station from making an unauthorized call after placing an authorized call via the attendant.
 - to hold the trunk busy until the CO disconnects so that another PBX station cannot seize the trunk and be connected to the CO party of the previous call.
3. **LS (Loop Start) supervision** — A supervisory signaling scheme used between a telephone and a PBX in which the telephone or far-end office completes the loop current path formed by the trunk leads (wires). The circuit provides one signaling state when it is open and another when it is closed. A third signaling state is achieved by changing the direction or magnitude of current in the loop. The most preferred method of loop start signaling is reverse battery signaling. Disconnect times when using Loop Start signaling can result in delays of up to 10 to 20 seconds. In addition, glaring as described in Ground Start is possible.
4. **RB (Reverse Battery) supervision** — A supervisory technique on 1-way trunks that uses open and closure signals from the originating end and reversals of battery and ground from the terminating end (normally used on direct inward dialing trunks).

Transmission of Address

With signaling there are three types of transmission of address. Transmission of address is the method of signaling used to represent digits and/or characters for called numbers, calling numbers, and so on. The methods of addressing are dial pulse (DP), dual tone multi-frequency (DTMF), and multi-frequency (MF) addressing.

- **DP addressing** — A means of signaling that consists of regular momentary interruptions of a direct or alternating current at the sending end in which the number of interruptions corresponds to the value of a digit or character (alternating current is not used by PBXs). The interruptions are usually produced by a rotary telephone dial, or may be produced by a sender in a switching system.

- **DTMF addressing** — Signaling arrangements (commonly known as touch-tone) consist of dialing signals of two simultaneous tones. One tone from a low group of four frequencies and the other from a high group of four frequencies correspond to digits, letters, or characters (0 through 9, A through Y, or “*” and “#”). One of the tones (1,633 Hz) from the high group is a spare.
- **MF addressing** — Signaling arrangements that make use of two frequencies, and only two, out of six to represent ten decimal digits (0 through 9) and five auxiliary signals. MF signals are used for called number addressing, calling number identification, ringback, and coin control.

Transmission of Alerting

Network trunks operate as automatic, immediate start, dial tone, wink start, or delay dial according to the type of start dial signal (alerting) the switch sends out or expects to receive. The different transmissions of alerting are as follows:

- **Automatic** — The originating switch sends no digits or start dial signal, expecting the terminating switch to complete the call. The call is usually completed by the attendant or other service such as Centralized Attendant Service (CAS).
- **Immediate start** — The originating switch sends digits immediately without waiting for a start dial signal from the terminating switch.
- **Dial tone** — The terminating switch sends precise dial tone to the originating switch, indicating that the terminating switch is ready to receive digits.
- **Wink start** — The terminating switch sends a wink start (momentary off-hook) signal to the originating switch, indicating that the terminating switch is ready to receive digits.
- **Delay dial** — The terminating switch sends a delay dial signal (an off-hook signal followed by an on-hook signal) to the originating switch, indicating that the terminating switch is ready to receive digits.

With digital trunks, signaling schemes are basically the same as for analog trunks when establishing a call. Supervisory, addressing, and alerting have been carried over to the digital trunks. These schemes are handled in a variety of ways to indicate particular calling states, such as on-hook, off-hook, ringing, not ringing, and so on, by using “A” and “B” bit-timed signaling. “A” and “B” bits carry a 0 or 1 depending on the type of trunk, the near-end channel unit type, far-end channel type, trunk condition (open loop, loop closure, reverse battery, and so on), and whether it is transmit or receive signaling.

In addition to the above, refer to “DS1 Circuit Pack” in this chapter for trunk-related terms associated with DS1 trunk interfaces.

Private Network Trunks

Private network trunks are referred to as tie trunks, tandem trunks, or both. The tie trunks that interconnect the switches of a private network are “universal,” which means that the trunks can be administered with a variety of translation encodes. The originating switch can recognize any start dial signal (precise dial tone, wink start, or delay dial) that the terminating switch sends. If the originating switch does not receive one of these start dial signals, it can be administered to send digits after an administered time-out interval. The time-out interval is the amount of time the originating switch waits before sending digits.

Tie trunks are further classified according to the type of signal (analog or digital) they carry.

Analog Tie Trunks

Analog tie trunks are communications paths that carry voice and voiceband data communication. The term voice implies that sound is transferred into electrical form and transmitted within an approximate voiceband of 300 Hz to 3,400 Hz. Voiceband data implies that data is transmitted within the voiceband and requires a conversion resource (modem) at both ends of the connection. The data transmission rate for analog tie trunks depends on the data-handling capability of the modems in the connection. Other factors that affect the data rate are the number of tie trunks in the connection and the technology of any multiplex systems used in the facilities. Generally, for data rates up to 300 bps, a connection can have five tie trunks in tandem. For data rates greater than 300 bps up to 2,400 bps, a connection can have up to three tie trunks in tandem. For data rates greater than 2,400 bps up to 4,800 bps, a connection can have up to two tie trunks in tandem.

Analog tie trunks used in unswitched connections can support up to 9,600 bps.

A special type of private network tie trunk is a Release Link Trunk (RLT). RLTs are used between a central or main location and a branch location to provide Centralized Attendant Service. It functions as a 1-way outgoing circuit from the branch locations and a 1-way incoming to the main location. RLTs participate in the redirection of incoming calls originally directed to the branch location-to attendants at the main location and handle call completion back to the branch location.

Another special type of trunk is the Advanced Private Line Termination (APLT) trunk. APLT provides access to and termination from central office based private networks; namely, Common Control Switching Arrangements (CCSA) and Enhanced Private Switched Communications Service (EPSCS). APLT trunks are physically the same as those used for analog tie trunks where the trunk signaling is compatible with EPSCS and CCSA network switches. The outgoing APLT trunk repeats any number of digits to the private network as dialed. APLT trunks can tandem through the PBX from EPSCS network only; CCSA networks require an attendant to complete the call.

Digital Tie Trunk (DS1)

The digital tie trunk is a high-speed and a high-volume trunk interface to T1 carrier. It uses digital signal (DS1) on the T1 carrier. By multiplexing 24 64-kbps digital channels onto a single 1.544-Mbps T1 carrier, or 32 64-kbps digital channels onto a single 2.048-Mbps T1 carrier, DS1 offers an economical alternative to the analog tie trunk as well as a high-speed fully digital (without modems) connection between the switches.

The maximum per-channel data rate for DS1 is 64 kbps, and it can carry voice, voiceband data, or high-speed data communications.

The DS1 tie trunk is also used for Digital Multiplexed Interface (DMI). DMI provides high-speed communications over digital transmission facilities between a host computer and a DEFINITY system, System 75, or System 85. The DMI trunk uses the "A" bit for signaling to provide wink-start dial-repeating into the switch and automatic out or 2-way wink start.

Public Network Trunks

Public network trunks are classified according to the type of signal (analog or digital) they carry. Public network trunks are used to connect a private network switch to a public network switch (central office). In reference to a central office, the term "local" applies to a switch within the local exchange area. An exchange area has a single uniform set of charges for telephone service and may be served by more than one central office (CO). Within an exchange area, a call between any two points is a local call.

Public network trunks also function as "special access" to AT&T Communications (AT&T-C) toll network. AT&T-C provides such services as MEGACOM service, MEGACOM 800 service, and ACCUNET telecommunications service.

Analog Trunks

Analog public network trunks are as follows:

- **Central Office (CO) Trunk** — A 1-way outgoing, 1-way incoming, or 2-way trunk connecting the switch to a CO within the local exchange area.
- **Foreign Exchange (FX) Trunk** — A 1-way outgoing, 1-way incoming, or 2-way trunk connecting the switch to a CO that is outside the local exchange area. These trunks give a caller direct access to a central office outside the local exchange area without having to use the public network.
- **Wide Area Telecommunications Service (WATS) Trunk** — A 1-way outgoing or 1-way incoming trunk connecting the switch to a CO equipped to handle WATS calls. The outgoing trunks allow a customer, for a monthly charge, to place outgoing station-to-station calls to telephones in a defined service area. The service area has one or more geographic areas known as WATS bands. Incoming trunk calls are completed by the attendant or other service.

- **800-Service Trunk** — A 1-way incoming trunk connecting the switch to a CO equipped to handle 800 Service calls (also known as Inward WATS). These trunks allow a customer, for a monthly charge, to receive incoming station-to-station calls from telephones in a defined service area without charge to the caller.
- **Direct Inward Dialing (DID) Trunk** — A 1-way incoming trunk connecting the switch to a local CO. These trunks allow calls from the public network to complete to terminals (stations) assigned to a private network switch without attendant assistance.
- **Direct Outward Dialing (DOD) Trunk** — A 1-way outgoing trunk for outgoing calls connecting the switch to a CO. These trunks allow terminal (station) users to place calls to a public network central office directly (without attendant assistance).

Digital Trunks

The digital public network trunk provides a DS1 interface to the central office over T1 carrier. The DS1 public network trunk provides an interface to CO, FX, WATS, and DID. The DS1 interface supports incoming and outgoing dial types of ground-start, loop-start, auto/auto, auto/delay, auto/immed, and auto/wink. Signaling may be robbed-bit or common channel depending on the trunk type and the incoming/outgoing dial type. The interface may be used to connect the switch to a toll office directly using wink-start tie trunks for 2-way access to the toll network.

Access Trunk Group

This form is used to provide the System with the ability to communicate with another PBX as either a main or tandem switch in an Electronic Tandem Network arrangement. This trunk group does not send or receive Traveling Class Marks.

Administration Commands

The following administration commands can be used to access the Access Trunk Group form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	trunk-group	1-MAX (or 'next')
change	trunk-group	1-MAX or TAC X...
display	trunk-group	1-MAX ['number' X]['to-number' X]['count' N] ['tac' assigned TAC]['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-MAX or TAC X...

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.



NOTE:

When supporting DCS, it is required that the far-end node trunk group be assigned the same group number.

- **Group Type** — Enter "access" to identify the trunk group type.
- **CDR Reports** — Enter "y" (default) to provide a detailed Call Detail Recording (CDR) record of both incoming and outgoing calls made on all trunks in the trunk group.
- **Group Name** — Enter a unique name that identifies the trunk group. Up to 15 characters can be used; default is OUTSIDE CALL.
- **COR** — Enter a class of restriction (COR) number (0 to 95) that reflects the desired restriction; default is 1.

- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. CDR also uses the TAC to identify the trunk group on associated CDR reports. A different TAC must be assigned to each trunk group. Valid entries are TACs that are compatible with the System Dial Plan (1 to 4 digits; 1 to 3 digits for DCS or to remotely control it).
- **Direction** — Enter whether the trunk group is “incoming”, “outgoing”, or “two-way” (default). Note that the Direction administered will affect which timers will appear on the Administrable Timer page.
- **Outgoing Display** — Specifies whether or not the trunk group name is displayed on a terminal placing an outgoing call. Valid entries are “y” or “n” (default).
- **Trunk Signaling Type** — This field specifies the kind of signaling to use for members in the trunk group, and if administered to a non-blank value, severely restricts the ports that can be administered in the trunk group.

Valid values are “cont” (continuous), “dis” (discontinuous), or blank. Entering one of these values indicates that only ports from a TN2140 Italian tie trunk may be administered as trunk group members. Entering one of these values will cause the Send Release Ack?, Receive Release Ack?, and Send Answer Supervision? fields to appear. If the field is blank (default), ports from any other Tie trunk circuit pack may be added as trunk group members.



NOTE:

The value in this field will also affect which timers will appear on the Administrable Timer Page.

- **Dial Access** — Enter “y” to allow the trunk group to be accessed via a TAC. Access via the ARS feature is allowed regardless of this entry. Default is “n”.
- **Busy Threshold** — Enter the number of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console.
- **Night Service** — Enter the extension number assigned to Night Service. The extension number entered will receive all incoming calls when Night Service is activated and the individual trunk member Night field is not administered to override this group extension. Valid entries are an extension number (can be a VDN extension), the attendant group access code (“attd”), or leave blank if the Trunk Type (in/out) field is not “auto/...”.
- **Queue Length** — Enter the number of outgoing calls that can be held waiting. A “0” (default) indicates no calls will be held in queue. Enter “0” for DCS trunks. This field is turned off if the Direction field is “incoming”.
- **Incoming Destination** — Displayed when the Direction field is “incoming” or “two-way”. Indicates where incoming calls will terminate. Valid entries are an extension number, the attendant group access code (“attd”), VDN, or leave blank if the Trunk Type (in/out) field is not “auto/...”. If “attd” is entered, a call is treated as an LDN call.

- **Comm Type** — Indicates if the trunk is to be used for voice, data, alternate voice-data (avd), or alternate voice/voice grade data and 56-kbps digital data (rbavd) calls. Valid entries are “avd”, “rbavd”, “voice” (default), or “data”. Type “rbavd” supports access to voice/data SDN service on robbed-bit transmission facilities.

 NOTE:

Comm Types of “avd” and “rbavd” require trunk member ports on a DS1 circuit pack. An “rbavd” type requires that the DS1 circuit pack be administered for robbed-bit, or (if mixed mode signaling is allowed on the DS1 circuit pack) ISDN-EXT, or ISDN-PRI. An “avd” type requires that the DS1 circuit pack be administered for either common-chan or CAS signaling.

- **Auth Code** — Only displayed if the Direction field is “incoming” or “two-way”. Enter “y” if an authorization code must be dialed to complete incoming calls on the trunk group. This field can only be “y” if the Authorization Codes feature is enabled on the System-Parameters Customer-Options form.
- **Send Answer Supervision** — Appears when Trunk Signaling Type is “cont” or “dis” and only applies to TN2140 ports. Enter “y” (default) if the switch should signal that the destination party has answered.
- **Send Release Ack** — Appears when the Trunk Signaling Type is “cont” or “dis” and only applies to TN2140 ports. Enter “y” (default) if the switch must send a release acknowledgment in response to a forward or backward release signal.
- **Receive Release Ack** — This field appears only when the Trunk Signaling Type has a value of either “cont” or “dis”. (Thus, this field only applies to TN2140 ports.) Enter “y” (default) if the switch should expect to receive a release acknowledgment in response to a forward or backward release signal.
- **ITC (Information Transfer Capability)** — Displayed for non-ISDN trunk groups, and when Comm Type is “data”, “avd”, or “rbavd” and BCC is not “0”. Used by the GRS feature and enables the system to route calls to restricted (default) or unrestricted facilities according to the endpoint’s information transfer capability. A trunk member is said to be restricted if the circuit pack it belongs to is administered as “zcs” in the Line Coding field of the DS1 form. A trunk member is said to be unrestricted if the circuit pack it belongs to is administered as “b8zs” or “hdb3” in the Line Coding field of the DS1 form. A restricted trunk member can carry only restricted calls. An unrestricted trunk member may carry restricted or unrestricted calls. A trunk group with a transfer capability of “unrestricted” may have only unrestricted trunk members.
- **BCC (Bearer Capability Class)** — Displayed when ISDN — PRI is enabled on the System-Parameters Customer-Options form and Comm Type is “data”, “avd”, or “rbavd”. Used by the Generalized Route Selection feature and identifies the type of traffic on trunks in the group. The BCC entry is used by far-end tandem switches to select outgoing routing

facilities with equivalent BCC classes. Valid entries are 0, 1, 2, 3, and 4. Default is 0 for "avd" and 2 for "data."

**NOTE:**

Refer to "Generalized Route Selection" in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls.

- **Trunk Type (in/out)** — Identifies the physical type of incoming and outgoing trunks. The trunks may be automatic, immed-start, wink-start or delay-dial; additionally, they may be "cont" (continuous-seize-ack) if Trunk Signaling Type is "cont"; if the Trunk Signaling Type is "dis", only "disc" (discontinuous-seize-ack is used instead of "wink") and "immed" are allowed. It may differ for incoming and outgoing directions,

When the Trunk Signaling Type is "dis", the valid values are "immed" and "disc":

disc/disc disc/immed immed/disc immed/immed

When the Trunk Signaling Type is "cont", the valid values are:

auto/auto	auto/cont	auto/delay	auto/immed	auto/wink
cont/auto	cont/cont	cont/delay	cont/immed	cont/wink
delay/auto	delay/cont	delay/delay	delay/immed	delay/wink
immed/auto	immed/cont	immed/delay	immed/immed	immed/wink
wink/auto	wink/cont	wink/delay	wink/immed	wink/wink

Otherwise, the valid values are:

auto/auto	auto/delay	auto/immed	auto/wink
delay/auto	delay/delay	delay/immed	delay/wink
immed/auto	immed/delay	immed/immed	immed/wink
wink/auto	wink/delay	wink/immed	wink/wink

**NOTE:**

For "immed/immed" trunks (on incoming trunks), the far-end PBX seizes the trunk and then sends digits without waiting for acknowledgment from the receiving PBX. When heavily loaded, the receiving PBX may incur a short delay in attaching a Touch Tone Receiver to this call and, therefore, cause it to lose digits. Using wink-start trunks or increasing the dial-guard timer value on the far-end PBX avoids this problem.

- **Incoming Rotary Timeout (sec)** — The timing interval required by the far-end that the System is connected to. If the System is connected to a Step-by-Step office, 18 seconds or more must be used; if the System is not connected to a Step-by-Step office, 5 seconds or more may be used. Valid entries are 5 through 99, or blank; default is 5.

- **Outgoing Dial Type** — Identifies the type of pulsing required on an outgoing call. Valid entries are “tone” (default), “rotary”, or (if the Trunk Signaling Type is blank) “mf”.



NOTE:

Multifrequency Signaling must be enabled on the System-Parameters Customer-Options form before a value of “mf” may be administered.

Outgoing Dial Type may not be set to “mf” if the Used for DCS field (Page 2 of the form) is set to “y”.

- **Incoming Dial Type** — Indicates the type of pulses required on an incoming trunk group. Valid entries are “tone” (default), “rotary,” or (if the Trunk Signaling Type is blank), “mf.”



NOTE:

Multifrequency Signaling must be enabled on the System-Parameters Customer-Options form before a value of “mf” may be administered.

Incoming Dial Type may not be set to “mf” if the Used for DCS field (Page 2 of the form) is set to “y”.

The value in this field impacts the appearance of the Incoming Partial Dial Timer on the Administrable Timer Page.

- **Disconnect Timing (msec)** — Specifies the minimum time period in ms that is required for recognition of disconnect by the serving central office or far-end PBX. The time interval must be in increments of 10 (from 140 to 2550 ins); default is 500. This timer is not used for ports on a circuit pack that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers. These latter two timers replace the former.
- **Digit Treatment** — Indicates if digits are to be absorbed or inserted. A blank indicates no digit absorption or insertion. Valid entries are “absorption” or “insertion,” or leave blank.



NOTE:

DCS features that use the remote-tgs button (on the remote switch) do not work when the local trunk group deletes or inserts digits on the incoming call. These buttons try to dial a local TAC. Adding or deleting digits defeats this operation and renders the remote feature inoperable. If digit manipulation is needed, use it on the outgoing side, based on the routing pattern. One reason for digit manipulation is insertion of the AAR feature access code (FAC).

- **Digits** — Indicates the digits to be inserted or number of digits to be absorbed. This field is used with the Digit Treatment field. No entry indicates no digit absorption or insertion is done. Valid entries are the number of digits to be absorbed (1 to 5) or the actual digits to be inserted (up to 5 digits including the characters “*” and “#”).

- **Sig Bit Inversion** — This field allows the user to administer the signaling bit inversion (the A-bit and B-bit inversion) on a per-port basis and applies only to TN464B or later circuit packs. The CCITT standards define on-hook to be “1” in the A-bit and off-hook to be “0”. This definition is the opposite of the EIA definition. The default in the TN464 firmware for signaling bit inversion is to use the CCITT standard for 32-channel mode and to use the EIA standard for 24-channel mode. Valid entries are “A”, “B”, “A&B” and “none”.
- **Connected to Toll** — Enter “y” if connected to a CO toll office. This field is displayed when the Trunk Type field contains an entry of “auto/..”, “delay/...”, “wink/...”, or “immed/...”.
- **Wink Timer (msec)** — Displayed when the trunk type for the “outgoing” side of the in/out field is “wink” or “delay”. Enter a number from 300 to 5000 in increments of 50; default is 300. This timer is sent only to TN760C (vintage 4 or later), TN767, and TN464C (or later) circuit packs.

⇒ NOTE:

This value is the same for each member of the trunk group where the timing is administered; that is, if members from TN760B ports are mixed with members from TN760C V4 ports, only the TN760C V4 ports are set to this value. (The TN760B ports use a default value on the circuit pack itself.)

United States domestic requirements state that for a “wink” start trunk, the wink must begin within five seconds (the “wait-for-wink-to-start” time) and must end within 290 ms (the “wait-for-wink-to-end” time). For a “delay” dial trunk, the wink must begin within 140 ms (the “wait-for-wink-to-start” time). and end when the switch is ready to receive digits.

The “wink” start “wait-for-wink-to-end” time and the “delay” dial “wait-for-wink-to-start” time are **both** administered through the use of this field.

- **STT Loss** (Satellite PBX Tie Trunk Loss) — Displayed when Connected to Toll is “n”. Specifies the loss plan to be used for the trunk group. Valid entries are “normal” (default) or “low”. This option affects the transmission performance of a private PBX network.

Although the use of this option has wider applications, only for the simplest network arrangements should this field be administered without Network Engineering advise. The “low” option (described as the ISL digital low loss plan in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PR/ Reference*, 555-025-101) should be used when:

1. Stations on the satellite PBX complain of too much loss on calls to the public network.
2. The PBX network consists of no more than three PBXs: one main and one or two satellite PBXs.

3. All PBXs have the "low" option available.
4. The total DS1 trunk connection length is less than 100 miles.

If the preceding conditions are not met, obtain Network Engineering assistance. The field entry is based on the following:

- **normal** — Applies to AIU-TT (Analog Interface Unit at Customer Switching System for Tie Trunk — 4-wire E&M interface), and DIU-TT (Digital Interface Unit at Customer Switching System for Tie Trunk — voice or AVD DS1 interface) loss plans.
- **low** — Applies to AIU-TTS (same as AIU-TT, but suitable for private network connections that can be connected in tandem with public network connections) and DIU-TTS (same as DIU-TT, but suitable for private network connections that can be connected in tandem with public network connections). These interfaces were formerly referred to as DIU DTT ISL.

- **DTT to DCO Loss** (Digital Tie to Digital CO Trunk Loss) — Specifies the loss plan used for the trunk group that connects a DIU-CO (Digital Interface Unit at a Central Office) to a DIU-DTT (Digital Interface Unit for a Digital Tie Trunk Interface). Displayed when the Trunk Type field is "auto/...", "delay/...", "wink/...", or "dimmed/...".

This option affects the transmission performance of public network access via a private PBX network. Choose the "low" option if private network users complain about too much loss on calls to the public network, otherwise, the "normal" option should be used. Valid entries are "normal" (default) and "low". The entry is based on the following:

- **normal** — Corresponds to a (0, -6) dB gain pair and is used as the default option. (This corresponds to the DTT/EIA DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Reference*, 555-025-101.)
- **low** — Corresponds to (+3, -3) dB gain pair. Low is used for internetwork applications in which no significant configuration will encounter echo, stability, or overload problems because of reduced loss. With the low gain pair, subscriber station DTMF signals transmitted through the digital class 5 office into the customer network may experience non-recoverable digit mutilation in secondary signaling applications (that is, DTMF signaling after the connection has been established). (This corresponds to the DTT/ISL DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Reference*, 555-025-101.)

- **Incoming Dial Tone** — Indicates whether or not the trunk group will pass on incoming dial tone to the calling party. Valid entries are "y" or "n".

- **Bit Rate** — Displayed when Comm Type is “avd” or “rbavd.” It also appears if the Comm Type is “data,” but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form. Specifies the baud rate to be used by pooled modems. Valid entries are 300, 1200 (default), 2400, 4800, 9600, and 19200.
- **Synchronization** — Displayed when Comm Type is “avd” or “rbavd.” It also appears if the Comm Type is “data,” but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form. Enter whether the trunk group will use synchronous or asynchronous communications. Valid entries are “async” (default) and “sync.”
- **Duplex** — Displayed when Comm Type is “avd” or “rbavd.” It also appears if the Comm Type is “data,” but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form. Specifies either full or half duplex for the trunk group. Valid entries are “full” (default) or “half.”
- **Disconnect Supervision-In** — This field appears when the Direction is either “incoming” or “two-way”. The default is for the field is “y.” Internally, the field is set to “n” if the Direction is “outgoing”. Enter “y” to indicate that the far-end has the ability to release a trunk when the calling party releases from a call and the system is able to recognize the release signal.
- **Disconnect Supervision-Out** — This field appears when the Direction is either “outgoing” or “two-way”. The default for the field is “n.” Internally, the field is set to “n” if the Direction is “incoming”. If the field is set to “y,” a Warning Message appears to alert the user of possible trunk lockups. This field specifies whether trunks in this trunk group provide disconnect supervision when seized outgoing (that is, whether these trunks should be allowed to participate in outgoing trunk to outgoing trunk calls). This field is set independently of the trunk-to-trunk transfer system parameter, although both options must be set appropriately if outgoing trunk to outgoing trunk transfers are desired.
- **Expected Digits** — Only displayed if the Trunk Signaling Type field is left blank, the Direction field is “incoming” or “two-way”, and the Incoming Dial Type field is “mf”. This field specifies the number of digits that the far-end sends for an incoming connection. Valid values are between 1 and 9 inclusive.
- **Answer Supervision Timeout** — Used for analog port circuits to indicate the amount of time in seconds the System allows for a call to be answered before beginning a CDR record of a call. This interval begins as soon as the outgoing trunk is seized. Valid entries are 0 to 250; default is 10.

⇒ NOTE:

This timeout does not override answer supervision sent from the network or other firmware (DS1 port circuit timers). DS1 firmware-sent answer supervision is administered in the Outgoing End of Dialing field on Page 3 (Administrable Timers page) of the Trunk Group form.

- **Receive Answer Supervision** — Specifies whether or not the network provides answer supervision for the trunks. Answer supervision refers to notification from the far-end that the called party has gone off-hook to answer the call. When answer supervision is provided, the originating PBX can classify a call as answered using the Answer Supervision Timeout field entry (for domestic circuit packs) or, for circuit packs that take administrable timers, by using the Outgoing End of Dial timer. For trunks over which answer supervision is provided by the network, set this field to “y” and the Answer Supervision Timeout field to “0” so that the firmware timeout is disabled. The firmware timeout is automatically set to “0” on circuit packs that take the administrable Outgoing End of Dial timers. Receive Answer Supervision must be set to “n” (default) if the Direction field is “incoming.”

Page 2 of the Form

- **ACA Assignment** — Specifies whether or not Automatic Circuit Assurance (ACA) measurements will be taken for this trunk group. Valid entries are “y” or “n” (default). If “y” is entered, complete the next three fields.
- **Long Holding Time (hours)** — Only displayed when ACA Assignment is “y”. This field is the length (in hours) that the System will consider as being a long holding time. If “0” is entered, the System will not consider long holding calls. Valid entries are 0 to 10; default is 1.
- **Short Holding Time (secs.)** — Only displayed when ACA Assignment is “y”. Specifies the length (in seconds) that the System will consider as being a short holding time. If “0” is entered, the System will not consider short holding calls. Valid entries are 0 to 160; default is 10.
- **Short Holding Threshold** — Only displayed when ACA Assignment is “y”. Number of times the System will record a short holding call before an attendant is alerted to the possibility of a faulty trunk. Valid entries are 0 to 30; default is 15.
- **Glare Handling** — Only displayed when the Direction field is “two-way” and the outgoing side of the Trunk Type field is either “wink” or “delay”. This field determines how glare situations should be treated. Valid entries are “control”, “backoff”, or “none” (default).

Warnings are generated if the field is changed to either “control” or “backoff” and ports for the trunk group are not capable of detecting glare.
- **Measured** — Indicates if the System will transmit data for this trunk group to the Call Management System. Valid entries are “internal”, “external”, “both”, “none”. Enter “internal” if the data is to be sent to the Basic Call Management System (internal to the switch) for subsequent measurement reports and “external” to send the data to the Call Management System Adjunct. Enter “both” to send the data to both systems for measurement reports. Enter “none” (default) if trunk group measurements are not required.

- **Data Restriction** — Is used to prevent System features from generating tones on a data call that would cause erroneous data transmission. Valid entries are “y” or “n” (default).
- **Used for DCS** — Specifies whether the trunk group will send and receive messages on a DCS signaling link. Valid entries are “y” or “n” (default).

 NOTE:

This field cannot be activated if the tie trunk group number is greater than 255, if there are more than 255 members in the trunk group, or if the Trunk Access code is more than 3 digits long.

- **PBX ID** — Displayed when the Used for DCS field is “y”. Enter the ID of the PBX at the other end of this trunk.
- **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are “y” (default) or “n”.
- **Suppress # Outpulsing** — Indicates end-to-end signaling begins with (and includes) the “#” when “y” is entered here. The final “#” is suppressed in cases where System would normally outpulse it. This field should be “y” when the Central Office (for example, rotary) or any other facility treats “#” as an error; default is n.
- **Seize When Maintenance Busy** — This field is effective only for ports on TN760C (or later release), TN767, and TN464C (or later release) circuit packs. It indicates whether an outgoing seize is generated when a trunk is maintenance busied, and whether the far-end switch is administered to do likewise. This supports the Electronic Tandem Network Busyout feature. The intended use of this feature is to prevent the far-end PBX from reporting problems concerning a trunk that has been removed from service at the near end. The setting of this field has no effect on the behavior of the far-end machine; it controls the behavior of the near end switch and the expected far-end behavior.

If the administered value of this field is either “near-end” or “both-ends”, an outgoing seize will be initiated whenever a trunk in this trunk group is maintenance busied. The seize is maintained until the maintenance busyout is released. This action will likely cause alarms at the far-end switch, perhaps leading to a far-end maintenance busy out, unless the far-end switch is administered to expect this behavior.

If the administered value of this field is either “far-end” or “both-ends”, any abnormally long incoming seize² (including failure to drop from a completed call) is *assumed to be the result of a far-end maintenance busy condition*.

2. When an incoming seize is detected, the normal behavior is to either immediately direct the call to an administered destination, or to wait for an administered period of time for incoming destination digits. If digits are expected but not received, the calling party receives the DID/TIE intercept treatment administered on the feature related system parameters form.

Note that this assumption may be incorrect since the abnormally long seize may actually be due to a transient or permanent failure of the trunk circuit. Regardless of the cause of the abnormally long seize, the near end response is to:

1. generate a warning alarm indicating the trunk is assumed to be maintenance busy at the far-end,
2. remove the trunk from service, and
3. keep the trunk out of service until a far-end disconnect is received.

The values allowed depend on the Direction field. When the Direction is "incoming", the valid values are "far-end" and "neither-end".

When the Direction is "outgoing", the valid values are "near-end" and "neither-end".

When the Direction is "two-way", the valid values are "both-ends", "far-end", "near-end", and "neither-end".

Page 3 of the Form (Administrable Timers)

- **Incoming Disconnect (msec)** — A disconnect signal on an incoming call is considered valid only if it continues at least for the time specified by this timer. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank; default is 500. The field appears only for an incoming or two-way trunk group when the Trunk Signaling Type is either blank or "cont."
- **Incoming Dial Guard (msec)** — Enter the interval between the detection of an incoming seizure and the acceptance of the first digit. The PBX will not accept digits before this timer expires. This timer is administrable when the Trunk Signaling Type is blank. Valid entries are 10 to 2550 in increments of 10; default is 70.
- **Incoming Partial Dial (sec)** — Enter the time (in sec) allowed between digits. Valid entries are 5 to 255 in increments of 1; default is 18. This timer appears only if the incoming Dial Type is "rotary."
- **Outgoing Disconnect (msec)** — A disconnect signal on an outgoing call is considered valid only if it continues at least for the time specified by this timer. This timer begins timing when a disconnect signal has been detected on an outgoing call over the trunk, and resets when the signal is no longer detected. If the timer times out, the trunk is dropped. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank. Default is 500. This field only appears for outgoing or two-way trunk group when the Trunk Signaling Type is either blank or "cont".
- **Outgoing Dial Guard (msec)** — This timer specifies the time between seizure acknowledgment of a trunk and the outputting of digits. For trunks that do not provide seizure acknowledgment, the timer specifies the minimum time between seizure and the outputting of digits. Any digit dialed by the station user after they lift the receiver, but before the timer times out, will not be outputted until the timer expires. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1600.

- **Incoming Glare Guard (msec)** — Enter the minimum time (in msec) between the time an incoming trunk is released and the same trunk can be seized for an outgoing call. This guard time will ensure the far-end has released all equipment after the incoming trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1500. This field only appears when the trunk group is “two-way”.
- **Outgoing Glare Guard (msec)** — Enter the minimum time (in msec) between the time an outgoing trunk is released and the same trunk can be seized for another outgoing call. This guard time will ensure that the far-end has released all equipment after the outgoing trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1500. This field only appears for “outgoing” and “two-way” trunk groups.
- **Outgoing Rotary Dial Interdigit (msec)** — Enter the interval (in msec) between rotary dial digits being outputted by the system (that is, PBX). Valid entries are 150 to 2550 in increments of 10. The field cannot be blank. Default is 800. This field only appears when the Outgoing Dial Type is “rotary”.
- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the far-end. Valid entries are 20 to 2550 in increments of 10. The field cannot be blank. Default is 500. This field appears when the Trunk Signaling Type is “cont” and the Direction is incoming or two-way. Only TN2140 ports receive this timer.
- **Outgoing End of Dial (sec)** — Enter the maximum time (in sec) a trunk may wait for answer supervision after dialing an outgoing call. During cut-through operation, timing begins after each outgoing digit is sent by the PBX and timing ceases after the far-end sends answer supervision. If the timer expires, the PBX acts as if it had received answer supervision. On senderized operation, the timer begins after the last digit collected is sent by the PBX. The timer ceases when the far-end sends answer supervision. If the timer expires, the PBX acts as if it has received answer supervision. This field appears when Direction is “outgoing” or “two-way” and Receive Answer Supervision is “n”. This field will not appear if the Receive Answer Supervision field is “y”, but a zero (0) value will be sent down to the firmware to disable the timer. Valid entries are 1 to 254 in increments of 1. Default is 10.

⇒ NOTE:

This field controls the firmware answer-supervision timer on ports that take the administrable timers; the Answer Supervision Timeout field on Page 1 of the Trunk Group form controls answer supervision for ports that do not take administrable timers. This field and the value administered in the Answer Supervision Timeout field on the Trunk Group form should be the same value.

- **Outgoing Seizure Response (sec)** — Enter a maximum time (in sec) by which the PBX should receive the proceed-to-dial indication from the far-end after sending the seize signal. If the indication is not received in this time, a seizure failure response is uplinked. Valid entries are 1 to 255 in increments of 1. Default is 5 sec. This timer is sent to the TN464B (or later), TN767, TN439, TN458, TN760Dv15 (or later), and TN2140 tie circuit packs.
- **Programmed Dial Pause (msec)** — Enter the length (in msec) of a pause during abbreviated dialing, ARS outpulsing, and terminal dialing operations. This timer is administrable for all outgoing and two-way trunk groups. Valid entries are 100 to 25500 in increments of 100. Default is 1500 msec. This timer is sent to the TN464B (or later), TN760Dv15 (or later), TN767, TN458, and TN2140 tie circuit packs.
- **Disconnect Signal Error (sec)** — Enter a maximum time (in sec) within which a disconnect signal from the far-end is expected after the internal party (a station or a tie trunk) goes on-hook. If the timer expires, the system can assume a disconnect failure and take an appropriate action (such as, an error message). Valid entries are 1 to 255 in increments of 1. Default is 240 sec.
- **Incoming Incomplete Dial Alarm (sec)** — Enter the maximum time (in sec) between incoming seizure and receipt of all digits. Intervals greater than this generate an inline error. Valid entries are 1 to 255 in increments of 1; default is 255. Only the TN464C (or later), TN760Dv15 (or later), TN767, and TN2140 tie circuit packs receive this timer.
- **Outgoing Last Digit (sec)** — Enter the maximum time (in seconds) to wait for the next digit dialed. After the timer expires, no more digits are accepted by the circuit pack. It will only be administrable if the Trunk Signaling Type is “dis” or “cont” and the trunk group Direction is “two-way” or “outgoing”. Valid entries are 1 to 40; default is 10. Only TN2140 ports receive this timer.
- **Normal Outgoing Seize Send (msec)** — Enter the number of milliseconds to ground the M-lead. Outgoing seizure is signaled by the calling switch momentarily grounding the M-lead for the duration specified by this timer. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “two-way” or “outgoing”. Valid entries are 60 to 250 in increments of 10. Default is 70. Only TN2140 ports receive this timer.
- **Release Ack Send (msec)** — Enter the duration (in msec) of the forward release acknowledgment signal. After receiving a forward release signal, the called switch must send the forward release acknowledgment signal. This signal is sent by grounding the M-lead for the duration specified by this timer. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 500 to 1200 in increments of 100. Default is 600. Only TN2140 ports receive this timer.

- **Seize Ack Delay (msec)** — Enter the maximum time (in msec) between receiving a seizure and the sending of seizure acknowledgment by the called switch. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 40 to 120 in increments of 10. Default is 100. Only TN2140 ports receive this timer.
- **Answer Send (msec)** — Enter the duration (in msec) of the answer signal pulse. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 60 to 120 in increments of 10. Default is 80. Only TN2140 ports receive this timer.
- **Outgoing Disconnect Send (msec)** — Enter the duration (in msec) of the M-lead ground at the calling switch during disconnect. Forward release is signaled by the calling switch by grounding the M-lead for the duration specified by this timer. It is only administrable if the Trunk Signaling Type is “dis” and the trunk group Direction is “two-way” or “outgoing”. Valid entries are 500 to 1200 in increments of 100. Default is 800. Only TN2140 ports receive this timer.
- **Seize Ack Send (msec)** — Enter the duration (in msec) of the seize acknowledge pulse. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 40 to 120 in increments of 10. Default is 80. Only TN2140 ports receive this timer.
- **Incoming Disconnect Send (msec)** — Enter the duration (in msec) of the M-lead ground at the called switch during disconnect. Calls may be cleared by either the calling switch (forward release) or the called switch (backward release). Backward release is signaled by the called switch by grounding the M-lead for the duration specified by this timer. It is only administrable if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 500 to 1200 in increments of 100. Default is 800. Only TN2140 ports receive this timer.
- **Glare** — Enter the minimum time (in msec) between sending an outgoing seizure and receiving a seizure acknowledgment. If seizure acknowledgment is received before expiration of the timer, a glare condition is assumed. It is only administrable if the Trunk Signaling Type is “cont” and the trunk group Direction is “two-way” or “outgoing”. Valid entries are 40 to 100 in increments of 10. Default is 40. Only TN2140 ports receive this timer.
- **Tone (msec)** — Enter the length of a DTMF tone sent in response to a button depression at a hybrid station set. Valid entries are 20 to 2550 in increments of 10; default is 350. This field appears only if the Trunk Signaling Type is blank.
- **Pause (msec)** — Enter the minimum length of a pause between tones being sent in response to button depressions at a hybrid station set. It is only administrable if the Trunk Signaling Type is blank. Valid entries are 20 to 2550 in increments of 10; default is 150.

- **PPS** — Enter either “10” or “20” to specify the PPS (pulses per second) assigned to rotary dial pulse trunk groups. Valid entries are “10” or “20”. Default is “10”.

 NOTE:

The TN439, TN458, and TN767 circuit packs can only do 10pps:

- **Make (msec)** — Enter the duration of the make interval (the pause between pulses) while the system is outputting digits using dial pulse signaling.

If the PPS field is “10”, the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of five. The field cannot be blank. The default is 40.

If the PPS field is “20”, the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of five. The field cannot be blank. The default is 20.

- **Break (msec)** — Enter the duration of the break interval (the pulse duration) while the system is outputting digits using dial pulse signaling.

If the PPS field is “10”, the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of five. The field cannot be blank. The default is 60.

If the PPS field is “20”, the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of five. The field cannot be blank. The default is 30.

Page 4 of the Form (ATMS Thresholds)

 NOTE:

This form appears when the Direction field on Page 1 is “outgoing” or “two-way” and ATMS is enabled on the Feature-Related System Parameters form.

- **TTL Type** — Specifies the type of TTL selected for testing trunks. The TTL type determines what ATMS tests can be completed and thus which threshold values need to be administered. The different TTLs supported are 105 with return loss (105-w-rl) (default), 105 without return loss (105-wo-rl), high-level tone source (high-level-tone), low-level tone source (low-level-tone), 100-type (100), and 102 type (102).

The following table explains the differences between TTL Types:

Type TTL	Description	Example
<i>105-w-rl</i>	Full range of 18 measurements or some defaults for return loss used (56A)	TN771B, ZLC12 and SN261B circuit packs and new 56A mini-responder
<i>105-wo-rl</i>	Cannot return default values for far-end return loss	Older 56A mini-responder
<i>high-level-tone</i>	Sends a fixed sequence of tones at 0 dBm	ZLC12 and SN261B circuit packs
<i>low-level-tone</i>	Sends a fixed sequence of tones at -16dBm	SN261B circuit pack
<i>100</i>	Up to 5 measurements that sends a 1004 Hz tone then a quiet termination	
<i>102</i>	One measurement that sends a 1004 Hz tone	

The far-end switch containing the TTL may be any of the following:

- System 85 R3 PBX equipped with the Maintenance/Test Board (TN771B)
- System 75 R1V2 and beyond, all of which contain the circuitry required to perform the TTL function
- System 85 R2 PBX equipped with the Analog/Digital Facility Test Circuit (ADFTC, SN261)
- DIMENSION FP8 equipped with the Analog Facility Test Circuit (AHC, ZLC-12)
- Central Office switches equipped with various TTL equipment that provide 100, 102, or 105 test line capabilities (56A).

Other vendor PBXs may be supported if compatible test lines are provided by these switches.

Four different versions of the ATMS Threshold Administration page can occur depending upon the measurements allowed by the TTL type selected. The four possibilities are:

1. 105-w-rl and 105-wo-rl — all thresholds appear.
2. high-its and low-lts — all thresholds (except maximum C-notched noise) appear.
3. 100 — all thresholds (except maximum c-notched noise, 404Hz loss, and 2804 Hz loss) appear.
4. 102 — only 1004 Hz loss threshold appears.

ATMS THRESHOLDS					
TTL Type: 105-w-rl_____	Far End Test No: _____				
TTL Vendor: _____	TTL Contact: _____				
Trunk Vendor: _____	Trunk Contact: _____				
Trunk Length: _____					
	MARGINAL		UNACCEPTABLE		
	Min	Max	Min	Max	
1004 Hz Loss:	-2	21	-2	21	
	-Dev	+Dev	-Dev	+Dev	
404 Hz Loss:	9	9	9	9	
2804 Hz Loss:	9	9	9	9	
Maximum C Message Noise:	55		55		
Maximum C Notched Noise:	74		74		
Minimum SRL-HI:	0_		0_		
Minimum SRL-LO:	0_		0_		
Minimum ERL:	0_		0_		
Allow ATMS Busyout, Error Logging and Alarming? y					
Maximum Percentage of Trunks Which Can Be Removed from Service by ATMS: 0_					

Screen 4-32. ATMS Thresholds Form

- **Far-End Test No.** — Enter the access number (1 to 20 digits) dialed to reach the TTL.
- **TTL Vendor** — Enter the 0 to 22 alphanumeric character TTL vendor name (the name of the vendor supplying the terminating test line); default is blank.
- **TTL Contact** — Enter the 0 to 25 alphanumeric character TTL vendor contact (the name and/or telephone number of someone from the TTL vendor who can be contacted in the event of problems with the TTL); default is blank.
- **Trunk Vendor** — Enter the 0 to 22 alphanumeric character trunk vendor name (who to notify in the event of problems with the trunks); default is blank.
- **Trunk Contact** — Enter the 0 to 25 alphanumeric character trunk vendor contact (the name and/or telephone number of someone from the trunk vendor who can be contacted in the event of problems with the trunks); default is blank.
- **Trunk Length** — Enter 0 to 4 digits followed by k (for kilometers) or m (for miles) showing the length of trunk. This field is not required, since it is not used by the G3-MT. It has been included for the G3-MA adjunct to use in aiding with threshold establishment, since noise on a trunk increases with the length of the trunk. The default is "Om".

- **Marginal Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance. A larger dB value is more restrictive.
- **Marginal Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance; default is 21. A smaller dB value is more restrictive.
- **Unacceptable Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable. A larger dB value is more restrictive.
- **Unacceptable Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable; default is 21. A smaller dB value is more restrictive.
- **Marginal Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone noise level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.

- **Unacceptable Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as out of tolerance. The default is 55. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as unacceptable. The default is 55. Smaller values are more restrictive.
- **Marginal Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as out of tolerance. The default is 74. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as unacceptable. The default is 74. Smaller values are more restrictive.
- **Marginal Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.

- **Unacceptable Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Allow ATMS Busyout, Error Logging and Alarming** — Enter “y” to allow ATMS error logging and alarming (subject to filtering depending on the service organization used to deal with alarms); default is n.
- **Maximum Percentage of Trunks Which Can Be Removed From Service by ATMS** — Enter the highest percentage of trunks from the trunk group (0 to 100) that can be removed from service at one time because of unacceptable transmission measurement results; default is 0.

Pages Y through X of the Form (Group Member Assignments)



NOTE:

The total number of pages, and the first page of the Group Member Assignments, will vary depending on whether the Administrable Timers and ATMS Thresholds pages are displayed.

- **Administered Members (min/max)** — Indicates the minimum and maximum member number that has been administered for the particular trunk group. This field is displayed on all member pages.
- **Total Administered Members** — Indicates the total number of members administered in the trunk group. This field will appear on all trunk group member pages.
- **Port** — Enter seven characters. The first two characters identify the cabinet (01 to 22 [G3r V2], 01 to 03 [G3s V2, G3i V2]); the third character identifies the carrier (A through E); the fourth and fifth identify the slot number in the carrier (01 to 20 for multi-carrier cabinets or 01 to 18 for single-carrier cabinets); the last two characters identify the circuit number (01 to 31).



NOTE:

When supporting DCS, it is required that the trunk be the same member number on both nodes. The member number of the trunk is the display-only field at the far left of the screen, just before the Port field.

- **Code** — Display-only field. Displays the type of circuit pack physically installed or logically administered at the location to which this member has been assigned. If a circuit pack is neither installed nor administered at the member's location, the field is blank.
- **Sfx** — Displays the type of circuit pack (suffix only) physically installed at the location to which this member has been assigned. Field is blank if a circuit pack has not been physically installed.
- **Name** — Enter up to ten characters to identify the member of the trunk group. The name can be a 7-digit telephone number or a 10-digit Trunk Circuit Identification number (provided by trunk supplier).

- **Night** — Enter the extension of the night destination for the trunk. This individual night destination overrides the group night service destination on the first page of the trunk group form. Incoming calls are routed to this destination when the system is placed in night service mode. (If “attd” is entered, night service will be to the attendant).
- **Mode** — Specifies the signaling mode used on Tie Trunks with TN722A or later release, TN760B or later release, TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are “e&m” (interface), “simplex” (phantomed), or “protected”. This entry must correspond to associated dip switch settings on the circuit pack.
- **Type** — Specifies the signaling type to be used. This field should be used only with TN760B (or later release), TN722 (with any suffix), TN767, TN2140 (when the Trunk Signaling Type field is “cont”), TN437, TN439, TN464 with any suffix, or TN458 circuit packs. The Type field appears when the Trunk Signaling Type field is “cont” or blank.

The value of “t5 rev” is allowed only for the TN760D vintage 10 or later. When the Type field is “t5 rev”, the Mode field must be “e&m.”

Valid entries are “t1 stan”, “t1 comp”, “t5rev”, or “type 5”. Default is blank.
- **Ans Delay** — Specifies the length of the wait for answer supervision delay (in ms) for Trunks using the TN722A or later, TN760 (B, C, or D), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are 20 to 5100 in increments of 20; default is blank and internally treated as a zero. This delay serves two purposes:
 1. Used to assure that the answer supervision signal is valid and not a secondary delay-dial or wink-start signal.
 2. Used to bridge over momentary off-hook signals resulting from connections made off-network through certain No. 5 Crossbar CCSA switches as the connection is being established.

TRUNK GROUP		Page 1 of X
Group Number: 1	Group Type: access	CDR Reports? y
Group Name: OUTSIDE_CALL_____	COR: 1_	TAC : _____
Direction: two-way_	Outgoing Display? n	Trunk Signaling Type: _____
Dial Access? y	Busy Threshold: 255	Night Service: _____
Queue Length: 0_		Incoming Destination: _____
Comm Type: voice	Auth Code? n	
TRUNK PARAMETERS		
Trunk Type(in/out): _____	Incoming Rotary Timeout: 5_	
Outgoing Dial Type: tone_	Incoming Dial Type: tone_	
	Disconnect Timing(msec) : 500_	
Digit Treatment: _____	Digits: _____	
Expected Digits: _		
Incoming Dial Tone? y	Sig Bit Inversion: none	
Disconnect Supervision- In? y Out? n		
Answer Supervision Timeout: _10	Receive Answer Supervision? n	

Screen 4-33. Access Trunk Group Form (Page 1 of X)**Implementation Notes:**

BCC is displayed when the Comm Type is "avd" or when ISDN-PRI is optioned on the System-Parameters Customer-Options form and Comm Type is "avd", "data", or "rbavd".

Connected to Toll and DTT to DCO Loss are displayed when Trunk Type is "auto/...", "delay/...", "immed/...", or "wink/...".

STT Loss is displayed when Connected to Toll is "n".

Wink Timer is displayed when the outgoing side of the Trunk Type is "wink" or "delay".

Queue Length is displayed when the Direction is "outgoing" or "two-way".

Night Service, incoming Destination and Auth Code are displayed when Destination is "incoming" or "two-way".

Send Release Ack, Receive Release Ack, and Send Answer Supervision are displayed when Trunk Signaling Type is "cont" or "dis".

Bit Rate, Synchronization, and Duplex are displayed when Comm Type is "avd" or "rbavd".

ITC is displayed when Comm Type is "data", "avd", or "rbavd" and BCC is not "0".

The Expected Digits field appears if the Direction is incoming or two-way, the Trunk Signaling type is blank, and the Incoming Dial Type is "mf."

TRUNK FEATURES		Page 2 of x
ACA Assignment? n	Measured: none	
	Data Restriction? n	
Used for DCS? n		Maintenance Tests? y
Suppress # Outpulsing? n		
	Seize When Maintenance Busy: neither-end	

Screen 4-34. Access Trunk Group Form (Page 2 of X)

Implementation Note:

Long Holding Time (hours), Short Holding Time (seconds), and Short Holding Threshold are displayed when ACA Assignment is "y".

The PBX ID field is displayed if the Used for DCS field is "y".

Glare Handling is displayed when the Direction field is "two-way" and the outgoing side of the Trunk Type field is "wink" or "delay".

		Page 3 of x
TRUNK GROUP		
ADMINISTRABLE TIMERS		
Incoming Disconnect(msec) : 500	Outgoing Disconnect(msec) : 500	
Incoming Dial Guard(msec) : 70	Outgoing Dial Guard(msec) : 1600	
Incoming Glare Guard(msec) : 1500	Outgoing Glare Guard(msec) : 1500	
Incoming Partial Dial(sec) : 18	Outgoing Rotary Dial Interdigit(msec) : 800_	
Outgoing End of Dial (sec) : 10	Outgoing Seizure Response (sec) : 5	
Programmed Dial Pause (msec) : 1500	Disconnect Signal Error(sec): 240	
	Incoming Incomplete Dial Alarm(sec) : 255	
END TO END SIGNALING		
Tone (msec): 350	Pause (msec) : 150	
OUTPULSING TIMING		
PPS: 10	Make (msec) : 40	Break (msec) : 60

Screen 4-35. Access Trunk Group Administrable Timers Form (Page 3 of X)**Implementation Note:**

The incoming Partial Dial field is displayed only when the Incoming Dial Type field from Page 1 is "rotary."

The Outgoing End of Dial field is displayed if the Receive Answer Supervision field from Page 1 is "n".

TRUNK GROUP		Page Y of X					
Administered Members(min/max) : 0/0							
Total Administered Members: 0							
GROUP MEMBER ASSIGNMENTS							
Port	Code	Sfx	Name	Night	Mode	Type	Ans Delay
1:		-					
2:		-					
3:		-					
4:		-					
5:		-					
6:		-					
7:		-					
8:		-					
9:		-					
10:		-					
11:		-					
12:		-					
13:		-					
14:		-					
15:		-					

Screen 4-36. Access Trunk Group Forms (Pages Y through X)

To reduce repetition, the remaining pages are not shown. For a complete set of forms, refer to the "Blank Forms Package."

Implementation Notes:

The Type column does not appear if the Trunk Signaling Type field on Page 1 is "dis".

APLT Trunk Group

This form is used to provide access to and termination from private line networks. APLT trunks are used with a Common Control Switching Arrangement (CCSA) or Enhanced Private Switched Communications Service (EPSCS) network.

Administration Commands

The following administration commands can be used to access the APLT Trunk Group form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	trunk-group	1-MAX (or 'next')
change	trunk-group	1-MAX or TAC X...
display	trunk-group	1-MAX ['number' X]['to-number' X]['count' N] ['tac' assigned TAC]['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-MAX or TAC X...

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Group Type** — Enter "apl" to identify the trunk group type.
- **CDR Reports** — Enter "y" (default) to provide a detailed Call Detail Recording (CDR) record of both incoming and outgoing calls made on all trunks in the trunk group.
- **Group Name** — Enter a unique name that identifies the trunk group. Up to 15 characters can be used; default is OUTSIDE CALL.
- **COR** — Enter a class of restriction (COR) number from 0 to 95 that reflects the desired restriction; default is 1.

- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. CDR also uses the TAC to identify the trunk group on associated CDR reports. A different TAC must be assigned to each trunk group. Valid entries are TACs that are compatible with the System Dial Plan (1 to 4 digits; 1 to 3 digits for DCS or to remotely control it).
- **Direction** — Enter whether the trunk group is “incoming”, “outgoing”, or “two-way” (default). Note that the Direction administered will affect which timers will appear on the Administrable Timer page.
- **Outgoing Display** — Specifies whether or not the trunk group name is displayed on a terminal placing an outgoing call. Valid entries are “y” or “n” (default).
- **Trunk Signaling Type** — This field specifies the kind of signaling to use for members in the trunk group and, if administered to a non-blank value, severely restricts the ports that can be administered in the trunk group.

Valid values are “cont” (continuous) or “dis” (discontinuous). Entering one of these values indicates that only ports from a TN2140 Italian tie trunk may be administered as trunk group members. Entering one of these values will cause the Send Release Ack?, Receive Release Ack? and Send Answer Supervision? fields to appear. If the field is blank (default), ports from any other Tie trunk circuit pack may be added as trunk group members. Note that the value in this field will also affect which timers will appear on the Administrable Timer Page.
- **Send Answer Supervision** — Appears when Trunk Signaling Type is “cont” or “dis” and only applies to TN2140 ports. Enter “y” (default) if the switch should signal that the destination party has answered.
- **Send Release Ack** — This field appears only when the Trunk Signaling Type has a value of either “cont” or “dis” and only applies to TN2140 ports. Enter “y” (default) if the switch must send a release acknowledgment in response to a forward or backward release signal.
- **Receive Release Ack** — This field appears only when the Trunk Signaling Type has a value of either “cont” or “dis” and only applies to TN2140 ports. Enter “y” (default) if the switch should expect to receive a release acknowledgment in response to a forward or backward release signal.
- **Expected Digits** — This field specifies the number of digits that the far-end sends for an incoming connection. Valid values are between 1 and 9 inclusive.

This field only appears if the Trunk Signaling Type field is left blank, the Direction is “incoming” or “two-way”, and the Incoming Dial Type is “mf”.
- **Dial Access** — Enter “y” to allow the trunk group to be accessed via a TAC. Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter the number of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console.

- **Night Service** — Enter the extension number assigned to Night Service. The extension number entered will receive all incoming calls when Night Service is activated and the individual trunk member Night field is not administered to override this group extension. Valid entries are an extension number (can be a VDN extension), the attendant group access code ("attd"), or leave blank if the Trunk Type (in/out) field is not "auto/...".
- **Queue Length** — Enter the number of outgoing calls that can be held waiting. A "0" indicates no calls will be held in queue. Enter "0" (default) for DCS trunks. This field is not displayed if the Direction field is "incoming".
- **Incoming Destination** — Indicates where incoming calls will terminate. Valid entries are an extension number, the attendant group access code ("attd"), VDN, or leave blank if the Trunk Type (in/out) field is not "auto/..." If "attd" is entered, a call is treated as an LDN call.
- **Auth Code** — Only displayed if the Direction field is "incoming" or "two-way". Enter "y" if an authorization code must be dialed to complete incoming calls on the trunk group. This field can only be "y" if the Authorization Codes feature is enabled on the System-Parameters Customer-Options form.
- **BCC (Bearer Capability Class)** — Displayed when ISDN-PRI is enabled on the System-Parameters Customer-Options form and Comm Type is "data", "avd", or "rbavd". Used by the Generalized Route Selection feature and identifies the type of traffic on trunks in the group. The BCC entry is used by far-end tandem switches to select outgoing routing facilities with equivalent BCC classes. Valid entries are 0, 1, 2, 3, and 4. Default is 0 for "avd" and 2 for "data."

⇒ NOTE:

Refer to "Generalized Route Selection" in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls.

- **Trunk Type (in/out)** — Identifies the physical type of incoming and outgoing trunks. The trunks may be "automatic", "immed-start", "wink-start" or "delay-dial"; additionally, they may be "cont" (continuous-seize-ack) if Trunk Signaling Type is "cont"; if the Trunk Signaling Type is "dis", only "disc" (discontinuous-seize-ack is used instead of "wink") and "immed" are allowed. It may differ for incoming and outgoing directions.

When the Trunk Signaling Type is "dis", the valid values are "immed" and "disc":

disc/disc disc/immed immed/disc immed/immed

When the Trunk Signaling Type is “cont”, the valid values are:

auto/auto	auto/cont	auto/delay	auto/immed	auto/wink
cont/auto	cont/cont	cont/delay	cont/immed	cont/wink
delay/auto	delay/cont	delay/delay	delay/immed	delay/wink
immed/auto	immed/cont	immed/delay	immed/immed	
wink/auto	wink/cont	wink/delay	wink/immed	wink/wink

Otherwise, the valid values are:

auto/auto	auto/delay	auto/immed	auto/wink
delay/auto	delay/delay	delay/immed	delay/wink
immed/auto	immed/delay	immed/immed	immed/wink
wink/auto	wink/delay	wink/immed	wink/wink

 NOTE:

For “immed/immed” trunks (on incoming trunks), the far-end PBX seizes the trunk and then sends digits without waiting for acknowledgment from the receiving PBX. When heavily loaded, the receiving PBX may incur a short delay in attaching a Touch Tone Receiver to this call and, therefore, cause it to lose digits. Using wink-start trunks or increasing the dial-guard timer value on the far-end PBX avoids this problem.

- **Incoming Rotary Timeout (sec)** — The timing interval required by the far-end that the System is connected to. If the System is connected to a Step-by-Step office, 18 seconds or more must be used; if the System is not connected to a Step-by-Step office, 5 seconds or more may be used. Valid entries are 5 to 99, or leave blank; default is 5.
- **Outgoing Dial Type** — identifies the type of pulsing required on an outgoing call. Valid entries are “tone” (default), “rotary”, or (if the Trunk Signaling Type is blank) “mf”.
- **Incoming Dial Type** — Indicates the type of pulses required on an incoming trunk group. Valid entries are “tone” (default), “rotary”, or (if the Trunk Signaling Type is blank) “mf”. The value in this field impact the appearance of the Incoming Partial Dial Timer on the Administrable Timer Page.
- **Disconnect Timing (msec)** — Specifies the minimum time period in ms that is required for recognition of disconnect by the serving central office or far-end PBX. The time interval must be in increments of 10 (from 140 to 2550 ins); default is 500. This timer will not be used for ports on a circuit pack that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers. These latter two timers will replace Disconnect Timing.

- **Sig Bit Inversion** — This field allows the user to administer the signaling bit inversion (the A-bit and B-bit inversion) on a per-port basis and applies only to TN464B or later circuit packs. The CCITT standards define on-hook to be “1” in the A-bit and off-hook to be “0”. This definition is the opposite of the EIA definition. The default in the TN464 firmware for signaling bit inversion is to use the CCITT standard for 32-channel mode and to use the EIA standard for 24-channel mode. Valid entries are “A”, “B”, “A&B”, and “none”.
- **Connected to Toll** — Enter “y” if connected to a CO toll office. This field is displayed when the Trunk Type field contains an entry of “auto/...”, “delay/...”, “wink/...”, or “dimmed/...”.
- **Wink Timer (msec)** — Displayed when the trunk type for the “outgoing” side of the in/out field is “wink” or “delay”. Enter a number from 300 to 5000 in increments of 50; default is 300. This timer is sent only to TN760C (vintage 4 or later), TN767, and TN464C (or later) circuit packs.

⇒ NOTE:

This value is the same for each member of the trunk group where the timing is administered; that is, if members from TN760B ports are mixed with members from TN760C V4 ports, only the TN760C V4 ports are set to this value. (The TN760B ports use a default value on the circuit pack itself).

United States domestic requirements state that for a “wink” start trunk, the wink must begin within five seconds (the “wait-for-wink-to-start” time) and must end within 290 ms (the “wait-for-wink-to-end” time). For a “delay” dial trunk, the wink must begin within 140 ms (the “wait-for-wink-to-start” time) and end when the switch is ready to receive digits.

The “wink” start “wait-for-wink-to-end” time and the “delay” dial “wait-for-wink-to-start” time are **both** administered through the use of this field.

- **STT Loss** (Satellite PBX Tie Trunk Loss) — Displayed when the Connected to Toll field is “n”. Specifies the loss plan to be used for the trunk group. Valid entries are “normal” (default) or “low”. This option affects the transmission performance of a private PBX network.

Although the use of this option has wider applications, only for the simplest network arrangements should this field be administered without Network Engineering advise. The “low” option (described as the ISL digital low loss plan in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DM/ISDN-PRI Reference*, 555-025-101) should be used when:

1. Stations on the satellite PBX complain of too much loss on calls to the public network.
2. The PBX network consists of **no more** than three PBXs: one main and one or two satellite PBXs.

3. All PBXs have the "low" option available.
4. The total DS1 trunk connection length is less than 100 miles.

If the preceding conditions are not met, obtain Network Engineering assistance. The field entry is based on the following:

- **normal** — Applies to AIU-TT (Analog Interface Unit at Customer Switching System for Tie Trunk — 4-wire E&M interface) and DIU-TT (Digital Interface Unit at Customer Switching System for Tie Trunk — voice or AVD DS1 interface) loss plans.
 - **low** — Applies to AIU-TTS (same as AIU-TT, but suitable for private network connections that can be connected in tandem with public network connections) and DIU-TTS (same as DIU-TT, but suitable for private network connections that can be connected in tandem with public network connections). These interfaces were formerly referred to as DIU DTT ISL.
- **DTT to DCO Loss** (Digital Tie to Digital CO Trunk Loss) — Specifies the loss plan used for the trunk group that connects a DIU-CO (Digital Interface Unit at a Central Office) to a DIU-DIT (Digital Interface Unit for a Digital Tie Trunk Interface). Displayed when the Trunk Type field contains an entry of "auto/...", "delay/...", "wink/...", or "immed/...".

This option affects the transmission performance of public network access via a private PBX network. Choose the "low" option if private network users complain about too much loss on calls to the public network otherwise, the "normal" option should be used. Valid entries are "normal" (default) and "low". The entry is based on the following:

- **normal** — Corresponds to a (0, -6) dB gain pair and is used as the default option. (This corresponds to the DTT/EIA DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Reference*, 555-025-101.)
 - **low** — Corresponds to (+3, -3) dB gain pair. Low is used for internetwork applications in which no significant configuration will encounter echo, stability, or overload problems because of reduced loss. With the low gain pair, subscriber station DTMF signals transmitted through the digital class 5 office into the customer network may experience nonrecoverable digit mutilation in secondary signaling applications (that is, DTMF signaling after the connection has been established). (This corresponds to the DTT/ISL DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Reference*, 555-025-101.)
- **Incoming Dial Tone** — Indicates whether or not the trunk group will pass on incoming dial tone to the calling party. Valid entries are "y" or "n".

- **Disconnect Supervision-Out** — This field is displayed when the Direction field is either “outgoing” or “two-way”. The default for the field is “n”. Internally, the field is set to “n” if the Direction is “incoming”. If the field is set to “y” a Warning Message appears to alert the user of possible trunk lockups. This field specifies whether trunks in this trunk group provide disconnect supervision when seized outgoing (that is, whether these trunks should be allowed to participate in outgoing trunk to outgoing trunk calls). This field is set independently of the trunk-to-trunk transfer system parameter, although both options must be set appropriately if outgoing trunk to outgoing trunk transfers are desired.
- **Answer Supervision Timeout** — Used for analog port circuits to indicate the amount of time (in seconds) the System allows for a call to be answered before beginning a CDR record of a call. This interval begins as soon as the outgoing trunk is seized. Valid entries are 0 to 250; default is 10.

⇒ NOTE:

This timeout does not override answer supervision sent from the network or other firmware (DS1 port circuit timers). DS1 firmware-sent answer supervision is administered in the Outgoing End of Dialing field on Page 3 of the Trunk Group form (Administrable Timers page).

- **Receive Answer Supervision** — Specifies whether or not the network provide answer supervision for the trunks. Answer supervision refers to notification from the far-end that the called party has gone off-hook to answer the call. When answer supervision is provided, the originating PBX can classify a call as answered using the Answer Supervision Timeout field entry (for domestic circuit packs) or, for circuit packs that take administrable timers, by using the Outgoing End of Dial timer. For trunks over which answer supervision is provided by the network, set this field to “y” and the Answer Supervision Timeout field to “0” so that the firmware timeout is disabled. The firmware timeout is automatically set to “0” on circuit packs that take the administrable Outgoing End of Dial timers. Receive Answer Supervision must be set to “n” (default) if the Direction field is “incoming”.

Page of the Form

- **ACA Assignment** — Specifies whether or not Automatic Circuit Assurance (ACA) measurements will be taken for this trunk group. Valid entries are “y” (default) or “n”. If “y” is entered, complete the next three fields.
- **Long Holding Time (hours)** — Is the length in hours that the System will consider as being a long holding time. If “0” is entered, the System will not consider long holding calls. Valid entries are 0 to 10; default is 1.
- **Short Holding Time (secs.)** — Specifies the length in seconds that the System will consider as being a short holding time. If “0” is entered, the System will not consider short holding calls. Valid entries are 0 to 160; default is 10.

- **Short Holding Threshold** — Is the number of times that the System will record a short holding call before an attendant or display-equipped voice terminal user is alerted to the possibility of a faulty trunk. Valid entries are 0 to 30; default is 15.
- **Measured** — Indicates if the System will transmit data for this trunk group to the Call Management System. Valid entries are "internal", "external", "both", and "none". Enter "internal" if the data is to be sent to the Basic Call Management System (internal to the switch) for subsequent measurement reports and "external" to send the data to the Call Management System Adjunct. Enter "both" to send the data to both systems for measurement reports. Enter "none" (default) if trunk group measurements are not required.
- **Internal Alert** — Specifies if internal ringing and coverage will be used for incoming calls. Valid entries are "y" or "n" (default).
- **Data Restriction** — Is used to prevent System features from generating tones on a data call that would cause erroneous data transmission. Valid entries are "y" or "n" (default).
- **Glare Handling** — Only displayed when the Direction field is "two-way" and the outgoing side of the Trunk Type field is either "wink" or "delay". This field determines how glare situations should be treated. Valid entries are "control", "backoff", or "none".

Warnings are generated if the field is changed to either "control" or "backoff" and ports for the trunk group are not capable of detecting glare.

- **Suppress # Outpulsing** — Indicates end-to-end signaling begins with (and includes) the "#" when "y" is entered in this field. The final "#" is suppressed in cases where System would normally outpulse it. This field should be "y" when the Central Office (for example, rotary) or any other facility treats "#" as an error; default is n.
- **Seize When Maintenance Busy** — This field is effective only for ports on TN760C (or later release), TN767, and TN464C (or later release) circuit packs. It indicates whether an outgoing seize is generated when a trunk is maintenance busied, and whether the far-end switch is administered to do likewise. This supports the Electronic Tandem Network Busyout feature. The intended use of this feature is to prevent the far-end PBX from reporting problems concerning a trunk which has been removed from service at the near end. The setting of this field has no effect on the behavior of the far-end machine; it controls the behavior of the near end switch and the *expected* far-end behavior.

If the administered value of this field is either "near-end" or "both-ends", an outgoing seize will be initiated whenever a trunk in this trunk group is maintenance busied. The seize is maintained until the maintenance busyout is released. This action will likely cause alarms at the far-end switch, perhaps leading to a far-end maintenance busy out, unless the far-end switch is administered to expect this behavior.

If the administered value of this field is either "far-end" or "both-ends", any abnormally long incoming seize³ (including failure to drop from a completed call) is *assumed to be the result of a far-end maintenance busy condition*. Note that this assumption may be incorrect since the abnormally long seize may actually be due to a transient or permanent failure of the trunk circuit. Regardless of the cause of the abnormally long seize, the near end response is to:

1. generate a warning alarm indicating the trunk is assumed to be maintenance busy at the far-end,
2. remove the trunk from service, and
3. keep the trunk out of service until a far-end disconnect is received.

The values allowed depend on the Direction field. When the Direction is "incoming", the valid values are "far-end" and "neither-end".

When the Direction is "outgoing", the valid values are "near-end" and "neither-end".

When the Direction is "two-way", the valid values are "both-ends", "far-end", "near-end", and "neither-end".

- **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are "y" (default) or "n".

Page 3 of the Form (Administrable Timers)

- **Incoming Disconnect (msec)** — A disconnect signal on an incoming call is considered valid only if it continues at least for the time specified by this timer. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank; default is 500. The field appears only for an "incoming" or "two-way" trunk group when the Trunk Signaling Type is either blank or "cont".
- **Incoming Dial Guard (msec)** — Enter the interval between the detection of an incoming seizure and the acceptance of the first digit. The PBX will not accept digits before this timer expires. This timer is administrable when the Trunk Signaling Type is blank. Valid entries are 10 to 2550 in increments of 10; default is 70.
- **Incoming Partial Dial (sec)** — Enter the time (in sec) allowed between digits. Valid entries are 5 to 255 in increments of 1; default is 18. This timer appears only if the Incoming Dial Type is "rotary".

3. When an incoming seize is detected, the normal behavior is to either immediately direct the call to an administered destination, or to wait for an administered period of time for incoming destination digits. If digits are expected but not received, the calling party receives the DID/TIE intercept treatment administered on the Feature-Related System Parameters form.

- **Incoming Incomplete Dial Alarm (sec)** — Enter the maximum time (in sec) between incoming seizure and receipt of all digits. Intervals greater than this generate an inline error. Valid entries are 1 to 255 in increments of 1; default is 255. This timer is sent to the TN464C (or later), TN760Dv15 (or later), TN767, and TN2140 tie circuit packs.
- **Outgoing Disconnect (msec)** — A disconnect signal on an outgoing call is considered valid only if it continues at least for the time specified by this timer. This timer begins timing when a disconnect signal has been detected on an outgoing call over the trunk, and resets when the signal is no longer detected. If the timer times out, the trunk is dropped. Valid entries are 50 to 2550 in increments of 10; default is 500. The field cannot be blank. This field only appears for “outgoing” or “two-way” trunk group when the Trunk Signaling Type is either blank or “cont”.
- **Outgoing Dial Guard (msec)** — This timer specifies the time between seizure acknowledgment of a trunk and the outpulsing of digits. For trunks that do not provide seizure acknowledgment, the timer specifies the minimum time between seizure and the outpulsing of digits. Any digit dialed by the station user after they lift the receiver, but before the timer times out, will not be outpulsed until the timer expires. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1600.
- **Incoming Glare Guard (msec)** — Enter the minimum time (in msec) between the time the incoming trunk is released and the same trunk can be seized for an outgoing call. This guard time will ensure the far-end has released all equipment after the incoming trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1500. This field only appears when the trunk group is “two-way”.
- **Outgoing Glare Guard (msec)** — Enter the minimum time (in msec) between the time an outgoing trunk is released and the same trunk can be seized for another outgoing call. This guard time will ensure that the far-end has released all equipment after the outgoing trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1500. This field only appears for outgoing and two-way trunk groups.
- **Outgoing Rotary Dial Interdigit (msec)** — Enter the interval (in msec) between rotary dial digits being outpulsed by the system (that is, PBX). Valid entries are 150 to 2550 in increments of 10. The field cannot be blank. Default is 800. This field only appears when the Outgoing Dial Type is “rotary”.
- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the far-end. Valid entries are 20 to 2550 in increments of 10. The field cannot be blank. Default is 500. This field appears when the Trunk Signaling Type is “cont” and the Direction is “incoming” or “two-way”. TN2140 ports are the only tie ports that can receive this timer.

- **Outgoing End of Dial (sec)** — Enter the maximum time (in sec) a trunk may wait for answer supervision after dialing an outgoing call. During cut through operation, timing begins after each outgoing digit is sent by the PBX and timing ceases after the far-end sends answer supervision. If the timer expires, the PBX acts as if it had received answer supervision. On senderized operation, the timer begins after the last digit collected is sent by the PBX. The timer ceases when the far-end sends answer supervision. If the timer expires, the PBX acts as if it has received answer supervision. This field appears when Direction is "outgoing" or "two-way" and Receive Answer Supervision is "n". This field will not appear if the Receive Answer Supervision field is "y", but a zero (0) value will be sent down to the firmware to disable the timer. Valid entries are 1 to 254 in increments of 1. Default is 10.

**NOTE:**

This field controls the firmware answer-supervision timer on ports that take the administrable timers; the Answer Supervision Timeout field on Page 1 of the Trunk Group form controls answer supervision for ports that do not take administrable timers. This field and the value administered in the Answer Supervision Timeout field on the Trunk Group form should be the same value.

- **Outgoing Seizure Response (sec)** — Enter a maximum time (in sec) by which the PBX should receive the proceed-to-dial indication from the far-end after sending the seize signal. If the indication is not received in this time, a seizure failure response is uplinked. Valid entries are 1 to 255 in increments of 1. Default is 5 sec. This timer is sent to the TN464B (or later), TN767, TN439, TN458, TN760Dv15 (or later), and TN2140 tie circuit packs.
- **Programmed Dial Pause (msec)** — Enter the length (in msec) of a pause during abbreviated dialing, ARS outpulsing, and terminal dialing operations. This timer is administrable for all outgoing and two-way trunk groups. Valid entries are 100 to 25500 in increments of 100. Default is 1500 msec. This timer is sent to the TN464B (or later), TN760Dv15 (or later), TN767, TN458, and TN2140 tie circuit packs.
- **Disconnect Signal Error (sec)** — Enter a maximum time (in sec) within which a disconnect signal from the far-end is expected after the internal party (a station or a tie trunk) goes on-hook. If the timer expires, the system can assume a disconnect failure and take an appropriate action (such as, an error message). Valid entries are 1 to 255 in increments of 1. Default is 240 sec.
- **Outgoing Last Digit (sec)** — Enter the maximum time (in seconds) to wait for the next digit dialed. After the timer expires, no more digits are accepted by the circuit pack. It will only be administrable if the Trunk Signaling Type is "dis" or "cont" and the trunk group Direction is "two-way" or "outgoing". Valid entries are 1-40; default is 10. Only TN2140 ports receive this timer.

- **Normal Outgoing Seize Send (msec)** — Enter the number of milliseconds to ground the M-lead. Outgoing seizure is signaled by the calling switch momentarily grounding the M-lead for the duration specified by this timer. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “two-way” or “outgoing”. Valid entries are 60 to 250 in increments of 10. Default is 70. Only TN2140 ports receive this timer.
- **Release Ack Send (msec)** — Enter the duration (in msec) of the forward release acknowledgment signal. After receiving a forward release signal, the called switch must send the forward release acknowledgment signal. This signal is sent by grounding the M-lead for the duration specified by this timer. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 500 to 1200 in increments of 100. Default is 600. Only TN2140 ports receive this timer.
- **Seize Ack Delay (msec)** — Enter the maximum time (in msec) between receiving a seizure and the sending of seizure acknowledgment by the called switch. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 40 to 120 in increments of 10. Default is 100. Only TN2140 ports receive this timer.
- **Answer Send (msec)** — Enter the duration (in msec) of the answer signal pulse. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 60 to 120 in increments of 10. Default is 80. Only TN2140 ports receive this timer.
- **Outgoing Disconnect Send (msec)** — Enter the duration (in msec) of the M-lead ground at the calling switch during disconnect. Forward release is signaled by the calling switch by grounding the M-lead for the duration specified by this timer. It is only administrable if the Trunk Signaling Type is “dis” and the trunk group Direction is “two-way” or “outgoing”. Valid entries are 500 to 1200 in increments of 100. Default is 800. Only TN2140 ports receive this timer.
- **Seize Ack Send (msec)** — Enter the duration (in msec) of the seize acknowledge pulse. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 40 to 120 in increments of 10. Default is 80. Only TN2140 ports receive this timer.
- **Incoming Disconnect Send (msec)** — Enter the duration (in msec) of the M-lead ground at the called switch during disconnect. Calls may be cleared by either the calling switch (forward release) or the called switch (backward release). Backward release is signaled by the called switch by grounding the M-lead for the duration specified by this timer. It is only administrable if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 500 to 1200 in increments of 100. Default is 800. Only TN2140 ports receive this timer.

- **Glare** — Enter the minimum time (in msec) between sending an outgoing seizure and receiving a seizure acknowledgment. If seizure acknowledgment is received before expiration of the timer, a glare condition is assumed. It is only administrable if the Trunk Signaling Type is "cont" and the trunk group Direction is "two-way" or "outgoing". Valid entries are 40 to 100 in increments of 10. Default is 40. Only TN2140 ports receive this timer.
- **Tone (msec)** — Enter the length of a DTMF tone sent in response to a button depression at a hybrid station set. Valid entries are 20 to 2550 in increments of 10; default is 350. Only administered if the Trunk Signaling Type is blank.
- **Pause (msec)** — Enter the minimum length of a pause between tones being sent in response to button depressions at a hybrid station set. Only administrable if the Trunk Signaling Type is blank. Valid entries are 20 to 2550 in increments of 10; default is 150.
- **PPS** — Enter either "10" or "20" to specify the PPS (pulses per second) assigned to rotary dial pulse trunk groups. Valid entries are "10" or "20", Default is "10".

⇒ NOTE:

The TN439, TN458, and TN767 circuit packs can only do 10pps.

- **Make (msec)** — Enter the duration of the make interval (the pause between pulses) while the system is outpulsing digits using dial pulse signaling.

If the PPS field is "10", the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of five. The field cannot be blank. The default is 40.

If the PPS field is "20", the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of five. The field cannot be blank. The default is 20.

- **Break (msec)** — Enter the duration of the break interval (the pulse duration) while the system is outpulsing digits using dial pulse signaling.

If the PPS field is "10", the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of five. The field cannot be blank. The default is 60.

If the PPS field is "20", the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of five. The field cannot be blank. The default is 30.

Page 4 of the Form (ATMS Threshold)**⇒ NOTE:**

This form appears when the Direction field on Page 1 is "outgoing" or "two-way" and ATMS is enabled on the Feature-Related System Parameters form.

- **TTL Type** — Specifies the type of TTL selected for testing trunks. The TTL type determines what ATMS tests can be completed and thus which threshold values need to be administered. The different TTLs supported are 105 with return loss (105-w-rl) (default), 105 without return loss (105-wo-rl), high-level tone source (high-level-tone), low-level tone source (low-level-tone), 100-type (100), and 102 type (102). The following table explains the differences between TTL Types:

Type TTL	Description	Example
<i>105-w-rl</i>	Full range of 18 measurements or some defaults for return loss used (56A)	TN771B, ZLC12 and SN261B circuit packs and new 56A mini-responder
<i>105-wo-rl</i>	Cannot return default values for far-end return loss	Older 56A mini-responder
<i>high-level-tone</i>	Sends a fixed sequence of tones at 0 dBm	ZLC12 and SN261B circuit packs
<i>low-level-tone</i>	Sends a fixed sequence of tones at -16dBm	SN261B circuit pack
<i>100</i>	Up to 5 measurements that sends a 1004 Hz tone then a quiet termination	
<i>102</i>	One measurement that sends a 1004 Hz tone	

The far-end switch containing the TTL may be any of the following:

- System 85 R3 PBX equipped with the Maintenance/Test Board (TN771B);
- System 75 R1V2 and beyond, all of which contain the circuitry required to perform the TTL function;
- System 85 R2 PBX equipped with the Analog/Digital Facility Test Circuit (ADFTC,SN261)
- DIMENSION FP8 equipped with the Analog Facility Test Circuit (AFTC, ZLC-12);
- Central Office switches equipped with various TTL equipment that provide 100, 102, or 105 test line capabilities (56A).

Other vendor PBXs *may* be supported if compatible test lines are provided by these switches.

Four different versions of the ATMS Threshold Administration page can occur depending upon the measurements allowed by the TTL type selected. The four possibilities are:

1. 105-w-rl and 105-wo-rl — all thresholds appear.
2. high-its and low-lts — all thresholds (except maximum C-notched noise) appear.

3. 100 — all thresholds (except maximum c-notched noise, 404Hz loss, and 2804 Hz loss) appear.
4. 102 — only 1004 Hz loss threshold appears.

				ATMS THRESHOLDS			
TTL Type: 105-w-rl_____				Far End Test No: _____			
TTL Vendor: _____				TTL Contact: _____			
Trunk Vendor: _____				Trunk Contact: _____			
Trunk Length: _____							

	MARGINAL		UNACCEPTABLE	
	Min	Max	Min	Max
1004 Hz Loss:	-2	21	-2	21
	-Dev	+Dev	-Dev	+Dev
404 Hz Loss:	9	9	9	9
2804 Hz Loss:	9	9	9	9

Maximum C Message Noise:	55	55
Maximum C Notched Noise:	74	74
Minimum SRL-HI:	0_	0_
Minimum SRL-LO:	0_	0_
Minimum ERL:	0_	0_

Allow ATMS Busyout, Error Logging and Alarming? y

Maximum Percentage of Trunks Which Can Be Removed from Service by ATMS: 0_

Screen 4-37. ATMS Thresholds Form

- **Far-End Test No.** — Enter the access number (1 to 20 digits) dialed to reach the TTL.
- **TTL Vendor**— Enter the 0 to 22 alphanumeric character TTL vendor name (the name of the vendor supplying the terminating test line); default is blank.
- **TTL Contact**— Enter the 0 to 25 alphanumeric character TTL vendor contact (the name and/or telephone number of someone from the TTL vendor who can be recontacted in the event of problems with the TTL); default is blank.
- **Trunk Vendor**— Enter the 0 to 22 alphanumeric character trunk vendor name (who to notify in the event of problems with the trunks); default is blank.
- **Trunk Contact**— Enter the 0 to 25 alphanumeric character trunk vendor contact (the name and/or telephone number of someone from the trunk vendor who can be contacted in the event of problems with the trunks); default is blank.

- **Trunk Length** — Enter 0 to 4 digits followed by “k” (for kilometers) or “m” (for miles) showing the length of trunk. This field is not required, since it is not used by the G3-MT. It has been included for the G3-MA adjunct to use in aiding with threshold establishment, since noise on a trunk increases with the length of the trunk. The default is “Om”.
- **Marginal Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance. A larger dB value is more restrictive.
- **Marginal Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance; default is 21. A smaller dB value is more restrictive.
- **Unacceptable Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable. A larger dB value is more restrictive.
- **Unacceptable Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable; default is 21. A smaller dB value is more restrictive.
- **Marginal Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone noise level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.

- **Marginal Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as out of tolerance. The default is 55. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as unacceptable. The default is 55. Smaller values are more restrictive.
- **Marginal Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as out of tolerance. The default is 74. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as unacceptable. The default is 74. Smaller values are more restrictive.
- **Marginal Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.

- **Marginal Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive,
- **Allow ATMS Busyout, Error Logging and Alarming** — Enter “y” to allow ATMS error logging and alarming (subject to filtering depending on the service organization used to deal with alarms); default is n.
- **Maximum Percentage of Trunks Which Can Be Removed From Service by ATMS** — Enter the highest percentage of trunks from the trunk group (0 to 100) that can be removed from service at one time because of unacceptable transmission measurement results; default is 0.

Pages Y through X of the Form (Group Member Assignments)



NOTE:

The total number of pages, and the first page of the Group Member Assignments, will vary depending on whether the Administrable Timers and ATMS Thresholds pages are displayed.

- **Administered Members (min/max)** — Indicates the minimum and maximum member number that has been administered for the particular trunk group. This field is displayed on all member pages.
- **Total Administered Members** — Indicates the total number of members administered in the trunk group. This field will appear on all trunk group member pages.
- **Port** — Enter seven characters. The first two characters identify the cabinet (01 to 22 [G3r V2], 01 to 03 [G3s V2, G3i V2]); the third character identifies the carrier (A through E); the fourth and fifth identify the slot number in the carrier (01 to 20 for multi-carrier cabinets or 01 to 18 for single-carrier cabinets); the last two characters identify the circuit number (01 to 31).
- **Code** — Display-only field. Displays the type of circuit pack physically installed or logically administered at the location to which this member has been assigned. If a circuit pack is neither installed nor administered at the member's location, the field is blank.

- **Sfx** — Displays the type of circuit pack (suffix only) physically installed at the location to which this member has been assigned. Field is blank if a circuit pack has not been physically installed.
- **Name** — Enter up to ten characters to identify the member of the trunk group. The name can be a 7-digit telephone number or a 10-digit Trunk Circuit Identification number (provided by trunk supplier).

**NOTE:**

Previously, Generic 1 Night Service and Balance/Loss information was entered in the Name field as "NT#..." and "TT#...". This information must now be entered in the Night field (below) or the STT Loss field on Page 1 of the form, as applicable.

- **Night** — Enter the extension of the night destination for the trunk. This individual night destination overrides the group night service destination on the first page of the trunk group form. Incoming calls are routed to this destination when the system is placed in night service mode. (If "attd" is entered, night service will be to the attendant.)
- **Mode** — Specifies the signaling mode used on Tie Trunks with TN722A (or later release), TN760B (or later release), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are "e&m" (interface), "simplex" (phantomed), or "protected". This entry must correspond to associated dip switch settings on the circuit pack.
- **Type** — Specifies the signaling type to be used. This field should only be used with TN760B (or later release), TN722 (with any suffix), TN767, TN2140 (when the Trunk Signaling Type field is "cont"), TN437, TN439, TN464 (with any suffix), or TN458 circuit packs. The Type field appears with the Trunk Signaling Type field is "cont" or blank".

The value of "t5 rev" is allowed only for the TN760D vintage 10 or later. When the Type field is "t5 rev", the Mode field must be "e&m."

Valid entries are "t1 stan", "t1 comp", "t5rev", or "type 5". Default is blank.

- **Ans Delay** — Specifies the length of the wait for answer supervision delay in ms for Trunks using the TN722A (or later), TN760 (B, C, or D), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are 20 to 5100 in increments of 20; default is blank and internally treated as a zero. This delay serves two purposes:
 1. Used to assure that the answer supervision signal is valid and not a secondary delay-dial or wink-start signal.
 2. Used to bridge over momentary off-hook signals resulting from connections made off-network through certain No. 5 Crossbar CCSA switches as the connection is being established.

TRUNK GROUP		Page 1 of x
Group Number: 1	Group Type: aplt	CDR Reports? y
Group Name: OUTSIDE CALL	COR: 1	TAC: _____
Direction: two-way	Outgoing Display? n	Trunk Signaling Type: _____
Dial Access? y	Busy Threshold: 99	Night Service: _____
Queue Length: 0		Incoming Destination: _____
	Auth Code? n	
TRUNK PARAMETERS		
Trunk Type(in/out) : _____	Incoming Rotary Timeout: 5	
Outgoing Dial Type: tone	Incoming Dial Type: tone	
	Disconnect Timing(msec) : 500	
	Sig Bit Inversion: none	
Incoming Dial Tone? y		
Disconnect Supervision- Out? n		
Answer Supervision Timeout: 10	Receive Answer Supervision? n	

Screen 4.38. Advanced Private Line Termination Trunk Group Form (Page 1 of X)

Implementation Notes:

BCC is displayed when the Comm Type is "avd" or when ISDN-PRI is optioned on the System-Parameters Customer-Options form and Comm Type is "avd", "data", or "rbavd".

Connected to Toll and DTT to DCO Loss are displayed when Trunk Type is "auto/...", "delay/...", "immed/...", or "wink/...".

STT Loss is displayed when Connected to Toll is "n".

Wink Timer is displayed when the outgoing side of the Trunk Type is "wink" or "delay".

Queue Length is displayed when the Direction is "outgoing" or "two-way".

Night Service, incoming Destination and Auth Code are displayed when Destination is "incoming" or "two-way".

Send Release Ack, Receive Release Ack, and Send Answer Supervision are displayed when Trunk Signaling Type is "cont" or "dis".

Bit Rate, Synchronization, and Duplex are displayed when Comm Type is "avd" or "rbavd".

ITC is displayed when Comm Type is "data", "avd", or "rbavd" and BCC is not "0".

The Expected Digits field appears if the Direction is "incoming" or "two-way", the Trunk Signaling type is blank, and the Incoming Dial Type is "mf."

		Page 2 of X
TRUNK FEATURES		TRUNK GROUP
ACA Assignment? n	Measured: none	
	Internal Alert? n	
	Data Restriction? n	
		Maintenance Tests? y
Suppress # Outpulsing? n		
	Seize When Maintenance Busy: neither-end	

Screen 4-39. Advanced Private Line Termination Trunk Group Form (Page 2 of X)

Implementation Note:

Long Holding Time (hours), Short Holding Time (seconds), and Short Holding Threshold are displayed when ACA Assignment is "y".

Glare Handling is displayed when the Direction field is "two-way" and the outgoing side of the Trunk Type field is "wink" or "delay".

		Page 3 of X
TRUNK GROUP		
ADMINISTRABLE TIMERS		
Incoming Disconnect (msec): 500	Outgoing Disconnect(msec): 500	
Incoming Dial Guard(msec) : 70	Outgoing Dial Guard(msec) : 1600	
Incoming Glare Guard(msec) : 1500	Outgoing Glare Guard(msec) : 1500	
Outgoing Rotary Dial Interdigit(msec) : 800_		
Outgoing End of Dial (sec) : 10	Outgoing Seizure Response (sec) : 5	
Programmed Dial Pause (msec) : 1500	Disconnect Signal Error(sec): 240	
Incoming Incomplete Dial Alarm(sec): 255		
END TO END SIGNALING		
Tone (msec) : 350	Pause (msec) : 150	
OUTPULSING TIMING		
PPS: 10	Make (msec) : 40	Break (msec) : 60

Screen 4-40. Access Trunk Group Administrable Timers Form (Page 3 of X)**Implementation Note:**

The Incoming Partial Dial field is only displayed when the Incoming Dial Type field from Page 1 is "rotary".

The Outgoing End of Dial field is displayed if the Receive Answer Supervision field from Page 1 is "n".

TRUNK GROUP								Page 4 of X
Administered Members (min/max)								xxx/yyy
Total Administered Members								xxx
GROUP	MEMBER	ASSIGNMENTS						
	Port	Code	s f x	Name	Night	Mode	Type	Ans Delay
1:	_____	_____	-	_____	_____	_____	_____	_____
2:	_____	_____	-	_____	_____	_____	_____	_____
3:	_____	_____	-	_____	_____	_____	_____	_____
4:	_____	_____	-	_____	_____	_____	_____	_____
5:	_____	_____	-	_____	_____	_____	_____	_____
6:	_____	_____	-	_____	_____	_____	_____	_____
7:	_____	_____	-	_____	_____	_____	_____	_____
8:	_____	_____	-	_____	_____	_____	_____	_____
9:	_____	_____	-	_____	_____	_____	_____	_____
10:	_____	_____	-	_____	_____	_____	_____	_____
11:	_____	_____	-	_____	_____	_____	_____	_____
12:	_____	_____	-	_____	_____	_____	_____	_____
13:	_____	_____	-	_____	_____	_____	_____	_____
14:	_____	_____	-	_____	_____	_____	_____	_____
15:	_____	_____	-	_____	_____	_____	_____	_____

Screen 4-41. Advanced Private Line Termination Trunk Group Form (Pages 4 through X)**Implementation Notes:**

To reduce repetition, the remaining pages are not shown. For a complete set of forms, refer to the "Blank Forms Package."

The Type Column does not appear if the Trunk Signaling Type field on Page 1 is "dis".

Central Office Trunk Group

This form is used to connect the System to the public telecommunications network via a local CO.

Administration Commands

The following administration commands can be used to access the CO Trunk Group form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	trunk-group	1-MAX (or 'next')
change	trunk-group	1-MAX or TAC X...
display	trunk-group	1-MAX ['number' X]['to-number' X]['count' N] ['tac' assigned TAC]['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-MAX or TAC X...

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Group Type** — Enter "co" to identify the trunk group type.
- **CDR Reports** — Enter "y" (default) to provide a detailed Call Detail Recording (CDR) record of both incoming and outgoing calls made on all trunks in the trunk group.
- **Group Name** — Enter a unique name that identifies the trunk group. Up to 15 characters can be used; default is OUTSIDE CALL.
- **COR** — Enter a class of restriction (COR) number from 0 to 95 that reflects the desired restriction; default is 1.
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. CDR also uses the TAC to identify the trunk group on associated CDR reports. A different TAC must be assigned to each trunk group. Valid entries are TACs that are compatible with the System Dial Plan (1 to 4 digits; 1 to 3 digits for DCS or to remotely control it).

- **Direction** — Enter whether the trunk group is “incoming”, “outgoing”, or “two-way” (default). The Direction administered affects which timers appear on the Administrable timers page.
- **Outgoing Display** — Specifies whether or not the trunk group name is displayed on a terminal placing an outgoing call. Valid entries are “y” or “n” (default).
- **Dial Access** — Enter “y” to allow the trunk group to be accessed via a TAC; otherwise, enter “n” (default). Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter the number of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console.
- **Night Service** — Enter the extension number assigned to Night Service. The extension number entered will receive all incoming calls when Night Service is activated and the individual trunk member Night field is not administered to override this group extension. Valid entries are an extension number (can be a VDN extension), the attendant group access code (“attd”), or leave blank if the Trunk Type (in/out) field is not “auto/...”.
- **Queue Length** — Enter the number of outgoing calls that can be held waiting. A “0” indicates no calls will be held in queue. Enter “0” (default) for DCS trunks. This field is not displayed if the Direction field is “incoming”.
- **Country** — This field specifies the country code for each subscriber line. Valid values are any number between 1 and 17, inclusive. The value of this field, in conjunction with the values of the Trunk Termination and Trunk Gain fields, will determine the input and trans-hybrid balance impedance requirements for TN465B, TN2146, and TN2147 ports.

Refer to the “Country Code Assignments” table in Appendix B for a complete list of country codes.



NOTE:

Although defined, country codes 12 (France) and 13 (Germany) are not supported and, if entered, will cause an error message to be displayed.

- **Incoming Destination** — Displayed only if the Direction field is “incoming” or “two-way”. Indicates where incoming calls will terminate. Valid entries are an extension number, the attendant group access code (“attd”), VDN, or leave blank if the Trunk Type (in/out) field is not “auto/...”. If “attd” is entered, a call is treated as an LDN call.
- **Comm Type** — Indicates if the trunk is to be used for voice, data, alternate voice-data (avd), or alternate voice/voice grade data and 56-kbps digital data (rbavd) calls. Valid entries are “avd”, “rbavd”, “voice” (default), or “data”. Type “rbavd” supports access to voice/data SDN service on robbed-bit transmission facilities.

**NOTE:**

Comm Types of "avd" and "rbavd" require trunk member ports on a DS1 circuit pack. An "rbavd" type requires that the DS1 circuit pack be administered for robbed-bit, or (if mixed mode signaling is allowed on the DS1 circuit pack) ISDN-EXT, or ISDN-PRI signaling. An "avd" type requires that the DS1 circuit pack be administered for either common-chan or CAS signaling.

- **Auth Code** — Displayed if the Direction field is "incoming" or "two-way". Enter "y" if an authorization code must be dialed to complete incoming calls on the trunk group. This field can only be "y" if the Authorization Codes feature is enabled on the System-Parameters Customer-Options form.
- **Digit Absorption List** — Enter a digit list absorption number, if required, when this trunk group terminates at a step-by-step office. This field specifies the type of absorption as specified on the System Digit Absorption form. Up to five different forms (lists 0 to 4) may be administered in the System.
- **Prefix-1** — Specifies if the prefix 1 is required for N(0/1)X calls. Valid entries are "y" and "n" (default).
- **Trunk Flash** — Enter "y" or "n" (default) to indicate if access to customized services provided by a far-end (such as Central Office) is permitted for this trunk group. The PBX must be directly connected to a far-end that provides such services via an analog or digital 2-wire trunk.
- **Toll Restricted** — Enter "y" (default) if this trunk group is to be toll restricted. This field only applies for outgoing TAC calls if the originating party is toll restricted. Trunks with an Outgoing Dial Type of "automatic" should have this field set to "n."
- **BCC (Bearer Capability Class)** — Displayed when the Integrated Services Digital Network-Primary Rate Interface is optioned for on the System-Parameters Customer-Options form and the Comm Type field is "data", "avd", or "rbavd". Used by the Generalized Route Selection feature and identifies the type of traffic on trunks in the group. The BCC entry is used by far-end tandem switches to select outgoing routing facilities with equivalent BCC classes. Valid entries are 0, 1, 2, 3, and 4; default is 0 for "avd" and 2 for "data."

**NOTE:**

Refer to "Generalized Route Selection" in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls.

- **ITC (Information Transfer Capability)** — Displayed for non-ISDN trunk groups when the Comm Type field is "data," "avd," or "rbavd" and the BCC field is not "0." Used by the GRS feature and enables the system to route calls to restricted or unrestricted facilities according to the endpoint's

information transfer capability. Default is restricted. A trunk member is said to be unrestricted if the circuit pack it belongs to is administered as "b8zs" or "hdb3" in the Line Coding field of the DS1 form. A restricted trunk member can carry only restricted calls. An unrestricted trunk member may carry restricted or unrestricted calls. A trunk group with a transfer capability of unrestricted may have only unrestricted trunk members.

- **Trunk Type** — Identifies the physical type of CO trunk. It may differ for incoming and outgoing types. Valid entries are "ground-start", "loop-start", "auto/auto", "auto/delay", "auto/immed", and "auto/wink".
- **Outgoing Dial Type** — Identifies the type of pulsing required on an outgoing call. Valid entries are "automatic", "mf", "tone" (default), or "rotary".

**NOTE:**

Multifrequency Signaling must be enabled on the System-Parameters Customer-Options form before a value of "mf" may be administered.

- **Cut-Through** — This field appears only when the Outgoing Dial Type is either "rotary" or "tone". Enter "y" to allow "cut-through" to the CO trunk.

If the dialed digits are restricted:

- The connection to the CO trunk is dropped,
- Intercept treatment is applied.

Enter "n" (default) and the user will receive PBX dial tone. Instead of digits being sent to the CO as they are dialed, they are collected, checked for restrictions, and, if there are no restrictions, the digits are sent to the CO.

- **Trunk Termination** — Specifies how the trunk group is terminated. Valid entries are "600ohm" or "rc" (default). Enter "600ohm" when the PBX trunk port is connected to terminal equipment (for example, SLC® carrier or compensators optioned for 600 ohms input impedance) and the distance to the terminal equipment from the System is less than 3000 feet.
- **Disconnect Timing (msec)** — Specifies the minimum time period in ms that is required for recognition of disconnect by the serving central office or far-end PBX. The time interval must be in increments of 10 (from 140 to 2550); default is 500. This timer is not used for ports on a circuit pack that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers. These latter two times will replace Disconnect Timing.
- **Auto Guard** — Enter "y" to prevent repeated seizures of a defective trunk. This field is effective only for TN438B, TN465B, and TN2147 ports. TN438B ports have hardware support for detecting a defective trunk. TN465B and TN2147 ports consider a trunk defective if no dial tone is detected on an outgoing call, and the Outpulse Without Tone? field is set to "n" on the Feature-Related System Parameters form. The default is no.

- **Call Still Held** — Enter “y” to prevent call collisions by not allowing an outgoing seizure for a period of not less than 140 seconds. This field is used only at the end of an incoming call where the disconnect is initiated by the PBX, and it will effectively extend the Incoming Glare Guard timer by 140 seconds. This field is effective only for TN438B, TN465B, and TN2147 ports. Default is “n”.
- **Sig Bit Inversion** — This field allows the user to administer the signaling bit inversion (the A-bit and B-bit inversion) on a per-port basis. This field applies only to TN464B or later suffixed circuit packs. The CCITT standards define on-hook to be “1” in the A-bit and off-hook to be “0”. This definition is the opposite of the EIA definition. The default in the TN464 firmware for signaling bit inversion is use the CCITT standard for 32-channel mode and to use the EIA standard for 24-channel mode. Valid entries are “A”, “A&B”, “B”, and “none” (default).
- **Connected to Toll** — Enter “y” if connected to a CO toll office. This field is displayed when the Trunk Type field contains an entry of “auto/...”.
- **Terminal Balanced** — Displayed when the Trunk Type field is “ground-start”, “loop-start”, “immed-start”, or “wink-start”. Enter “y” for terminally balanced trunks or “n” (default) for unbalanced trunks. Typically, a Trunk Termination field of “600ohm” signifies a balanced trunk group and a field of “rc” signifies a non-balanced trunk group. If the trunks in this group pass the Low Frequency Return Loss test requirements, then they are terminally balanced, and this field should be “y”.
- **STT Loss (Satellite PBX Tie Trunk Loss)** — Displayed when Connected to Toll is “n”. Specifies the loss plan to be used for the trunk group. Valid entries are “normal” (default) or “low”. This option affects the transmission performance of a private PBX network.

Although the use of this option has wider applications, only for the simplest network arrangements should this field be administered without Network Engineering advise. The “low” option (described as the ISL digital low loss plan in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DM/ISDN-PRI Reference*, 555-025-101) should only be used when:

1. Stations on the satellite PBX complain of too much loss on calls to the public network.
2. The PBX network consists of no more than three PBXs: one main and one or two satellite PBXs.
3. All PBXs have the “low” option available.
4. The total DS1 trunk connection length is less than 100 miles,

If the preceding conditions are not met, obtain Network Engineering assistance. The field entry is based on the following:

- **normal** — Applies to AIU-TT (Analog Interface Unit at Customer Switching System for Tie Trunk — 4-wire E&M interface), and DIU-IT (Digital Interface Unit at Customer Switching System for Tie Trunk — voice or AVD DS1 interface) loss plans.

- **low** — Applies to AIU-TTS (same as AIU-TT, but suitable for private network connections that can be connected in tandem with public network connections) and DIU-TTS (same as DIU-TT, but suitable for private network connections that can be connected in tandem with public network connections). These interfaces were formerly referred to as DIU DTT ISL.
 - **RA Trunk Loss** (Remote Access Trunk Loss) — Displayed when the Terminal Balanced entry is “n”. Specifies the type of dB loss to be applied to non-terminally balanced trunks. If unsatisfactory echo performance (hollowness) is experienced, the field should be changed to 2dB. Valid entries are “0db” (default) and “2db”.
 - **DTT to DCO Loss** (Digital Tie to Digital CO Trunk Loss) — Specifies the loss plan to be used for the trunk group for interconnections from a DIU-CO (Digital interface Unit at a Central Office) to a DIU-DTT (Digital Interface Unit for a Digital Tie Trunk Interface). This field is displayed when the Trunk Type field contains an entry of “auto/...”.
- This option affects the transmission performance of public network access via a private PBX network. Choose the “low” option when private network users complain about too much loss on calls to the public network; otherwise, the “normal” option should be used. Valid entries are “normal” (default) and “low”. The entry is based on the following:
- **normal** — Corresponds to a (0, -6) dB gain pair and is used as the default option. (This corresponds to the DTT/EIA DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMII/ISDN-PRI Reference*, 555-025-101.)
 - **low** — Corresponds to (+3, -3) dB gain pair. Low is used for internetwork applications in which no significant configuration will encounter echo, stability, or overload problems because of reduced loss. With the low gain pair, subscriber station DTMF signals transmitted through the digital class 5 office into the customer network may experience nonrecoverable digit mutilation in secondary signaling applications (that is, DTMF signaling after the connection has been established). (This corresponds to the DTT/ISL DCO port to port configuration as described in *DEFINITY Communications System Genetic 1 and System 75 and System 85 DS1/DMII/ISDN-PRI Reference*, 555-025-101.)
- **Trunk Gain** — This field specifies the gain of the trunk, and can be “high” (default) or “low”. The value of this field, in conjunction with the values of the Trunk Termination and Country fields, will determine the input and trans-hybrid balance impedance for TN465B, TN2147, and TN2146 ports. All other CO circuit packs will be automatically set to “high”.
 - **Bit Rate** — Displayed when Comm Type is “avd” or “rbavd.” It also appears if the Comm Type is “data,” but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form. Specifies the baud rate to be used by pooled modems. Valid entries are 300, 1200 (default), 2400, 4800, 9600, and 19200.

- **Synchronization** — Displayed when Comm Type is “avd” or “rbavd.” It also appears if the Comm Type is “data,” but only if the option for ISDN-PRI is enabled on the System Parameters Customer Options form. Enter whether the trunk group will use synchronous or asynchronous communications. Valid entries are “async” (default) and “sync”.
- **Duplex** — Displayed when Comm Type is “avd” or “rbavd.” It also appears if the Comm Type is “data,” but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form. Specifies either full or half duplex for the trunk group. Valid entries are “full” (default) or “half”.
- **Disconnect Supervision-In** — This field appears when the Direction is either “incoming” or “two-way”. Internally, the field is set to “n” if the Direction is “outgoing”. Enter “y” (default) to indicate that the far-end has the ability to release a trunk when the calling party releases from a call and the system is able to recognize the release signal.
- **Disconnect Supervision-Out** — This field appears when the Direction is either “outgoing” or “two-way”. Internally, the field is set to “n” if the Direction is “incoming”. If the field is set to “y,” a Warning Message appears to alert the user of possible trunk lockups. This field specifies whether trunks in this trunk group provide disconnect supervision when seized outgoing (that is, whether these trunks should be allowed to participate in outgoing trunk to outgoing trunk calls). This field is set independently of the trunk-to-trunk transfer system parameter, although both options must be set appropriately if outgoing trunk to outgoing trunk transfers are desired.
- **Cyclical Hunt** — Displayed when Direction is “two-way” and Trunk Type is “loop-start”. Enter “y” (default) if a preferential hunting algorithm is to be used. Otherwise, a linear hunting algorithm will be used.
- **Answer Supervision Timeout** — Used for analog port circuits to indicate the amount of time in seconds the System allows for a call to be answered before beginning a CDR record of a call. This interval begins as soon as the outgoing trunk is seized. Valid entries are 0 to 250; default is 10.

 NOTE:

This timeout does not override answer supervision sent from the network or other firmware (DS1 port circuit timers). DS1 firmware-sent answer supervision is administered in the Outgoing End of Dialing field on Page 3 of the Trunk Group form (Administrable Timers page).

- **Receive Answer Supervision** — Specifies whether or not the network provides answer supervision for the trunks. Answer supervision refers to notification from the far-end that the called party has gone off-hook to answer the call. When answer supervision is provided, the originating PBX can classify a call as answered using the Answer Supervision Timeout field entry (for domestic circuit packs) or, for circuit packs that take administrable timers, by using the Outgoing End of Dial timer. For trunks over which answer supervision is provided by the network, set this

field to "y" and the Answer Supervision Timeout field to "0" so that the firmware timeout is disabled. The firmware timeout is automatically set to "0" on circuit packs that take the administrable Outgoing End of Dial timers. Receive Answer Supervision must be set to "n" (default) if the Direction field is "incoming."

Page 2 of the Form

- **ACA Assignment** — Specifies whether or not Automatic Circuit Assurance (ACA) measurements will be taken for this trunk group. Valid entries are "y" or "n" (default). [f "y" is entered, complete the next three fields.
- **Long Holding Time (hours)** — Only displayed if ACA Assignment is "y". Is the length in hours that the System will consider as being a long holding time. If "0" is entered, the System will not consider long holding calls. Valid entries are 0 to 10; default is 1.
- **Short Holding Time (secs.)** — Only displayed if ACA Assignment is "y". Specifies the length in seconds that the System will consider as being a short holding time. If "0" is entered, the System will not consider short holding calls. Valid entries are 0 to 160; default is 10.
- **Short Holding Threshold** — Only displayed if ACA Assignment is "y". Number of times the System will record a short holding call before an attendant is alerted to the possibility of a faulty trunk. Valid entries are 0 to 30; default is 15.
- **Measured** — Indicates if the System will transmit data for this trunk group to the Call Management System. Valid entries are "internal", "external", "both", "none". Enter "internal" if the data is to be sent to the Basic Call Management System (internal to the switch) for subsequent measurement reports and "external" to send the data to the Call Management System Adjunct. Enter "both" to send the data to both systems for measurement reports. Enter "none" if trunk group measurements are not required. System default is none.
- **Data Restriction** — Used to prevent System features from generating tones on a data call that would cause erroneous data transmission. Valid entries are "y" or "n" (default).
- **Abandoned Call Search** — Administered when the Trunk Type is "ground-start", Enter "y" if this trunk group will conduct an Abandoned Call Search to identify a ghost call.

NOTE:

Abandoned Call Search is designed to work with CO trunks (ground start - analog) that *do not* provide disconnect supervision. Central offices that provide disconnect supervision do not require use of the Abandoned Call Search feature. The CO must support Abandoned Call Search for the feature to work properly.

- **Suppress # Outpulsing** — Indicates end-to-end signaling begins with (and includes) the "#" when "y" is entered in this field. The final "#" is

suppressed in cases where System would normally output it. This field should be "y" when the Central Office (for example, rotary) or any other facility treats "#" as an error; default is n.

- **Maintenance Tests** — indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are "y" (default) or "n".

Page 3 of the Form (Administrable Timers)



NOTE:

Different fields appear on the form depending on whether the trunk Direction is "incoming", "outgoing" or "two-way".

- **Incoming Disconnect (msec)** — A disconnect signal on an incoming call is considered valid only if it continues at least for the time specified by this timer. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank; default is 500. This timer is sent to ground-start trunks that are "incoming" or "two-way". The only "incoming" or "two-way" loop-start circuit packs that receive this timer are the TN2138 and TN2147.
- **Outgoing Disconnect (msec)** — A disconnect signal on an outgoing call is considered valid only if it continues at least for the time specified by this timer. This timer begins timing when a disconnect signal has been detected on an outgoing call over the trunk, and resets when the signal is no longer detected. If the timer times out, the trunk is dropped. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank; default is 500. This timer is sent to ground-start trunks that are "outgoing" or "two-way". The only "outgoing" or "two-way" loop-start circuit packs that receive this timer are the TN2138 and TN2147.
- **Outgoing Dial Guard (msec)** — This timer specifies the time between seizure acknowledgment of a trunk and the outputting of digits. For trunks that do not provide seizure acknowledgment, the timer specifies the minimum time between seizure and the outputting of digits. Any digit dialed by the station user after they lift the receiver, but before the timer times out, will not be outputted until the timer expires. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank; default is 1600.
- **Incoming Glare Guard (msec)** — Enter the minimum time between the time an incoming trunk is released and the same trunk can be seized for an outgoing call. This guard time will ensure the far-end has released all equipment after the incoming trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank; default is 1500. This field only appears when the trunk group is "two-way".
- **Outgoing Glare Guard (msec)** — Enter the minimum time between the time the outgoing trunk is released and the same trunk can be seized for another outgoing call. This guard time will ensure that the far-end has released all equipment after the outgoing trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank; default is 1500. This field only appears when the trunk group is "outgoing" or "two-way".

- **Outgoing Rotary Dial Interdigit (msec)** — Enter the interval between rotary dial digits being outputted by the system (that is, PBX). Valid entries are 150 to 2550 in increments of 10. The field cannot be blank; default is 800. This field only appears when the Outgoing Dial Type is "rotary".
- **Ringing Monitor (msec)** — Enter the minimum time required to determine if the trunk is disconnected. If the ringing signal disappears for a duration longer than the time specified in this field, the call will be assumed to be disconnected. Valid entries are 200 to 51000 in increments of 200. The field cannot be blank; default is 5200. This timer is sent to TN464C (or later), TN767, TN438 (all), TN465 (all), TN447, TN2138, and TN2147 CO circuit packs.
- **Incoming Seizure (msec)** — Enter the minimum time required for recognition of incoming ringing signal from the serving CO. Valid entries are 20 to 2550 in increments of 10. The field cannot be blank; default is 500. This timer is sent to TN464C (or later), TN767, TN438 (all), TN465 (all), TN447, TN2138, and TN2147 CO circuit packs,
- **Outgoing End of Dial (sec)** — Indicates the maximum time (in sec) a trunk waits for answer supervision after dialing an outgoing call. During cut-through operation, timing begins after each outgoing digit is sent by the PBX and timing ceases after the far-end sends answer supervision. If the timer expires, the PBX acts as if it had received answer supervision. On slenderized operation, the timer begins after the last digit collected is sent by the PBX. The timer ceases when the far-end sends answer supervision. If the timer expires, the PBX acts as if it has received answer supervision. This field appears when Direction is "outgoing" or "two-way" and Receive Answer Supervision is "n". This field will not appear if the Receive Answer Supervision field is "y" but a zero (0) value will be sent down to the firmware to disable the timer. Valid entries are 1 to 254; default is 10.

 NOTE:

This field controls the firmware answer-supervision timer on ports that take the administrable timers; the Answer Supervision Timeout field on Page 1 of the Trunk Group form controls answer supervision for ports that do not take administrable timers. This field and the value administered in the Answer Supervision Timeout field on the Trunk Group form should be the same value.

- **Outgoing Seizure Response (sec)** — Enter the time (in sec) by which the PBX should receive the proceed-to-dial indication from the far-end after sending the seize signal. If the indication is not received in this time, a seizure failure response is uplinked. This timer is sent to TN464B (or later), TN767, TN438B, TN447, TN465B, and TN2147 CO circuit packs. Valid entries are 1 to 255 in increments of 1; default is 5.
- **Programmed Dial Pause (msec)** — Enter the length of a pause during abbreviated dialing, ARS outpulsing, and terminal dialing operations. This timer is administrable for all outgoing and two-way trunk groups. Valid entries are 100 to 25500 in increments of 100; default is 1500.

- **Disconnect Signal Error (sec)** — Enter the time (in sec) within which a disconnect signal from the far-end is expected after the internal party (a station or a tie trunk) goes on-hook. If the timer expires, the system can assume a disconnect failure and take an appropriate action (such as, error message). This timer is administrable on ground-start trunk groups. Valid entries are 1 to 255 in increments of 1; default is 240.
- **Flash Length (msec)** — Specifies the length of the flash signal to be generated toward the Central Office. Valid entries are 10 to 2550 in increments of 10; default is 540. This timer is sent to TN464C (or later), TN465B, and TN2147 ports.
- **Tone (msec)** — Enter the length of a DTMF tone sent to the public network in response to a button depression at a hybrid station set. Valid entries are 20 to 2550 in increments of 10; default is 350.
- **Pause (msec)** — Enter the minimum length of a pause between tones being sent in response to button depressions at a hybrid station set. Valid entries are 20 to 2550 in increments of 10; default is 150.
- **PPS** — Enter either "10" or "20" to specify the PPS (pulses per second) assigned to rotary dial pulse trunk groups. Valid entries are "10" (default) or "20".



NOTE:

The TN767 and TN747Bv12 (or later) circuit packs can do only "10" PPS.

- **Make (msec)** — Enter the duration of the make interval (the pause between pulses) while the system is outputting digits using dial pulse signaling.

If the PPS field is "10", the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of 5. The field cannot be blank; default is 40.

If the PPS field is "20", the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of 5. The field cannot be blank; default is 20.
- **Break (msec)** — Enter the duration of the break interval (the pulse duration) while the system is outputting digits using dial pulse signaling.

If the PPS field is "10", the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of 5; the field cannot be blank. default is 60.

If the PPS field is "20", the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of 5. The field cannot be blank; default is 30.
- **PPM** — Appears for outgoing and two-way CO trunks. Enter "y" if Periodical Pulse Metering (PPM) pulses should be collected from the public network to determine call cost. If this field is "y," the Frequency field is displayed.

- **Frequency** — Displayed if the PPM field is “y.” Identifies the PPM pulse frequency(ies). Circuit packs can listen for up to three different frequencies, (12kHz, 16kHz, and 50Hz), plus two frequency combinations, (50Hz/12kHz and 50Hz/16kHz). Valid entries are “12k”, “16k”, “50”, “50/12k” (default), and “50/16k”. This field is sent to the TN465B and TN2138 circuit packs.

**NOTE:**

The TN465B can only detect 12k and 16kHz PPM. Therefore, if “50/12k” or “12k” is administered, the circuit pack will be set to detect 12kHz. If “16k”, “50”, or “50/16k” is administered, the circuit pack will be set to detect 16kHz.

Page 4 of the Form (ATMS Thresholds)

This form appears when the Direction field on Page 1 is “outgoing” or “two-way” and ATMS is enabled on the Feature-Related System Parameters form.

- **TTL Type** — Specifies the type of TTL selected for testing trunks. The TTL type determines what ATMS tests can be completed and thus which threshold values need to be administered. The different TTLs supported are 105 with return loss (105-w-rl) (default), 105 without return loss (105-wo-rl), high-level tone source (high-level-tone), low-level tone source (low-level-tone), 100-type (100), and 102 type (102). The following table explains the differences between TTL Types:

Type TTL	Description	Example
<i>105-w-rl</i>	Full range of 18 measurements or some defaults for return loss used (56A)	TN771B, ZLC12 and SN261B circuit packs and new 56A mini-responder
<i>105-wo-rl</i>	Cannot return default values for far-end return loss	Older 56A mini-responder
<i>high-level-tone</i>	Sends a fixed sequence of tones at 0 dBm	ZLC12 and SN261B circuit packs
<i>low-level-tone</i>	Sends a fixed sequence of tones at -16dBm	SN261B circuit pack
<i>100</i>	Up to 5 measurements that sends a 1004 Hz tone then a quiet termination	
<i>102</i>	One measurement that sends a 1004 Hz tone	

The far-end switch containing the TTL may be any of the following:

- System 85 R3 PBX equipped with the Maintenance/Test Board (TN771B)
- System 75 R1V2 and beyond, all of which contain the circuitry required to perform the TTL function

- System 85 R2 PBX equipped with the Analog/Digital Facility Test Circuit (ADFTC, SN261)
- DIMENSION FP8 equipped with the Analog Facility Test Circuit (AFTC, ZLC-12)
- Central Office switches equipped with various TTL equipment that provide 100, 102, or 105 test line capabilities (56A)

Other vendor PBXs *may* be supported if compatible test lines are provided by these switches.

Four different versions of the ATMS Threshold Administration page can occur depending upon the measurements allowed by the TTL type selected. The four possibilities are:

1. 105-w-rl and 105-wo-rl — all thresholds appear.
2. high-lts and low-lts — all thresholds (except maximum C-notched noise) appear.
3. 100 — all thresholds (except maximum c-notched noise, 404Hz loss, and 2804 Hz loss) appear.
4. 102 — only 1004 Hz loss threshold appears.

- **Far End Test No.** — Enter the access number (1 to 20 digits) dialed to reach the TTL.
- **TTL Vendor** — Enter the 0 to 22 alphanumeric character TTL vendor name (the name of the vendor supplying the terminating test line); default is blank.
- **TTL Contact** — Enter the 0 to 25 alphanumeric character TTL vendor contact (the name and/or telephone number of someone from the TTL vendor who can be contacted in the event of problems with the TTL); default is blank.
- **Trunk Vendor** — Enter the 0 to 22 alphanumeric character trunk vendor name (who to notify in the event of problems with the trunks); default is blank.
- **Trunk Contact** — Enter the 0 to 25 alphanumeric character trunk vendor contact (the name and/or telephone number of someone from the trunk vendor who can be contacted in the event of problems with the trunks); default is blank.
- **Trunk Length** — Enter 0 to 4 digits followed by “k” (for kilometers) or “m” (for miles) showing the length of trunk. This field is not required, since it is not used by the G3-MT. It has been included for the G3-MA adjunct to use in aiding with threshold establishment, since noise on a trunk increases with the length of the trunk. The default is “Om”.
- **Marginal Threshold** - Minimum 1004 Hz Loss — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance. A larger dB value is more restrictive.

- **Marginal Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance; default is 21. A smaller dB value is more restrictive.
- **Unacceptable Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable. A larger dB value is more restrictive.
- **Unacceptable Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable; default is 21. A smaller dB value is more restrictive.
- **Marginal Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 hz from the 1004 Hz test tone noise level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.

- **Marginal Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as out of tolerance. The default is 55. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as unacceptable. The default is 55. Smaller values are more restrictive.
- **Marginal Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as out of tolerance. The default is 74. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as unacceptable. The default is 74. Smaller values are more restrictive.
- **Marginal Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.

Unacceptable Threshold - Minimum SRL-HI — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.

- **Allow ATMS Busyout, Error Logging and Alarming** — Enter “y” to allow ATMS error logging and alarming (subject to filtering depending on the service organization used to deal with alarms); default is n.
- **Maximum Percentage of Trunks Which Can Be Removed From Service by ATMS** — Enter the highest percentage of trunks from the trunk group (0 to 100) that can be removed from service at one time because of unacceptable transmission measurement results; default is 0.

Page 4 of X

TTL Type: 105-w-rl_____

TTL Vendor: _____

Trunk Vendor: _____

Trunk Length: _____

ATMS THRESHOLDS

Far End Test No: _____

TTL Contact : _____

Trunk Contact: _____

	MARGINAL		UNACCEPTABLE	
	Min	Max	Min	Max
1004 Hz Loss:	-2	21	-2	21
	-Dev	+Dev	-Dev	+Dev
404 Hz Loss:	9	9	9	9
2804 Hz Loss:	9	9	9	9
Maximum C Message Noise:	55		55	
Maximum C Notched Noise:	74		74	
Minimum SRL-HI:	0_		0_	
Minimum SRL-LO:	0_		0_	
Minimum ERL:	0_		0_	

Allow ATMS Busyout, Error Logging and Alarming? y

Maximum Percentage of Trunks Which Can Be Removed from Service by ATMS: 0_

Screen 4-42. ATMS Thresholds Form

Pages Y through X of the Form (Group Member Assignments)

**NOTE:**

The total number of pages for the form, and the first page of the Group Member Assignments, will vary depending on whether the Administrable Timers and ATMS Thresholds pages are displayed.

- **Administered Members (min/max)** — Indicates the minimum and maximum member number that has been administered for the particular trunk group. This field is displayed on all member pages.

- **Total Administered Members** — Indicates the total number of members administered in the trunk group. This field will appear on all trunk group member pages.
- **Port** — Enter seven characters. The first two characters identify the cabinet (01 to 22 [G3r V2], 1 to 3 [G3s V2, G3i V2]); the third character identifies the carrier (A through E); the fourth and fifth identify the slot number in the carrier (01 to 20 for multi-carrier cabinets or 01 to 18 for single-carrier cabinets); the last two characters identify the circuit number (01 to 31).
- **Code** — Display-only field. Displays the type of circuit pack physically installed or logically administered at the location to which this member has been assigned. If a circuit pack is neither installed nor administered at the member's location, the field is blank.
- **Sfx** — Displays the type of circuit pack (suffix only) physically installed at the location to which this member has been assigned. Field is blank if a circuit pack has not been physically installed.
- **Name** — Enter up to ten characters to identify the member of the trunk group. The name can be a 7-digit telephone number or a 10-digit Trunk Circuit Identification number (provided by trunk supplier).

 NOTE:

Previously, Generic 1 Night Service and Balance/Loss information was entered in the Name field as "NT#..." and "TT#...". This information must now be entered in the Night field (below) or the STT Loss field on Page 1 of the form, as applicable.

- **Night** — Enter the extension of the night destination for the trunk. This individual night destination overrides the group night service destination on the first page of the trunk group form. Incoming calls are routed to this destination when the system is placed in night service mode. (If "attd" is entered, night service will be to the attendant.)
- **Mode** — Specifies the signaling mode used on Tie Trunks with TN722A or later release, TN760B or later release, TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are "e&m" (interface), "simplex" (phantomed), or "protected". This entry must correspond to associated dip switch settings on the circuit pack.
- **Type** — Specifies the signaling type to be used. This field should be used only with TN760B (or later release), TN722 (with any suffix), TN767, TN2140 (when the Trunk Signaling Type field is "cont"), TN437, TN439, TN464 (with any suffix), or TN458 circuit packs. The Type field appears with the Trunk Signaling Type field is "cont" or blank.

The value of "t5 rev" is only allowed for the TN760D vintage 10 or later. When the Type field is "t5 rev", the Mode field must be "e&m".

Valid entries are "t1 stan", "t1 comp", "t5rev", or "type 5". Default is blank.

- **Ans Delay** — Specifies the length of the wait for answer supervision delay (in ms) for Trunks using the TN722A, TN722B, TN760 (B, C, or D), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are 20 to 5100 in increments of 20; default is blank and internally treated as a zero. This delay serves two purposes:

1. Used to assure that the answer supervision signal is valid and not a secondary delay-dial or wink-start signal.
2. Used to bridge over momentary off-hook signals resulting from connections made off-network through certain No. 5 Crossbar CCSA switches as the connection is being established.

Page 1 of x

TRUNK GROUP

Group Number: 1	Group Type: co	CDR Reports?: y
Group Name: OUTSIDE_CALL _____	COR : 1_	TAC: _____
Direction: two-way_	Outgoing Display? n	
Dial Access? y	Busy Threshold: 99	Night Service: _____
Queue Length: 0_	Country: 1	Incoming Destination: _____
Comm Type: voice	Auth Code? n	Digit Absorption List: _
Prefix-1? y	Trunk Flash? n	Toll Restricted? y

TRUNK PARAMETERS

Trunk Type: _____		
Outgoing Dial Type: tone		Cut-Through? n
Trunk Termination: rc _____		Disconnect Timing (msec) : 500
Auto Guard? n	Call Still Held? n	Sig Bit Inversion: none
Trunk Gain: high		
Disconnect Supervision- In? y Out? n		
Answer Supervision Timeout: _10	Receive Answer Supervision? n	

Screen 4-43. Central Office Trunk Group Form (Page 1 of X)

Implementation Notes:

The BCC field is displayed when ISDN-PRI is optioned for on the System-Parameters Customer-Options form and the Comm Type field is "avd", "data", or "rbavd".

The ITC field is displayed when the Comm Type is "data", "avd", or "rbavd", and BCC is not "0".

The Connected to Toll and DTT to DCO Loss fields are displayed when the Trunk Type field is "auto/...".

The Cyclical Hunt field is displayed when the Direction is "two-way" and the Trunk Type is "loop-start".

The STT Loss field is displayed when the Connected to Toll field is "n".

The Cut-Through field is displayed when the Outgoing Dial Type field is "rotary" or "tone".

The Terminal Balanced field is displayed when the Trunk Type field is "ground-start", "loop-start", "immed-start", or "wink-start".

The RA Trunk Loss field is displayed when the Terminal Balanced field is "n".

The Incoming Destination, and Auth Code fields are displayed when the Direction is "incoming" or "two-way".

The Disconnect Supervision In field is displayed when the Direction is "incoming." or "two-way".

The Disconnect Supervision Out field is displayed when the Direction is "outgoing" or "two-way".

The Bit Rate, Synchronization, and Duplex fields are displayed when the Comm Type field is "avd" or "rbavd". Also displayed if Comm Type is "data" if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

		Page 2 of x
TRUNK FEATURES	TRUNK GROUP	
ACA Assignment? n	Measured: none	
Abandoned Call Search? n	Data Restriction? n	
Suppress # Outpulsing? n	Maintenance Tests? y	

Implementation Note:

The Long Holding Time (hours), Short Holding Time (seconds), and Short Holding Threshold fields are displayed when the ACA Assignment field is "y".

		Page 3 of x
ADMINISTRABLE TIMERS	TRUNK GROUP	
Incoming Disconnect (msec) : 500	Outgoing Disconnect (msec) : 500	
	Outgoing Dial Guard(msec): 1600	
Incoming Glare Guard(msec) : 1500	Outgoing Glare Guard(msec) : 1500	
	Outgoing Rotary Dial Interdigit (msec) : 800	
Ringing Monitor (msec) : 5200	Incoming Seizure (msec) : 500	
Outgoing End of Dial (sec): 10**	Outgoing Seizure Response (sec) : 5	
Programmed Dial Pause (msec) : 1500	Disconnect Signal Error(sec) : 240	
Flash Length (msec): 540*		
END TO END SIGNALING		
Tone (msec): 350	Pause (msec) : 150	
OUTPULSING INFORMATION		
PPS: 10	Make (msec) : 40 Break (msec): 60 PPM? y Frequency: 50/12k	

Screen 4-45. Timers Page for Ground Start CO Type Trunk Group (two-way) with PPM

		Page 3 of X
TRUNK GROUP		
ADMINISTRABLE TIMERS		
Incoming Disconnec(msec) : 500	Outgoing Disconnect (msec) : 500	
	Outgoing Dial Guard(msec): 1600	
Incoming Glare Guard(msec) : 1500	Outgoing Glare Guard(msec) : 1500	
	Outgoing Rotary Dial Interdigit (msec) : 800	
Ringing Monitor (msec): 5200	Incoming Seizure (msec) : 500	
Outgoing End of Dial (sec): 10**	Outgoing Seizure Response (sec) : 5	
Programmed Dial Pause (msec): 1500		
Flash Length (msec): 540*		
END TO END SIGNALING		
Tone (msec): 350	Pause (msec): 150	
OUTPULSING Information		
PPS: 10	Make (msec): 40 Break (msec): 60 PPM? n	

Screen 4-46. Timers Page for Loop Start CO Type Trunk Group (two-way)**Implementation Notes:**

The Outgoing End of Dial field is not displayed if the Receive Answer Supervision field is "y."

TRUNK GROUP		Page Y of X					
Administered Members (min/max) : xxx/yyy							
Total Administered Members: xxx							
GROUP MEMBER ASSIGNMENTS							
Port	Code	Sfx	Name	Night	Mode	Type	Ans Delay
1:		-					
2		-					
3		-					
4		-					
5		-					
6:		-					
7:		-					
8:		-					
9:		-					
10:		-					
11:		-					
12:		-					
13:		-					
14:		-					
15:		-					

Screen 4-47. Central Office Trunk Group Form (Pages Y through X)

To reduce repetition, the remaining pages are not shown. For a complete set of forms, refer to the "Blank Forms Package."

CPE Trunk Group

This form is used to provide access between the System and customer-provided equipment.

Administration Commands

The following administration commands can be used to access the CPE Trunk Group form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	trunk-group	1–MAX (or 'next')
change	trunk-group	1–MAX or TAC X...
display	trunk-group	1–MAX ['number' X]['to-number' X]['count' N] ['tac' assigned TAC]['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1–MAX or TAC X...

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Group Type** — Enter “cpe” to identify the trunk group type.
- **CDR Reports** — Enter “y” (default) to provide a detailed Call Detail Recording (CDR) record of both incoming and outgoing calls made on all trunks in the trunk group.
- **Group Name** — Enter a unique name that identifies the trunk group. Up to 15 characters can be used; default is OUTSIDE CALL.
- **COR** — Enter a class of restriction (COR) number from 0 to 95 that reflects the desired restriction; default is 1.
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. CDR also uses the TAC to identify the trunk group on associated CDR reports. A different TAC must be assigned to each trunk group. Valid entries are TACs that are compatible with the System Dial Plan (1 to 4 digits; 1 to 3 digits for DCS or to remotely control it).

- **Outgoing Display** — Specifies whether or not the trunk group name is displayed on a terminal placing an outgoing call. Valid entries are “y” or “n” (default).
- **Dial Access** — Enter “y” to allow the trunk group to be accessed via a TAC. Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter the number of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console.
- **Queue Length** — Enter the number of outgoing calls that can be held waiting. A “0” (default) indicates no calls will be held in queue. Enter “0” for DCS trunks. This field is not displayed if Direction is “incoming”.
- **Disconnect Timing (msec)** — Specifies the minimum time period in ms that is required for recognition of disconnect by the serving central office or far-end PBX. The time interval must be in increments of 10 (from 140 to 2550 ins); default is 500. This timer is not used for ports on a circuit pack that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers. These latter two timers replace Disconnect Timing.
- **End-to-End Signaling** — Specifies the duration (in ms) of touch-tone signal tone that is sent to the far-end for interpretation by devices at that location. Valid entries are 60 to 360 in increments of 10, or leave blank; default is 60.
- **Answer Supervision Timeout** — Used for analog port circuits to indicate the amount of time in seconds the System allows for a call to be answered before beginning a CDR record of a call. This interval begins as soon as the outgoing trunk is seized. Valid entries are 0 to 250; default is 10.

Page 2 of the Form

- **ACA Assignment** — Specifies whether or not Automatic Circuit Assurance (ACA) measurements will be taken for this trunk group. If “y” is entered, complete the next three fields.
- **Long Holding Time (hours)** — Only displayed if ACA Assignment is “y”. The length in hours that the System considers as being a long holding time. If “0” is entered, the System will not consider long holding calls. Valid entries are 0 to 10; default is 1.
- **Short Holding Time (sec.)** — Only displayed if ACA Assignment is “y”. Specifies the length in seconds that the System will consider as being a short holding time. If “0” is entered, the System will not consider short holding calls. Valid entries are 0 to 160; default is 10.
- **Short Holding Threshold** — Only displayed if ACA Assignment is “y”. Is the number of times that the System will record a short holding call before an attendant or display-equipped voice terminal user is alerted to the possibility of a faulty trunk. Valid entries are 0 to 30; default is 15.
- **Measured** — Indicates if the System will transmit data for this trunk group to the Call Management System. Valid entries are “internal”, “external”, “both”, and “none”.

Enter "internal" if the data is to be sent to the Basic Call Management System (internal to the switch) for subsequent measurement reports and "external" to send the data to the Call Management System Adjunct. Enter "both" to send the data to both systems for measurement reports. Enter "none" if trunk group measurements are not required. System default is "none".

- **Data Restriction** — Is used to prevent System features from generating tones on a data call that would cause erroneous data transmission. Valid entries are "y" or "n" (default).
- **Suppress # Outpulsing** — Indicates end-to-end signaling begins with (and includes) the "#" when "y" is entered in this field. The final "#" is suppressed in cases where System would normally outpulse it. This field should be "y" when the Central Office (for example, rotary) or any other facility treats "#" as an error; default is n.
- **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are "y" (default) or "n".

Page 3 of the Form (ATMS Thresholds)

This form appears when the Direction field on Page 1 is "outgoing" or "two-way" and ATMS is enabled on the Feature-Related System Parameters form.

- **TTL Type** — Specifies the type of TTL selected for testing trunks. The TTL type determines what ATMS tests can be completed and thus which threshold values need to be administered. The different TTLs supported are 105 with return loss (105-w-rl) (default), 105 without return loss (105-wo-rl), high-level tone source (high-level-tone), low-level tone source (low-level-tone), 100-type (100), and 102 type (102). The following table explains the differences between TTL Types:

Type TTL	Description	Example
<i>105-w-rl</i>	Full range of 18 measurements or some defaults for return loss used (56A)	TN771B, ZLC12 and SN261B circuit packs and new 56A mini-responder
<i>105-wo-rl</i>	Cannot return default values for far-end return loss	Older 56A mini-responder
<i>high-level-tone</i>	Sends a fixed sequence of tones at 0 dBm	ZLC12 and SN261B circuit packs
<i>low-level-tone</i>	Sends a fixed sequence of tones at -16dBm	SN261B circuit pack
<i>100</i>	Up to 5 measurements that sends a 1004 Hz tone then a quiet termination	
<i>102</i>	One measurement that sends a 1004 Hz tone	

The far-end switch containing the TTL may be any of the following:

- System 85 R3 PBX equipped with the Maintenance/Test Board (TN771B)
- System 75 R1V2 and beyond, all of which contain the circuitry required to perform the TTL function
- System 85 R2 PBX equipped with the Analog/Digital Facility Test Circuit (ADFTC, SN261)
- DIMENSION FP8 equipped with the Analog Facility Test Circuit (AFTC, ZLC-12)
- Central Office switches equipped with various TTL equipment that provide 100, 102, or 105 test line capabilities (56A)

Other vendor PBXs *may* be supported if compatible test lines are provided by these switches.

Four different versions of the ATMS Threshold Administration page can occur depending upon the measurements allowed by the TTL type selected. The four possibilities are:

1. 105-w-rl and 105-wo-rl — all thresholds appear.
 2. high-its and low-its — all thresholds (except maximum C-notched noise) appear.
 3. 100 — all thresholds (except maximum c-notched noise, 404Hz loss, and 2804 Hz loss) appear.
 4. 102 — only 1004 Hz loss threshold appears.
- **Far End Test No.** — Enter the access number (1 to 20 digits) dialed to reach the TTL.
 - **TTL Vendor** — Enter the 0 to 22 alphanumeric character TTL vendor name (the vendor supplying the TTL); default is blank.
 - **TTL Contact** — Enter the 0 to 25 alphanumeric character TTL vendor contact (the name and/or telephone number of someone from the TTL vendor who can be contacted in the event of problems with the TTL); default is blank.
 - **Trunk Vendor** — Enter the 0 to 22 alphanumeric character trunk vendor name (who to notify in the event of problems with the trunks); default is blank.
 - **Trunk Contact** — Enter the 0 to 25 alphanumeric character trunk vendor contact (the name and/or telephone number of someone from the trunk vendor who can be contacted in the event of problems with the trunks); default is blank.
 - **Trunk Length** — Enter 0 to 4 digits followed by “k” (for kilometers) or “m” (for miles) showing the length of trunk. This field is not required, since it is not used by the G3-MT. It has been included for the G3-MA adjunct to use in aiding with threshold establishment, since noise on a trunk increases with the length of the trunk. The default is “Om”.

- **Marginal Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance. A larger dB value is more restrictive.
- **Marginal Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance; default is 21. A smaller dB value is more restrictive.
- **Unacceptable Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable. A larger dB value is more restrictive.
- **Unacceptable Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable; default is 21. A smaller dB value is more restrictive.
- **Marginal Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 hz from the 1004 Hz test tone noise level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.

- **Unacceptable Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as out of tolerance. The default is 55. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as unacceptable. The default is 55. Smaller values are more restrictive.
- **Marginal Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as out of tolerance. The default is 74. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as unacceptable. The default is 74. Smaller values are more restrictive.
- **Marginal Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.

- **Allow ATMS Busyout, Error Logging and Alarming** — Enter “y” to allow ATMS error logging and alarming (subject to filtering depending on the service organization used to deal with alarms); default is n.
- **Maximum Percentage of Trunks Which Can Be Removed From Service by ATMS** — Enter the highest percentage of trunks from the trunk group (0 to 100) that can be removed from service at one time because of unacceptable transmission measurement results; default is 0.

Page 3 of x

TTL Type: 105-w-rl_____
TTL Vendor: _____
Trunk Vendor: _____
Trunk Length: _____

ATMS THRESHOLDS
Far End Test No: _____
TTL Contact : _____
Trunk Contact : _____

	MARGINAL		UNACCEPTABLE	
	Min	Max	Min	Max
1004 Hz Loss:	-2	21	-2	21
	-Dev	+Dev	-Dev	+Dev
404 Hz Loss:	9	9	9	9
2804 Hz Loss:	9	9	9	9
Maximum C Message Noise:	55		55	
Maximum C Notched Noise:	74		74	
Minimum SRL-HI:	0_		0_	
Minimum SRL-LO:	0_		0_	
Minimum ERL:	0_		0_	

Allow ATMS Busyout, Error Logging and Alarming? y
Maximum Percentage of Trunks Which Can Be Removed from Service by ATMS:0_

Screen 4-48. ATMS Thresholds Form

Pages Y through X of the Form (Group Member Assignments)

➤ NOTE:

The total number of pages, and the first page of the Group Member Assignments, will vary depending on whether the ATMS Thresholds page is displayed.

- **Administered Members (min/max)** — Indicates the minimum and maximum member number that has been administered for the particular trunk group. This field is displayed on all member pages.

- **Total Administered Members** — Indicates the total number of members administered in the trunk group. This field will appear on all trunk group member pages.
- **Port** — Enter seven characters. The first two characters identify the cabinet (01 to 22 [G3r V2], 1 to 3 [G3s V2, G3i V2]); the third character identifies the carrier (A through E); the fourth and fifth identify the slot number in the carrier (01 to 20 for multi-carrier cabinets or 01 to 18 for single-carrier cabinets); the last two characters identify the circuit number (01 to 31).
- **Code** — Display-only field. Displays the type of circuit pack physically installed or logically administered at the location to which this member has been assigned. If a circuit pack is neither installed nor administered at the member's location, the field is blank.
- **Sfx** — Displays the type of circuit pack (suffix only) physically installed at the location to which this member has been assigned. Field is blank if a circuit pack has not been physically installed.
- **Name** — Enter up to ten characters to identify the member of the trunk group. The name can be a 7-digit telephone number or a 10-digit Trunk Circuit Identification number (provided by trunk supplier).

 NOTE:

Previously, Generic 1 Night Service and Balance/Loss information was entered in the Name field as "NT#..." and "TT#...". This information must now be entered in the Night field (below) or the STT Loss field on Page 1 of the form, as applicable.

Page 1 of X		
TRUNK GROUP		
Group Number: xxx	Group Type: cpe	CDR Reports? y
Group Name: OUTSIDE_CALL ____	COR: 1_	TAC: ____
	Outgoing Display? n	
Dial Access? n	Busy Threshold: 99	
Queue Length: 0 _		
TRUNK PARAMETERS		
	Disconnect Timing (msec) : 500_	
End-to-End Signaling: 60_		
Answer Supervision Timeout : _10		

Screen 4-49. Customer-Provided Equipment Trunk Group Form (Page 1 of X)

Page 2 of X

TRUNK GROUP

TRUNK FEATURES

ACA Assignment? n

Measured: none

Data Restriction? n

Suppress # Outpulsing? n

Maintenance Tests? y

Screen 4-50. Customer-Provided Equipment Trunk Group Form (Page 2 of X)

Implementation Note:

The Long Holding Time (hours), Short Holding Time (seconds), Short Holding Threshold fields are displayed when the ACA Assignment field is "y".

Page Y of x

TRUNK GROUP

Administered Members (min/max) : xxx/yyy

Total Administered Members: xxx

GROUP MEMBER ASSIGNMENTS

	Port	Code	Sfx	Name
1			-	
2			-	
3			-	
4			-	
5			-	
6			-	
7			-	
8			-	
9			-	
10:			-	
11:			-	
12:			-	
13:			-	
14:			-	
15:			-	

Screen 4-51. Customer-Provided Equipment Trunk Group Form (Pages Y through X)

To reduce repetition, the remaining pages are not shown. For a complete set of forms, refer to the "Blank Forms Package."

Digital Multiplexed Interface (DMI) — BOS Trunk Group

This form is used to allow communications to/from the System using DMI-BOS protocol.

Administration Commands

The following administration commands can be used to access the DMI-BOS Trunk Group form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	trunk-group	1-MAX (or 'next')
change	trunk-group	1-MAX or TAC X...
display	trunk-group	1-MAX ['number' X]['to-number' X]['count' N] ['tac' assigned TAC]['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-MAX or TAC X...

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Group Type**— Enter “dmi-bos” to identify the trunk group type.
- **CDR Reports** — Enter “y” (default) to provide a detailed Call Detail Recording (CDR) record of both incoming and outgoing calls made on all trunks in the trunk group.
- **Group Name** — Enter a unique name that identifies the trunk group. Up to 15 characters can be used; default is OUTSIDE CALL.
- **COR** — Enter a class of restriction (COR) number from 0 to 95 that reflects the desired restriction; default is 1.
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. CDR also uses the TAC to identify the trunk group on associated CDR reports. A different TAC must be assigned to each trunk group. Valid entries are TACs that are compatible with the System Dial Plan (1 to 4 digits; 1 to 3 digits for DCS or to remotely control it).

- **Direction** — Enter whether the trunk group is “incoming”, “outgoing”, or “two-way” (default). Note that the Direction administered will affect which timers will appear on the Administrable Timer page.
- **Outgoing Display** — Specifies whether or not the trunk group name is displayed on a terminal placing an outgoing call. Valid entries are “y” or “n” (default).
- **Dial Access** — Enter “y” to allow the trunk group to be accessed via a TAC. Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter the number of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console.
- **Night Service** — Enter the extension number assigned to Night Service. The extension number entered will receive all incoming calls when Night Service is activated and the individual trunk member Night field is not administered to override this group extension. Valid entries are an extension number (can be a VDN extension), the attendant group access code (“attd”), or leave blank if the Trunk Type (in/out) field is not “auto/...”.
- **Incoming Destination** — Indicates where incoming calls will terminate. Valid entries are an extension number, the attendant group access code (“attd”), VDN, or leave blank if the Trunk Type (in/out) field is not “auto/...”.
- **Auth Code** — Enter “y” if an authorization code must be dialed to complete incoming calls on the trunk group. This field can only be “y” if the Authorization Codes feature is enabled on the System-Parameters Customer-Options form.
- **Trunk Type (in/out)** — Identifies the physical type of incoming and outgoing trunks. The trunks may be “automatic”, “immed-start”, “wink-start” or “delay-dial”.

The valid values are:

auto/auto	auto/delay	auto/immed	auto/wink
delay/auto	delay/delay	delay/immed	delay/wink
immed/auto	immed/delay	immed/immed	immed/wink
wink/auto	wink/delay	wink/immed	wink/wink



NOTE:

For “immed/immed” trunks (on incoming trunks), the far-end PBX seizes the trunk and then sends digits without waiting for acknowledgment from the receiving PBX. When heavily loaded, the receiving PBX may incur a short delay in attaching a Touch Tone Receiver to this call and, therefore, cause it to lose digits. Using wink-start trunks or increasing the dial-guard timer value on the far-end PBX avoids this problem.

- **Incoming Rotary Timeout (sec)** — Is the timing interval required by the central office that the System is connected to. If the System is connected to a Step-by-Step office, 18 seconds or more must be used; if the System is not connected to a Step-by-Step office, 5 seconds or more may be used. Valid entries are 5 to 99, or leave blank; default is 5.
- **Outgoing Dial Type** — Identifies the type of pulsing required on an outgoing call. Valid entries are "mf", "tone" (default), or "rotary".



NOTE:

Multifrequency Signaling must be enabled on the System-Parameters Customer-Options form before a value of "mf" may be administered.

- **Incoming Dial Type** — Indicates the type of pulses required on an incoming trunk group. Valid entries are "mf", "tone" (default), or "rotary".



NOTE:

Multifrequency Signaling must be enabled on the System-Parameters Customer-Options form before a value of "mf" may be administered.

- **Wink Timer (msec)** — Displayed when the Trunk Type for the "outgoing" side of the in/out field is "wink" or "delay". Enter a number from 300 to 5000 in increments of 50; default is 300. This timer is sent only to TN760C (vintage 4 or later), TN767, and TN464C (or later) circuit packs.



NOTE:

This value is the same for each member of the trunk group where the timing is administered; that is, if members from TN760B ports are mixed with members from TN760C V4 ports, only the TN760C V4 ports are set to this value. (The TN760B ports use a default value on the circuit pack itself).

United States domestic requirements state that for a "wink" start trunk, the wink must begin within five seconds (the "wait-for-wink-to-start" time) and must end within 290 ms (the "wait-for-wink-to-end" time). For a "delay" dial trunk, the wink must begin within 140 ms (the "wait-for-wink-to-start" time). and end when the switch is ready to receive digits.

The "wink" start "wait-for-wink-to-end" time and the "delay" dial "wait-for-wink-to-start" time are **both** administered through the use of this field.

- **Disconnect Timing (msec)** — Specifies the minimum time period (in ms) that is required for recognition of disconnect by the serving central office or far-end PBX. The time interval must be in increments of 10 (from 140 to 2550 ins); default is 500. This timer is not used for ports on a circuit pack that can receive the administrable incoming Disconnect and Outgoing Disconnect timers. These latter two timers replace Disconnect Timing.

- **Digit Treatment** — Indicates if digits are to be absorbed or inserted. A blank indicates no digit absorption or insertion. Valid entries are “absorption” or “insertion”, or leave blank.
- **Digits** — Indicates the digits to be inserted or number of digits to be absorbed. This field is used with the Digit Treatment field. No entry indicates no digit absorption or insertion is done. Valid entries are the number of digits to be absorbed (1 to 5) or the actual digits to be inserted (up to 5 digits including the characters ‘*’ and ‘#’).
- **Expected Digits** — Only displayed if the Direction is “incoming” or “two-way”, and the Incoming Dial Type is “mf”. This field specifies the number of digits that the far-end sends for an incoming connection. Valid values are between 1 and 9 inclusive.
- **Sig Bit Inversion** — This field allows the user to administer the signaling bit inversion (the A-bit and B-bit inversion) on a per-port basis. This field applies only to TN464B or later. The CCITT standards define on-hook to be “1” in the A-bit and off-hook to be “0”. This definition is the opposite of the EIA definition. The default in the TN464 firmware for signaling bit inversion is use the CCITT standard for 32-channel mode and to use the EIA standard for 24-channel mode. Valid entries are “A”, “A&B”, “B”, and “none” (default).
- **Connected to Toll** — Enter “y” if connected to a CO toll office. This field is displayed when the Trunk Type field contains an entry of “auto/...”, “delay/...”, “wink/...”, or “dimmed/...”.
- **STT Loss** (Satellite PBX Tie Trunk Loss) — Displayed when Connected to Toll is “n”. Specifies the loss plan to be used for the trunk group. Valid entries are “normal” (default) or “low”. This option affects the transmission performance of a private PBX network.

Although the use of this option has wider applications, only for the simplest network arrangements should this field be administered without Network Engineering advice. The “low” option (described as the ISL digital low loss plan in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Reference*, 555-025-101) should be used when:

1. Stations on the satellite PBX complain of too much loss on calls to the public network.
2. The PBX network consists of no more than three PBXs: one main and one or two satellite PBXs.
3. All PBXs have the “low” option available.
4. The total DS1 trunk connection length is less than 100 miles.

If the preceding conditions are not met, obtain Network Engineering assistance. The field entry is based on the following:

- **normal** — Applies to AIU-TT (Analog Interface Unit at Customer Switching System for Tie Trunk — 4-wire E&M interface), and DIU-TT (Digital Interface Unit at Customer Switching System for Tie Trunk — voice or AVD DS1 interface) loss plans.

- **low** — Applies to AIU-TTS (same as AIU-TT, but suitable for private network connections that can be connected in tandem with public network connections) and DIU-TTS (same as DIU-TT, but suitable for private network connections that can be connected in tandem with public network connections). These interfaces were formerly referred to as DIU DTT ISL.
- **DTT to DCO Loss** (Digital Tie to Digital CO Trunk Loss) — Specifies the loss plan used for the trunk group that connects a DIU-CO (Digital Interface Unit at a Central Office) to a DIU-DTT (Digital Interface Unit for a Digital Tie Trunk Interface). Displayed when the Trunk Type field is “auto/...”, “delay/...”, “wink/...”, or “immed/...”.

This option affects the transmission performance of public network access via a private PBX network. Choose the “low” option if private network users complain about too much loss on calls to the public network; otherwise, the “normal” option should be used. Valid entries are “normal” (default) and “low”. The entry is based on the following:

- **normal** — Corresponds to a (0, -6) dB gain pair and is used as the default option. (This corresponds to the DTT/EIA DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Reference*, 555-025-101.)
- **low** — Corresponds to (+3, -3) dB gain pair. Low is used for internetwork applications in which no significant configuration n will encounter echo, stability, or overload problems because of reduced loss. With the low gain pair, subscriber station DTMF signals transmitted through the digital class 5 office into the customer network may experience nonrecoverable digit mutilation in secondary signaling applications (that is, DTMF signaling after the connection has been established). (This corresponds to the DTT/ISL DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Reference*, 555-025-101.)
- **Incoming Dial Tone** — Indicates whether or not the trunk group will pass on incoming dial tone to the calling party. Valid entries are “y” (default) or “n”.
- **Bit Rate** — Specifies the baud rate to be used by pooled modems. Valid entries are 300, 1200 (default), 2400, 4800, 9600, and 19200.
- **Synchronization** — Enter whether the trunk group will use synchronous or asynchronous communications. Valid entries are “async” (default) and “sync”.
- **Duplex** — Specifies either full or half duplex for the trunk group. Valid entries are “full” (default) or “half”.
- **Disconnect Supervision-Out** — This field appears when the Direction is either “outgoing” or “two-way”. Internally, the field is set to “n” if the direction is incoming. If the field is set to “y”, a Warning Message appears to alert the user of possible trunk lockups. This field specifies

whether trunks in this trunk group provide disconnect supervision when seized outgoing (that is, whether these trunks should be allowed to participate in outgoing trunk to outgoing trunk calls. This field is set independently of the trunk-to-trunk transfer system parameter, although both options must be set appropriately if outgoing trunk to outgoing trunk transfers are desired.

- **Answer Supervision Timeout** — Used for analog port circuits to indicate the amount of time in seconds the System allows for a call to be answered before beginning a CDR record of a call. This interval begins as soon as the outgoing trunk is seized. Valid entries are 0 to 250; default is 10.

⇒ NOTE:

This timeout does not override answer supervision sent from the network or other firmware (DS1 port circuit timers). DS1 firmware-sent answer supervision is administered in the Outgoing End of Dialing field on Page 3 of the Trunk Group form (Administrable Timers page).

- **Receive Answer Supervision** — Specifies whether or not the network provides answer supervision for the trunks. Answer supervision refers to notification from the far-end that the called party has gone off-hook to answer the call. When answer supervision is provided, the originating PBX can classify a call as answered using the Answer Supervision Timeout field entry (for domestic circuit packs) or, for circuit packs that take administrable timers, by using the Outgoing End of Dial timer. For trunks over which answer supervision is provided by the network, set this field to “y” and the Answer Supervision Timeout field to “0” so that the firmware timeout is disabled. The firmware timeout is automatically set to “0” on circuit packs that take the administrable Outgoing End of Dial timers. Receive Answer Supervision must be set to “n” (default) if the Direction field is “incoming.”

Page 2 of the Form

- **ACA Assignment** — Specifies whether or not ACA measurements will be taken for this trunk group. Valid entries are “y” or “n” (default). If “y” is entered, complete the next three fields.
- **Long Holding Time (hours)** — Only displayed if ACA Assignment is “y”. Is the length in hours that the System will consider as being a long holding time. If “0” is entered, the System will not consider long holding calls. Valid entries are 0 to 10; default is 1.
- **Short Holding Time (secs.)** — Only displayed if ACA Assignment is “y”. Specifies the length in seconds that the System will consider as being a short holding time. If “0” is entered, the System will not consider short holding calls. Valid entries are 0 to 160; default is 10.
- **Short Holding Threshold** — Only displayed if ACA Assignment is “y”. Is the number of times that the System will record a short holding call before an attendant or display-equipped voice terminal user is alerted to the possibility of a faulty trunk. Valid entries are 0 to 30; default is 15.

- **Measured**— Indicates if the System will transmit data for this trunk group to the Call Management System. Valid entries are "internal", "external", "both", or "none". Enter "internal" if the data is to be sent to the Basic Call Management System (internal to the switch) for subsequent measurement reports and "external" to send the data to the Call Management System Adjunct. Enter "both" to send the data to both systems for measurement reports. Enter "none" if trunk group measurements are not required. System default is "none".
- **Internal Alert** — Specifies if internal ringing and coverage will be used for incoming calls. Valid entries are "y" or "n" (default).
- **Data Restriction** — Is used to prevent System features from generating tones on a data call that would cause erroneous data transmission. Valid entries are "y" or "n" (default).
- **Glare Handling** — Only displayed when the Direction field is "two-way" and the outgoing side of the Trunk Type field is either "wink" or "delay". This field determines how glare situations should be treated. Valid entries are "control", "backoff", or "none".

Warnings are generated if the field is changed to either "control" or "backoff" and ports for the trunk group are not capable of detecting glare.
- **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are "y" (default) or "n".
- **Suppress # Outpulsing** — Indicates end-to-end signaling begins with (and includes) the "#" when "y" is entered in this field. The final "#" is suppressed in cases where System would normally outpulse it. This field should be "y" when the Central Office (for example, rotary) or any other facility treats "#" as an error; default is n.
- **Seize When Maintenance Busy** — This field is effective only for ports on TN760C (or later release), TN767, and TN464C (or later release). It indicates whether an outgoing seize is generated when a trunk is maintenance busied, and whether the far-end switch is administered to do likewise. This supports the Electronic Tandem Network Busyout feature. The intended use of this feature is to prevent the far-end PBX from reporting problems concerning a trunk that has been removed from service at the near-end. The setting of this field has no effect on the behavior of the far-end machine; it controls the behavior of the near-end switch and the *expected* far-end behavior.

If the administered value of this field is either "near-end" or "both-ends", an outgoing seize will be initiated whenever a trunk in this trunk group is maintenance busied. The seize is maintained until the maintenance busyout is released. This action will likely cause alarms at the far-end switch, perhaps leading to a far-end maintenance busy out, unless the far-end switch is administered to expect this behavior.

If the administered value of this field is either "far-end" or "both-ends", any abnormally long incoming seize⁴ (including failure to drop from a completed call) is *assumed to be the result of a far-end maintenance busy condition*. Note that this assumption may be incorrect since the abnormally long seize may actually be due to a transient or permanent failure of the trunk circuit. Regardless of the cause of the abnormally long seize, the near-end response is to:

1. generate a warning alarm indicating the trunk is assumed to be maintenance busy at the far-end,
2. remove the trunk from service, and
3. keep the trunk out of service until a far-end disconnect is received.

The values allowed depend on the Direction field. When the Direction is "incoming", the valid values are "far-end" and "neither-end".

When the Direction is "outgoing", the valid values are "near-end" and "neither-end".

When the Direction is "two-way", the valid values are "both-ends", "far-end", "near-end", and "neither-end".

Page 3 of the Form (Administrable Timers)

- **Incoming Disconnect (msec)** — A disconnect signal on an incoming call is considered valid only if it continues at least for the time specified by this timer. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank; default is 500. This field only appears for "incoming" or "two-way" trunk groups.
- **Incoming Dial Guard (msec)** — Enter the interval between the detection of an incoming seizure and the acceptance of the first digit. The PBX will not accept digits before this timer expires. Valid entries are 10 to 2550 in increments of 10; default is 70.
- **Incoming Partial Dial (sec)** — Enter the time (in sec) allowed between digits on rotary trunks. Valid entries are 5 to 255 in increments of 1; default is 18. This timer only appears if the Incoming Dial Type is "rotary."
- **Incoming Incomplete Dial Alarm (sec)** — Enter the maximum time (in sec) between incoming seizure of a trunk and receipt of all digits. Intervals greater than this generate an inline error. Valid entries are 1 to 255 in increments of 1; default is 255. This timer is sent to the TN464C (or later), TN767, and TN760DV15 (or later release) circuit packs.

4. When an incoming seize is detected, the normal behavior is to either immediately direct the call to an administered destination, or to wait for an administered period of time for incoming destination digits. If digits are expected but not received, the calling party receives the DID/TIE intercept treatment administered on the feature related system parameters form.

- **Outgoing Disconnect (msec)** — A disconnect signal on an outgoing call is considered valid only if it continues at least for the time specified by this timer. This timer begins timing when a disconnect signal has been detected on an outgoing call over the trunk, and resets when the signal is no longer detected. If the timer times out, the trunk is dropped. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank. Default is 500. This field only appears for “outgoing” or “two-way” trunk groups.
- **Outgoing Dial Guard (msec)** — This timer specifies the time between seizure acknowledgment of a trunk and the outpulsing of digits. For trunks that do not provide seizure acknowledgment, the timer specifies the minimum time between seizure and the outpulsing of digits. Any digit dialed by the station user after they lift the receiver, but before the timer times out, will not be outpulsed until the timer expires. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default 1600.
- **Incoming Glare Guard (msec)** — Enter the minimum time (in msec) between the time the incoming trunk is released and the same trunk can be seized for an outgoing call. This guard time will ensure the far-end has released all equipment after the incoming trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1500. This field only appears when the trunk group is “two-way”.
- **Outgoing Glare Guard (msec)** — Enter the minimum time (in msec) between the time an outgoing trunk is released and the same trunk can be seized for another outgoing call. This guard time will ensure that the far-end has released all equipment after the outgoing trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1500. This field only appears for “outgoing” and “two-way” trunk groups.
- **Outgoing Rotary Dial Interdigit (msec)** — Enter the interval (in msec) between rotary dial digits being outpulsed by the system (that is, PBX). Valid entries are 150 to 2550 in increments of 10. The field cannot be blank. Default is 800. This field only appears when the Outgoing Dial Type is “rotary”.
- **Outgoing End of Dial (sec)** — Enter the maximum time (in sec) a trunk may wait for answer supervision after dialing an outgoing call. During cut-through operation, timing begins after each outgoing digit is sent by the PBX and timing ceases after the far-end sends answer supervision. If the timer expires, the PBX acts as if it had received answer supervision. On slenderized operation, the timer begins after the last digit collected is sent by the PBX. The timer ceases when the far-end sends answer supervision. If the timer expires, the PBX acts as if it has received answer supervision. This field appears when Direction is “outgoing” or “two-way” and Receive Answer Supervision is “n”. This field will not appear if the Receive Answer Supervision field is “y”, but a zero (0) value will be sent down to the firmware to disable the timer. Valid entries are 1 to 254 in increments of 1. Default is 10.



NOTE:

This field controls the firmware answer-supervision timer on ports that take the administrable timers; the Answer Supervision Timeout field on Page 1 of the Trunk Group form controls answer supervision for ports that do not take administrable timers. This field and the value administered in the Answer Supervision Timeout field on the Trunk Group form should be the same value.

- **Outgoing Seizure Response (sec)** — Enter a maximum time (in sec) by which the PBX should receive the proceed-to-dial indication from the far end after sending the seize signal. If the indication is not received in this time, a seizure failure response is uplinked. Valid entries are 1 to 255 in increments of 1. Default is 5 sec. This timer is sent to the TN464B (or later), TN767, TN439, TN458, and TN760Dv15 (or later) tie circuit packs.
- **Programmed Dial Pause (msec)** — Enter the length (in msec) of a pause during abbreviated dialing, ARS outpulsing, and terminal dialing operations. This timer is administrable for all outgoing and two-way trunk groups. Valid entries are 100 to 25500 in increments of 100. Default is 1500 msec. This timer is sent to the TN464B (or later), TN760Dv15 (or later), TN767, and TN458 tie circuit packs.
- **Disconnect Signal Error (sec)** — Enter a maximum time (in sec) within which a disconnect signal from the far-end is expected after the internal party (a station or a tie trunk) goes on-hook. If the timer expires, the system can assume a disconnect failure and take an appropriate action (such as, display an error message). Valid entries are 1 to 255 in increments of 1. Default is 240 sec.
- **PPS** — Enter either “10” or “20” to specify the PPS (pulses per second) assigned to rotary dial pulse trunk groups. Default is “10”.



NOTE:

The TN439, TN458, and TN767 circuit packs can only perform at 10pps.

- **Make (msec)** — Enter the duration of the make interval (the pause between pulses) while the system is outpulsing digits using dial pulse signaling.

If the PPS field is “10”, the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of five. The field cannot be blank. The default is 40.

If the PPS field is “20”, the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of five. The field cannot be blank. The default is 20.
- **Break (msec)** — Enter the duration of the break interval (the pulse duration) while the system is outpulsing digits using dial pulse signaling.

If the PPS field is “10”, the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of five. The field cannot be blank. The default is 60.

if the PPS field is "20", the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of five. The field cannot be blank. The default is 30.

- **Tone (msec)** — Enter the length of a DTMF tone sent to the public network in response to a button depression at a hybrid station set. Valid entries are 20 to 2550 in increments of 10; default is 350.
- **Pause (msec)** — Enter the minimum length of a pause between tones being sent in response to button depressions at a hybrid station set. Valid entries are 20 to 2550 in increments of 10; default is 150.

Page 4 of the Form (ATMS Thresholds)

This form appears when the Direction on Page 1 is "outgoing" or "two-way" and ATMS is enabled on the Feature-Related System Parameters form.

- **TTL Type** — Specifies the type of TTL selected for testing trunks. The TTL type determines what ATMS tests can be completed and thus which threshold values need to be administered. The different TTLs supported are 105 with return loss (105-w-rl) (default), 105 without return loss (105-wo-rl), high-level tone source (high-level-tone), low-level tone source (low-level-tone), 100-type (100), and 102 type (102). The following table explains the differences between TTL Types:

Type TTL	Description	Example
<i>105-w-rl</i>	Full range of 18 measurements or some defaults for return loss used (56A)	TN771B, ZLC12 and SN261B circuit packs and new 56A mini-responder
<i>105-wo-rl</i>	Cannot return default values for far-end return loss	Older 56A mini-responder
<i>high-level-tone</i>	sends a fixed sequence of tones at 0 dBm	ZLC12 and SN261B circuit packs
<i>low-level-tone</i>	Sends a fixed sequence of tones at -16dBm	SN261B circuit pack
<i>100</i>	Up to 5 measurements that sends a 1004 Hz tone then a quiet termination	
<i>102</i>	One measurement that sends a 1004 Hz tone	

The far-end switch containing the TTL may be any of the following:

- System 85 R3 PBX equipped with the Maintenance/Test Board (TN771B)
- System 75 R1V2 and beyond, all of which contain the circuitry required to perform the TTL function
- System 85 R2 PBX equipped with the Analog/Digital Facility Test Circuit (ADFTC,SN261)
- DIMENSION FP8 equipped with the Analog Facility Test Circuit (AITC,ZLC-12)

- Central Office switches equipped with various TTL equipment that provide 100, 102, or 105 test line capabilities (56A)

Other vendor PBXs *may* be supported if compatible test lines are provided by these switches.

Four different versions of the ATMS Threshold Administration page can occur depending upon the measurements allowed by the TTL type selected. The four possibilities are:

1. 105-w-rl and 105-wo-rl — all thresholds appear.
2. high-lts and low-lts — all thresholds (except maximum C-notched noise) appear.
3. 100 — all thresholds (except maximum c-notched noise, 404Hz loss, and 2804 Hz loss) appear.
4. 102 — only 1004 Hz loss threshold appears.

TTL Type: 105-w-rl _____		ATMS THRESHOLDS	
TTL Vendor: _____		Far End Test No: _____	
Trunk Vendor: _____		TTL Contact: _____	
Trunk Length: _____		Trunk Contact: _____	

	MARGINAL		UNACCEPTABLE	
	Min	Max	Min	Max
1004 Hz Loss:	-2	21	-2	21
	-Dev	+Dev	-Dev	+Dev
404 Hz LOSS:	9	9	9	9
2804 Hz Loss:	9	9	9	9
Maximum C Message Noise:	55		55	
Maximum C Notched Noise:	74		74	
Minimum SRL-HI:	0_		0_	
Minimum SRL-LO:	0_		0_	
Minimum ERL:	0_		0_	

Allow ATMS Busyout, Error Logging and Alarming? y

Maximum Percentage of Trunks Which Can Be Removed from Service by ATMS: 0_

Screen 4-52. ATMS Thresholds Form

- **Far End Test No.** — Enter the access number (1 to 20 digits) dialed to reach the TTL.

- **TTL Vendor** — Enter the 0 to 22 alphanumeric character TTL vendor name (the name of the vendor supplying the terminating test line); default is blank.
- **TTL Contact** — Enter the 0 to 25 alphanumeric character TTL vendor contact (the name and/or telephone number of someone from the TTL vendor who can be contacted in the event of problems with the TTL); default is blank.
- **Trunk Vendor** — Enter the 0 to 22 alphanumeric character trunk vendor name (who to notify in the event of problems with the trunks); default is blank.
- **Trunk Contact** — Enter the 0 to 25 alphanumeric character trunk vendor contact (the name and/or telephone number of someone from the trunk vendor who can be contacted in the event of problems with the trunks); default is blank.
- **Trunk Length** — Enter 0 to 4 digits followed by “k” (for kilometers) or “m” (for miles) showing the length of trunk. This field is not required, since it is not used by the G3-MT. It has been included for the G3-MA adjunct to use in aiding with threshold establishment, since noise on a trunk increases with the length of the trunk. The default is “Om”.
- **Marginal Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance. A larger dB value is more restrictive.
- **Marginal Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance; default is 21. A smaller dB value is more restrictive.
- **Unacceptable Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable. A larger dB value is more restrictive.
- **Unacceptable Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable; default is 21. A smaller dB value is more restrictive.
- **Marginal Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone noise level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.

- **Unacceptable Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as out of tolerance. The default is 55. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as unacceptable. The default is 55. Smaller values are more restrictive.
- **Marginal Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as out of tolerance. The default is 74. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as unacceptable. The default is 74. Smaller values are more restrictive.

- **Marginal Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Allow ATMS Busyout, Error Logging and Alarming** — Enter “y” to allow ATMS error logging and alarming (subject to filtering depending on the service organization used to deal with alarms); default is n.
- **Maximum Percentage of Trunks Which Can Be Removed From Service by ATMS** — Enter the highest percentage of trunks from the trunk group (0 to 100) that can be removed from service at one time because of unacceptable transmission measurement results; default is 0.

Pages Y through X of the Form (Group Member Assignments)



NOTE:

The total number of pages, and the first page of the Group Member Assignments, will vary depending on whether the Administrable Timers and ATMS Thresholds pages are displayed.

- **Administered Members (min/max)** — Indicates the minimum and maximum member number that is administered for the particular trunk group (displayed on all member pages).
- **Total Administered Members** — Indicates the total number of members administered in the trunk group (appears on all trunk group member pages).

- **Port** — Enter seven characters. The first two characters identify the cabinet (01 to 22 [G3r V2], 1 to 3 [G3s V2, G3i V2]); the third character identifies the carrier (A through E); the fourth and fifth identify the slot number in the carrier (01 to 20 for multi-carrier cabinets or 01 to 18 for single-carrier cabinets); the last two characters identify the circuit number (01 to 31).
- **Code** — Display-only field. Displays the type of circuit pack physically installed or logically administered at the location to which this member has been assigned. If a circuit pack is neither installed nor administered at the member's location, the field is blank.
- **Sfx** — Displays the type of circuit pack (suffix only) physically installed at the location to which this member has been assigned. Field is blank if a circuit pack has not been physically installed.
- **Name** — Enter up to ten characters to identify the member of the trunk group. The name can be a 7-digit telephone number or a 10-digit Trunk Circuit Identification number (provided by trunk supplier).



NOTE:

Previously, System 75 Night Service and Balance/Loss information was entered in the Name field as "NT#..." and "TT#...". This information must now be entered in the Night field (below) or the STT Loss field on Page 1 of the form, as applicable.

- **Night** — Enter the extension of the night destination for the trunk. This individual night destination overrides the group night service destination on the first page of the trunk group form. Incoming calls are routed to this destination when the system is placed in night service mode. (If "attd" is entered, night service will be to the attendant.)
- **Mode** — Specifies the signaling mode used on Tie Trunks with TN722A or later release, TN760B or later release, TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are "e&m" (interface), "simplex" (phantomed), or "protected". This entry must correspond to associated dip switch settings on the circuit pack.
- **Type** — Specifies the signaling type to be used. This field should only be used with TN760B (or later release), TN722 (with any suffix), TN767, TN2140 (when the Trunk Signaling Type field is "cont"), TN437, TN439, TN464 (with any suffix), or TN458 circuit packs. The Type field appears with the Trunk Signaling Type field is "cont" or blank.

The value of "t5 rev" is only allowed for the TN760D vintage 10 or later. When the Type field is "t5 rev", the Mode field must be "e&m"..

Valid entries are "t1 stan", "t1 comp", "t5rev", or "type 5". Default is blank.

- **Ans Delay** — Specifies the length of the wait for answer supervision delay (in ms) for Trunks using the TN722A, TN722B, TN760 (B, C, or D), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are 20 to 5100 in increments of 20; default is no entry (blank) and internally treated as a zero. This delay serves two purposes:
 1. Used to assure that the answer supervision signal is valid and not a secondary delay-dial or wink-start signal.
 2. Used to bridge over momentary off-hook signals resulting from connections made off-network through certain No. 5 Crossbar CCSA switches as the connection is being established.

Page 1 of X		
TRUNK GROUP		
Group Number: 1	Group Type: dmi-bos	CDR Reports? y
Group Name: OUTSIDE_CALL ____	COR: 1_	TAC: ____
Direction: two-way_	Outgoing Display? n	
Dial Access? n	Busy Threshold: 99	Night Service: ____
		Incoming Destination: ____
	Auth Code? n	
TRUNK PARAMETERS		
Trunk Type(in/out): ____	Incoming Rotary Timeout: 5_	
Outgoing Dial Type: tone____	Incoming Dial Type: tone_	
	Disconnect Timing(msec) : 500_	
Digit Treatment: ____	Digits: ____	
Incoming Dial Tone? y	Sig Bit Inversion: none	
Bit Rate: 1200_	Synchronization: async	Duplex: full
Disconnect Supervision- Out? n		
Answer Supervision Timeout: _10	Receive Answer Supervision? n	

Screen 4-53. Digital Multiplexed Interface Trunk Group Form (Page 1 of X)**Implementation Notes:**

The Connected to Toll and DTT to DCO Loss fields are displayed when the Trunk Type field is "auto/...", "delay/...", "wink/...", or "dimmed/...".

The STT Loss field is displayed when the Connected to Toll field is "n".

The Disconnect Supervision Out field is displayed when the Direction field is "outgoing" or "two-way".

The Wink Timer field is only displayed when the Trunk Type (in/out) field outgoing side is "wink..." or "delay".

The Expected Digits field is only displayed when the Direction field is "incoming" or "two-way" and the incoming Dial Type field is "mf".

		Page 2 of X
TRUNK FEATURES	TRUNK GROUP	
ACA Assignment? n	Measured: none	
	Internal Alert? n	
	Data Restriction? n	
	Maintenance Tests? y	
Suppress # Outpulsing? n		
	Seize When Maintenance Busy: neither-end	

Screen 4-54. Digital Multiplexed Interface Trunk Group Form (Page 2 of X)

Implementation Note:

The Long Holding Time (hours), Short Holding Time (seconds), and Short Holding Threshold fields are only displayed when the ACA Assignment field is "y".

The Glare Handling field is only displayed when the Direction field is "two-way" and the outgoing side of the Trunk Type (in/out) field is "wink" or "delay".

		Page 3 of X
TRUNK GROUP		
ADMINISTRABLE TIMERS		
Incoming Disconnect (msec) : 500	Outgoing Dial Guard (msec): 500	
Incoming Dial Guard(msec) : 70	Outgoing Dial Guard(msec) : 1600	
Incoming Glare Guard(msec) : 1500	Outgoing Glare Guard(msec) : 1500	
Incoming Partial Dial(sec) : 18		
Outgoing Rotary Dial Interdigit (msec) : 800		
Outgoing End of Dial (sec) : 10	Outgoing Seizure Response (sec) : 5	
Programmed Dial Pause (msec) : 1500	Disconnect Signal Error(sec): 240	
	Incoming Incomplete Dial Alarm(sec) : 255	
END TO END SIGNALING		
Tone (msec): 350	Pause (msec) : 150	
OUTPULSING TIMING		
PPS: 10	Make (msec) : 40	Break (msec): 60

Screen 4-55. Administrable Timers Form (Page 3 of X)**Implementation Notes:**

The incoming Partial Dial field only appears if the Incoming Dial Type field is "rotary".

The Outgoing Rotary Dial Interdigit field only appears if the Outgoing Dial Type field on Page 1 is set to "rotary".

The Outgoing End of Dial field only appears if the Receive Answer Supervision field is "y".

Page Y of X

TRUNK GROUP

Administered Members (min/max) : xxx/yyy
Total Administered Members: xxx

GROUP	MEMBER	ASSIGNMENTS							
	Port	Code	Sfx	Name	Night	Mode	Type	Ans	Delay
1:			-						
2:			-						
3:			-						
4:			-						
5:			-						
6:			-						
7:			-						
8:			-						
9:			-						
10:			-						
11:			-						
12:			-						
13:			-						
14:			-						
15:			-						

Screen 4-56. Digital Multiplexed Interface Trunk Group Form (Pages Y through X)

To reduce repetition, the remaining pages are not shown. For a complete set of forms, refer to the "Blank Forms Package."

Direct Inward Dialing (DID) Trunk Group

This form is used to allow an incoming call from the exchange network to reach a specific extension number directly without attendant intervention.

Administration Commands

The following administration commands can be used to access the DID Trunk Group form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	trunk-group	1-MAX (or 'next')
change	trunk-group	1-MAX or TAC X...
display	trunk-group	1-MAX ['number' X]['to-number' X]['count' N] ['tac' assigned TAC]['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-MAX or TAC X...

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Group Type** — Enter "did" to identify the trunk group type.
- **CDR Reports** — Enter "y" (default) to provide a detailed Call Detail Recording (CDR) record of both incoming and outgoing calls made on all trunks in the trunk group.
- **Group Name** — Enter a unique name that identifies the trunk group. Up to 15 characters can be used; default is OUTSIDE CALL.
- **COR** — Enter a class of restriction (COR) number from 0 to 95 that reflects the desired restriction; default is 1.

- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. CDR also uses the TAC to identify the trunk group on associated CDR reports. A different TAC must be assigned to each trunk group. Valid entries are TACs that are compatible with the System Dial Plan (1 to 4 digits; 1 to 3 digits for DCS or to remotely control it).
- **Country** — This field specifies the country code for each subscriber line. Valid values are any number between 1 and 17, inclusive. The value of this field, in conjunction with the values of the Trunk Termination and Trunk Gain fields, will determine the input and trans-hybrid balance impedance requirements for TN465B, TN2146, and TN2147 ports.

Refer to the “Country Code Assignments” table in Appendix B for a complete listing of assigned country codes.

⇒ NOTE:

Although defined, country codes 12 (France) and 13 (Germany) are not supported and, if entered, will cause an error message to be displayed.

- **CO Type** — Only displayed when Country is set to 14 (Czechoslovakia) and is only applicable if the trunk group members are administered on a TN464D vintage 2 or greater. This field specifies the type of CO the trunk group is attached to. Valid entries are “analog” (default) and “digital”.
- **Protocol Type** — Only displayed when Country is set to 15 (C. I. S.) and is only applicable if the trunk group members are administered on a TN464D vintage 3 or greater. This field specifies the type of line signaling protocol (Incoming Local or Incoming Toll) to be used. Valid entries are “inloc” (default) and “intol”.
- **Auth Code** — Enter “y” if an authorization code must be dialed to complete incoming calls on the trunk group. This field can only be “y” if the Authorization Codes feature is enabled on the System-Parameters Customer-Options form.
- **Trunk Type** — Identifies the physical type of trunk. Valid entries are “loop-start”, “immed-start”, “wink-start.”
- **Incoming Rotary Timeout (sec)** — Is the timing interval required by the central office that the System is connected to. If the System is connected to a Step-by-Step office, 18 seconds or more must be used; if the System is not connected to a Step-by-Step office, 5 seconds or more may be used. Valid entries are 5 to 99, or leave blank; default is 5.
- **Incoming Dial Type** — Indicates the type of pulses required on an incoming trunk group. Valid entries are “mf”, “tone” (default) or “rotary”.

⇒ NOTE:

Multifrequency Signaling must be enabled on the System-Parameters Customer-Options form before a value of “mf” may be administered.

- **Trunk Termination** — Specifies how the trunk group is terminated. Valid entries are "600ohm" or "rc" (default). Use "600ohm" when the PBX trunk port is connected to terminal equipment (for example, SLC carrier or compensators optioned for 600 ohms input impedance) and the distance to the terminal equipment from the System is less than 3000 feet.
- **Disconnect Timing (msec)** — Specifies the minimum time period (in ms) that is required for recognition of disconnect by the serving central office or far-end PBX. The time interval must be in increments of 10 (from 140 to 2550); default is 500. This timer is not used for ports on a circuit pack that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers. These latter two timers replace Disconnect Timing.
- **Digit Treatment** — Indicates if digits are to be absorbed or inserted. A blank indicates no digit absorption or insertion. Valid entries are "absorption" or "insertion", or leave blank.
- **Digits** — Indicates the actual digits to be inserted or number of digits to be absorbed. This field is used with the Digit Treatment field. No entry indicates no digit absorption or insertion is done. Valid entries are the number of digits to be absorbed from the beginning of the dialed number (1 to 5) or the actual digits to be inserted into the beginning of the dialed number (1 to 5 digits including the characters '*' and '#').
- **Expected Digits** — Enter the number of digits the Central Office sends for incoming call connections. If the Incoming Dial Type is "mf", this field must be completed. Default is blank.
- **Sig Bit Inversion** — This field allows the user to administer the signaling bit inversion (the A-bit and B-bit inversion) on a per port basis. This field applies only to TN464B or later suffixed circuit packs. The CCITT standards define on-hook to be "1" in the A-bit and off-hook to be "0". This definition is the opposite of the EIA definition. The default in the TN464 firmware for signaling bit inversion is use the CCITT standard for 32-channel mode and to use the EIA standard for 24-channel mode. Valid entries are "A", "A&B", "B", and "none" (default).
- **Terminal Balanced** — Displayed when the Trunk Type field is filled in. Enter "y" for terminally balanced trunks or "n" (default) for unbalanced trunks. Typically, a Trunk Termination field of "600ohm" signifies a balanced trunk group and a field of "rc" signifies a non-balanced trunk group. If the trunks in this group pass the Low Frequency Return Loss test requirements, then they are terminally balanced and this field should be "y".
- **RA Trunk Loss** — (Remote Access Trunk Loss) Displayed when the Terminal Balanced field is "n". Specifies the type of dB loss to be applied to terminally unbalanced trunks. If unsatisfactory echo performance (hollowness) is experienced, the field should be changed to 2dB. Valid entries are "0db" (default) and "2db".
- **Extended Loop Range** — This field appears only on a DID trunk group and only for the TN459A circuit pack. Enter "y" or "n" (default) depending on the distance between the central office and the PBX. If greater than the required distance, then the field should be set to "y"

- **Trunk Gain** — This field specifies the gain of the trunk, and can have the values of “high” or “low”. The value of this field, in conjunction with the values of the Trunk Termination and Country fields, will determine the input and trans-hybrid balance impedance for TN465B, TN2147, and TN2146 ports. All other CO and DID circuit packs will be automatically set to “high”.
- **Drop Treatment** — Setting this field set to “intercept” indicates that intercept tone is applied on the talk path of DID calls dropped by the terminating party when the originating party is still on the call. Entering “busy” indicates busy tone will be applied, and “silence” indicates no tone will be applied. Default is “silence”.



NOTE:

In Italy, Drop Treatment must be administered as “intercept” for all DID trunk groups.

- **Disconnect Supervision-In** — Enter “y” (default) to indicate that the far end has the ability to release a trunk when the calling party releases from a call and the system is able to recognize the release signal.

Page 2 of the Form

- **ACA Assignment** — Specifies whether or not Automatic Circuit Assurance (ACA) measurements will be taken for this trunk group. Valid entries are “y” or “n” (default). If “y” is entered, complete the next three fields.
- **Long Holding Time (hours)** — Only displayed when ACA Assignment is “y”. Is the length in hours that the System will consider as being a long holding time. If “0” is entered, the System will not consider long holding calls. Valid entries are 0 to 10; default is 1.
- **Short Holding Time (secs.)** — Only displayed when ACA Assignment is “y”. Specifies the length in seconds that the System will consider as being a short holding time. If “0” is entered, the System will not consider short holding calls. Valid entries are 0 to 160; default is 10.
- **Short Holding Threshold** — Only displayed when ACA Assignment is “y”. Is the number of times that the System will record a short holding call before an attendant or display-equipped voice terminal user is alerted to the possibility of a faulty trunk. Valid entries are 0 to 30; default is 15.
- **Measured** — indicates if the System will transmit data for this trunk group to the Call Management System. Valid entries are “internal”, “external”, “both”, “none”. Enter “internal” if the data is to be sent to the Basic Call Management System (internal to the switch) for subsequent measurement reports and “external” to send the data to the Call Management System Adjunct. Enter “both” to send the data to both systems for measurement reports. Enter “none” if trunk group measurements are not required. System default is none.
- **Data Restriction** — Is used to prevent System features from generating tones on a data call that would cause erroneous data transmission. Valid entries are “y” or “n” (default).

- **Suppress # Outpulsing** — Indicates end-to-end signaling begins with (and includes) the “#” when “y” is entered in this field. The final “#” is suppressed in cases where System would normally outpulse it. This field should be “y” when the Central Office (for example, rotary) or any other facility treats “#” as an error; default is n.
- **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are “y” (default) or “n”.

Page 3 of the Form (Administrable Timers)

- **Incoming Disconnect (msec)** — A disconnect signal on an incoming call is considered valid only if it continues at least for the time specified by this timer. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank; default is 500.
- **Flash Length** — Specifies the length (in ms) of the flash signal to be generated toward the Central Office. This field is sent to TN436B, TN459B, TN464C (or later), and TN2146 ports. Valid entries are 10 to 2550 in increments of 10; default is 540.
- **Incoming Dial Guard (msec)** — Enter the interval between the detection of an incoming seizure and the acceptance of the first digit. The PBX will not accept digits before this timer expires. Valid entries are 10 to 2550 in increments of 10; default is 70.
- **Incoming Partial Dial (sec)** — Enter the time (in sec) allowed between digits on rotary trunks. Valid entries are 5 to 255 in increments of 1; default is 18. This timer appears only if the Incoming Dial Type field is “rotary”.
- **Incoming Incomplete Dial Alarm (sec)** — Enter the maximum time (in sec) between incoming seizure of a trunk and receipt of all digits. Intervals greater than this generate an inline error. Valid entries are 1 to 255 in increments of 1; default is 255. This timer is sent to TN464C (or later), TN767, TN436 (all), TN459 (all), and TN2146 circuit packs.
- **Tone (msec)** — Enter the length of a DTMF tone sent to the public network in response to a button depression at a hybrid station set. Valid entries are 20 to 2550 in increments of 10; default is 350. This timer is sent to TN464B (or later), TN767, TN436B, TN459B, and TN2146 DID circuit packs.
- **Pause (msec)** — Enter the minimum length of a pause between tones being sent in response to button depressions at a hybrid station set. Valid entries are 20 to 2550 in increments of 10; default is 150. This timer is sent to TN464B (or later), TN767, TN436B, TN459B, and TN2146 DID circuit packs.

Pages Y through X of the Form (Group Member Assignments)



NOTE:

The total number of pages, and the first page of the Group Member Assignments, will vary depending on whether the Administrable Timers page is displayed.

- **Administered Members (min/max)** — Indicates the minimum and maximum member number that has been administered for the particular trunk group. This field is displayed on all member pages.
- **Total Administered Members** — Indicates the total number of members administered in the trunk group. This field will appear on all trunk group member pages.
- **Port** — Enter seven characters. The first two characters identify the cabinet (01 to 22 [G3r V2], 1 to 3 [G3s V2, G3i V2]); the third character identifies the carrier (A through E); the fourth and fifth identify the slot number in the carrier (01 to 20 for multi-carrier cabinets or 01 to 18 for single-carrier cabinets); the last two characters identify the circuit number (01 to 31).
- **Code** — Display-only field. Displays the type of circuit pack physically installed or logically administered at the location to which this member has been assigned. If a circuit pack is neither installed nor administered at the member's location, the field is blank.
- **Sfx** — Displays the type of circuit pack (suffix only) physically installed at the location to which this member has been assigned. Field is blank if a circuit pack has not been physically installed.
- **Name** — Enter up to ten characters to identify the member of the trunk group. The name can be a 7-digit telephone number or a 10-digit Trunk Circuit Identification number (provided by trunk supplier).



NOTE:

Previously, System 75 Night Service and Balance/Loss information was entered in the Name field as "NT#..." and "TT#...". This information must now be entered in the Night field (below) or the STT Loss field on Page 1 of the form, as applicable.

TRUNK GROUP			Page 1 of x
Group Number: xxx	Group Type: did	CDR Reports? y	
Group Name: OUTSIDE_CALL_____	COR: 1_	TAC:_____	
Country: 1			
Auth Code? n			
TRUNK PARAMETERS			
Trunk Type: _____	Incoming Rotary Timeout: 5_		
Trunk Termination: rc_____	Incoming Dial Type: tone_		
Digit Treatment: _____	Disconnect Timing (msec) : 500_		
Expected Digits: _	Digits:_____		
Sig Bit Inversion: none			
Extended Loop Range? n	Trunk Gain: high	Drop Treatment: silence	
Disconnect Supervision- In? y			

Screen 4-57. Direct Inward Dialing Trunk Group From (Page 1 of X)**Implementation Notes:**

The CO Type field is displayed when the Country field is "14" and only applies if the trunk group members are administered on a TN464D vintage 2 or greater.

The Protocol Type field is displayed when the Country field is "15" and only applies if the trunk group members are administered on a TN464D vintage 3 or greater.

The Terminal Balanced field is displayed when the Trunk Type field has been filled in.

The RA Trunk Loss field is displayed when the Terminal Balanced field is "n".

		Page 2 of X
TRUNK FEATURES		TRUNK GROUP
ACA Assignment? n		Measured: none
		Data Restriction? n
Suppress # Outpulsing? n		Maintenance Tests? y

Screen 4-58. Direct Inward Dialing Trunk Group Form (Page 2 of X)

Implementation Note:

The Long Holding Time (hours), Short Holding Time (seconds), and Short Holding Threshold fields are displayed when the ACA Assignment field is "y".

		Page 3 of X
ADMINISTRABLE TIMERS		TRUNK GROUP
Incoming Disconnect(msec): 500		
Incoming Dial Guard(msec): 70		
Incoming Partial Dial(sec): 18		
Flash Length(msec) : 540		Incoming Incomplete Dial Alarm(sec) : 255
END TO END SIGNALING		
Tone (msec): 350	Pause (msec): 150	

Screen 4-59. Direct Inward Dialing Trunk Group Administrable Timers Form (Page 3 of X)

Implementation Note:

Incoming Partial Dial only appears if the Incoming Dial Type is "rotary".

				Page Y of X
TRUNK GROUP				
Administered Members(min/max) : xxx/yyy				
Total Administered Members: xxx				
GROUP MEMBER ASSIGNMENTS				
	Port	Code	Sfx	Name
226:	_____	_____	-	_____
227:	_____	_____	-	_____
228:	_____	_____	-	_____
229:	_____	_____	-	_____
230:	_____	_____	-	_____
231:	_____	_____	-	_____
232:	_____	_____	-	_____
233:	_____	_____	-	_____
234:	_____	_____	-	_____
235:	_____	_____	-	_____
236:	_____	_____	-	_____
237:	_____	_____	-	_____
238:	_____	_____	-	_____
239:	_____	_____	-	_____
240:	_____	_____	-	_____

Screen 4-60. Direct Inward Dialing Trunk Group Form (Pages Y through X)

To reduce repetition, the remaining pages are not shown. For a complete set of forms, refer to the "Blank Forms Package."

Direct Inward and Outward Dialing Trunk Group

⇒ NOTE:

The TN429 DIOD Trunk circuit pack is used in Japan. See the “Direct Inward and Outward Dialing (DIOD)” section in Chapter 3 for more information.

This form is used to assign a Direct Inward and Outward Dialing (DIOD) trunk group and associated trunk ports. The TN429 DIOD trunk circuit pack allows calls from a local exchange to be made to a subscriber on a PBX system without connecting through the attendant console.

Administration Commands

The following administration commands can be used to access the DIOD Trunk Group form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	trunk-group	1-MAX (or 'next')
change	trunk-group	1-MAX or TAC X...
display	trunk-group	1-MAX ['number' X]['to-number' X]['count' N] ['tac' assigned TAC]['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-MAX or TAC X...

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Group Type** — Enter “diod” to identify the trunk group type.
- **CDR Reports** — Enter “y” to provide a detailed CDR record of both incoming and outgoing calls made on all trunks in the trunk group; otherwise, enter “n”. Default is “y”.
- **Group Name** — Enter a unique name that identifies the trunk group. Up to 16 characters can be used. Default is “OUTSIDE CALL”.

- **COR** — Enter a class of restriction (COR) number from 0 to 95 that reflects the desired restriction. Default is “1”.
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. CDR also uses the TAC to identify the trunk group on associated CDR reports. A different TAC must be assigned to each trunk group. Valid entries are TACs that are compatible with the System Dial Plan (1 to 4 digits).
- **Direction** — Enter “two-way”.
- **Outgoing Display** — Specifies whether or not the trunk group name is displayed on a terminal placing an outgoing call. Valid entries are “y” or “n”. Default is “n”.
- **Dial Access** — Enter “y” to allow the trunk group to be accessed via a TAC. Default is “n”. Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter the number of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console.
- **Queue Length** — Enter the number of outgoing calls that can be held waiting. A “0” (default) indicates no calls will be held in queue.
- **Auth Code** — Enter “y” if an authorization code must be dialed to complete incoming calls on the trunk group. This field can only be set to “y” if the Authorization Codes feature is enabled on the System-Parameters Customer-Options form. Default is “n”.
- **Digit Absorption List** — Enter a digit list absorption number, if required, when this trunk group terminates at a Step-by-Step office. This field specifies the type of absorption as specified on the System Digit Absorption form. Up to five different forms (lists 0 to 4) may be administered in the System.
- **Prefix-1** — Indicates if the prefix 1 is required for NXX FNPA calls (where N is 2 to 9, and X is 0 to 9). Valid entries are “y” (default) and “n”.
- **Toll Restricted** — Automatic dial type trunks should have this field set to “n”. Valid entries are “y” (default) and “n”.
- **Trunk Type** — Enter “loop-start” for DIOD trunk types. Default is blank. Entering “loop-start” causes the Terminal Balanced field to appear. All members of this group must be on TN429 circuit packs.
- **Outgoing Dial Type** — Identifies the type of pulsing required on an outgoing call. Valid entries are “tone” (default) or “rotary”.
- **Incoming Dial Type** — Indicates the type of pulses required on an incoming trunk group. The only valid entry is “tone” (default).
- **Trunk Termination** — Valid entries are “600ohm” or “rc”; 600ohm is used when the PBX trunk port is connected to terminal equipment (for example, SLC carrier or compensators optioned for 600 ohms input impedance) and the distance to the terminal equipment from the System is less than 3000 feet. Enter “rc” (default) in all other cases.

- **Digit Treatment** — Indicates if digits are to be absorbed or inserted. A blank indicates no digit absorption or insertion. Valid entries are “absorption” or “insertion”, or leave blank.
- **Digits** — Indicates the digits to be inserted or number of digits to be absorbed. This field is used with the Digit Treatment field. No entry indicates no digit absorption or insertion is done. Valid entries are the number of digits to be absorbed (1 to 5) or the actual digits to be inserted (up to 5 digits including the character ‘*’ and ‘#’).
- **Expected Digits** — Enter the number of digits (1 to 9) the Central Office sends for an incoming call connections. Default is blank.
- **Terminal Balanced** — Displayed when the Trunk Type field is “loop-start”. Specifies whether the trunks in the trunk group are balanced. A “y” signifies that the trunks are terminally balanced and “n” signifies that the trunks are not terminally balanced. Typically, a Trunk Termination field of “600ohm” signifies a balanced trunk group and a field of “rc” signifies a non-balanced trunk group. If the trunks in this group pass the Low Frequency Return Loss test requirements, then they are terminally balanced, and this field should be set to “y”. Since most trunks are not balanced, the default is “n”.
- **RA Trunk Loss** — (Remote Access Trunk Loss) Specifies the type of dB loss to be applied to non-terminally balanced trunks. The 0dB entry is used in both directions as the default option. If unsatisfactory echo performance (hollowness) is experienced, the field should be reset to 2dB. Valid entries are “0db” and “2db”. This field is only displayed when the Terminal Balanced field entry is “n”.
- **Disconnect Supervision-In** — Enter “y” (default) to indicate that the far end has the ability to release a trunk when the calling party releases from a call and the system is able to recognize the release signal.
- **Disconnect Supervision-Out** — This field appears when the Direction is “two-way”. Internally, the field is set to “n” if the direction is incoming. If the field is set to “y”, a Warning Message appears to alert the user of possible trunk lockups. This field specifies whether trunks in this trunk group provide disconnect supervision when seized outgoing (that is, whether these trunks should be allowed to participate in outgoing trunk to outgoing trunk calls. This field is set independently of the trunk-to-trunk transfer system parameter, although both options must be set appropriately if outgoing trunk to outgoing trunk transfers are desired.
- **Cyclical Hunt** — Enter “y” (default) if a preferential hunting algorithm is to be used. Otherwise, a linear hunting algorithm will be used.
- **Answer Supervision Timeout** — Enter the amount of time in seconds the System allows for the call to be answered before beginning a CDR record of a call. This interval begins as soon as the outgoing trunk is seized. This time-out does not override network or firmware sent answer supervision. Valid entries are 0 to 250. The default is “10”.

- **Receive Answer Supervision** — Specifies whether or not the network provides answer supervision for the trunks. Answer supervision refers to notification from the far-end that the called party has gone off-hook to answer the call. When answer supervision is not provided, the originating PBX can classify a call as answered using the Answer Supervision Timeout field entry (for domestic circuit packs) or, for circuit packs that take administrable timers, by using the Outgoing End of Dial timer. For trunks over which answer supervision is provided by the network, this field should be set to “y” and the Answer Supervision Timeout field set to “0” to disable the firmware time-out. Note that the firmware time-out is automatically set to “0” for circuit packs that take the administrable Outgoing End of Dial timer. Default is “n”.

Page 2 of the Form

- **ACA Assignment** — Specifies whether or not Automatic Circuit Assurance (ACA) measurements will be taken for this trunk group. Valid entries are “y” or “n” (default).
- **Long Holding Time (hours)** — Only displayed when ACA Assignment is “y”. Is the length in hours that the System will consider as being a long holding time. If “0” is entered, the System will not consider long holding calls. Valid entries are 0 to 10. Default is “1”.
- **Short Holding Time (secs.)** — Only displayed when ACA Assignment is “y”. Specifies the length in seconds that the System will consider as being a short holding time. If “0” is entered, the System will not consider short holding calls. Valid entries are 0 to 160. Default is “10”.
- **Short Holding Threshold** — Only displayed when ACA Assignment is “y”. Is the number of times that the System will record a short holding call before an attendant or display-equipped voice terminal user is alerted to the possibility of a faulty trunk. Valid entries are 0 to 30. Default is “15”.
- **Measured** — Indicates if the System will transmit data for this trunk group to the Call Management System. Valid entries are “internal”, “external”, “both”, or “none”. Enter “internal” if the data is to be sent to the Basic Call Management System (internal to the switch) for subsequent measurement reports and “external” to send the data to the 3B Call Management System. Enter “both” to send the data to both systems for measurement reports. Enter “none” if trunk group measurements are not required. System default is “none”.
- **Data Restriction** — Is used to prevent System features from generating tones on a data call that would cause erroneous data transmission. Valid entries are “y” or “n”. Default is “n”.
- **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are “y” (default) or “n”.
- **Suppress # Outpulsing** — Indicates end-to-end signaling begins with (and includes) the “#” when “y” is entered in this field. The final “#” is suppressed in cases where System would normally outpulse it. This field should be set to “y” when the Central Office (for example, rotary) or any other facility treats “##” as an error. Default is “n”.

Page 3 of the Form (Administrable Timers)

- **Incoming Disconnect (msec)** — A disconnect signal on an incoming call is considered valid only if it continues at least for the time specified by this timer. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank. Default is 500. Note that this timer is not sent to TN429 ports.
- **Outgoing Disconnect (msec)** — A disconnect signal on an outgoing call is considered valid only if it continues at least for the time specified by this timer. This timer begins timing when a disconnect signal has been detected on an outgoing call over the trunk, and resets when the signal is no longer detected. If the timer times out, the trunk is dropped. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank. Default is 500. Note that this timer is not sent to TN429 ports.
- **Outgoing Dial Guard (msec)** — This timer specifies the time between seizure acknowledgment of a trunk and the outpulsing of digits. For trunks that do not provide seizure acknowledgment, the timer specifies the minimum time between seizure and the outpulsing of digits. Any digit dialed by the station user after they lift the receiver, but before the timer times out, will not be outpulsed until the timer expires. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1600.
- **Incoming Glare Guard (msec)** — Enter the minimum time (in msec) between the time an incoming trunk is released and the same trunk can be seized for an outgoing call. This guard time will ensure the far-end has released all equipment after the incoming trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1500.
- **Outgoing Glare Guard (msec)** — Enter the minimum time (in msec) between the time an outgoing trunk is released and the same trunk can be seized for another outgoing call. This guard time will ensure that the far-end has released all equipment after the outgoing trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1500.
- **Outgoing Rotary Dial Interdigit (msec)** — Enter the interval (in msec) between rotary dial digits being outpulsed by the System. Valid entries are 150 to 2550 in increments of 10. The field cannot be blank. Default is 800. This field only appears when the Outgoing Dial Type is "rotary".
- **Ringing Monitor (msec)** — Enter the minimum time (in msec) required to determine if the trunk is disconnected. If the ringing signal disappears for a duration longer than the time specified in this field, the call will be assumed to be disconnected. Valid entries are 200 to 51000 in increments of 200. Default is 5200. The field cannot be blank.
- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the serving CO. Valid entries are 20 to 2550 in increments of 10. The field cannot be blank. Default is 500.

- **Outgoing End of Dial (sec)** — Enter the maximum time (in sec) a trunk may wait for answer supervision after dialing an outgoing call. During cut-through operation, timing begins after each outgoing digit is sent by the PBX and timing ceases after the far-end sends answer supervision. If the timer expires, the PBX acts as if it had received answer supervision. On slenderized operation, the timer begins after the last digit collected is sent by the PBX. The timer ceases when the far-end sends answer supervision. If the timer expires, the PBX acts as if it has received answer supervision. This field appears when Direction is “outgoing” or “two-way” and Receive Answer Supervision is “n”. This field will not appear if the Receive Answer Supervision field is “y”, but a zero (0) value will be sent down to the firmware to disable the timer. This timer applies to the outgoing and two-way CO trunk groups. Valid entries are 1 to 254 in increments of 1. Default is 10.
- **Programmed Dial Pause (msec)** — Enter the length (in msec) of a pause during abbreviated dialing, ARS outpulsing, and terminal dialing operations. Valid entries are 100 to 25500 in increments of 100. Default is 1500 msec.
- **Tone (msec)** — Enter the length (in msec) of a DTMF tone sent to the public network in response to a button depression at a hybrid station set. Valid entries are 20 to 2550 in increments of 10. Default is 350.
- **Pause (msec)** — Enter the minimum length (in msec) of a pause between tones being sent in response to button depressions at a hybrid station set. Valid entries are 20 to 2550 in increments of 10. Default is 150.
- **PPS** — Enter either “10” or “20” to specify the PPS (pulses per second) assigned to rotary dial pulse trunk groups. Valid entries are “10” or “20”. Default is “10”.
- **Make (msec)** — Enter the duration of the make interval (the pause between pulses) while the system is outpulsing digits using dial pulse signaling.

If the PPS field is “10”, the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of five. The field cannot be blank. The default is 40.

If the PPS field is “20”, the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of five. The field cannot be blank. The default is 20.
- **Break (msec)** — Enter the duration of the break interval (the pulse duration) while the system is outpulsing digits using dial pulse signaling.

If the PPS field is “10”, the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of five. The field cannot be blank. The default is 60.

If the PPS field is “20”, the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of five. The field cannot be blank. The default is 30.

- **PPM** (Periodical Pulse Metering) — This field does not apply to the TN429 since that circuit pack cannot detect PPM. Default is “n”.

Page 4 of the Form (ATMS Thresholds)

This form appears when the Direction on Page 1 is “two-way” and ATMS is enabled on the Feature-Related System Parameters form.

- **TTL Type** — Specifies the type of TTL selected for testing trunks. The TTL type determines what ATMS tests can be completed and thus which threshold values need to be administered. The different TTLs supported are 105 with return loss (105-w-rl) (default), 105 without return loss (105-wo-rl), high-level tone source (high-level-tone), low-level tone source (low-level-tone), 100-type (100), and 102 type (102). The following table explains the differences between TTL Types:

Type TTL	Description	Example
<i>105-w-rl</i>	Full range of 18 measurements or some defaults for return loss used (56A)	TN771B, ZLC12 and SN261B circuit packs and new 56A mini-responder
<i>105-wo-rl</i>	Cannot return default values for far-end return loss	Older 56A mini-responder
<i>high-level-tone</i>	sends a fixed sequence of tones at 0 dBm	ZLC12 and SN261B circuit packs
<i>low-level-tone</i>	Sends a fixed sequence of tones at -16dBm	SN261 B circuit pack
<i>100</i>	Up to 5 measurements that sends a 1004 Hz tone then a quiet termination	
<i>102</i>	One measurement that sends a 1004 Hz tone	

The far-end switch containing the TTL may be any of the following:

- System 85 R3 PBX equipped with the Maintenance/Test Board (TN771B)
- System 75 R1V2 and beyond, all of which contain the circuitry required to perform the TTL function
- System 85 R2 PBX equipped with the Analog/Digital Facility Test Circuit (ADFTC,SN261)
- DIMENSION FP8 equipped with the Analog Facility Test Circuit (AFTC,ZLC-12)
- Central Office switches equipped with various TTL equipment that provide 100, 102, or 105 test line capabilities (56A)

Other vendor PBXs *may* be supported if compatible test lines are provided by these switches.

Four different versions of the ATMS Threshold Administration page can occur depending upon the measurements allowed by the TTL type selected. The four possibilities are:

1. 105-w-rl and 105-wo-rl — all thresholds appear.
2. high-lts and low-lts — all thresholds (except maximum C-notched noise) appear.
3. 100 — all thresholds (except maximum c-notched noise, 404Hz loss, and 2804 Hz loss) appear.
4. 102 — only 1004 Hz loss threshold appears.

ATMS THRESHOLDS																																																												
TTL Type: 105-w-rl_____	Far End Test No: _____																																																											
TTL Vendor: _____	TTL Contact: _____																																																											
Trunk Vendor: _____	Trunk Contact: _____																																																											
Trunk Length: _____																																																												
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="2" style="text-align: center;">MARGINAL</th> <th colspan="2" style="text-align: center;">UNACCEPTABLE</th> </tr> <tr> <th></th> <th style="text-align: center;">Min</th> <th style="text-align: center;">Max</th> <th style="text-align: center;">Min</th> <th style="text-align: center;">Max</th> </tr> </thead> <tbody> <tr> <td>1004 Hz Loss:</td> <td style="text-align: center;">-2</td> <td style="text-align: center;">21</td> <td style="text-align: center;">-2</td> <td style="text-align: center;">21</td> </tr> <tr> <td></td> <td style="text-align: center;">-Dev</td> <td style="text-align: center;">+Dev</td> <td style="text-align: center;">-Dev</td> <td style="text-align: center;">+Dev</td> </tr> <tr> <td>404 Hz Loss:</td> <td style="text-align: center;">9</td> <td style="text-align: center;">9</td> <td style="text-align: center;">9</td> <td style="text-align: center;">9</td> </tr> <tr> <td>2804 Hz Loss:</td> <td style="text-align: center;">9</td> <td style="text-align: center;">9</td> <td style="text-align: center;">9</td> <td style="text-align: center;">9</td> </tr> <tr> <td>Maximum C Message Noise:</td> <td colspan="2" style="text-align: center;">55</td> <td colspan="2" style="text-align: center;">55</td> </tr> <tr> <td>Maximum C Notched Noise:</td> <td colspan="2" style="text-align: center;">74</td> <td colspan="2" style="text-align: center;">74</td> </tr> <tr> <td>Minimum SRL-HI:</td> <td colspan="2" style="text-align: center;">0_</td> <td colspan="2" style="text-align: center;">0_</td> </tr> <tr> <td>Minimum SRL-LO:</td> <td colspan="2" style="text-align: center;">0_</td> <td colspan="2" style="text-align: center;">0_</td> </tr> <tr> <td>Minimum ERL:</td> <td colspan="2" style="text-align: center;">0_</td> <td colspan="2" style="text-align: center;">0_</td> </tr> </tbody> </table>							MARGINAL		UNACCEPTABLE			Min	Max	Min	Max	1004 Hz Loss:	-2	21	-2	21		-Dev	+Dev	-Dev	+Dev	404 Hz Loss:	9	9	9	9	2804 Hz Loss:	9	9	9	9	Maximum C Message Noise:	55		55		Maximum C Notched Noise:	74		74		Minimum SRL-HI:	0_		0_		Minimum SRL-LO:	0_		0_		Minimum ERL:	0_		0_	
	MARGINAL		UNACCEPTABLE																																																									
	Min	Max	Min	Max																																																								
1004 Hz Loss:	-2	21	-2	21																																																								
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Minimum SRL-LO:	0_		0_																																																									
Minimum ERL:	0_		0_																																																									
Allow ATMS Busyout, Error Logging and Alarming? y																																																												
Maximum Percentage of Trunks Which Can Be Removed from Service by ATMS: 0_																																																												

Screen 4-61. ATMS Thresholds Form

- **Far End Test No.** — Enter the access number (1 to 20 digits) dialed to reach the TTL.
- **TTL Vendor** — Enter the 0 to 22 alphanumeric character TTL vendor name (the name of the vendor supplying the terminating test line); default is blank.
- **TTL Contact** — Enter the 0 to 25 alphanumeric character TTL vendor contact (the name and/or telephone number of someone from the TTL vendor who can be contacted in the event of problems with the TTL); default is blank.
- **Trunk Vendor** — Enter the 0 to 22 alphanumeric character trunk vendor name (who to notify in the event of problems with the trunks); default is blank.

- **Trunk Contact** — Enter the 0 to 25 alphanumeric character trunk vendor contact (the name and/or telephone number of someone from the trunk vendor who can be contacted in the event of problems with the trunks); default is blank.
- **Trunk Length** — Enter 0 to 4 digits followed by "k" (for kilometers) or "m" (for miles) showing the length of trunk. This field is not required, since it is not used by the G3-MT. It has been included for the G3-MA adjunct to use in aiding with threshold establishment, since noise on a trunk increases with the length of the trunk. The default is "Om".
- **Marginal Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance. A larger dB value is more restrictive.
- **Marginal Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance; default is 21. A smaller dB value is more restrictive.
- **Unacceptable Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable. A larger dB value is more restrictive.
- **Unacceptable Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable; default is 21. A smaller dB value is more restrictive.
- **Marginal Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone noise level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804. Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.

- **Marginal Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as out of tolerance. The default is 55. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as unacceptable. The default is 55. Smaller values are more restrictive.
- **Marginal Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as out of tolerance. The default is 74. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as unacceptable. The default is 74. Smaller values are more restrictive.
- **Marginal Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.

- **Unacceptable Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Allow ATMS Busyout, Error Logging and Alarming** — Enter “y” to allow ATMS error logging and alarming (subject to filtering depending on the service organization used to deal with alarms); default is n.
- **Maximum Percentage of Trunks Which Can Be Removed From Service by ATMS** — Enter the highest percentage of trunks from the trunk group (0 to 100) that can be removed from service at one time because of unacceptable transmission measurement results; default is 0. This field appears only if the Allow ATMS Busyout, Error Logging and Alarming field is “y”.

Pages Y through X of the Form (Group Member Assignments)



NOTE:

The total number of pages, and the first page of Group Member Assignments, will vary depending on whether the Administrable Timers and ATMS Thresholds pages are displayed.

- **Administered Members (min/max)** — indicates the minimum and maximum member number that is administered for the particular trunk group (displayed on all member pages).
- **Total Administered Members** — Indicates the total number of members administered in the trunk group (appears on all trunk group member pages).
- **Port** — Enter seven characters. The first two characters identify the cabinet (01 to 22 [G3r V2], 1 to 3 [G3s V2, G3i V2]); the third character identifies the carrier (A through E); the fourth and fifth identify the slot number in the carrier (01 to 20 for multi-carrier cabinets or 01 to 18 for single-carrier cabinets); the last two characters identify the circuit number (01 to 31).



NOTE:

All ports in a DIOD trunk group must be from TN429 circuit packs.

- **Code** — Display-only field. Displays the type of circuit pack physically installed or logically administered at the location to which this member has been assigned. If a circuit pack is neither installed nor administered at the member's location, the field is blank.

- **Sfx** — Displays the type of circuit pack (suffix only) physically installed at the location to which this member has been assigned. Field is blank if a circuit pack has not been physically installed.
- **Name** — Enter up to ten characters to identify the member of the trunk group. The name can be a 7-digit telephone number or a 10-digit Trunk Circuit Identification number (provided by trunk supplier).
- **Night** — Enter the extension of the night destination for the trunk. This individual night destination overrides the group night service destination on the first page of the trunk group form. Incoming calls are routed to this destination when the system is placed in night service mode. (If "attd" is entered, night service will be to the attendant.)
- **Mode** — This field must be blank for DIOD groups.
- **Type** — This field must be blank for DIOD groups.
- **Ans Delay** — This field must be blank for DIOD groups.

Page 1 of X		
TRUNK GROUP		
Group Number: xx	Group Type: diod	CDR Reports? y
Group Name: OUTSIDE CALL_____	COR: 1_	TAC: _____
Direction: two-way_	Outgoing Display? n	
Dial Access? n	Busy Threshold: 99	
Queue Length: 0_		
	Auth Code? n	Digit Absorption List : _
Prefix-1? y		Toll Restricted? y
TRUNK PARAMETERS		
Trunk Type: _____		
Outgoing Dial Type: tone_____		Incoming Dial Type: tone _____
Trunk Termination: rc _____		
Digit Treatment: _____		Digits: _____
Expected Digits: _		
Disconnect Supervision - In? y Out? n		Cyclical Hunt? y
Answer Supervision Timeout : 10_		Receive Answer Supervision? n

Screen 4-62. Direct Inward and Outward Dial Trunk Group Form (Page 1 of X)

Implementation Notes:

The Terminal Balanced field is only displayed when Trunk Type is "loop-start".

The RA Trunk Loss field is only displayed when Terminal Balanced is "n".

TRUNK FEATURES		Page 2 of X
ACA Assignment? n	Measured: none	
	Data Restriction? n	
Suppress # Outpulsing? n		Maintenance Tests? y

Screen 4-63. Direct Inward and Outward Dial Trunk Group Form (Page 2 of X)

Implementation Note:

The Long Holding Time (hours), Short Holding Time (secs.), and Short Holding Threshold fields are only displayed if ACA Assignment is "y".

ADMINISTRABLE TIMERS		Page 3 of X
Incoming Disconnect(msec): 500	Outgoing Disconnect(msec) : 500	
	Outgoing Dial Guard(msec) : 1600	
Incoming Glare Guard(msec) : 1500	Outgoing Glare Guard(msec) : 1500	
	Outgoing Rotary Dial Interdigit(msec) : 800	
Ringing Monitor(msec) : 5200	Incoming Seizure(msec) : 500	
Outgoing End of Dial(sec) : 10	Outgoing Seizure Response(sec): 5	
Programmed Dial Pause(msec) : 1500		
END TO END SIGNALING		
Tone(msec): 350	Pause(msec) : 150	
OUTPULSING INFORMATION		
PPS: 10	Make(msec) : 40	Break(msec): 60 PPM? n

Screen 4-64. Direct Inward and Outward Dial Trunk Group Form (Page 3 of X)

Implementation Note:

Outgoing End of Dial does not appear if the Receive Answer Supervision field is "Y".

Page Y of X

TRUNK GROUP

Administered Members (min/max) : xxx/yyy
Total Administered Members: xxx

GROUP	MEMBER	ASSIGNMENTS						
	Port	Code	Sfx	Name	Night	Mode	Type	Ans Delay
1:			-					
2:			-					
3:			-					
4:			-					
5			-					
6			-					
7			-					
8			-					
9:			-					
10:			-					
11:			-					
12:			-					
13:			-					
14:			-					
15:			-					

Screen 4-65. Direct Inward and Outward Dial Trunk Group Form (Page Y of X)

To reduce repetition, the remaining pages are not shown. For a complete set of forms, refer to the "Blank Forms Package."

Foreign Exchange Trunk Group

This form is used to allow a connection between a distant central office and the System.

Administration Commands

The following administration commands can be used to access the FX Trunk Group form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	trunk-group	1- MAX (or 'next')
change	trunk-group	1 -MAX or TAC X...
display	trunk-group	1-MAX ['number' X]['to-number' X]['count' N] ['tac' assigned TAC]['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1 – MAX or TAC X...

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Group Type** — Enter "fx" to identify the trunk group type.
- **CDR Reports** — Enter "y" (default) to provide a detailed Call Detail Recording (CDR) record of both incoming and outgoing calls made on all trunks in the trunk group.
- **Group Name** — Enter a unique name that identifies the trunk group. Up to 15 characters can be used; default is OUTSIDE CALL.
- **COR** — Enter a class of restriction (COR) number from 0 to 95 that reflects the desired restriction; default is 1.
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. CDR also uses the TAC to identify the trunk group on associated CDR reports. A different TAC must be assigned to each trunk group. Valid entries are TACs that are compatible with the System Dial Plan (1 to 4 digits; 1 to 3 digits for DCS or to remotely control it).

- **Direction** — Enter whether the trunk group is “incoming”, “outgoing”, or “two-way” (default). Note that the Direction administered will affect which timers will appear on the Administrable Timer page.
- **Outgoing Display** — Specifies whether or not the trunk group name is displayed on a terminal placing an outgoing call. Valid entries are “y” or “n” (default).
- **Dial Access** — Enter “y” to allow the trunk group to be accessed via a TAC. Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter the number of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console.
- **Night Service** — Enter the extension number assigned to Night Service. The extension number entered will receive all incoming calls when Night Service is activated and the individual trunk member Night field is not administered to override this group extension. Valid entries are an extension number (can be a VDN extension), the attendant group access code (“attd”), or leave blank if the Trunk Type field is not “auto/...”.
- **Queue Length** — Enter the number of outgoing calls that can be held waiting. A “0” (default) indicates no calls will be held in queue. Enter “0” for DCS trunks. This field is not displayed if the Direction field is “incoming”.
- **Country** — This field specifies the country code for each subscriber line. Valid values are any number between 1 and 17, inclusive. The value of this field, in conjunction with the values of the Trunk Termination and Trunk Gain fields, will determine the input and trans-hybrid balance impedance requirements for TN465B, TN2146, and TN2147 ports.

Refer to the “Country Code Assignments” table in Appendix B for a complete list of country codes.



NOTE:

Although defined, country codes 12 (France) and 13 (Germany) are not supported and, if entered, will cause an error message to be displayed.

- **Incoming Destination** — Indicates where incoming calls will terminate. Valid entries are an extension number, the attendant group access code (“attd”), VDN, or leave blank if the Trunk Type field is not “auto/...”. If “attd” is entered, a call is treated as an LDN call.
- **Comm Type** — Indicates if the trunk is to be used for voice, data, alternate voice-data (avd), or alternate voice/voice grade data and 56-kbps digital data (rbavd) calls. Valid entries are “avd”, “rbavd”, “voice” (default), or “data”. Type “rbavd” supports access to voice/data SDN service on robbed-bit T1 transmission facilities.



NOTE:

“avd” and “rbavd” types require trunk member ports on a DS1 circuit pack. An “avd” type also requires that the DS1 circuit pack be administered for either common-chan or CAS signaling. An “rbavd” type requires that the DS1 circuit pack be administered for robbed-bit, ISDN-EXT, or ISDN-PRI signaling. Also, if mixed mode signaling is allowed on the DS1 circuit pack, it must be administered for robbed bit signaling,

- **Auth Code** — Enter “y” if an authorization code must be dialed to complete incoming calls on the trunk group. This field can only be “y” if the Authorization Codes feature is enabled on the System-Parameters Customer-Options form,
- **Digit Absorption List** — Enter a digit list absorption number, if required, when this trunk group terminates at a Step-by-Step office. This field specifies the type of absorption as specified on the System Digit Absorption form. Up to five different forms (lists 0 to 4) may be administered in the System.
- **Prefix-1** — Specifies if the prefix 1 is required for N(0/1)X (where N is 2 to 9, and X is 0 to 9) calls. Valid entries are “y” and “n” (default).
- **Trunk Flash** — Enter “y” or “n” (default) to indicate if access to customized services provided by a far-end (such as Central Office) is permitted for this trunk group. The PBX must be directly connected to a far-end that provides such services.
- **Toll Restricted** — Applies for outgoing TAC calls if the originating party is toll restricted. Enter “y” (default) if this trunk group is to be toll restricted. Set this field to “n” for trunks with an Outgoing Dial Type of “automatic”.
- **BCC** (Bearer Capability Class) — Displayed when ISDN-PRI is optioned for on the System-Parameters Customer-Options form and Comm Type is “data”, “avd”, or “rbavd”. Used by the Generalized Route Selection feature and identifies the type of traffic on trunks in the group. The BCC entry is used by far-end tandem switches to select outgoing routing facilities with equivalent BCC classes. Valid entries are 0, 1, 2, 3, and 4. Default is 0 for “avd” and 2 for “data”.



NOTE:

Refer to “Generalized Route Selection” in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls.

- **ITC** (Information Transfer Capability) — Displayed for non-ISDN trunk groups, and when Comm Type is “data”, “avd”, or “rbavd” and BCC is not “0”. Used by the GRS feature and enables the system to route calls to restricted (default) or unrestricted facilities according to the endpoint's information transfer capability. A trunk member is said to be restricted if the circuit pack it belongs to is administered as “zcs” in the Line Coding

field of the DS1 form. A trunk member is said to be unrestricted if the circuit pack it belongs to is administered as "b8zs" or "hdb3" in the Line Coding field of the DS1 form. A restricted trunk member can only carry restricted calls. An unrestricted trunk member may carry restricted or unrestricted calls. A trunk group with a transfer capability of unrestricted may have only unrestricted trunk members.

- **Trunk Type** — Identifies the physical type of CO trunk. It may differ for incoming and outgoing types. Valid entries are "ground-start", "loop-start", "auto/auto", "auto/delay", "auto/immed", and "auto/wink".
- **Outgoing Dial Type** — Identifies the type of pulsing required on an outgoing call. Valid entries are "automatic", "mf", "rotary", or "tone" (default).

**NOTE:**

Multifrequency Signaling must be enabled on the System-Parameters Customer-Options form before a value of "mf" may be administered.

- **Cut-Through** — This field appears only when the Outgoing Dial Type is either "rotary" or "tone". Enter "y" to allow cut-through to the CO trunk.

If the dialed digits are restricted:

- The connection to the CO trunk is dropped.
- Intercept treatment is applied.

If "n" (default) is entered, then PBX dial tone will be received, and, instead of digits being sent to the CO as they are dialed, they are collected, checked for restrictions, and, if there are no restrictions, the digits are sent to the CO.

- **Trunk Termination** — Specifies how the trunk group is terminated. Valid entries are "600ohm" or "rc" (default). Enter "600ohm" when the PBX trunk port is connected to terminal equipment (for example, SLC carrier or compensators optioned for 600 ohms input impedance) and the distance to the terminal equipment from the System is less than 3000 feet.
- **Disconnect Timing (msec)** — Specifies the minimum time period (in ms) that is required for recognition of disconnect by the serving central office or far-end PBX. The time interval must be in increments of 10 (from 140 to 2550 ins); default is 500. This timer is not used for ports on a circuit pack that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers. These latter two timers replace Disconnect Timing.
- **Auto Guard** — This field enables the user to prevent repeated seizures of a defective trunk. This field is effective only for TN438B, TN465B, and TN2147 ports. TN438B ports have hardware support for detecting a defective trunk. TN465B and TN2147 ports consider a trunk defective if no dial tone is detected on an outgoing call, and Outpulse Without Tone? is set to "no" on the Feature-Related System Parameters form. Valid entries are "n" (default) and "y".

- **Call Still Held** — Enter "y" to prevent call collisions by not allowing an outgoing seizure for a period of not less than 140 seconds. This field is used only at the end of an incoming call where the disconnect is initiated by the PBX, and it will effectively extend the Incoming Glare Guard timer by 140 seconds. This field is effective only for TN438B, TN465B, and TN2147 ports.
- **Sig Bit Inversion** — This field allows the user to administer the signaling bit inversion (the A-bit and B-bit inversion) on a per-port basis. This field applies only to TN464B or later suffixed circuit packs. The CCITT standards define on-hook to be "1" in the A-bit and off-hook to be "0". This definition is the opposite of the EIA definition. The default in the TN464 firmware for signaling bit inversion is use the CCITT standard for 32-channel mode and to use the EIA standard for 24-channel mode. Valid entries are "A", "A&B", "B", and "none" (default).
- **Connected to Toll** — Enter "y" if connected to a CO toll office. This field is displayed when the Trunk Type field contains an entry of "auto/...", "delay/...", "wink/...", or "dimmed/...".
- **STT Loss** (Satellite PBX Tie Trunk Loss) — Displayed when Connected to Toll is "n". Specifies the loss plan to be used for the trunk group. Valid entries are "normal" (default) or "low". This option affects the transmission performance of a private PBX network.

Although the use of this option has wider applications, only for the simplest network arrangements should this field be administered without Network Engineering advise. The "low" option (described as the ISL digital low loss plan in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Reference*, 555-025-101) should be used when:

1. Stations on the satellite PBX complain of too much loss on calls to the public network.
2. The PBX network consists of no more than three PBXs: one main and one or two satellite PBXs.
3. All PBXs have the "low" option available.
4. The total DS1 trunk connection length is less than 100 miles.

If the preceding conditions are not met, obtain Network Engineering assistance. The field entry is based on the following:

- **normal** — Applies to AIU-TT (Analog Interface Unit at Customer Switching System for Tie Trunk — 4-wire E&M interface) and DIU-TT (Digital Interface Unit at Customer Switching System for Tie Trunk — voice or AVD DS1 interface) loss plans.
- **low** — Applies to AIU-TTS (same as AIU-TT, but suitable for private network connections that can be connected in tandem with public network connections) and DIU-TTS (same as DIU-TT, but suitable for private network connections that can be connected in tandem with public network connections). These interfaces were formerly referred to as DIU DTT ISL.

- **DTT to DCO Loss** (Digital Tie to Digital CO Trunk Loss) — Specifies the loss plan to be used for the trunk group for interconnections from a DIU-CO (Digital Interface Unit at a Central Office) to a DIU-DTT (Digital Interface Unit for a Digital Tie Trunk Interface). This field is displayed when the Trunk Type field contains an entry of “auto/...”, “delay/...”, “wink/...”, or “dimmed/...”.

This option affects the transmission performance of public network access via a private PBX network. Choose the “low” option if private network users complain about too much loss on calls to the public network, otherwise, the “normal” option should be used. Valid entries are “normal” (default) and “low”. The entry is based on the following:

- **normal** — Corresponds to a (0, -6) dB gain pair and is used as the default option. (This corresponds to the DTT/EIA DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DML/ISDN-PRI Reference*, 555-025-101.)
 - **low** — Corresponds to (+3, -3) dB gain pair. Low is used for internetwork applications in which no significant configuration will encounter echo, stability, or overload problems because of reduced loss. With the low gain pair, subscriber station DTMF signals transmitted through the digital class 5 office into the customer network may experience nonrecoverable digit mutilation in secondary signaling applications (that is, DTMF signaling after the connection has been established). (This corresponds to the DTT/ISL DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DML/ISDN-PRI Reference*, 555-025-101.)
- **Trunk Gain** — This field specifies the gain of the trunk, and can have the values of “high” (default) or “low”. The value of this field, in conjunction with the values of the Trunk Termination and Country fields, will determine the input and trans-hybrid balance impedance for TN465B, TN2147, and TN2146 ports. All other CO and DID circuit packs will be automatically set to “high”.
 - **Bit Rate** — Displayed when Comm Type is “avd” or “rbavd”. It is also displayed if the Comm Type is “data” and the ISDN-PRI option is enabled on the System-Parameters Customer-Options form. Specifies the baud rate to be used by pooled modems. Valid entries are 300, 1200 (default), 2400, 4800, 9600, and 19200.
 - **Synchronization** — Displayed when Comm Type is “avd” or “rbavd”. It is also displayed if the Comm Type is “data” and the ISDN-PRI option is enabled on the System-Parameters Customer-Options form. Enter whether the trunk group will use synchronous or asynchronous communications. Valid entries are “async” (default) and “sync”.
 - **Duplex** — Displayed when Comm Type is “avd” or “rbavd”. Specifies either “full” (default) or “half” duplex for the trunk group. It is also displayed if the Comm Type is “data” and the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

- **Disconnect Supervision-In** — This field appears when the Direction is “incoming” or “two-way”. Internally, the field is set to “n” if Direction is “outgoing”. Enter “y” (default) to indicate that the far-end has the ability to release a trunk when the calling party releases from a call and the system can recognize the release signal.
- **Disconnect Supervision-Out** — This field appears when Direction is “outgoing” or “two-way”. Internally, the field is set to “n” (default) if the direction is incoming. If the field is set to “y” a Warning Message appears to alert the user of possible trunk lockups. This field specifies whether trunks in this trunk group provide disconnect supervision when seized outgoing, (that is, whether these trunks should be allowed to participate in outgoing trunk to outgoing trunk calls). This field is set independently of the trunk-to-trunk transfer system parameter, although both options must be set appropriately if outgoing trunk to outgoing trunk transfers are desired.
- **Cyclical Hunt** — Only displayed when Trunk Type is “loop-start”. Enter “y” (default) if a preferential hunting algorithm is to be used. Otherwise, a linear hunting algorithm will be used.
- **Answer Supervision Timeout** — Used for analog port circuits to indicate the amount of time in seconds the System allows for a call to be answered before beginning a CDR record of a call. This interval begins as soon as the outgoing trunk is seized. Valid entries are 0 to 250; default is 10.



NOTE:

This timeout does not override answer supervision sent from the network or other firmware (DS1 port circuit timers). DS1 firmware-sent answer supervision is administered in the Outgoing End of Dialing field on Page 3 of the Trunk Group form (Administrable Timers page).

- **Receive Answer Supervision** — Specifies whether or not the network provides answer supervision for the trunks. Answer supervision refers to notification from the far-end that the called party has gone off-hook to answer the call. When answer supervision is provided, the originating PBX can classify a call as answered using the Answer Supervision Timeout field entry (for domestic circuit packs) or, for circuit packs that take administrable timers, by using the Outgoing End of Dial timer. For trunks over which answer supervision is provided by the network, set this field to “y” and the Answer Supervision Timeout field to “0” so that the firmware timeout is disabled. The firmware timeout is automatically set to “0” on circuit packs that take the administrable Outgoing End of Dial timers. Receive Answer Supervision must be set to “n” (default) if the Direction field is “incoming”.

Page 2 of the Form

- **ACA Assignment** — Specifies whether or not Automatic Circuit Assurance (ACA) measurements will be taken for this trunk group. Valid entries are “y” or “n” (default). If “y” is entered, complete the next three fields.
 - **Long Holding Time (hours)** — Only displayed when ACA Assignment is “y”. Is the length in hours that the System will consider as being a long holding time. If “0” is entered, the System will not consider long holding calls. Valid entries are 0 to 10; default is 1.
 - **Short Holding Time (secs.)** — Only displayed when ACA Assignment is “y”. Specifies the length in seconds that the System will consider as being a short holding time. If “0” is entered, the System will not consider short holding calls. Valid entries are 0 to 160; default is 10.
 - **Short Holding Threshold** — Only displayed when ACA Assignment is “y”. Is the number of times that the System will record a short holding call before an attendant or display-equipped voice terminal user is alerted to the possibility of a faulty trunk. Valid entries are 0 to 30; default is 15.
 - **Measured** — Indicates if the System will transmit data for this trunk group to the Call Management System. Valid entries are “internal”, “external”, “both”, or “none”. Enter “internal” if the data is to be sent to the Basic Call Management System (internal to the switch) for subsequent measurement reports and “external” to send the data to the Call Management System Adjunct. Enter “both” to send the data to both systems for measurement reports. Enter “none” (default) if trunk group measurements are not required.
 - **Data Restriction** — Is used to prevent System features from generating tones on a data call that would cause erroneous data transmission. Valid entries are “y” or “n” (default).
 - **Abandoned Call Search** — Applicable when Trunk Type is “ground-start”. Enter “y” if this trunk group will conduct an Abandoned Call Search to identify a ghost call.
-  **NOTE:**
- Abandoned Call Search is designed to work with CO trunks (ground start - analog) that *do not* provide disconnect supervision. Central offices that provide disconnect supervision do not require use of the Abandoned Call Search feature. The CO must support Abandoned Call Search for the feature to work properly.
- **Suppress # Outpulsing** — Indicates end-to-end signaling begins with (and includes) the “#” when “y” is entered in this field. The final “#” is suppressed in cases where System would normally outpulse it. This field should be “y” when the Central Office (for example, rotary) or any other facility treats “#” as an error; default is “n”.
 - **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are “y” (default) or “n”.

Page 3 of the Form (Administrable Timers)



NOTE:

Different fields appear on the form depending on whether the Direction is “incoming”, “outgoing”, or “two-way”.

- **Incoming Disconnect (msec)** — A disconnect signal on an incoming call is considered valid only if it continues at least for the time specified by this timer. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank; default is 500. This timer is sent to ground-start trunks that are “incoming” or “two-way”. The only “incoming” or “two-way” loop-start circuit packs that receive this timer are the TN2138 and TN2147.
- **Outgoing Disconnect (msec)** — A disconnect signal on an outgoing call is considered valid only if it continues at least for the time specified by this timer. This timer begins timing when a disconnect signal has been detected on an outgoing signal over the trunk, and resets when the signal is no longer detected. If the timer times out, the trunk is dropped. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank; default is 500. This timer is sent to ground-start trunks that are “outgoing” or “two-way”. The only “outgoing” or “two-way” loop-start circuit packs that receive this timer are the TN2138 and TN2147.
- **Outgoing Dial Guard (msec)** — This timer specifies the time between seizure acknowledgment of a trunk and the outpulsing of digits. For trunks that do not provide seizure acknowledgment, the timer specifies the minimum time between seizure and the outpulsing of digits. Any digit dialed by the station user after they lift the receiver, but before the timer times out, will not be outpulsed until the timer expires. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank; default is 1600.
- **Incoming Glare Guard (msec)** — Enter the minimum time between the time an incoming trunk is released and the same trunk can be seized for an outgoing call. This guard time will ensure the far-end has released all equipment after the incoming trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank; default is 1500. This field only appears when the trunk group is “two-way”.
- **Outgoing Glare Guard (msec)** — Enter the minimum time between the time an outgoing trunk is released and the same trunk can be seized for another outgoing call. This guard time will ensure that the far-end has released all equipment after the outgoing trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank; default is 1500. This field only appears when the trunk group is “outgoing” or “two-way”.
- **Outgoing Rotary Dial Interdigit (msec)** — Enter the interval between rotary dial digits being outpulsed by the system (that is, PBX). Valid entries are 150 to 2550 in increments of 10. The field cannot be blank; default is 800. This field only appears when the Outgoing Dial Type is “rotary”.

- **Ringing Monitor (msec)** — Enter the minimum time required to determine if the trunk is disconnected. If the ringing signal disappears for a duration longer than the time specified in this field, the call will be assumed to be disconnected. Valid entries are 200 to 51000 in increments of 200. The field cannot be blank; default is 5200. This timer is sent to TN464C (or later), TN767, TN438 (all), TN465 (all), TN447, TN2138, and TN2147 CO circuit packs.
- **Incoming Seizure (msec)** — Enter the minimum time required for recognition of incoming ringing signal from the serving CO. Valid entries are 20 to 2550 in increments of 10. The field cannot be blank; default is 500. This timer is sent to TN464C (or later), TN767, TN438 (all), TN465 (all), TN447, TN2138, and TN2147 CO circuit packs.
- **Outgoing End of Dial (sec)** — Indicates the maximum time (in sec) a trunk waits for answer supervision after dialing an outgoing call. During cut-through operation, timing begins after each outgoing digit is sent by the PBX and timing ceases after the far-end sends answer supervision. If the timer expires, the PBX acts as if it had received answer supervision. On slenderized operation, the timer begins after the last digit collected is sent by the PBX. The timer ceases when the far-end sends answer supervision. If the timer expires, the PBX acts as if it has received answer supervision. This field appears when Direction is “outgoing” or “two-way” and Receive Answer Supervision is “n”. This field will not appear if the Receive Answer Supervision field is “y” but a zero (0) value will be sent to the firmware to disable the timer. This timer applies to the outgoing and two-way CO trunk groups. Valid entries are 1 to 254; default is 10.



NOTE:

This field controls the firmware answer-supervision timer on ports that take the administrable timers; the Answer Supervision Timeout field on Page 1 of the Trunk Group form controls answer supervision for ports that do not take administrable timers. This field and the value administered in the Answer Supervision Timeout field on the Trunk Group form should be the same value.

- **Outgoing Seizure Response (sec)** — Enter the time (in sec) by which the PBX should receive the proceed-to-dial indication from the far-end after sending the seize signal. If the indication is not received in this time, a seizure failure response is uplinked. This timer is sent to TN464B (or later), TN767, TN438B, TN447, TN465B, and TN2147 CO circuit packs. Valid entries are 1 to 255 in increments of 1; default is 5.
- **Programmed Dial Pause (msec)** — Enter the length of a pause during abbreviated dialing, ARS outputting, and terminal dialing operations. This timer is administrable for all outgoing and two-way trunk groups. Valid entries are 100 to 25500 in increments of 100; default is 1500.

- **Disconnect Signal Error (sec)** — Enter the time (in sec) within which a disconnect signal from the far-end is expected after the internal party (a station or a tie trunk) goes on-hook. If the timer expires, the system can assume a disconnect failure and take an appropriate action (such as error message). This timer is administrable on ground-start trunk groups. Valid entries are 1 to 255 in increments of 1; default is 240.
- **Flash Length (msec)** — Specifies the length of the flash signal to be generated toward the Central Office. Valid entries are 10 to 2550 in increments of 10; default is 540. This timer is sent to TN464C (or later), TN465B, and TN2147 ports.
- **Tone (msec)** — Enter the length of a DTMF tone sent to the public network in response to a button depression at a hybrid station set. Valid entries are 20 to 2550 in increments of 10; default is 350.
- **Pause (msec)** — Enter the minimum length of a pause between tones being sent in response to button depressions at a hybrid station set. Valid entries are 20 to 2550 in increments of 10; default is 150.
- **PPS** — Enter either “10” or “20” to specify the pulses per second (PPS) assigned to rotary dial pulse trunk groups. Valid entries are “10” (default) or “20”.



NOTE:

The TN767 and TN747Bv12 (or later) circuit packs can only perform at 10pps.

- **Make (msec)** — Enter the duration of the make interval (the pause between pulses) while the system is outputting digits using dial pulse signaling.

If the PPS field is “10”, the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of 5. The field cannot be blank; default is 40.

If the PPS field is “20”, the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of 5. The field cannot be blank; default is 20.
- **Break (msec)** — Enter the duration of the break interval (the pulse duration) while the system is outputting digits using dial pulse signaling.

If the PPS field is “10”, the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of 5. The field cannot be blank; default is 60.

If the PPS field is “20”, the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of 5. The field cannot be blank; default is 30.
- **PPM** — Only displayed if the Direction is “outgoing” or “two-way”. Enter “y” if Periodical Pulse Metering (PPM) pulses should be collected from the public network to determine call cost. If this field is “y”, the Frequency field is displayed.

- **Frequency**— Appears if the PPM field is “y”. Identifies the PPM pulse frequency(ies). Boards can listen for up to three different frequencies, (12kHz, 16kHz, and 50Hz), plus two frequency combinations, (50Hz/12kHz and 50Hz/16kHz). Valid entries are “12k”, “16k”, “50”, “50/12k” (default), and “50/16k”. This field is sent to the TN465B and TN2138 circuit packs.

**NOTE:**

The TN465B can only detect 12k and 16kHz PPM. Therefore, if “50/12k” or “12k” is administered, the circuit pack will be set to detect 12kHz. If “16k”, “50”, or “50/16k” is administered, the circuit pack will be set to detect 16kHz.

Page 4 of the Form (ATMS Thresholds)

This form appears when the Direction field on Page 1 is “outgoing” or “two-way” and ATMS is enabled on the Feature-Related System Parameters form.

- **TTL Type** — Specifies the type of TTL selected for testing trunks. The TTL type determines what ATMS tests can be completed and thus which threshold values need to be administered. The different TTLs supported are 105 with return loss (105-w-rl) (default), 105 without return loss (105-wo-rl), high-level tone source (high-level-tone), low-level tone source (low-level-tone), 100-type (100), and 102 type (102). The following table explains the differences between TTL Types:

Type TTL	Description	Example
<i>105-w-rl</i>	Full range of 18 measurements or some defaults for return loss used (56A)	TN771B, ZLC12 and SN261B circuit packs and new 56A mini-responder
<i>105-wo-rl</i>	Cannot return default values for far-end return loss	Older 56A mini-responder
<i>high-level-tone</i>	sends a fixed sequence of tones at 0 dBm	ZLC12 and SN261B circuit packs
<i>low-level-tone</i>	Sends a fixed sequence of tones at -16dBm	SN261B circuit pack
<i>100</i>	Up to 5 measurements that sends a 1004 Hz tone then a quiet termination	
<i>102</i>	One measurement that sends a 1004 Hz tone	

The far-end switch containing the TTL may be any of the following:

- System 85 R3 PBX equipped with the Maintenance/Test Board (TN771B)
- System 75 R1V2 and beyond, all of which contain the circuitry required to perform the TTL function
- System 85 R2 PBX equipped with the Analog/Digital Facility Test Circuit (ADFTC, SN261)
- DIMENSION FP8 equipped with the Analog Facility Test Circuit (AFTC, ZLC-12)
- Central Office switches equipped with various TTL equipment that provide 100, 102, or 105 test line capabilities (56A)

Other vendor PBXs may be supported if compatible test lines are provided by these switches.

Four different versions of the ATMS Threshold Administration page can occur depending upon the measurements allowed by the TTL type selected. The four possibilities are:

1. 105-w-rl and 105-wo-rl — all thresholds appear.
2. high-lts and low-lts — all thresholds (except maximum C-notched noise) appear.
3. 100 — all thresholds (except maximum c-notched noise, 404Hz loss, and 2804 Hz loss) appear.
4. 102 — only 1004 Hz loss threshold appears.

TTL Type: 105-w-rl _____
 TTL Vendor: _____
 Trunk Vendor: _____
 Trunk Length: _____

ATMS THRESHOLDS

Far End Test No: _____
 TTL Contact: _____
 Trunk Contact: _____

	MARGINAL		UNACCEPTABLE	
	Min	Max	Min	Max
1004 Hz Loss:	-2	21	-2	21
	-Dev	+Dev	-Dev	+Dev
404 Hz Loss:	9	9	9	9
2804 Hz Loss:	9	9	9	9
Maximum C Message Noise:	55		55	
Maximum C Notched Noise:	74		74	
Minimum SRL-HI:	0_		0_	
Minimum SRL-LO:	0_		0_	
Minimum ERL:	0_		0_	

Allow ATMS Busyout, Error Logging and Alarming? y
 Maximum Percentage of Trunks Which Can Be Removed from Service by ATMS: 0_

Screen 4-66. ATMS Thresholds Form

- **Far End Test No.** — Enter the access number (1 to 20 digits) dialed to reach the TTL.
- **TTL Vendor** — Enter the 0 to 22 alphanumeric character TTL vendor name (the name of the vendor supplying the terminating test line); default is blank.
- **TTL Contact** — Enter the 0 to 25 alphanumeric character TTL vendor contact (the name and/or telephone number of someone from the TTL vendor who can be contacted in the event of problems with the TTL); default is blank.
- **Trunk Vendor** — Enter the 0 to 22 alphanumeric character trunk vendor name (who to notify in the event of problems with the trunks); default is blank.
- **Trunk Contact** — Enter the 0 to 25 alphanumeric character trunk vendor contact (the name and/or telephone number of someone from the trunk vendor who can be contacted in the event of problems with the trunks); default is blank.

- **Trunk Length** — Enter 0 to 4 digits followed by “k” (for kilometers) or “m” (for miles) showing the length of trunk. This field is not required, since it is not used by the G3-MT. It has been included for the G3-MA adjunct to use in aiding with threshold establishment, since noise on a trunk increases with the length of the trunk. The default is “Om”.
- **Marginal Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance. A larger dB value is more restrictive.
- **Marginal Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance; default is 21. A smaller dB value is more restrictive.
- **Unacceptable Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable. A larger dB value is more restrictive.
- **Unacceptable Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable; default is 21. A smaller dB value is more restrictive.
- **Marginal Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone noise level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.

- **Marginal Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as out of tolerance. The default is 55. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as unacceptable. The default is 55. Smaller values are more restrictive.
- **Marginal Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as out of tolerance. The default is 74. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as unacceptable. The default is 74. Smaller values are more restrictive.
- **Marginal Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.

- **Unacceptable Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Allow ATMS Busyout, Error Logging and Alarming** — Enter “y” to allow ATMS error logging and alarming (subject to filtering depending on the service organization used to deal with alarms); default is n.
- **Maximum Percentage of Trunks Which Can Be Removed From Service by ATMS** — Enter the highest percentage of trunks from the trunk group (0 to 100) that can be removed from service at one time because of unacceptable transmission measurement results; default is 0.

Pages Y through X of the Form (Group Member Assignments)



NOTE:

The total number of pages, and the first page of Group Member Assignments, will vary depending on whether the Administrable Timers and ATMS Thresholds pages are displayed.

- **Administered Members (min/max)** — Indicates the minimum and maximum member number that has been administered for the particular trunk group. This field is displayed on all member pages.
- **Total Administered Members** — Indicates the total number of members administered in the trunk group. This field will appear on all trunk group member pages.
- **Port** — Enter seven characters. The first two characters identify the cabinet (01 to 22 [G3r V2], 1 to 3 [G3s V2, G3i V2]); the third character identifies the carrier (A through E); the fourth and fifth identify the slot number in the carrier (01 to 20 for multi-carrier cabinets or 01 to 18 for single-carrier cabinets); the last two characters identify the circuit number (01 to 31).
- **Code** — Display-only field. Displays the type of circuit pack physically installed or logically administered at the location to which this member has been assigned. If a circuit pack is neither installed nor administered at the member's location, the field is blank.
- **Sfx** — Displays the type of circuit pack (suffix only) physically installed at the location to which this member has been assigned. Field is blank if a circuit pack has not been physically installed.

- **Name** — Enter up to ten characters to identify the member of the trunk group. The name can be a 7-digit telephone number or a 10-digit Trunk Circuit Identification number (provided by trunk supplier).

 NOTE:

Previously, Generic 1 Night Service and Balance/Loss information was entered in the Name field as “NT#...” and “TT#)...”. This information must now be entered in the Night field (below) or the STT Loss field on Page 1 of the form, as applicable.

- **Night** — Enter the extension of the night destination for the trunk. This individual night destination overrides the group night service destination on the first page of the trunk group form. Incoming calls are routed to this destination when the system is placed in night service mode, (If “attd” is entered, night service will be to the attendant.)
- **Mode** — Specifies the signaling mode used on Tie Trunks with TN722A, TN722B, TN760B (or later release), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are “e&m” (interface), “simplex” (phantomed), or “protected”. This entry must correspond to associated dip switch settings on the circuit pack.
- **Type** — Specifies the signaling type to be used. This field should only be used with TN760B (or later release), TN722 (with any suffix), TN767, TN2140 (when the Trunk Signaling Type field is “cont”), TN437, TN439, TN464 (with any suffix), or TN458 circuit packs. The Type field appears with the Trunk Signaling Type field is “cont” or blank.

The value of “t5 rev” is only allowed for the TN760D vintage 10 or later. When the Type field is “t5 rev”, the Mode field must be “e&m”.

Valid entries are “t1 stan”, “t1 comp”, “t5rev”, or “type 5”. Default is blank.

- **Ans Delay** — Specifies the length of the wait for answer supervision delay (in ms) for Trunks using the TN722A, TN722B, TN760 (B, C, or D), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are 20 to 5100 in increments of 20; default is no entry (blank) and internally treated as a zero. This delay serves two purposes:
 1. Used to assure that the answer supervision signal is valid and not a secondary delay-dial or wink-start signal.
 2. Used to bridge over momentary off-hook signals resulting from connections made off-network through certain No. 5 Crossbar CCSA switches as the connection is being established.

TRUNK GROUP		Page 1 of X
Group Number: xxx	Group Type: fx	CDR Reports? y
Group Name: OUTSIDE_CALL ____	COR: 1_	TAC: ____
Direction: two-way_ Outgoing Display? n		
Dial Access? n	Busy Threshold: 99	Night Service: ____
Queue Length: 0_	Country: 1	Incoming Destination: ____
Comm Type: voice	Auth Code? n	Digit Absorption List: _
Prefix-1? y	Trunk Flash? n	Toll Restricted? y
TRUNK PARAMETERS		
Trunk Type: ____		
Outgoing Dial Type: tone ____	Cut-Through? n	
Trunk Termination: rc ____	Disconnect Timing(msec) : 500_	
Auto Guard? n	Call Still Held? n	Sig Bit Inversion: none
Trunk Gain? high		
Disconnect Supervision- In? y Out? n		
Answer Supervision Timeout: _10	Receive Answer Supervision? n	

Screen 4-67. Foreign Exchange Trunk Group Form (Page 1 of X)

Implementation Notes:

The BCC field is only displayed when the Comm Type is "avd", or "rbavd", or the ISDN-PRI is optioned for on the System-Parameters Customer-Options form and the Comm Type field is "avd", "data", or "rbavd".

Connected to Toll and DTT to DCO Loss are displayed when Trunk Type is "auto/...", "delay...", "wink...", or "immed...".

STT Loss is displayed when Connected to Toll is "n".

The Bit Rate, Synchronization, and Duplex fields are only displayed if the Comm Type field is "avd" or "rbavd". It also appears if the Comm Type is "data" but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form.

The Cyclical Hunt field is only displayed if the Trunk Type is "loop-start".

TRUNK GROUP		Page 2 of X
TRUNK FEATURES		
ACA Assignment? n	Measured: none	
	Data Restriction? n	
Abandoned Call Search? n	Maintenance Tests? y	
Suppress # Outpulsing? n		

Screen 4-68. Foreign Exchange Trunk Group Form (Page 2 of X)**Implementation Note:**

The Long Holding Time (hours), Short Holding Time (seconds), and Short Holding Threshold fields are displayed when ACA Assignment is "y".

TRUNK GROUP		Page 3 of X
ADMINISTRABLE TIMERS		
Incoming Disconnect(msec) : 500	Outgoing Disconnect(msec): 500	
	Outgoing Dial Guard(msec): 1500	
Incoming Glare Guard(msec): 1500	Outgoing Glare Guard(msec) : 1500	
	Outgoing Rotary Dial Interdigit (msec): 800	
Ringing Monitor (msec): 5200	Incoming Seizure (msec): 500	
Outgoing End of Dial (sec) : 10**	Outgoing Seizure Response (sec) : 5	
Programmed Dial Pause (msec) : 1500	Disconnect Signal Error(sec) : 240	
Flash Length (msec) : 540*		
END TO END SIGNALING		
Tone (msec): 350	Pause (msec) : 150	
OUTPULSING INFORMATION		
PPS: 10	Make (msec) : 40 Break (msec): 60 PPM? y Frequency: 50/12k	

Screen 4-69. Foreign Exchange Trunk Group Administrable Timers Form with PPM**Implementation Notes:**

The PPM field is only displayed when Direction is "outgoing" or "two-way".

The Frequency field is only displayed when PPM is "y".

TRUNK GROUP		Page 3 of X
ADMINISTRABLE TIMERS		
Incoming Disconnect (msec) : 500	Outgoing Dial Guard (msec): 500	
	Outgoing Dial Guard(msec) : 1600	
Incoming Glare Guard(msec) : 1500	Outgoing Glare Guard(msec) : 1500	
	Outgoing Rotary Dial Interdigit (msec) : 800	
Ringing Monitor (msec) : 5200	Incoming Seizure (msec): 500	
Outgoing End of Dial (sec) : 10**	Outgoing Seizure Response (sec) : 5	
Programmed Dial Pause (msec) : 1500		
Flash Length (msec) : 540*		
END TO END SIGNALING		
Tone (msec): 350	Pause (msec) : 150	
OUTPULSING INFORMATION		
PPS: 10	Make (msec) : 40	Break (msec): 60 PPM? n

Screen 4-70. Foreign Exchange Trunk Group Administrable Timers Form with Loop Start

Implementation Note:

The Outgoing End of Dial field is only displayed if the Receive Answer Supervision field is "n".

TRUNK GROUP

Page Y of X

Administered Members (min/max) : xxx/yyy
Total Administered Members: xxx

GROUP	MEMBER	ASSIGNMENTS						
	Port	Code	Sfx	Name	Night	Mode	Type	Ans Delay
1:			-					
2:			-					
3:			-					
4:			-					
5:			-					
6:			-					
7:			-					
8:			-					
9:			-					
10:			-					
11:			-					
12:			-					
13:			-					
14:			-					
15:			-					

Screen 4-71. Foreign Exchange Trunk Group Form (Pages Y through X)

To reduce repetition, the remaining pages are not shown. For a complete set of forms, refer to the "Blank Forms Package."

Integrated Services Digital Network — Primary Rate Interface Trunk Group

This form is used to assign an ISDN-PRI Trunk group that supports the ISDN-PRI and Call by Call Service Selection features. The trunk group provides end-to-end digital connectivity and supports a wide range of services including voice and non-voice services to which users have access by a limited set of CCITT defined, standard multi-purpose interfaces. Calls to a variety of switched nodal services such as MEGACOM telecommunications service, WATS, and ACCUNET digital service and calls destined for different interexchange carriers can be processed.

The ISDN-PRI trunk group may also be used to support the Wideband Switching feature. This is intended to work with the H0 (384 kbps), H11 (1536 kbps), H12 (1920 kbps), and NxDS0 (128 to 1984 kbps) data services, and to support high-speed video conferencing and data applications.

Administration Commands

The following administration commands can be used to access the ISDN-PRI Trunk Group form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

⇒ NOTE:

When an ISDN-PRI trunk connects two PBXs, the trunk options should be set identically at both ends of the connection with the exception of Trunk Hunt. It is acceptable for both ends to have the Trunk Hunt field administered as “cyclical”, but if one end is administered as “ascend”, the other end must be administered as “descend”. This will help avoid the possibility of glare conditions.

Action	Object	Qualifier*
add	trunk-group	1- MAX (or 'next')
change	trunk-group	1 -MAX or tac X...
display	trunk-group	1-MAX ['number' X]['to-number' X]['count' N] ['tac' assigned TAC]['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1- MAX or tac X...

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.



NOTE:

When supporting BX.25 DCS, it is required that the far-end node trunk group be assigned the same "Group Number".

- **Group Type** — Enter "isdn" to identify the type of trunk group. This type can only be entered if the ISDN-PRI field on the System-Parameters Customer-Options form has been enabled.
- **CDR Reports** — Enter "y" (default) to provide a detailed record of both incoming and outgoing calls made on all trunks in the trunk group.
- **Group Name** — Enter a unique name that identifies the trunk group. Up to 15 characters can be used; default is OUTSIDE CALL.
- **COR** — Enter a class of restriction (COR) number from 0 to 95 that reflects the desired restriction; default is 1.
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. A different TAC must be assigned to each trunk group. CDR also uses the TAC to identify the trunk group on associated CDR reports. Valid entries are TACs that are compatible with the System Dial Plan (1 to 4 digits; 1 to 3 digits for DCS or to remotely control it).
- **Direction** — Identifies whether the Direction is "incoming", "outgoing", or "two-way" (default).
- **Outgoing Display** — Specifies whether or not the trunk group name is displayed on outgoing calls. Valid entries are "y" or "n" (default).
- **Dial Access** — Enter "y" to allow the trunk group to be accessed via a TAC. Access via the ARS feature is allowed regardless of this entry. A "y" may be entered only if Service Type is "access", "tie", "tandem", or "dmi-mos".
- **Busy Threshold** — Enter the number of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console.
- **Night Service** — Enter the extension number assigned to Night Service. The extension number entered will receive all incoming calls when Night Service is activated. Valid entries are an extension number, the attendant group access code ("attd"), or leave blank. Leave blank for a Service Type field entry of "sddn". This entry can be overridden by the Night Service entry on Page 2 or on the Group Member Assignment pages of the form.

■ **Queue Length** — Enter the number of outgoing calls that can be held waiting. A “0” (default) indicates no calls will be held in queue. Enter “0” for DCS trunks or a Service Type field entry of “sddn”.

■ **Service Type** — Indicates the service for which this trunk group will be dedicated. Table 4-7 provides a listing of predefined entries. In addition to the Services/Features listed in this table, “access”, “dmi-mos”, “public-ntwrk”, “sddn”, “tie”, “tandem”, “wats”, and any user-defined services as administered on the Network Facilities form is allowed. An entry of “cbc” is also allowed which indicates that this trunk group is used by the Call by Call Service Selection feature.

Up to ten ISDN-PRI trunk groups can have the Service Type field administered as “cbc”.

Table 4-8. Predefine Services/Features — ISDN-PRI

Administration Mnemonic	Description
accunet	ACCUNET Switched Digital Service — part of AC I (AT&T Communications ISDN) phase 2.
i800	International 800 Service — allows a subscriber to receive international calls without a charge to the call originating party.
inwats	INWATS — provides OUTWATS-like pricing and service for incoming calls.
lds	Long-Distance Service — part of ACI (AT&T Communications ISDN) phase 2.
megacom	MEGACOM Service — an AT&T communications service that provides unhandled long-distance services using special access (PBX to 4ESS switch) from an AT&T communications node.
mega800	MEGACOM 800 Service — an AT&T communications service that provides unhandled 800 service using special access (4ESS switch to PBX) from an AT&T communications node.
multi quest	AT&T MULTIQUEST Telecommunications Service — dial 700 service. A terminating users service supporting interactive voice service between callers at switched access locations and service provides” directly connected to the AT&T Switched Network (ASN).
operator	Network Operator — provides access to the network operator.
outwats-bnd	OUTWATS Band — WATS is a voice-grade service providing both voice and low speed data transmission capabilities from the user’s location to defined service areas commonly referred to as bands. Currently, the widest band is 5.
sdn	Software Defined Network (SDN) — an AT&T communications offering that provides a virtual private network using the public switched network. SDN can carry voice and data between customer locations as well as off-net locations.

Table 4-8. Predefine Services/Features — ISDN-PRI (continued)

Administration Mnemonic	Description
sddn	Software Defined Data Network — provides a virtual private line connectivity via the AT&T switched network (4ESS switch). Services include voice, data, and video applications. These services complement the SDN service.
sub-operator	Presubscribed Common Carrier operator — provides access to the presubscribed common carrier operator.
wats-max-bnd	Maximum Banded Wats — a WATS-like offering for which a user's calls are billed at the highest WATS band subscribed to by the user.

- **Auth Code** — Enter “y” if an Authorization Code must be dialed to complete incoming calls on the trunk group. This field can only be “y” if the Authorization Codes feature on the System-Parameters Customer Options form has been enabled.
- **Test Call ITC** — Controls the encoding of the Information Transfer Capability (ITC) codepoint of the Bearer Capability IE in the SETUP message when generating an ISDN Test Call. Allowed values are “rest”(ricted) and “unre”(stricted); default is “rest”.

**NOTE:**

ISDN Testcall feature does not go through routing so a testcall is never blocked due to an incompatible ITC.

- **Usage Alloc** — Displayed when Service Type is “cbc”. Specifies whether or not the user wishes to allocate the usage of the services provided by the trunk group. Valid entries are “y” and “n” (default). If “y” is entered, two additional CBC related forms are displayed.
- **Far End Test Line No.** — Specifies the number that will be sent to the far-end's ISDN test line extension. When the *test trunk long* command is issued, this exact number is sent to the far-end to establish a call that tests the integrity of the trunk member under test. The number does not pass through routing or undergo digit manipulation. The digits entered here must be what the far-end expects. For example, for an ISDN tandem trunk, the far-end test number should be a 7-digit ETN (Electronic Tandem Network) number. Up to 15 digits may be entered in this field.

- **Test Call BCC** — Indicates the Bearer Capability Code (BCC) used for the ISDN-PRI test call. Valid entries and their definitions are as follows:

Entry	Definition
0	Voice
1	Mode 1
2	Mode 2 Asynchronous
3	Mode 3 Circuit
4	Mode 0 (default)

- **Test Call Service** — Specifies the call by call selection for an ISDN-PRI test call. This field only appears if the Service Type field is "cbc". Valid entries are all the services listed in Table 4-7 excluding "sddn" or any user-defined services as administered on the Network Specific Facility Encoding form.

- **Trunk Hunt** — The switch performs a trunk hunt when searching for available channels within a facility in an ISDN-PRI trunk group. Enter "ascend" to enable a linear trunk hunt search from the lowest to highest numbered channels, or "descend" for a linear trunk hunt search from the highest to lowest numbered channels. With both "ascend" and "descend", all trunks within an ISDN-PRI trunk group are selected based on this field and without regard to the order in which trunks are administered within the trunk group.

Enter "cyclical" (default) to enable a circular trunk hunt based on the order in which trunks were administered within the trunk group.

⇒ NOTE:

The "cyclical" option cannot be set if the trunk group is to be used for Wideband operations (Wideband Support field set to "y").

The search is administrable per ISDN-PRI trunk group, but it infers the direction of search within all ISDN-PRI facilities (or portions of those facilities) administered within the trunk group.

- **Codeset to Send Display** — This field defines the codeset for sending the information element for Display. The value depends on what type of switch the user is connected to as follows:

Value	Switch Type
0	CCITT
6	Any other than CCITT or System 85 R2V4, 4E11 (default)
7	System 85 R2V4, 4E11

- **Codeset to Send TCM, Lookahead** — This field defines the codeset for sending the information element for Traveling Class Marks and Lookahead Interflow. The value depends on what type of switch the user is connected to. Valid entries are “7” for System 85 R2V4, 4E11 or newer switch types or “6” (default) for any other types.

**NOTE:**

A Traveling Class Mark (that is, the user’s FRL or the user’s trunk group FRL) is passed between tandem nodes in an ETN in the setup message only when the Service Type is set to “tandem”. It is then used by the distant tandem switch to permit access to facilities consistent with the originating user’s privileges.

- **Max Message Size to Send** — Defines the maximum size of ISDN-PRI messages sent by the switch. Currently, the System can receive 260 byte messages. Valid entries are “128”, “244”, “256”, and “260” (default). The following Table indicates the expected message size from several AT&T products.

Products	Message Length (octets) Received
4ESS(4E11)	256
4ESS (4E13)	256
4ESS(4E14)	256
5ESS (5E4)	244
5ESS (5E5)	244
5ESS (5E6)	244
System 75 (all)	260
System 85 (R2V4)	128
System 85 (R2V5)	260
System 85 (R2V6)	260

- **Overlap Receiving** — Indicates if it is possible to accept digits using Overlap Receiving. If this field is administered as “n” (default), then the current Enbloc procedures will be applied to incoming calls on that trunk group.

If the far-end switch sends digits using Overlap Sending and the trunk group is not administered to be able to accept Overlap Receiving, there is a good chance calls will not complete due to an incomplete called party number. If, however, the trunk group is administered for Overlap Receiving and the far-end only uses Enbloc Sending, an additional call delay (of up to 15 seconds) may be placed on each call.

- **Connected to Toll** — Enter “y” if connected to a CO toll office.
- **STT Loss** (Satellite PBX Tie Trunk Loss) — Displayed when Connected to Toll field is “n”. Specifies the loss plan to be used. Valid entries are “normal” (default) or “low”. This option affects the transmission performance of a private PBX network.

Although the use of this option has wider applications, only for the simplest network arrangements should this field be administered without Network Engineering advise. The “low” option (described as the ISL digital low loss plan in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Reference*, 555-025-101) should be used when:

1. Stations on the satellite PBX complain of too much loss on calls to the public network.
2. The PBX network consists of no more than three PBXs; one main and one or two satellite PBXs.
3. All PBXs have the “low” option available.
4. The total DS1 trunk connection length is less than 100 miles.

If the above conditions are not met, obtain Network Engineering assistance. The field entry is based on the following:

- **normal** — Applies to AIU-TT (Analog interface Unit at Customer Switching System for Tie Trunk — 4-wire E&M interface), and DIU-TT (Digital interface Unit at Customer Switching System for Tie Trunk — voice or AVD DS1 interface) loss plans.
 - **low** — Applies to AIU-TTS (same as AIU-TT, but suitable for private network connections that can be connected in tandem with public network connections) and DIU-TTS (same as DIU-TT, but suitable for private network connections that can be connected in tandem with public network connections). These interfaces were formerly referred to as DIU DTT ISL.
- DTT to DCO Loss (Digital Tie to Digital CO Trunk Loss) — Specifies the loss plan used for the trunk group that connects a DIU-CO (Digital Interface Unit at a Central Office) to a DIU-DTT (Digital Interface Unit for a Digital Tie Trunk Interface).

This option affects the transmission performance of public network access via a private PBX network. Choose the “low” option if private network users complain about too much loss on calls to the public network; otherwise, the “normal” option should be used. Valid entries are “normal” (default) and “low”. The entry is based on the following:

- **normal** — Corresponds to a (0, -6) dB gain pair and is used as the default option. (This corresponds to the DTT/EIA DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Reference*, 555-025-101.)
- **low** — Corresponds to (+3, -3) dB gain pair. Low is used for internetwork applications in which no significant configuration will encounter echo, stability, or overload problems because of reduced loss. With the low gain pair, subscriber station DTMF signals transmitted through the digital class 5 office into the customer network may experience non-recoverable digit mutilation in

secondary signaling applications (that is, DTMF signaling after the connection has been established). (This corresponds to the DTT/ISL DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMII/ISDN-PRI Reference*, 555-025-101.)

- **Bit Rate** — Specifies the baud rate used for pooled modems. Valid entries are 300, 1200 (default), 2400, 4800, 9600, and 19200.
- **Synchronization** — Specifies if the trunk group will use synchronous or asynchronous communications. Valid entries are “async” (default) and “sync”.
- **Duplex** — Specifies if the trunk will operate full or half duplex. Valid entries are “full” (default) and “half”.
- **Disconnect Supervision-In** — This field appears when the Direction is either “incoming” or “two-way”. Internally, the field is set to “n” if the Direction is “outgoing”. Enter “y” (default) to indicate that the far-end has the ability to release a trunk when the calling party releases from a call and the system can recognize the release signal.
- **Disconnect Supervision-Out** — This field appears when the Direction is either “outgoing” or “two-way”. Internally, the field is set to “n” (default) if the Direction is “incoming”. If the field is set to “y” a Warning Message appears to alert the user of possible trunk lockups. This field specifies whether trunks in this trunk group provide disconnect supervision when seized outgoing, (that is, whether these trunks should be allowed to participate in outgoing trunk to outgoing trunk calls). This field is set independently of the trunk-to-trunk transfer system parameter, although both options must be set appropriately if outgoing trunk to outgoing trunk transfers are desired.
- **Answer Supervision Timeout** — Used to indicate the amount of time in seconds the System allows for a call to be answered before beginning a CDR record of a call. This interval begins as soon as the outgoing trunk is seized. Valid entries are 0 to 250; default is 0 (disabled for ISDN-PRI trunk groups).

Page 2 of the Form

- **ACA Assignment** — Specifies whether or not ACA measurements will be taken for this trunk group. Valid entries are “y” or “n” (default). If “y” is entered, complete the next three fields.



NOTE:

For the Wideband Switching feature, wideband trunk calls will be treated as a single trunk call. This way, if an ACA referral call is generated (for short or long holding time), the wideband call will only trigger a single referral call using the lowest B-channel trunk member associated with the wideband channel.

- **Long Holding Time (hours)** — Only displayed when ACA Assignment is “y”. Is the length in hours that the System will consider as being a long holding time. If “0” is entered, the System will not consider long holding calls. Valid entries are 0 to 10; default is 1. Field must be “0” for a Service Type field entry of “sddn”.
- **Short Holding Time (secs.)** — Only displayed when ACA Assignment is “y”. Specifies the length in seconds that the System will consider as being a short holding time. If “0” is entered, the System will not consider short holding calls. Valid entries are 0 to 160; default is 10.
- **Short Holding Threshold** — Only displayed when ACA Assignment is “y”. . Is the number of times that the System will record a shot-t holding call before an attendant or display-equipped voice terminal user is alerted to the possibility of a faulty trunk. Valid entries are 0 to 30; default is 15.
- **Measured** — Indicates if the System will transmit data for this trunk group to the Call Management System. Valid entries are “internal”, “external”, “both”, or “none”. Enter “internal” if the data is to be sent to the Basic Call Management System (internal to the switch) for subsequent measurement reports and “external” to send the data to the Call Management System Adjunct. Enter “both” to send the data to both systems for measurement reports. Enter “none” (default) if trunk group measurements are not required.
- **Wideband Support?** — Specifies whether or not Wideband Switching is supported by this trunk group. Valid entries are “y” or “n” (default). This field is only administrable if the Wideband Switching feature is enabled on the System-Parameters Customer-Options form. If set to “y”, the Wideband Support Options page is displayed.
- **Internal Alert** — Specifies if internal ringing and coverage are used for incoming calls. This field only appears if the Service Type on Page 1 is “tie”. Valid entries are “y” or “n” (default).
- **Data Restriction** — Is used to prevent System features from generating tones on a data call that would cause erroneous data transmission. Valid entries are “y” or “n” (default).
- **NCA TSC Signaling Group** — Identifies which signaling group an NCA TSC is routed on.
- **Send CPN** — Specifies if the calling/connected party’s number is sent to the network on incoming and/or outgoing ISDN calls. Valid entries are “y” or “n” (default). If “y” is entered, the CPN Prefix Table is accessed to construct the actual number to be sent over the network.



NOTE:

The CPN Prefix Table can override the Send CPN field entry for any administrable block of extensions.

- **Send Name** — Specifies if the calling/connected party's administered name is sent to the network on incoming and/or outgoing calls. Valid entries are "y" or "n" (default).
- **Used for DCS** — Specifies whether the trunk group will send and receive messages on a DCS signaling link. This field does not appear if the Service Type is "dmi-mos" or "sddn". Valid entries are "y" or "n" (default). If "y" is entered, complete the DCS Signaling field entry as well.

 NOTE:

This field cannot be activated if the tie trunk group number is greater than 255, if there are more than 255 members in the trunk group, or if the Trunk Access code is more than 3 digits long.

- **PBX ID** — Displayed when the Used for DCS field is "y". Enter the ID of the PBX at the other end of this trunk.
- **DCS Signaling** — Specifies the means used to send the DCS message. This field is only displayed if the Used for DCS field entry is "y". Valid entries are "bx.25" for the traditional DCS feature or "d-chan" for the DCS over ISDN-PRI D-channel feature.
- **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are "y" (default) or "n".

The following fields on Page 2 of the form provide an incoming call handling table. The table can (optionally) be used to provide unique call treatment for different incoming calls on any ISDN-PRI trunk group. Twelve unique treatment specifications are possible, corresponding to the 12 rows (lines) on the table. Unique digit manipulation capabilities, CPN/BN requests, and night service destinations are possible for different types of incoming calls. The unique digit manipulation capabilities can be particularly useful to accommodate different dial plans for different services on a ISDN-PRI trunk type with a Service Type (field entry) of "cbc" (Call-by-Call). The table can also be used for ISDN-PRI trunk groups that are not Call-by-Call. For example, an ISDN-PRI group with service type "mega800" could use the Incoming Call Handling Table to distinguish treatment of calls to different 800 numbers based on the Dialed Number Identification Service (DNIS) number that is incoming to the PBX.

Each row in the table consists of seven columns. The first three columns (Service/Feature, Called Len, and Called Number) constitute a key that together select which row or unique treatment should apply for an incoming call on the group. The remaining four columns (Del, Insert, and so on) specify the treatment to be provided for a call that matches the key.

If an incoming call is for a service listed in a row on the table, then that row may specify the treatment for the call, depending on the other two columns of the key. The Called Len field is used to continue the row determination. If the number of digits received with the incoming call matches the number of digits in the Called Len field for calls to the matched service, then this row may apply. If no other row also contains a matching service and called length, then this row does apply. If another row does exist with the same service and number length, then the Called Number field will be used to continue the row determination.

If the leading digits received with the incoming call match the digits specified in the Called Number field, then this row applies to the call. Therefore, with this table, a unique treatment can be given to any incoming call, even if these calls are to the same service or have the same length of digits. The remaining four fields specify the unique treatment for the call once the row has been determined. Together, the Del and Insert fields can be used to manipulate the incoming number that will be used to route the call. The Per Call CPN/BN field can be used to request CPN/BN for specific calls incoming on the group. The Night Serv field is used to have calls of different types routed to different night destinations when night service is in effect.

**NOTE:**

DCS features that use the remote-tgs button (on the remote switch) do not work when the local trunk group deletes or inserts digits on the incoming call. These buttons try to dial a local TAC. Adding or deleting digits defeats this operation and renders the remote feature inoperable. If digit manipulation is needed, use it on the outgoing side, based on the routing pattern. One reason for digit manipulation is insertion of the AAR feature access code (FAC).

The following provides information for each field that can be administered:

- **Service/Feature** — Specifies the ISDN-PRI Services/Features for an incoming call type. See the Service Type field description for a list of predefined Services/Features that can be received. The identifier “other” can be used for any Services/Features not explicitly specified.
- **Called Len** — Specifies the number of digits received for an incoming call. A blank entry is used as a “wildcard” entry and, when used, means that any length of digits associated with the specified Service/Feature can match in this field. Valid entries are 0 to 21, or leave blank.
- **Called Number** — Specifies the leading digits received for an incoming call. A blank entry is used as a “wildcard” entry and, when used, means that any number associated with the specified Service/Feature can match in this field. Valid entries are 1 to 16 digits, or leave blank.
- **Del** — Specifies the number of leading digits to be deleted from the incoming Called Party Number. Calls of a particular type may be administered to be routed to a single destination by deleting all incoming digits and then administering the Insert field with the desired extension. Valid entries are 1 to 21, “all”, or leave blank.
- **Insert** — Specifies the digits to be prepended to the front of the remaining digits after any (optional) digit deletion has been performed. The resultant number formed from digit deletion/insertion is used to route the call, provided night service is not in effect. Valid entries are up to 16 characters consisting of a combination from the following: 0 through 9, *, #, or leave blank.

- **Per Call CPN/BN** — Specifies if and how to request Calling Party Number (CPN) or Billing Number (BN) for calls of this type. An entry of "none" indicates that the switch will not request either CPN or BN for any incoming calls of this type. Valid entries are "cpn-only", "bn-only", "bn-pref" (prefer BN, but will accept CPN), "cpn-pref" (prefer CPN, but will accept BN), "none", or leave blank; default is blank. Leave blank when connected to another PBX switch.

⇒ **NOTE:**

A 4 second delay will occur in terminating the call to the far-end station if the connecting switch does not respond to the request.

- **Night Serv** — Specifies a night service extension (can be a VDN extension) per Service/Feature. An entry other than blank overrides the Night Service field entry on page 1 of the form. This entry can be overridden by the Trunk/Member Night Service entry when provided. Valid entries are an assigned extension, the attendant group access code ("attd"), or leave blank.

Page 3 of the Form

The following fields appear when Service Type on Page 1 is "cbc" and Usage Allot is "y". Page 3 is used to set a minimum and maximum number of members for up to ten different Services/Features for up to three different Usage Allocation Plans (1 through 3).

⇒ **NOTE:**

Refer to "Call By Call Service Selection" in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Usage Allocation Plans.

- **Service/Feature** — Specifies the ISDN-PRI Services/Features that can be requested at call setup time when using this trunk group. See the Service Type field description for a list of predefined Services/Features that can be received on a call by call basis. The identifier "other" is used for all Services/Features not explicitly specified.
- **Min# Chan** — Indicates the minimum number of members of an ISDN-PRI trunk group with a Service Type of "cbc" that a particular Service/Feature can use at any given time. The sum of the minimum number of members for all Service/Features must not exceed the total number of members of the trunk group.
- **Max# Chan** — Indicates the maximum number of members of a ISDN-PRI trunk group with a Service Type of "cbc" that a particular Service/Feature can use at any given time. This field must be completed if a Service/Feature has been entered on Page 2 of the form.

Page 4 of the Form

Page 4 is displayed when Service Type on Page 1 is “cbc” and Usage Alloc is “y”. Page 4 provides for administering a fixed schedule or administering a schedule that can change up to six times a day for each day of the week.

- **Fixed** — Indicates whether the allocation plan will be fixed. If “y” (default) is entered in this field, the plan number entered in the Allocation Plan Number field will be enabled. This field must be completed if a Service/Feature has been entered on Page 2 of the form.
- **Allocation Plan Number** — Specifies the CBC Trunk Allocation Plan (1 through 3) that is in effect if a fixed usage method has been selected. This field must be assigned if the Fixed field is “y”. Valid entries are 1 through 3 or blank (default).
- **Scheduled** — Indicates whether the allocation plans will be in effect according to the schedule found on this page. If “y” is entered in this field then there must be at least one entry in the schedule.
- **Act Time** — Indicates the time that the usage allocation plan administered in the next field (Plan #) will become effective. The time is entered in military time. There must be at least one entry per day. Valid entries are 00:00 through 23:59.
- **Plan #** — Specifies the number of the usage allocation plan that will be in effect from the activation time until the activation time of the next scheduled plan change. Valid entries are 1 to 3.

Wideband Support Options Page

This page is displayed if Wideband Support field is “y”.

This page appears immediately before the trunk member pages. The actual page number will vary. If the Service Type is “cbc” and the Usage Allocation field is “y”, the Wideband Support Options page is Page 5; otherwise, it is Page 3.

NOTE:

All B-channels that comprise the wideband call must reside on the same ISDN-PRI facility.

- **H0** — Enter “y” to specify the ISDN information transfer rate for 384 kbps data, which is comprised of six B-channels. When a trunk group is administered to support H0, the trunk/hunt algorithm to satisfy a call requiring 384 kbps of bandwidth uses a fixed allocation scheme. Default is “n”.
- **H11** — Enter “y” to specify the ISDN information transfer rate for 1536 kbps data, which is comprised of 24 B-channels. When a trunk group is administered to support H11, the trunk/hunt algorithm to satisfy a call requiring 1536 kbps bandwidth uses a fixed allocation scheme. Default is “n”.

- **H12** — Enter “y” to specify the ISDN information transfer rate for 1920 kbps data, which is comprised of 30 B-channels. When a trunk group is administered to support H12, the trunk/hunt algorithm to satisfy a call requiring 1920 kbps bandwidth uses a fixed allocation scheme. Default is “n”.
- **NxDS0** — Enter “y” to specify the NxDS0 multirate service. Default is “n”.
- **Contiguous?** — Specifies whether to hunt contiguous NxDS0 channels. This field only appears if “y” is entered in the NxDS0 field.

The trunk/hunt algorithm to satisfy an NxDS0 call is as follows:

- Enter “y” to specify the “floating” scheme. NxDS0 calls are placed on a contiguous group of B-channels large enough to satisfy the requested bandwidth without constraint on the starting channel (no fixed starting point trunk).



NOTE:

H0 and NxDS0 “floating” scheme cannot both be set to “y”.

- Enter “n” to specify the “flexible” scheme. NxDS0 calls are placed on any set of B-channels on the same facility as long as the requested bandwidth is satisfied. There are no constraints such as contiguity of B-channels or fixed starting points.

Pages Y through X of the Form (Group Member Assignments)



NOTE:

When supporting DCS, Member Number Assignments must be the same between nodes (Member #1 must be Member #1 at the far-end trunk group).

For BX.25 signaling, Trunk Group numbers must be the same between nodes (trunk group 1 must be trunk group 1 at the far-end).

The Trunk Access Code (TAC) must be less than 4 digits.

The total number of pages, and the first page of Group Member Assignments, will vary depending on whether the CBC and Wideband Support pages are displayed.

- **Administered Members (min/max)** — Display-only field. Indicates the minimum and maximum member number that has been administered for the particular trunk group. This field is displayed on all member pages.
- **Total Administered Members** — Display-only field. Indicates the total number of members administered in the trunk group. This field will appear on all trunk group member pages.

- **Port** — Enter seven characters. The first two characters identify the cabinet (01 to 22 [G3r V2], 1 to 3 [G3s V2, G3i V2]); the third character identifies the carrier (A through E); the fourth and fifth identify the slot number in the carrier (01 to 20 for multi-carrier cabinets or 01 to 18 for single-carrier cabinets); the last two characters identify the circuit number (01 to 31).
- **Code** — Display-only field. Displays the type of circuit pack physically installed or logically administered at the location to which this member has been assigned. If a circuit pack is neither installed nor administered at the member's location, the field is blank.
- **Sfx** — Displays the type of circuit pack (suffix only) physically installed at the location to which this member has been assigned. Field is blank if a circuit pack has not been physically installed.
- **Name** — Enter up to ten characters to identify the member of the trunk group. The name can be a 7-digit telephone number or a 10-digit Trunk Circuit Identification number (provided by trunk supplier).
- **Night** — Specifies a night destination for an individual trunk. This entry overrides the group Night Service entry on Page 1 of the form. Valid entries are an extension (can be a VDN extension), the attendant group access code ("attd"), or leave blank.
- **Sig Grp** — Enter the appropriate signaling group number. See Signaling Group in this chapter for more information. If a DS1 interface appears in one signaling group, then the number of that signaling group will appear as a default in the Sig Grp column for any trunk on that interface after the form is submitted. This value cannot be altered without adding a DS1 interface to another signaling group. If a DS1 circuit pack appears in more than one signaling group, then Sig Grp cannot be left blank. One of the signaling group members must be entered.

TRUNK GROUP		Page 1 of X
Group Number: 1	Group Type: isdn-pri	CDR Reports? y
Group Name: OUTSIDE_CALL_	COR: 1_	TAC: ____
Direction: two-way_ Outgoing Display? n		
Dial Access? n	Busy Threshold: 99	Night Service: ____
Queue Length: 0_		
Service Type: ____	Auth Code? n	Test Call ITC: rest
Far End Test Line No: ____		
Test Call BCC: 4		
TRUNK PARAMETERS		
Codeset to Send Display: 6	Codeset to Send TCM, Lookahead: 6	
Max Message size to Send: 260_		
Overlap Receiving? n		
Trunk Hunt: cyclical		
Connected to Toll? n	STT Loss: normal	DTT to DCO Loss: n
Bit Rate: 1200_	Synchronization: async	Duplex: full
Disconnect Supervision - In? y Out? n		
Answer Supervision Timeout: 0		

Screen 4-72. ISDN-PRI Trunk Group Form (Page 1 of X)**Implementation Notes:**

Queue Length is displayed when Direction is "outgoing" or "two-way".

Usage Alloc and Testcall Service are displayed when Service Type is "cbc".

STT loss is only displayed if Connected to Toll is "n".

TRUNK FEATURES		TRUNK GROUP		Page 2 of X		
ACA Assignment? n		Measured: none		Wideband support? n		
		Data Restriction? n		NCA-TSC Signaling Group?		
		Send CPN? n		Send Name? n		
Used for DCS? n				Maintenance Tests? y		
Service/ Feature	Called Len	Called Number	Del	Insert	Per Call CPN/BN	Night Serv.
_____	—	_____	—	_____	_____	_____
_____	—	_____	—	_____	_____	_____
_____	—	_____	—	_____	_____	_____
_____	—	_____	—	_____	_____	_____
_____	—	_____	—	_____	_____	_____
_____	—	_____	—	_____	_____	_____
_____	—	_____	—	_____	_____	_____
_____	—	_____	—	_____	_____	_____
_____	—	_____	—	_____	_____	_____
_____	—	_____	—	_____	_____	_____
_____	—	_____	—	_____	_____	_____
_____	—	_____	—	_____	_____	_____
_____	—	_____	—	_____	_____	_____
_____	—	_____	—	_____	_____	_____
_____	—	_____	—	_____	_____	_____

Screen 4-73. ISDN-PRI Trunk Group Form (Page 2 of X)

Implementation Notes:

The Long Holding Time (hours), Short Holding Time (seconds), and Short Holding Threshold fields are displayed when ACA Assignment is "y".

internal Alert field is only displayed if Service Type on Page 1 is "tie".

DCS Signaling and PBX ID are displayed when Used for DCS is "y".

The Used for DCS field is not displayed if the Service Type field on Page 1 is "dmi-mos" or "sddn".

CBC TRUNK GROUP USAGE ALLOCATION

Page 3 of X

Usage Allocation Plan 1			Usage Allocation Plan 2			Usage Allocation Plan 3		
	Min#	Max#		Min#	Max#		Min#	Max#
Service/Feature	Chan	Chan	Service/Feature	Chan	Chan	Service/Feature	Chan	Chan
	-	-		-	-		-	-
	-	-		-	-		-	-
	-	-		-	-		-	-
	-	-		-	-		-	-
	-	-		-	-		-	-
	-	-		-	-		-	-
	-	-		-	-		-	-
	-	-		-	-		-	-
	-	-		-	-		-	-
	-	-		-	-		-	-
	-	-		-	-		-	-

Screen 4-74. ISDN-PRI Trunk Group Form (Page 3 of X)

Implementation Note:

This page is displayed when Service Type on Page 1 is “cbc” and Usage Alloc is “y”.

Page 4 of X

CBC SERVICE TRUNK GROUP ALLOCATION PLAN ASSIGNMENT SCHEDULE

Usage Method:
 Fixed? y Allocation Plan Number: 1
 Scheduled? n

Usage Allocation Plan Activation Schedule:

	Act	Pln	Act	Pin	Act	Pln	Act	Pin	Act	Pln	Act	Pln
	Time	#	Time	#	Time	#	Time	#	Time	#	Time	#
Sun	-:-	-	-:-	-	-:-	-	-:-	-	-:-	-	-:-	-
Mon	-:-	-	-:-	-	-:-	-	-:-	-	-:-	-	-:-	-
Tue	-:-	-	-:-	-	-:-	-	-:-	-	-:-	-	-:-	-
Wed	-:-	-	-:-	-	-:-	-	-:-	-	-:-	-	-:-	-
Thu	-:-	-	-:-	-	-:-	-	-:-	-	-:-	-	-:-	-
Fri	-:-	-	-:-	-	-:-	-	-:-	-	-:-	-	-:-	-
Sat	-:-	-	-:-	-	-:-	-	-:-	-	-:-	-	-:-	-

Screen 4-75. ISDN-PRI Trunk Group Form (Page 4 of X)

Implementation Notes:

This page is displayed when Service Type on Page 1 is "cbc" and the Usage Allot field is "y".

The Allocation Plan Number field is only displayed if the Fixed field is set to "y".

Page Y of X

Wideband Support Options

H0? n
 H11? n
 H12? n
 N X DS0? y Contiguous? n

Screen 4-76. ISDN-PRI Trunk Group Wideband Switching Parameters

Implementation Notes:

This page is only displayed if the Wideband Support field is "y".

The Contiguous field is only displayed if NxDS0 is "y".

TRUNK GROUP

Page Y of X

Administered Members (min/max) : xxx/yyy

Total Administered Members: xxx

GROUP	MEMBER	ASSIGNMENTS				
	Port	Code	Sfx	Name	Night	Sig Grp
1:	_____	_____	-	_____	_____	_____
2:	_____	_____	-	_____	_____	_____
3:	_____	_____	-	_____	_____	_____
4:	_____	_____	-	_____	_____	_____
5:	_____	_____	-	_____	_____	_____
6:	_____	_____	-	_____	_____	_____
7:	_____	_____	-	_____	_____	_____
8:	_____	_____	-	_____	_____	_____
9:	_____	_____	-	_____	_____	_____
10:	_____	_____	-	_____	_____	_____
11:	_____	_____	-	_____	_____	_____
12:	_____	_____	-	_____	_____	_____
13:	_____	_____	-	_____	_____	_____
14:	_____	_____	-	_____	_____	_____
15:	_____	_____	-	_____	_____	_____

Screen 4-77. ISDN-PRI Trunk Group Form (Page Y through X)

To reduce repetition, the remaining pages are not shown. For a complete set of forms, refer to the "Blank Forms Package."

Personal Central Office Line (PCOL) Group

This form is used to provide a dedicated trunk circuit between multi-appearance voice terminals and a central office (CO) or other switch via the PBX network.

Administration Commands

The following administration commands can be used to access the PCOL Group form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	personal-co-line	1 -MAX (or 'next')
change	personal-co-line	1 -MAX
display	personal-co-line	1-MAX ['number' X]['to-number' X]['count' N] ['tac' assigned TAC]['print' or 'schedule']
list	personal-co-line	['print' or 'schedule']
remove	personal-co-line	1 -MAX

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Group Type** — Enter "co" (Central Office), "fx" (Foreign Exchange), or "wats" (Wide Area Telecommunications Service) to identify the type of PCOL Group.
- **CDR Reports** — Enter "y" (default) to provide a detailed CDR record of incoming and outgoing calls made on the PCOL.
- **Group Name** — Enter a unique name that identifies the PCOL Group. Up to 15 characters can be used (all forms); default is OUTSIDE CALL.
- **Coverage Path** — Enter the number of the Call Coverage Path used to redirect the incoming calls on this PCOL Group. This field may be blank.

- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the PCOL Group. CDR also uses the TAC to identify the trunk group on associated CDR reports. A different TAC must be assigned to each trunk group. Valid entries are TACs that are compatible with System Dial Plan (1 to 4 digits; 1 to 3 digits for DCS or to remotely control it).
- **Security Code** — Enter a 4-digit code (or leave blank) users must dial to retrieve voice messages and the Demand Print Message feature.
- **Outgoing Display** — Allows the display of the PCOL Group name on outgoing calls made by voice terminals that have a display. Valid entries are “y” or “n” (default).
- **Data Restriction** — Is used to restrict System features from causing overriding tones on a PCOL. This provides permanent protection. Valid entries are “y” or “n” (default).
- **Trunk Type** — Identifies the type of PCOL as “ground-start” or “loop-start”.
- **Trunk Direction** — Identifies the direction of the trunks in the PCOL Group. Valid entries are “incoming”, “outgoing”, or “two-way” (default) for CO and FX Group Types. For WATS Group Types, only “incoming” or “outgoing” may be entered.
- **Trunk Port** — Enter seven characters. The first two characters identify the cabinet (01 to 22 [G3r V2], 1 to 3 [G3s V2, G3i V2]); the third character identifies the carrier (A through E); the fourth and fifth identify the slot number in the carrier (01 to 20); the last two characters identify the circuit number (01 to 31).
- **Disconnect Timing (msec)** — Represents the time (in ms) that is required for recognition of the disconnect signal from the serving CO. The time interval must be in increments of 10 (from 140 to 2550 ms); default is 500.
- **Trunk Name** — A 10-character name that identifies the PCOL Group.
- **Trunk Termination** — Defines how the PCOL is terminated. The PCOL can terminate in a resistance of 600 ohms, or a resistor capacitor (rc) network. The “rc” network is used to match long loops; “600ohm” is used to match short loops. Valid entries are “600ohm” or “rc”. Enter “600ohm” when the PBX trunk port is connected to terminal equipment.
- **Outgoing Dial Type** — Identifies the type of pulsing required on an outgoing call. Valid entries are “tone” (default), “automatic”, or “rotary”.
- **Terminal Balanced-** Specifies whether the trunks in the trunk group are balanced. A “y” signifies that the trunks are terminally balanced and an “n” signifies that the trunks are not terminally balanced. Typically, a Trunk Termination field of “600ohm” signifies a balanced trunk group and a field of “rc” signifies a non-balanced trunk group. If the trunks in this group pass the Low Frequency Return Loss test requirements, then they are terminally balanced when this field should be set to “y”. A value of “n” (default) causes the RA Trunk Loss field to appear.

- **RA Trunk Loss** — (Remote Access Trunk Loss) — Displayed when the Terminal Balanced entry is “n”. Specifies the type of dB loss to be applied to non-terminally balanced trunks. If unsatisfactory echo performance (hollowness) is experienced, the field should be changed to 2dB. Valid entries are “0db” (default) and “2db”.
- **Disconnect Supervision-In** — This field appears when the Direction is either “incoming” or “two-way”. Enter “y” (default) to indicate that the CO has the ability to release a trunk when the calling party releases from a call and the system is able to recognize the release signal.
- **Prefix-1** — Indicates if the prefix 1 is required for NXX FNPA calls (where N is 2 through 9, and X is 0 through 9). This field is only displayed for “co” and “fx” PCOL groups. Valid entries are “y” (default) and “n”.
- **Call Still Held** — Entering “y” prevents call collisions by not allowing an outgoing seizure for a period of not less than 140 seconds. This field is effective for TN2147 ports and appears only for Central Office and Foreign Exchange trunk groups. Valid entries are “y” and “n” (default).
- **Country** — Enter 1 through 17 to indicate the country where the trunk terminates. Refer to the “Country Code Assignments” table in Appendix B for a listing of valid country numbers.

⇒ NOTE:

Although defined, country codes 12 (France) and 13 (Germany) are not supported and, if entered, will cause an error message.

- **Answer Supervision Timeout** — Used for analog port circuits to indicate the amount of time in seconds the System allows for a call to be answered before beginning a CDR record of a call. This interval begins as soon as the outgoing trunk is seized. Valid entries are 0 to 250; default is 10.

⇒ NOTE:

This timeout does not override answer supervision sent from the network or other firmware (DS1 port circuit timers). DS1 firmware-sent answer supervision is administered in the Outgoing End of Dialing field on Page 3 of the Trunk Group form (Administrable Timers page).

- **Receive Answer Supervision** — Specifies whether or not the network provides answer supervision for the trunks. Answer supervision refers to notification from the far-end that the called party has gone off-hook to answer the call. When answer supervision is provided, the originating PBX can classify a call as answered using the Answer Supervision Timeout field entry (for domestic circuit packs) or, for circuit packs that take administrable timers, by using the Outgoing End of Dial timer. For trunks over which answer supervision is provided by the network, set this field to “y” and the Answer Supervision Timeout field to “0” so that the firmware timeout is disabled. The firmware timeout is automatically set to “0” on circuit packs that take the administrable Outgoing End of Dial timers. Receive Answer Supervision must be set to “n” (default) if Direction is “incoming”.

- **Trunk Gain** — This field specifies the gain of the trunk. Valid entries are “high” (default) and “low”. The value of this field, in conjunction with the value of the Trunk Termination and Country fields, will determine the input and trans-hybrid balance impedance.

This field will apply to PCOL groups with a Trunk Port assigned to a TN2147 board.

Page 3 of the Form (Administrable Timers)

- **Incoming Disconnect (msec)** — Enter the minimum time (in msec) required for recognition of disconnect for an incoming call from the serving CO. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank. Default is 500. This field only appears if the Trunk Type is “ground-start” and the trunk Direction is either “incoming” or “two-way”.
- **Outgoing Disconnect (msec)** — Enter the minimum time (in msec) required for recognition of disconnect for an outgoing call. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank. Default is 500. This field only appears if the Trunk Type is “ground-start” and the trunk Direction is either “outgoing” or “two-way”.
- **Outgoing Dial Guard (msec)** — Enter the minimum time (in msec) between seizure of the trunk and outpulsing of digits. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1600.
- **Incoming Glare Guard (msec)** — Enter the incoming guard time (in msec) between the time the incoming trunk is released and the same trunk can be seized again. This guard time will ensure the far-end has released all equipment after the incoming trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1500. This field is only displayed when the Direction is “two-way”.
- **Outgoing Glare Guard (msec)** — Enter the outgoing guard time (in msec) between the time the outgoing trunk is released and the same trunk can be seized again. This guard time will ensure that the far-end has released all equipment after the outgoing trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1500. This field is only displayed when the Direction is “outgoing” or “two-way”.
- **Outgoing Rotary Dial Interdigit (msec)** — Enter the interval (in msec) between rotary dial digits being outpulsed by the system (that is, PBX). Valid entries are 150 to 2550 in increments of 10. The field cannot be blank. Default is 800.
- **Ringing Monitor (msec)** — Enter the minimum time (in msec) required to determine if the trunk is disconnected. If the ringing signal disappears for a duration longer than the time specified in this field, the call will be assumed to be disconnected. Valid entries are 200 to 51000 in increments of 200. Default is 5200. The field cannot be blank. This timer is sent to TN767 and TN2147 circuit packs.

- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the serving CO. Valid entries are 20 to 2550 in increments of 10. The field cannot be blank. Default is 500. Sent to TN767 and TN2147 circuit packs.
- **Outgoing End of Dial (sec)** — Enter the maximum time (in sec) a trunk may wait for answer supervision after dialing an outgoing call. During cut-through operation, timing begins after each outgoing digit is sent by the PBX and timing ceases after the far-end sends answer supervision. If the timer expires, the PBX acts as if it had received answer supervision. On senderized operation, the timer begins after the last digit collected is sent by the PBX. The timer ceases when the far-end sends answer supervision. If the timer expires, the PBX acts as if it has received answer supervision. This field will not appear if the Receive Answer Supervision field is "y", but a zero (0) value will be sent down to the firmware to disable the timer. This timer applies to outgoing and two-way trunk groups. Valid entries are 1 to 254 in increments of 1. Default is 10.
- **Outgoing Seizure Response (sec)** — Enter a maximum time (in sec) by which the PBX should receive the proceed-to-dial indication from the far-end after sending the seize signal. If the indication is not received in this time, a seizure failure response is uplinked. This timer is administrable per CO or TIE trunk group. Valid entries are 1 to 255 in increments of 1. Default is 5 sec. Sent only to TN767 and TN2147 circuit packs.
- **Programmed Dial Pause (msec)** — Enter the maximum length (in msec) of a pause during abbreviated dialing, ARS outpulsing, and terminal dialing operations. This timer is administrable for all outgoing and two-way trunk groups. Valid entries are 100 to 25500 in increments of 100. Default is 1500 msec.
- **Disconnect Signal Error (sec)** — Enter a maximum time (in sec) within which a disconnect signal from the far-end is expected after the internal party (a station or a tie trunk) goes on-hook. If the timer expires, the system can assume a disconnect failure and take an appropriate action (such as an error message). This timer is administrable on ground-start trunk groups. Valid entries are 1 to 255 in increments of 1. Default is 240.
- **Flash Length** — Specifies the length (in msec) of the flash signal to be generated toward the Central Office. This field is only applied to TN2147 ports. Valid entries are 10 to 2550 in increments of 10. Default is 540.
- **Tone (msec)** — Enter the length (in msec) of a DTMF tone sent to the public network in response to a button depression at a hybrid station set. Valid entries are 20 to 2550 in increments of 10. Default is 350.
- **Pause (msec)** — Enter the minimum length (in msec) of a pause between tones being sent in response to button depressions at a hybrid station set. Valid entries are 20 to 2550 in increments of 10. Default is 150.
- **PPS** — Enter either "10" or "20" to specify the pulses per second (PPS) assigned to rotary dial pulse trunk groups. Valid entries are "10" or "20". Default is "10".

 NOTE:

The TN767 and TN747 circuit packs can only perform at 10pps.

- **Make (msec)** — Enter the duration of the make interval while the system is outpulsing digits using dial pulse signaling.

If the PPS field is “10”, the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of five. The field cannot be blank. The default is 40.

If the PPS field is “20”, the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of five. The field cannot be blank. The default is 20.
- **Break (msec)** — Enter the duration of the break interval while the system is outpulsing digits using dial pulse signaling.

If the PPS field is “10”, the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of five. The field cannot be blank. The default is 60.

If the PPS field is “20”, the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of five. The field cannot be blank. The default is 30.
- **PPM (Periodic Pulse Metering)** — Appears when CDR is set to “y” and the Direction is either “outgoing” or “two-way”. Enter “y” if pulse should be collected from the public network to determine call cost.

PERSONAL CO LINE GROUP		Page 1 of x
Group Number: 1	Group Type: co	CDR Reports? y
Group Name: OUTSIDE CALL	Coverage Path: ____	TAC:
Security Code: ____	Outgoing Display? n	Data Restriction? n
TRUNK PARAMETERS		
Trunk Type: ____	Trunk Direction: two-way	
Trunk Port: ____	Disconnect Timing(msec) : 500	
Trunk Name: ____	Trunk Termination: ____	
Outgoing Dial Type: tone	Terminal Balanced? n	
Prefix-1? y	RA Trunk Loss: 0dB	
Disconnect Supervision - In? y	Call Still Held? n	
Answer Supervision Timeout: _	Receive Answer Supervision? _	
Trunk Gain: high	Country: 1	

Screen 4-78. Personal Central Office Line Group Form (Page 1 of X)

Implementation Notes:

RA Trunk Loss is only displayed when Terminal Balanced is "y".

Disconnect Supervision In is only displayed when Direction is "incoming" or "two-way".

Prefix-1 and Call Still Held are only displayed when Group Type is "co" or "fx".

PERSONAL CO LINE GROUP		Page 2 of x	
ASSIGNED MEMBERS (Stations with a button for this PCOL Group)			
Ext	Name	Ext	Name
1: ____	____	3: ____	____
2: ____	____	4: ____	____

Screen 479. Personal Central Office Line Group Form (Page 2 of X)

Implementation Note:

The number of fields displayed will vary depending on System configuration. The form shown above (with four members) is for the G3i V2 configuration. Up to 16 members may be assigned for G3r V2.

ADMINISTRABLE TIMERS		Page 3 of X	
Incoming Glare Guard(msec) : 1500	Outgoing Dial Guard (msec) : 160		
	Outgoing Glare Guard(msec) : 1500		
	Outgoing Rotary Dial Interdigit(msec) : 800		
Ringing Monitor(msec) : 5200	Incoming Seizure(msec) : 500		
	Outgoing Seizure Response(sec) : 5		
Outgoing End of Dial: 10			
Programmed Dial Pause(msec) : 1500			
Flash Length(msec): 540			
END TO END SIGNALING			
Tone(msec) : 350	Pause(msec): 150		
OUTPULSING INFORMATION			
PPS: 10	Make(msec) : 40	Break(msec): 60	PPM? n

Screen 4-80. Personal Central Office Line Group Form (Page 3 of X)

Implementation Notes:

PPM is only displayed when CDR Repot is is "y".

Incoming Disconnect is only displayed when Trunk Type is "ground-start" and Direction is "incoming" or "two-way".

Outgoing Disconnect is only displayed when Trunk Type is "ground-start" and Direction is "outgoing" or "two-way".

Incoming Glare Guard is only displayed when Direction is "two-way".

Outgoing Glare Guard and Outgoing End of Dial are only displayed when Direction is "outgoing" or "two-way".

Release Link Trunk (RLT) Group

Used to implement the Centralized Attendant Service (CAS) feature, and to connect attendant-seeking calls from a branch location to a main location.

Administration Commands

The following administration commands can be used to access the Release Link Trunk Group form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier
add	trunk-group	1–MAX (or 'next')
change	trunk-group	1–MAX or TAC X...
display	trunk-group	1–MAX ['number' X]['to-number' X]['count' N] ['tac' assigned TAC]['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1–MAX or TAC X...

* Brackets [] indicate the qualifier is optional. Single quotes (") indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.

**NOTE:**

When supporting DCS, it is required that the far-end node trunk group be assigned the same group number.

- **Group Type** — Enter “rlt” to identify the trunk group type.
- **CDR Reports** — Enter “y” (default) to provide a detailed Call Detail Recording (CDR) record of both incoming and outgoing calls made on all trunks in the trunk group.
- **Group Name** — Enter a unique name that identifies the trunk group. Up to 15 characters can be used; default is OUTSIDE CALL.
- **COR** — Enter a class of restriction (COR) number from 0 to 95 that reflects the desired restriction; default is 1.

- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. CDR also uses the TAC to identify the trunk group on associated CDR reports. A different TAC must be assigned to each trunk group. Valid entries are TACs that are compatible with the System Dial Plan (1 to 4 digits; 1 to 3 digits for DCS or to remotely control it).
- **Direction** — Enter whether the trunk group is “incoming” or “outgoing”. Note that the Direction administered will affect which timers will appear on the Administrable Timer page.
- **Outgoing Display** — Specifies whether or not the trunk group name is displayed on a terminal placing an outgoing call. Valid entries are “y” or “n” (default).
- **Trunk Signaling Type** — This field specifies the kind of signaling to use for members in the trunk group, and if administered to a non-blank value, severely restricts the ports that can be administered in the trunk group.

Valid values are “cont” (continuous) or “dis” (discontinuous). Entering one of these values indicates that only ports from a TN2140 Italian tie trunk may be administered as trunk group members. Entering one of these values will cause the Send Release Ack?, Receive Release Ack? and Send Answer Supervision? fields to appear. If this field is blank (default), ports from any other Tie trunk can be added as trunk group members. The value in this field affects which timers appear on the Administrable Timer page.
- **Busy Threshold** — Enter the number of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console.
- **Night Service** — Enter the extension number assigned to Night Service. The extension number entered will receive all incoming calls when Night Service is activated and the individual trunk member Night field is not administered to override this group extension. Valid entries are an extension number (can be a VDN extension), the attendant group access code (“attd”), or leave blank if the Trunk Type (in/out) field is not “auto/..”.
- **Queue Length** — Enter the number of outgoing calls that can be held waiting. A “0” (default) indicates no calls will be held in queue. Enter “0” for DCS trunks. This field is not displayed if the Direction field is “incoming”.
- **Incoming Destination** — Indicates where incoming calls will terminate. Valid entries are an extension number, the attendant group access code (“attd”), VDN, or leave blank if the Trunk Type (in/out) field is not “auto/...”. If “attd” is entered, a call is treated as an LDN call.
- **Trunk Type (in/out)** — Identifies the physical type of incoming and outgoing trunks. The trunks may be “automatic”, “immed-start”, “wink-start” or “delay-dial”; additionally, they may be “cont” (continuous-seize-ack) if Trunk Signaling Type is “cont”. If the Trunk Signaling Type is “dis”, only “disc” (discontinuous-seize-ack) and “immed” are allowed.

When the Trunk Signaling Type is “dis”, the valid values are “immed” and “disc”:

disc/disc disc/immed immed/disc immed/immed

When the Trunk Signaling Type is “cont”, the valid values are:

auto/cont	auto/delay	auto/immed	auto/wink	cont/auto
cont/delay	cont.hmmed	cont/wink	delay/auto	delay/cont
delay/immed	delay/wink	immed/auto	immed/cont	immed/delay
immed/wink	wink/auto	wink/cont	/wink/delay	wink/immed

Otherwise, the valid values are:

auto/delay	auto/immed	auto/wink	
delay/auto	delay/delay	delay/immed	delay/wink
immed/auto	immed/delay	immed/immed	immed/wink
wink/auto	wink/delay	wink/immed	wink/wink

⇒ NOTE:

For “immed/immed” trunks (on incoming trunks), the far-end PBX seizes the trunk and then sends digits without waiting for acknowledgment from the receiving PBX. When heavily loaded, the receiving PBX may incur a short delay in attaching a Touch-Tone Receiver to this call and, therefore, cause it to lose digits. Using wink-start trunks or increasing the dial-guard timer value on the far-end PBX avoids this problem.

- **Incoming Rotary Timeout (sec)** — Is the timing interval required by the central office that the System is connected to. If the System is connected to a Step-by-Step office, 18 seconds or more must be used; if the System is not connected to a Step-by-Step office, 5 seconds or more may be used. Valid entries are 5 to 99, or leave blank; default is 5.
- **Outgoing Dial Type** — Identifies the type of pulsing required on an outgoing call. Valid entries are “tone” (default) or “rotary”.
- **Incoming Dial Type** — Indicates the type of pulses required on an incoming trunk group. Valid entries are “tone” (default) or “rotary”.
- **Wink Timer (msec)** — Displayed when the Trunk Type for the “out” side of the in/out field is “wink” or “delay”. Enter a number from 300 to 5000 in increments of 50; default is 300. This timer is sent only to TN760C vintage 4 or later), TN767, and TN464C (or later) circuit packs.

⇒ NOTE:

This value is the same for each member of the trunk group where the timing is administered; that is, if members from TN760B ports are mixed with members from TN760C V4 ports, only the TN760C V4 ports are set to this value. (The TN760B ports use a default value on the circuit pack itself.)

United States domestic requirements state that for a "wink" start trunk, the wink must begin within five seconds (the "wait-for-wink-to-start" time) and must end within 290 ms (the "wait-for-wink-to-end" time). For a "delay" dial trunk, the wink must begin within 140 ms (the "wait-for-wink-to-start" time). and end when the switch is ready to receive digits.

The "wink" start "wait-for-wink-to-end" time and the "delay" dial "wait-for-wink-to-start" time are **both** administered through the use of this field.

- **Sig Bit Inversion** — This field allows the user to administer the signaling bit inversion (the A-bit and B-bit inversion) on a per-port basis. This field applies only to TN464B or later suffixed circuit packs. The CCITT standards define on-hook to be "1" in the A-bit and off-hook to be "0". This definition is the opposite of the EIA definition. The default in the TN464 firmware for signaling bit inversion is use the CCITT standard for 32-channel mode and to use the EIA standard for 24-channel mode. Valid entries are "A", "A&B", "B", and "none" (default).
- **Connected to Toll** — Enter "y" if connected to a CO toll office. This field is displayed when the Trunk Type field contains an entry of "auto/...", "delay/...", "wink/...", or "dimmed/...".
- **STT Loss** (Satellite PBX Tie Trunk Loss) — Displayed when Connected to Toll is "n". Specifies the loss plan to be used for the trunk group. Valid entries are "normal" (default) or "low". This option affects the transmission performance of a private PBX network.

Although the use of this option has wider applications, only for the simplest network arrangements should this field be administered without Network Engineering advice. The "low" option (described as the ISL digital low loss plan in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMII/ISDN-PRI Reference*, 555-025-101) should be used when:

1. Stations on the satellite PBX complain of too much loss on calls to the public network.
2. The PBX network consists of no more than three PBXs: one main and one or two satellite PBXs.
3. All PBXs have the "low" option available.
4. The total DS1 trunk connection length is less than 100 miles.

If the preceding conditions are not met, obtain Network Engineering assistance. The field entry is based on the following:

- **normal** — Applies to AIU-TT (Analog Interface Unit at Customer Switching System for Tie Trunk — 4-wire E&M interface) and DIU-TT (Digital Interface Unit at Customer Switching System for Tie Trunk — voice or AVD DS1 interface) loss plans.

- **low** — Applies to AIU-TTS (same as AIU-TT, but suitable for private network connections that can be connected in tandem with public network connections) and DIU-TTS (same as DIU-TT, but suitable for private network connections that can be connected in tandem with public network connections). These interfaces were formerly referred to as DIU DTT ISL.
- **DTT to DCO Loss** (Digital Tie to Digital CO Trunk Loss) — Specifies the loss plan to be used for the trunk group for interconnections from a DIU-CO (Digital Interface Unit at a Central Office) to a DIU-DTT (Digital Interface Unit for a Digital Tie Trunk Interface). This field is displayed when the Trunk Type field contains an entry of “auto/...”, “delay/...”, “wink/...”, or “immed/...”.

This option affects the transmission performance of public network access via a private PBX network. Choose the “low” option if private network users complain about too much loss on calls to the public network; otherwise, the “normal” option should be used. Valid entries are “normal” (default) and “low”. The entry is based on the following:

- **normal** — Corresponds to a (0, -6) dB gain pair and is used as the default option. (This corresponds to the DIT/EIA DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DNI/ISDN-PRI Reference*, 555-025-101.)
- **low** — Corresponds to (+3, -3) dB gain pair. Low is used for internetwork applications in which no significant configuration will encounter echo, stability, or overload problems because of reduced loss. With the low gain pair, subscriber station DTMF signals transmitted through the digital class 5 office into the customer network may experience non-recoverable digit mutilation in secondary signaling applications (that is, DTMF signaling after the connection has been established). (This corresponds to the DTT/ISL DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DNI/ISDN-PRI Reference*, 555-025-101.)
- **Incoming Dial Tone** — Indicates whether or not the trunk group will pass on incoming dial tone to the calling party. Valid entries are “y” or “n”.
- **Send Release Ack** — This field appears only when the Trunk Signaling Type has a value of either “cont” or “dis”. (Thus, this field only applies to TN2140 ports.) Enter “y” (default) if the switch must send a release acknowledgment in response to a forward or backward release signal,
- **Receive Release Ack** — This field appears only when the Trunk Signaling Type has a value of either “cont” or “dis”, (Thus, this field only applies to TN2140 ports.) Enter “y” (default) if the switch should expect to receive a release acknowledgment in response to a forward or backward release signal.

- **Disconnect Supervision-In** — This field appears when the Direction is either “incoming”, “outgoing’s,”⁵ or “two-way”. Enter “y” (default) to indicate that the far-end has the ability to release a trunk when the calling party releases from a call and the system is able to recognize the release signal.
- **Send Answer Supervision** — Appears when Trunk Signaling Type is “cont” or “dis”. This field only applies to TN2140 ports. Enter “y” (default) for the switch to signal that the destination party has answered.
- **Answer Supervision Timeout** — Used for analog port circuits to indicate the amount of time in seconds the System allows for a call to be answered before beginning a CDR record of a call. This interval begins as soon as the outgoing trunk is seized. Valid entries are 0 to 250; default is 10.



NOTE:

This timeout does not override answer supervision sent from the network or other firmware (DS1 port circuit timers). DS1 firmware-sent answer supervision is administered in the Outgoing End of Dialing field on Page 3 of the Trunk Group form (Administrable Timers page).

- **Receive Answer Supervision** — Specifies whether or not the network provides answer supervision for the trunks. Answer supervision refers to notification from the far-end that the called party has gone off-hook to answer the call. When answer supervision is provided, the originating PBX can classify a call as answered using the Answer Supervision Timeout field entry (for domestic circuit packs) or, for circuit packs that take administrable timers, by using the Outgoing End of Dial timer. For trunks over which answer supervision is provided by the network, set this field to “y” and the Answer Supervision Timeout field to “0” so that the firmware timeout is disabled. The firmware timeout is automatically set to “0” on circuit packs that take the administrable Outgoing End of Dial timers. Receive Answer Supervision must be set to “n” (default) if the Direction field is “incoming”.

Page 2 of the Form

- **ACA Assignment** — Specifies whether or not Automatic Circuit Assurance (ACA) measurements will be taken for this trunk group. Valid entries are “y” or “n” (default). If “y” is entered, complete the next three fields.
- **Long Holding Time (hours)** — Only displayed when ACA Assignment is “y”. Is the length in hours that the System will consider as being a long holding time. If “0” is entered, the System will not consider long holding calls. Valid entries are 0 to 10; default is 1.

5. Only an attendant can “Flash” an outgoing RLT trunk and then place an incoming call on that same outgoing trunk.

- **Short Holding Time (secs.)** — Only displayed when ACA Assignment is “y”. Specifies the length in seconds that the System will consider as being a short holding time. If “0” is entered, the System will not consider short holding calls. Valid entries are 0 to 160; default is 10.
- **Short Holding Threshold** — Only displayed when ACA Assignment is “y”. Is the number of times that the System will record a short holding call before an attendant or display-equipped voice terminal user is alerted to the possibility of a faulty trunk. Valid entries are 0 to 30; default is 15.
- **Measured** — Indicates if the System will transmit data for this trunk group to the Call Management System. Valid entries are “internal”, “external”, “both”, or “none”. Enter “internal” if the data is to be sent to the Basic Call Management System (internal to the switch) for subsequent measurement reports and “external” to send the data to the Call Management System Adjunct. Enter “both” to send the data to both systems for measurement reports. Enter “none” if trunk group measurements are not required. System default is “none”.
- **Data Restriction** — Is used to prevent System features from generating tones on a data call that would cause erroneous data transmission. Valid entries are “y” or “n” (default).
- **Used for DCS** — This field determines if a trunk will send and receive messages via a DCS signaling link.

 NOTE:

This field cannot be activated if the tie trunk group number is greater than 255, if there are more than 255 members in the trunk group, or if the trunk access code (TAC) is more than three digits long.

- **PBX ID** — Displayed when the Used for DCS field entry on the ISDN-PRI trunk group form is “y”. Identifies the remote PBX within the network with which the trunk will communicate on a DCS signaling link. Valid entries are 1 to 63; default is blank.
- **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are “y” (default) or “n”.
- **Suppress # Outpulsing** — Indicates end-to-end signaling begins with (and includes) the “#” when “y” is entered in this field. The final “#” is suppressed in cases where System would normally outpulse it. This field should be “y” when the Central Office (for example, rotary) or any other facility treats “#” as an error; default is n.

Page 3 of the Form (Administrable Timers)

- **Incoming Disconnect (msec)** — A disconnect signal on an incoming call is considered valid only if it continues at least for the time specified by this timer. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank; default is 500. The field appears only for incoming trunk groups when the Trunk Signaling type is either blank or “cont”.

 NOTE:

TN760Dv15 (or later) ports used in a Release Link Trunk group will have their incoming disconnect timer value internally forced to 280 ms. All other ports in the group that take administrable timers will receive the value administered in this field. All other ports in the group that **do not** take administrable timers will have their disconnect timing forced to 280 ms.

- **Outgoing Disconnect (msec)** — A disconnect signal on an outgoing call is considered valid only if it continues at least for the time specified by this timer. This timer begins timing when a disconnect signal has been detected on an outgoing call over the trunk, and resets when the signal is no longer detected. If the timer times out, the trunk is dropped. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank; default is 500. This field only appears for “outgoing” trunk groups when the Trunk Signaling Type is blank or “cont”.

 NOTE:

TN760Dv15 (or later) ports used in a Release Link Trunk group will have their outgoing disconnect timer value internally forced to 280 ms. All other ports in the group that take administrable timers will receive the value administered in this field. All other ports in the group that **do not** take administrable timers will have their disconnect timing forced to 280 ms.

- **Incoming Dial Guard (msec)** — Enter the interval between the detection of an incoming seizure and the acceptance of the first digit. The PBX will not accept digits before this timer expires. This timer is administrable when the Trunk Signaling Type is blank. Valid entries are 10 to 2550 in increments of 10; default is 70.
- **Outgoing Dial Guard (msec)** — This timer specifies the time between seizure acknowledgment of a trunk and the outputting of digits. For trunks that do not provide seizure acknowledgment, the timer specifies the minimum time between seizure and the outputting of digits. Any digit dialed by the station user after they lift the receiver, but before the timer times out, will not be outputted until the timer expires. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank; default is 1600.
- **Outgoing Glare Guard (msec)** — Enter the minimum time between the time an outgoing trunk is released and the same trunk can be seized for another outgoing call. This guard time will ensure that the far-end has released all equipment after the outgoing trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank; default is 1500. This field only appears for “outgoing” trunk groups.
- **Incoming Partial Dial (sec)** — Enter the time (in sec) allowed between digits on rotary trunks. Valid entries are 5 to 255 in increments of 1; default is 18. This timer only appears if the Incoming Dial Type is “rotary.”

- **Outgoing Rotary Dial Interdigit (msec)** — Enter the interval between rotary dial digits being outputted by the system (that is, PBX). Valid entries are 150 to 2550 in increments of 10. The field cannot be blank; default is 800. This field only appears when the Outgoing Dial Type is “rotary”.
- **Incoming Seizure (msec)** — Enter the minimum time required for recognition of incoming ringing signal from the far-end. Valid entries are 20 to 2550 in increments of 10. The field cannot be blank; default is 500. This field only appears when the Trunk signaling Type is “cont” and the Direction is “incoming”.



NOTE:

TN2140 ports are the only tie ports that can receive this timer.

- **Outgoing End of Dial (sec)** — Enter the maximum time a trunk may wait for answer supervision after dialing an outgoing call. During cut-through operation, timing begins after each outgoing digit is sent by the PBX and timing ceases after the far-end sends answer supervision. If the timer expires, the PBX acts as if it had received answer supervision. On senderized operation, the timer begins after the last digit collected is sent by the PBX. The timer ceases when the far-end sends answer supervision. If the timer expires, the PBX acts as if it has received answer supervision. This field appears when Direction is “outgoing” and Receive Answer Supervision is “n”. This field will not appear if the Receive Answer Supervision field is “y” but a zero (0) value will be sent down to the firmware to disable the timer. This timer applies to the outgoing and two-way CO trunk groups. Valid entries are 1 to 254; default is 10.



NOTE:

This field controls the firmware answer-supervision timer on ports that take the administrable timers; the Answer Supervision Timeout field on Page 1 of the Trunk Group form controls answer supervision for ports that do not take administrable timers. This field and the value administered in the Answer Supervision Timeout field on the Trunk Group form should be the same value.

- **Outgoing Seizure Response (sec)** — Enter the time (in sec) by which the PBX should receive the proceed-to-dial indication from the far-end after sending the seize signal. If the indication is not received in this time, a seizure failure response is uplinked. This timer is administrable per CO or TIE trunk group. Valid entries are 1 to 255 in increments of 1; default is 5. This timer is sent to the TN464B (or later), TN767, TN439, TN458, TN760Dv15 (or later), and TN2140 tie circuit packs.
- **Programmed Dial Pause (msec)** — Enter the length of a pause during abbreviated dialing, ARS outputting, and terminal dialing operations. This timer is administrable for all outgoing and two-way trunk groups. Valid entries are 100 to 25500 in increments of 100; default is 1500. This timer is sent to the TN464B (or later), TN760Dv15 (or later), TN767; and TN458 tie circuit packs.

- **Disconnect Signal Error (sec)** — Enter the time (in sec) within which a disconnect signal from the far-end is expected after the internal party (a station or a tie trunk) goes on-hook. If the timer expires, the system can assume a disconnect failure and take an appropriate action (such as error message). Valid entries are 1 to 255 in increments of 1; default is 240.
- **Incoming Incomplete Dial Alarm (sec)** — Enter the maximum time (in sec) between incoming seizure and receipt of all digits. Intervals greater than this generate an inline error. Valid entries are 1 to 255 in increments of 1; default is 255. Only the TN464C (or later), TN760Dv15 (or later), TN767, and TN2140 tie circuit packs receive this timer.
- **Outgoing Last Digit (sec)** — Enter the maximum time (in seconds) to wait for the next digit dialed. After the timer expires, no more digits are accepted by the circuit pack. It will only be administrable if the Trunk Signaling Type is “dis” or “cont” and the trunk group Direction is “outgoing”. Valid entries are 1 to 40; default is 10. Only TN2140 ports receive this timer.
- **Normal Outgoing Seize Send (msec)** — Enter the number of milliseconds to ground the M-lead. Outgoing seizure is signaled by the calling switch momentarily grounding the M-lead for the duration specified by this timer. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “outgoing”. Valid entries are 60 to 250 in increments of 10. Default is 70. Only TN2140 ports receive this timer.
- **Release Ack Send (msec)** — Enter the duration (in msec) of the forward release acknowledgment signal. After receiving a forward release signal, the called switch must send the forward release acknowledgment signal. This signal is sent by grounding the M-lead for the duration specified by this timer. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming”. Valid entries are 500 to 1200 in increments of 100. Default is 600. Only TN2140 ports receive this timer.
- **Seize Ack Delay (msec)** — Enter the maximum time (in msec) between receiving a seizure and the sending of seizure acknowledgment by the called switch. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming”. Valid entries are 40 to 120 in increments of 10. Default is 100. Only TN2140 ports receive this timer.
- **Answer Send (msec)** — Enter the duration (in msec) of the answer signal pulse. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming”. Valid entries are 60 to 120 in increments of 10. Default is 80. Only TN2140 ports receive this timer.
- **Outgoing Disconnect Send (msec)** — Enter the duration (in msec) of the M-lead ground at the calling switch during disconnect. Forward release is signaled by the calling switch by grounding the M-lead for the duration specified by this timer. It is only administrable if the Trunk Signaling Type is “dis” and the trunk group Direction is “outgoing”. Valid entries are 500 to 1200 in increments of 100. Default is 800. Only TN2140 ports receive this timer.

- **Seize Ack Send (msec)** — Enter the duration (in msec) of the seize acknowledge pulse. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming”. Valid entries are 40 to 120 in increments of 10. Default is 80. Only TN2140 ports receive this timer.
- **Incoming Disconnect Send (msec)** — Enter the duration (in msec) of the M-lead ground at the called switch during disconnect. Calls may be cleared by either the calling switch (forward release) or the called switch (backward release). Backward release is signaled by the called switch by grounding the M-lead for the duration specified by this timer. It is only administrable if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming”. Valid entries are 500 to 1200 in increments of 100. Default is 800. Only TN2140 ports receive this timer.
- **Glare** — Enter the minimum time (in msec) between sending an outgoing seizure and receiving a seizure acknowledgment. If seizure acknowledgment is received before expiration of the timer, a glare condition is assumed. It is only administrable if the Trunk Signaling Type is “cont” and the trunk group Direction is “outgoing”. Valid entries are 40 to 100 in increments of 10. Default is 40. Only TN2140 ports receive this timer.
- **Tone (msec)** — Enter the length of a DTMF tone sent in response to a button depression at a hybrid station set. This timer is only administrable when the Trunk Signaling Type is blank. Valid entries are 20 to 2550 in increments of 10; default is 350.
- **Pause (msec)** — Enter the minimum length of a pause between tones being sent in response to button depressions at a hybrid station set. This timer is only administrable when the Trunk Signaling Type is blank. Valid entries are 20 to 2550 in increments of 10; default is 150.
- **PPS** — Enter either “10” or “20” to specify the pulses per second (PPS) assigned to rotary dial pulse trunk groups. Valid entries are “10” (default) or “20”.

 NOTE:

The TN439, TN458, and TN767 circuit packs can only do 10pps:

- **Make (msec)** — Enter the duration of the make interval (the pause between pulses) while the system is outputting digits using dial pulse signaling.

If the PPS field is “10”, the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of 5. The field cannot be blank; default is 40.

If the PPS field is “20”, the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of 5. The field cannot be blank; default is 20.
- **Break (msec)** — Enter the duration of the break interval (the pulse duration) while the system is outputting digits using dial pulse signaling.

If the PPS field is "10", the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of 5. The field cannot be blank; default is 60.

If the PPS field is "20", the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of 5. The field cannot be blank; default is 30.

Page 4 of the Form (ATMS Thresholds)

This form appears when the Direction on Page 1 is "outgoing" or "two-way" and ATMS is enabled on the Feature-Related System Parameters form.

- **TTL Type** — Specifies the type of TTL selected for testing trunks. The TTL type determines what ATMS tests can be completed and thus which threshold values need to be administered. The different TTLs supported are 105 with return loss (105-w-rl) (default), 105 without return loss (105-wo-rl), high-level tone source (high-level-tone), low-level tone source (low-level-tone), 100-type (100), and 102 type (102). The following table explains the differences between TTL Types:

Type TTL	Description	Example
<i>105-w-rl</i>	Full range of 18 measurements or some defaults for return loss used (56A)	TN771B, ZLC12 and SN261B circuit packs and new 56A mini-responder
<i>105-wo-rl</i>	Cannot return default values for far-end return loss	Older 56A mini-responder
<i>high-level-tone</i>	Sends a fixed sequence of tones at 0 dBm	ZLC12 and SN261B circuit packs
<i>low-level-tone</i>	Sends a fixed sequence of tones at -16dBm	SN261B circuit pack
<i>100</i>	Up to 5 measurements that sends a 1004 Hz tone then a quiet termination	
<i>102</i>	One measurement that sends a 1004 Hz tone	

The far-end switch containing the TTL may be any of the following:

- System 85 R3 PBX equipped with the Maintenance/Test Board (TN771B)
- System 75 R1V2 and beyond, all of which contain the circuitry required to perform the TTL function
- System 85 R2 PBX equipped with the Analog/Digital Facility Test Circuit (ADFTC, SN261)
- DIMENSION FP8 equipped with the Analog Facility Test Circuit (AFTC, ZLC-12)
- Central Office switches equipped with various TTL equipment that provide 100, 102, or 105 test line capabilities (56A)

Other vendor PBXs *may* be supported if compatible test lines are provided by these switches.

Four different versions of the ATMS Threshold Administration page can occur depending upon the measurements allowed by the TTL type selected. The four possibilities are:

1. 105-w-rl and 105-wo-rl — all thresholds appear.
2. high-lts and low-lts — all thresholds (except maximum C-notched noise) appear.
3. 100 — all thresholds (except maximum c-notched noise, 404Hz loss, and 2804 Hz loss) appear.
4. 102 — only 1004 Hz loss threshold appears,

Page 4 of X

ATMS THRESHOLDS

TTL Type: 105-w-rl_____ Far End Test No: _____
 TTL Vendor: _____ TTL Contact: _____
 Trunk Vendor: _____ Trunk Contact: _____
 Trunk Length: _____

	MARGINAL		UNACCEPTABLE	
	Min	Max	Min	Max
1004 Hz Loss:	-2	21	-2	21
	-Dev	+Dev	-Dev	+Dev
404 Hz Loss:	9	9	9	9
2804 Hz Loss:	9	9	9	9
Maximum C Message Noise:	55		55	
Maximum C Notched Noise:	74		74	
Minimum SRL-HI:	0_		0_	
Minimum SRL-LO:	0_		0_	
Minimum ERL:	0_		0_	

Allow ATMS Busyout, Error Logging and Alarming; y
 Maximum percentage of Trunks Which Can Be Removed from Service by ATMS: 0_

Screen 4-81. ATMS Thresholds Form

- **Far End Test No.**— Enter the access number (1 to 20 digits) dialed to reach the TTL.
- **TTL Vendor**— Enter the 0 to 22 alphanumeric character TTL vendor name (the name of the vendor supplying the terminating test line); default is blank.
- **TTL Contact**— Enter the 0 to 25 alphanumeric character TTL vendor contact (the name and/or telephone number of someone from the TTL vendor who can be contacted in the event of problems with the TTL); default is blank.

- **Trunk Vendor**— Enter the 0 to 22 alphanumeric character trunk vendor name (who to notify in the event of problems with the trunks); default is blank.
- **Trunk Contact** — Enter the 0 to 25 alphanumeric character trunk vendor contact (the name and/or telephone number of someone from the trunk vendor who can be contacted in the event of problems with the trunks); default is blank.
- **Trunk Length** — Enter 0 to 4 digits followed by "k" (for kilometers) or "m" (for miles) showing the length of trunk. This field is not required, since it is not used by the G3-MT. It has been included for the G3-MA adjunct to use in aiding with threshold establishment, since noise on a trunk increases with the length of the trunk. The default is "0m".
- **Marginal Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance. A larger dB value is more restrictive.
- **Marginal Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB); default is 21. A smaller dB value is more restrictive.
- **Unacceptable Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable. A larger dB value is more restrictive.
- **Unacceptable Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable; default is 21. A smaller dB value is more restrictive.
- **Marginal Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone noise level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.

- **Marginal Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as out of tolerance. The default is 55. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as unacceptable. The default is 55. Smaller values are more restrictive.
- **Marginal Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as out of tolerance. The default is 74. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as unacceptable. The default is 74. Smaller values are more restrictive.
- **Marginal Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.

- **Marginal Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Allow ATMS Busyout, Error Logging and Alarming** — Enter “y” to allow ATMS error logging and alarming (subject to filtering depending on the service organization used to deal with alarms); default is n.
- **Maximum Percentage of Trunks Which Can Be Removed From Service by ATMS** — Enter the highest percentage of trunks from the trunk group (0 to 100) that can be removed from service at one time because of unacceptable transmission measurement results; default is 0.

Pages 4 through X of the Form (Group Member Assignments)

 NOTE:

The total number of pages, and the first page of Group Member Assignments, will vary depending on whether the Administrable Timer and ATMS Threshold pages are displayed.

- **Administered Members (min/max)** — Indicates the minimum and maximum member number that has been administered for the particular trunk group. This field is displayed on all member pages.
- **Total Administered Members** — Indicates the total number of members administered in the trunk group. This field will appear on all trunk group member pages.
- **Port** — Enter seven characters. The first two characters identify the cabinet (01 to 22 [G3r V2], 1 to 3 [G3s V2, G3i V2]); the third character identifies the carrier (A through E); the fourth and fifth identify the slot number in the carrier (01 to 20 for multi-carrier cabinets or 01 to 18 for single-carrier cabinets); the last two characters identify the circuit number (01 to 31).

 NOTE:

When supporting DCS, it is required that the trunk be the same member number on both nodes. The member number of the trunk is the display only field at the far left of the screen, just before the Port field.

- **Code** — Display-only field. Displays the type of circuit pack physically installed or logically administered at the location to which this member has been assigned. If a circuit pack is neither installed nor administered at the member's location, the field is blank.
- **Sfx** — Displays the type of circuit pack (suffix only) physically installed at the location to which this member has been assigned. Field is blank if a circuit pack has not been physically installed.
- **Name** — Enter up to ten characters to identify the member of the trunk group. The name can be a 7-digit telephone number or a 10-digit Trunk Circuit Identification number (provided by trunk supplier).



NOTE:

Previously, Generic 1 Night Service and Balance/Loss information was entered in the Name field as "NT#..." and "TT#...". This information must now be entered in the Night field (below) or the STT Loss field on Page 1 of the form, as applicable.

- **Night** — Enter the extension of the night destination for the trunk. This individual night destination overrides the group night service destination on the first page of the trunk group form. Incoming calls are routed to this destination when the system is placed in night service mode. (If "attd." is entered, night service will be to the attendant.)
- **Mode** — Specifies the signaling mode used on Tie Trunks with TN722A, TN722B, TN760B (or later release), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are "e&m" (interface), "simplex" (phantomed), or "protected". This entry must correspond to associated dip switch settings on the circuit pack.
- **Type** — Specifies the signaling type to be used. This field should only be used with TN760B (or later release), TN722 (with any suffix), TN767, TN2140 (when the Trunk Signaling Type field is "cont"), TN437, TN439, TN464 (with any suffix), or TN458 circuit packs. The Type field appears when the Trunk Signaling Type is "cont" or blank.

The value "t5 rev" is only allowed for the TN760D vintage 10 or later. When the Type field is "t5 rev", the Mode field must be "e&m".

Valid entries are "t1 stan", "t1 comp", "t5rev", "type 5" or blank (default).

- **Ans Delay** — Specifies the length of the wait for answer supervision delay (in ms) for Trunks using the TN722A, TN722B, TN760 (B, C, or D), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are 20 to 5100 in increments of 20; default is no entry (blank) and internally treated as a zero. This delay serves two purposes:
 1. Used to assure that the answer supervision signal is valid and not a secondary delay-dial or wink-start signal.
 2. Used to bridge over momentary off-hook signals resulting from connections made off-network through certain No. 5 Crossbar CCSA switches as the connection is being established.

TRUNK GROUP		Page 1 of X
Group Number: 1	Group Type: rlt	CDR Reports? y
Group Name: OUTSIDE_CALL ____	COR: 1_	TAC: ____
Direction: two-way	Outgoing Display? n	Trunk Signaling Type: _
	Busy Threshold: 99	Night Service: _
Queue Length: 0_		Incoming Destination: _
TRUNK PARAMETERS		
Trunk Type(in/out): ____		Incoming Rotary Timeout: 5_
Outgoing Dial Type: tone ____		Incoming Dial Type: tone_
		Sig Bit Inversion: none
Incoming Dial Tone? y		
Disconnect Supervision In? y		
Answer Supervision Timeout: 10		Receive Answer Supervision? n

Screen 4-82. Release Link Trunk Group Form (Page 1 of X)**Implementation Notes:**

Queue Length is displayed if Direction is "outgoing".

Connected to Toll and DTT to DCO Loss are displayed when Trunk Type is "auto/..", "delay/...", "dimmed/...", "wink/...".

STT Loss is displayed when Connected to Toll is "n".

Send Release Ack and Receive Release Ack are only displayed when Trunk Signaling Type is "cont" or "dis".

Page 2 of X	
TRUNK FEATURES	
ACA Assignment? n	Measured: none
Data Restriction? n	
Used for DCS? n	Maintenance Tests? y
Suppress # Outpulsing? n	

Screen 4-83. Release Link Trunk Group Form (Page 2 of X)

Implementation Notes:

The Long Holding Time (hours), Short Holding Time (seconds), and Short Holding Threshold fields are displayed when ACA Assignment is "y".

The PBX ID field is only displayed when Used for DCS is "y".

ADMINISTRABLE TIMERS		Page 3 of X
Incoming Disconnect (msec) : 500	Outgoing Disconnect(msec) : 500	
Incoming Dial Guard(msec): 70	Outgoing Dial Guard(msec): 1600	
Incoming Glare Guard(msec) : 1500	Outgoing Glare Guard(msec) : 1500	
Incoming Partial Dial(sec) : 18	Outgoing Rotary Dial Interdigit(msec) : 800_	
Outgoing End of Dial (sec): 10	Outgoing Seizure Response (sec) : 5	
Programmed Dial Pause (msec) : 1500	Disconnect Signal Error(sec) : 240	
	Incoming Incomplete Dial Alarm(sec): 255	
END TO END SIGNALING		
Tone (msec): 350	Pause (msec): 150	
OUTPULSING TIMING		
PPS: 10	Make (msec): 40	Break (msec) : 60

Screen 4-84. Access Trunk Group Administrable Timers Form (Page 3 of X)

Implementation Notes:

The incoming Partial Dial field is only displayed when incoming Dial Type from Page 1 is "rotary."

The Outgoing End of Dial field is only displayed if Receive Answer Supervision from Page 1 is "y."

Incoming Disconnect is only displayed when Direction is "incoming" and Trunk Signaling Type is blank or "cont".

TRUNK GROUP		Page 4 of X						
Administered Members (min/max) : xxx/yyy								
Total Administered Members: xxx								
GROUP MEMBER ASSIGNMENTS								
Port	Code	Sfx	Name	Night	Mode	Type	Ans	Delay
1:	_____	_____	-	_____	_____	_____	_____	_____
2:	_____	_____	-	_____	_____	_____	_____	_____
3:	_____	_____	-	_____	_____	_____	_____	_____
4:	_____	_____	-	_____	_____	_____	_____	_____
5:	_____	_____	-	_____	_____	_____	_____	_____
6:	_____	_____	-	_____	_____	_____	_____	_____
7:	_____	_____	-	_____	_____	_____	_____	_____
8:	_____	_____	-	_____	_____	_____	_____	_____
9:	_____	_____	-	_____	_____	_____	_____	_____
10:	_____	_____	-	_____	_____	_____	_____	_____
11:	_____	_____	-	_____	_____	_____	_____	_____
12:	_____	_____	-	_____	_____	_____	_____	_____
13:	_____	_____	-	_____	_____	_____	_____	_____
14:	_____	_____	-	_____	_____	_____	_____	_____
15:	_____	_____	-	_____	_____	_____	_____	_____

Screen 4-85. Release Link Trunk Group Form (Pages 4 to X)

To reduce repetition, the remaining pages are not shown. For a complete set of forms, refer to the "Blank Forms Package."

Implementation Note:

The Type field does not appear if Trunk Signaling Type on Page 1 is "dis".

Tandem Trunk Group

This form is used to interconnect tandem nodes in an ETN network. The trunk group provides the System with the ability to act as an intermediate switch (through switch) in a private network and is capable of transmitting and receiving Traveling Class Marks as well as outputting 7-digit RNX-XXXX dialed numbers. A Traveling Class Mark represents a user's Facility Restriction Level (FRL) or the FRL of the user's trunk group.

Administration Commands

The following administration commands can be used to access the Tandem Trunk Group form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	trunk-group	1-MAX (or 'next')
change	trunk-group	1-MAX or TAC X...
display	trunk-group	1-MAX ['number' X]['to-number' X]['count' N] ['tac' assigned TAC]['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-MAX or TAC X...

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.



NOTE:

When supporting DCS, it is required that the far-end node trunk group be assigned the same group number.

- **Group Type** — Enter "tandem" to identify the trunk group type.
- **CDR Reports** — Enter "y" (default) to provide a detailed Call Detail Recording (CDR) record of both incoming and outgoing calls made on all trunks in the trunk group.

- **Group Name** — Enter a unique name that identifies the trunk group. Up to 15 characters can be used; default is OUTSIDE CALL.
- **COR** — Enter a class of restriction (COR) number from 0 to 95 that reflects the desired restriction; default is 1.
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. CDR also uses the TAC to identify the trunk group on associated CDR reports. A different TAC must be assigned to each trunk group. Valid entries are TACs that are compatible with the System Dial Plan (1 to 4 digits; 1 to 3 digits for DCS or to remotely control it).
- **Direction** — Enter whether the trunk group is “incoming”, “outgoing”, or “two-way” (default). Note that the Direction administered will affect which timers will appear on the Administrable Timer page.
- **Outgoing Display** — Specifies whether or not the trunk group name is displayed on a terminal placing an outgoing call. Valid entries are “y” or “n” (default).
- **Trunk Signaling Type** — This field specifies the kind of signaling to use for members in the trunk group and, if administered to a non-blank value, severely restricts the ports that can be administered in the trunk group.

Valid values are “cont” (continuous) or “dis” (discontinuous). Entering one of these values indicates that only ports from a TN2140 Italian tie trunk may be administered as trunk group members. Entering one of these values will cause the Send Release Ack?, Receive Release Ack? and Send Answer Supervision? fields to appear. If the field is blank (default), ports from any other Tie trunk circuit pack may be added as trunk group members. The value in this field will also affect which timers will appear on the Administrable Timer Page.
- **Dial Access** — Enter “y” to allow the trunk group to be accessed via a TAC. Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter the number of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console.
- **Night Service** — Enter the extension number assigned to Night Service. The extension number entered will receive all incoming calls when Night Service is activated and the individual trunk member Night field is not administered to override this group extension. Valid entries are an extension number (can be a VDN extension), the attendant group access code (“attd”), or leave blank if the Trunk Type (in/out) field is not “auto/...”.
- **Queue Length** — Enter the number of outgoing calls that can be held waiting. A “0” (default) indicates no calls will be held in queue. Enter “0” for DCS trunks. This field is not displayed if Direction is “incoming”.
- **Incoming Destination** — Indicates where incoming calls will terminate. Valid entries are an extension number, the attendant group access code (“attd”), VDN, or leave blank if the Trunk Type (in/out) field is not “auto/...”.

- **Comm Type** — Indicates if the trunk is to be used for voice, data, alternate voice-data (avd), or alternate voice/voice grade data and 56-kbps digital data (rbavd) calls. Valid entries are “avd”, “rbavd”, “voice” (default), or “data”. Type “rbavd” supports access to voice/data SDN service on robbed-bit T1 transmission facilities.

⇒ **NOTE:**

“avd” and “rbavd” types require trunk member ports on a DS1 circuit pack. An “rbavd” type requires that the DS1 circuit pack be administered for robbed-bit, ISDN-EXT, or ISDN-PRI signaling.

- **BCC** (Bearer Capability Class) — Displayed when ISDN-PRI is enabled for on the System-Parameters Customer-Options form and the Comm Type field is “avd”, “data”, or “rbavd”. Used by the Generalized Route Selection feature and identifies the type of traffic on trunks in the group. The BCC entry is used by far-end tandem switches to select outgoing routing facilities with equivalent BCC classes. Valid entries are 0, 1, 2, 3, and 4; default is 0 for “avd” and 2 for “data”.

⇒ **NOTE:**

Refer to “Generalized Route Selection” in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls.

- **ITC** (Information Transfer Capability) — Displayed when the Comm Type field is “data”, “avd”, or “rbavd” and the BCC field is not “0”. Used by the GRS feature and enables the system to route calls to restricted or unrestricted facilities according to the endpoint’s information transfer capability; default is restricted.

A trunk member is said to be unrestricted if the circuit pack it belongs to is administered as “b8zs” or “hdb3” in the Line Coding field of the DS1 form. A restricted trunk member can carry only restricted calls. An unrestricted trunk member may carry restricted or unrestricted calls. A trunk group with a transfer capability of “unrestricted” may have only unrestricted trunk members.

- **Trunk Type (in/out)** — Identifies the physical type of incoming and outgoing trunks. The trunks may be “automatic”, “immed-start”, “wink-start” or “delay-dial”; additionally, they may be “cont” (continuous-seize-ack) if Trunk Signaling Type is “cont”. If the Trunk Signaling Type is “dis”, only “disc” (discontinuous-seize-ack) and “immed” are allowed.

When the Trunk Signaling Type is “dis”, the valid values are “immed” and “disc”:

disc/disc disc/immed immed/disc immed/immed

When the Trunk Signaling Type is "cont", the valid values are:

auto/auto	auto/cont	auto/delay	auto/immed	auto/wink
cont/delay	cont/immed	cont/wink	delay/auto	delay/cont
delay/immed	delay/wink	immed/auto	immed/cont	immed/delay
immed/wink	wink/auto	wink/cont	/wink/delay	wink/immed

Otherwise, the valid values are:

auto/auto	auto/delay	auto/immed	auto/wink
delay/auto	delay/delay	delay/immed	delay/wink
immed/auto	immed/delay	immed/immed	immed/wink
wink/auto	wink/delay	wink/immed	wink/wink

⇒ NOTE:

For "immed/immed" trunks (on incoming trunks), the far-end PBX seizes the trunk and then sends digits without waiting for acknowledgment from the receiving PBX. When heavily loaded, the receiving PBX may incur a short delay in attaching a Touch-Tone Receiver to this call and, therefore, cause it to lose digits. Using wink-start trunks or increasing the dial-guard timer value on the far-end PBX avoids this problem.

- **Incoming Rotary Timeout (sec)** — The timing interval required by the central office that the System is connected to. If the System is connected to a Step-by-Step office, 18 or more seconds must be used; if the System is not connected to a Step-by-Step office, 5 or more seconds may be used. Valid entries are 5 to 99, or leave blank; default is 5.
- **Outgoing Dial Type** — Identifies the type of pulsing required on an outgoing call. Valid entries are "tone" (default), "rotary", or (when the Trunk Signaling Type field is blank) "mf".

⇒ NOTE:

Multifrequency Signaling must be enabled on the System-Parameters Customer-Options form before a value of "mf" may be administered.

Outgoing Dial Type may not be set to "mf" if the Used for DCS field (Page 2 of the form) is set to "y".

- **Incoming Dial Type** — Indicates the type of pulses required on an incoming trunk group. Valid entries are "tone" (default), "rotary", or (when the Trunk Signaling Type field is blank) "mf".

⇒ NOTE:

Multifrequency Signaling must be enabled on the System-Parameters Customer-Options form before a value of "mf" may be administered.

Incoming Dial Type may not be set to "mf" if the Used for DCS field (Page 2 of the form) is set to "y".

- **Wink Timer (msec)** — Displayed when the Trunk Type for the “out” side of the in/out field is “wink” or “delay”. Enter a number from 300 to 5000 in increments of 50; default is 300. This timer is sent only to TN760C vintage 4 or later), TN767, and TN464C (or later) circuit packs.

 NOTE:

This value is the same for each member of the trunk group where the timing is administered; that is, if members from TN760B ports are mixed with members from TN760C V4 ports, only the TN760C V4 ports are set to this value. (The TN760B ports use a default value on the circuit pack itself.)

United States domestic requirements state that for a “wink” start trunk, the wink must begin within five seconds (the “wait-for-wink-to-start” time) and must end within 290 ms (the “wait-for-wink-to-end” time). For a “delay” dial trunk, the wink must begin within 140 ms (the “wait-for-wink-to-start” time). and end when the switch is ready to receive digits.

The “wink” start “wait-for-wink-to-end” time and the “delay” dial “wait-for-wink-to-start” time are **both** administered through the use of this field.

- **Disconnect Timing (msec)** — Specifies the minimum time period (in ms) that is required for recognition of disconnect by the serving central office or far-end PBX. The time interval must be in increments of 10 (from 140 to 2550 ins); default is 500.

This timer is not used for ports on a circuit pack that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers. These latter two timers replace Disconnect Timing.

- **Digit Treatment** — Indicates if digits are to be absorbed or inserted. A blank indicates no digit absorption or insertion. Valid entries are “absorption”, “insertion”, or leave blank.

 NOTE:

DCS features that use the remote-tgs button (on the remote switch) do not work when the local trunk group deletes or inserts digits on the incoming call. These buttons try to dial a local TAC. Adding or deleting digits defeats this operation and renders the remote feature inoperable. If digit manipulation is needed, use it on the outgoing side, based on the routing pattern. One reason for digit manipulation is insertion of the AAR feature access code (FAC).

- **Digits** — Indicates the digits to be inserted or number of digits to be absorbed. This field is used with the Digit Treatment field. No entry indicates no digit absorption or insertion is done. Valid entries are the number of digits to be absorbed (1 to 5) or the actual digits to be inserted (up to 5 digits including the characters ‘*’ and ‘#’).

- **Expected Digits** — This field specifies the number of digits that the far-end sends for an incoming connection. Valid values are between 1 and 9 inclusive. This field only appears if the Trunk Signaling Type field is left blank, the Direction is “incoming” or “two-way”, and the Incoming Dial Type is “mf”.
- **Sig Bit Inversion** — This field allows the user to administer the signaling bit inversion (the A-bit and B-bit inversion) on a per port basis. This field applies only to TN464B or later suffixed circuit packs. The CCITT standards define on-hook to be “1” in the A-bit and off-hook to be “0”. This definition is the opposite of the EIA definition. The default in the TN464 firmware for signaling bit inversion is use the CCITT standard for 32-channel mode and to use the EIA standard for 24-channel mode. Valid entries are “A”, “A&B”, “B”, and “none” (default).
- **Connected to Toll** — Enter “y” if connected to a CO toll office. This field is displayed when the Trunk Type field contains an entry of “auto/...”, “delay/...”, “wink/...”, or “immed/...”.
- **STT Loss** (Satellite PBX Tie Trunk Loss) — Displayed when Connected to Toll is “n”. Specifies the loss plan to be used for the trunk group. Valid entries are “normal” (default) or “low”. This option affects the transmission performance of a private PBX network.

Although the use of this option has wider applications, only for the simplest network arrangements should this field be administered without Network Engineering advice. The “low” option (described as the ISL digital low loss plan in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DM/ISDN-PRI Reference*. 555-025-101) should be used when:

1. Stations on the satellite PBX complain of too much loss on calls to the public network.
2. The PBX network consists of no more than three PBXs: one main and one or two satellite PBXs.
3. All PBXs have the “low” option available.
4. The total DS1 trunk connection length is less than 100 miles.

If the preceding conditions are not met, obtain Network Engineering assistance. The field entry is based on the following:

- **normal** — Applies to AIU-TT (Analog Interface Unit at Customer Switching System for Tie Trunk — 4-wire E&M interface) and DIU-TT (Digital Interface Unit at Customer Switching System for Tie Trunk — voice or AVD DS1 interface) loss plans.
- **low** — Applies to AIU-TTS (same as AIU-TT, but suitable for private network connections that can be connected in tandem with public network connections) and DIU-TTS (same as DIU-TT, but suitable for private network connections that can be connected in tandem with public network connections). These interfaces were formerly referred to as DIU DTT ISL.

- **DTT to DCO Loss** (Digital Tie to Digital CO Trunk Loss) — Specifies the loss plan to be used for the trunk group for interconnections from a DIU-CO (Digital Interface Unit at a Central Office) to a DIU-DTT (Digital Interface Unit for a Digital Tie Trunk interface). This field is displayed when the Trunk Type field contains an entry of “auto/...”, “delay/...”, “wink/...”, or “dimmed/...”.

This option affects the transmission performance of public network access via a private PBX network. Choose the “low” option if private network users complain about too much loss on calls to the public network, otherwise, the “normal” option should be used. Valid entries are “normal” (default) and “low”. The entry is based on the following:

- **normal** — Corresponds to a (0, -6) dB gain pair and is used as the default option. (This corresponds to the DTT/EIA DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DM/ISDN-PRI Reference*, 555-025-101.)
 - **low** — Corresponds to (+3, -3) dB gain pair. Low is used for internetwork applications in which no significant configuration will encounter echo, stability, or overload problems because of reduced loss. With the low gain pair, subscriber station DTMF signals transmitted through the digital class 5 office into the customer network may experience non-recoverable digit mutilation in secondary signaling applications (that is, DTMF signaling after the connection has been established). This corresponds to the DTT/ISL DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DM/ISDN-PRI Reference*, 555-025-101.
- **Incoming Dial Tone** — Indicates whether or not the trunk group will pass on incoming dial tone to the calling party. Valid entries are “y” or “n”.
 - **Send Release Ack** — This field appears only when the Trunk Signaling Type has a value of either “cont” or “dis”. (Thus, this field only applies to TN2140 ports.) Enter “y” (default) if the switch must send a release acknowledgment in response to a forward or backward release signal.
 - **Receive Release Ack** — This field appears only when the Trunk Signaling Type has a value of either “cont” or “dis”. (Thus, this field only applies to TN2140 ports.) Enter “y” (default) if the switch should expect to receive a release acknowledgment in response to a forward or backward release signal.
 - **Bit Rate** — Displayed when Comm Type is “avd” or “rbavd”. It also appears if the Comm Type is “data” but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form. Specifies the baud rate to be used by pooled modems. Valid entries are 300, 1200 (default), 2400, 4800, 9600, and 19200.

- **Synchronization** — Displayed when Comm Type is “avd” or “rbavd”. It also appears if the Comm Type is “data” but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form. Enter whether the trunk group will use synchronous or asynchronous communications. Valid entries are “async” (default) and “sync”.
- **Duplex** — Displayed when Comm Type is “avd” or “rbavd”. It also appears if the Comm Type is “data”, but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form. Specifies either full or half duplex for the trunk group. Valid entries are “full” (default) or “half”.
- **Disconnect Supervision-In** — This field appears when the Direction is either “incoming” or “two-way”. Internally, the field is set to “n” if the direction is outgoing. Enter “y” (default) to indicate that the far-end has the ability to release a trunk when the calling party releases from a call and the system is able to recognize the release signal.
- **Disconnect Supervision-Out** — This field appears when the Direction is either “outgoing” or “two-way”. Internally, the field is set to “n” (default) if the direction is incoming. If the field is set to “y” a Warning Message appears to alert the user of possible trunk lockups. This field specifies whether trunks in this trunk group provide disconnect supervision when seized outgoing. That is, whether these trunks should be allowed to participate in outgoing trunk to outgoing trunk calls. This field is set independently of the trunk-to-trunk transfer system parameter, although both options must be set appropriately if outgoing trunk to outgoing trunk transfers are desired.
- **Answer Supervision Timeout** — Used for analog port circuits to indicate the amount of time in seconds the System allows for a call to be answered before beginning a CDR record of a call. This interval begins as soon as the outgoing trunk is seized. Valid entries are 0 to 250; default is 10.

**NOTE:**

This timeout does not override answer supervision sent from the network or other firmware (DS1 port circuit timers). in the Outgoing End of Dialing field on Page 3 of the Trunk Group form (Administrable Timers page).

- **Send Answer Supervision** — Appears when Trunk Signaling Type is “cont” or “dis”. This field only applies to TN2140 ports. Valid entries are “y” (default) for the switch to signal that the destination party has answered.
- **Receive Answer Supervision** — Specifies whether or not the network provides answer supervision for the trunks. Answer supervision refers to notification from the far-end that the called party has gone off-hook to answer the call. When answer supervision is provided, the originating PBX can classify a call as answered using the Answer Supervision Timeout field entry (for domestic circuit packs) or, for circuit packs that take administrable timers, by using the Outgoing End of Dial timer. For trunks over which answer supervision is provided by the network, set this

field to “y” and the Answer Supervision Timeout field to “0” so that the firmware timeout is disabled. The firmware timeout is automatically set to “0” on circuit packs that take the administrable Outgoing End of Dial timers. Receive Answer Supervision must be set to “n” (default) if the Direction field is “incoming”.

Page 2 of the Form

- **ACA Assignment** — Specifies whether or not Automatic Circuit Assurance (ACA) measurements will be taken for this trunk group. Valid entries are “y” or “n” (default). If “y” is entered, complete the next three fields.
- **Long Holding Time (hours)** — Only Displayed when ACA Assignment is “y”. The length in hours that the System will consider as being a long holding time. If “0” is entered, the System will not consider long holding calls. Valid entries are 0 to 10; default is 1.
- **Short Holding Time (secs.)** — Only Displayed when ACA Assignment is “y”. Specifies the length in seconds that the System will consider as being a short holding time. If “0” is entered, the System will not consider short holding calls. Valid entries are 0 to 160; default is 10.
- **Short Holding Threshold** — Only Displayed when ACA Assignment is “y”. The number of times that the System will record a short holding call before an attendant or display-equipped voice terminal user is alerted to the possibility of a faulty trunk, Valid entries are 0 to 30; default is 15.
- **Measured** — Indicates if the System will transmit data for this trunk group to the Call Management System. Valid entries are “internal”, “external”, “both”, “none”. Enter “internal” if the data is to be sent to the Basic Call Management System (internal to the switch) for subsequent measurement reports and “external” to send the data to the Call Management System Adjunct. Enter “both” to send the data to both systems for measurement reports. Enter “none” (default) if trunk group measurements are not required.
- **Data Restriction** — Used to prevent System features from generating tones on a data call that would cause erroneous data transmission. Valid entries are “y” or “n” (default).
- **Glare Handling** — Only displayed when the Direction field is “two-way” and the outgoing side of the Trunk Type field is either “wink” or “delay”. This field determines how glare situations should be treated. Valid entries are “control”, “backoff”, or “none” (default).

Warnings are generated if the field is changed to either “control” or “backoff” and ports for the trunk group are not capable of detecting glare.
- **Used for DCS** — Specifies whether the trunk group will send and receive messages on a DCS signaling link. Valid entries are “y” or “n” (default).

⇒ NOTE:

This field cannot be activated if the tie trunk group number is greater than 255, if there are more than 255 members in the trunk group, or if the Trunk Access code is more than 3 digits long.

- **PBX ID** — Displayed when the Used for DCS field is “y”. Enter the ID of the PBX at the other end of this trunk.
- **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are “y” (default) or “n”.
- **Suppress # Outpulsing** — Indicates end-to-end signaling begins with (and includes) the “#” when “y” is entered in this field. The final “#” is suppressed in cases where System would normally outpulse it. This field should be “y” when the Central Office (for example, rotary) or any other facility treats “#” as an error; default is n.
- **Seize When Maintenance Busy** — This field is effective only for ports on TN760C (or later release), TN767, and TN464C (or later release) circuit packs. It indicates whether an outgoing seize is generated when a trunk is maintenance busied, and whether the far-end switch is administered to do likewise. This supports the Electronic Tandem Network Busyout feature. The intended use of this feature is to prevent the far-end PBX from reporting problems concerning a trunk which has been removed from service at the near-end. The setting of this field has no effect on the behavior of the far-end machine; it controls the behavior of the near-end switch and the expected far-end behavior.

If the administered value of this field is either “near-end” or “both-ends”, an outgoing seize will be initiated whenever a trunk in this trunk group is maintenance busied. The seize is maintained until the maintenance busyout is released. This action will likely cause alarms at the far-end switch, perhaps leading to a far-end maintenance busy out, unless the far-end switch is administered to expect this behavior.

If the administered value of this field is either “far-end” or “both-ends”, any abnormally long incoming seize⁶ (including failure to drop from a completed call) is *assumed to be the result of a far-end maintenance busy condition*. Note that this assumption may be incorrect since the abnormally long seize may actually be due to a transient or permanent failure of the trunk circuit. Regardless of the cause of the abnormally long seize, the near-end response is to:

1. generate a warning alarm indicating the trunk is assumed to be maintenance busy at the far-end,

6. When an incoming seize is detected, the normal behavior is to either immediately direct the call to an administered destination, or to wait for an administered period of time for incoming destination digits. If digits are expected but not received, the calling party receives the DID/TIE intercept treatment administered on the feature related system parameters form.

2. remove the trunk from service, and
3. keep the trunk out of service until a far-end disconnect is received.

The values allowed depend on the Direction field. When the Direction is "incoming", the valid values are: "far-end", "neither-end".

When the Direction is "outgoing", the valid values are: "near-end", "neither-end".

When the Direction is "two-way", the valid values are: "both-ends", "far-end", "near-end", "neither-end".

The default is "neither-end".

Page 3 of the Form (Administrable Timers)

- **Incoming Disconnect (msec)** — A disconnect signal on an incoming call is considered valid only if it continues at least for the time specified by this timer. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank; default is 500. The field appears only for an "incoming" or "two-way" trunk group when the Trunk Signaling Type is blank or "cont."
- **Incoming Dial Guard (msec)** — Enter the interval between the detection of an incoming seizure and the acceptance of the first digit. The PBX will not accept digits before this timer expires. This timer is administrable when the Trunk Signaling Type is blank. Valid entries are 10 to 2550 in increments of 10; default is 70.
- **Incoming Partial Dial (sec)** — Enter the time (in sec) allowed between digits. Valid entries are 5 to 255 in increments of 1; default is 18. This timer appears only if the Incoming Dial Type is "rotary."
- **Incoming Incomplete Dial Alarm (sec)** — Enter the maximum time (in sec) between incoming seizure and receipt of all digits. Intervals greater than this generate an inline error. Valid entries are 1 to 255 in increments of 1; default is 255. This timer is sent to the TN464C (or later), TN760Dv15 (or later), TN767, and TN2140 tie circuit packs.
- **Outgoing Disconnect (msec)** — A disconnect signal on an outgoing call is considered valid only if it continues at least for the time specified by this timer. This timer begins timing when a disconnect signal has been detected on an outgoing call over the trunk, and resets when the signal is no longer detected. If the timer times out, the trunk is dropped. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank. Default is 500. This field only appears for "outgoing" or "two-way" trunk group when the Trunk Signaling Type is either blank or "cont".
- **Outgoing Dial Guard (msec)** — This timer specifies the time between seizure acknowledgment of a trunk and the outputting of digits. For trunks that do not provide seizure acknowledgment, the timer specifies the minimum time between seizure and the outputting of digits. Any digit dialed by the station user after they lift the receiver, but before the timer times out, will not be outputted until the timer expires. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1600.

- **Incoming Glare Guard (msec)** — Enter the minimum time (in msec) between the time an incoming trunk is released and the same trunk can be seized for an outgoing call. This guard time will ensure the far-end has released all equipment after the incoming trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1500. This field only appears when the Direction is “two-way”.
- **Outgoing Glare Guard (msec)** — Enter the minimum time (in msec) between the time an outgoing trunk is released and the same trunk can be seized for another outgoing call. This guard time will ensure that the far-end has released all equipment after the outgoing trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1500. This field only appears for outgoing and two-way trunk groups.
- **Outgoing Rotary Dial Interdigit (msec)** — Enter the interval (in msec) between rotary dial digits being outpulsed by the system (that is, PBX). Valid entries are 150 to 2550 in increments of 10. The field cannot be blank. Default is 800. This field only appears when the Outgoing Dial Type is “rotary”.
- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the far-end. Valid entries are 20 to 2550 in increments of 10. The field cannot be blank. Default is 500. This field appears when the Trunk Signaling Type is “cont” and the Direction is “incoming” or “two-way”.



NOTE:

TN2140 ports are the only tie ports that can receive this timer.

- **Outgoing End of Dial (sec)** — Enter the maximum time (in sec) a trunk may wait for answer supervision after dialing an outgoing call. During cut-through operation, timing begins after each outgoing digit is sent by the PBX and timing ceases after the far-end sends answer supervision. If the timer expires, the PBX acts as if it had received answer supervision. On senderized operation, the timer begins after the last digit collected is sent by the PBX. The timer ceases when the far-end sends answer supervision. If the timer expires, the PBX acts as if it has received answer supervision. This field appears when Direction is “outgoing” or “two-way” and Receive Answer Supervision is “n”. This field will not appear if the Receive Answer Supervision field is “y”, but a zero (0) value will be sent down to the firmware to disable the timer. This timer applies to outgoing and two-way trunk groups. Valid entries are 1 to 254 in increments of 1. Default is 10.



NOTE:

This field controls the firmware answer-super-vision timer on ports that take the administrable timers; the Answer Supervision Timeout field on Page 1 of the Trunk Group form controls answer supervision for ports that do not take administrable timers. This field and the value administered in the Answer Supervision Timeout field on the Trunk Group form should be the same value.

- **Outgoing Seizure Response (sec)** — Enter a maximum time (in sec) by which the PBX should receive the proceed-to-dial indication from the far-end after sending the seize signal. If the indication is not received in this time, a seizure failure response is uplinked. Valid entries are 1 to 255 in increments of 1. Default is 5 sec. This timer is sent to the TN464B (or later), TN767, TN439, TN458, TN760Dv15 (or later), and TN2140 tie circuit packs.
- **Programmed Dial Pause (msec)** — Enter the length (in msec) of a pause during abbreviated dialing, ARS outpulsing, and terminal dialing operations. This timer is administrable for all outgoing and two-way trunk groups. Valid entries are 100 to 25500 in increments of 100. Default is 1500 msec. This timer is sent to the TN464B (or later), TN760Dv15 (or later), TN767, TN458, and TN2140 tie circuit packs.
- **Disconnect Signal Error (sec)** — Enter a maximum time (in sec) within which a disconnect signal from the far-end is expected after the internal party (a station or a tie trunk) goes on-hook. If the timer expires, the system can assume a disconnect failure and take an appropriate action (such as an error message). Valid entries are 1 to 255 in increments of 1. Default is 240 sec.
- **Outgoing Last Digit (sec)** — Enter the maximum time (in seconds) to wait for the next digit dialed. After the timer expires, no more digits are accepted by the circuit pack. It will only be administrable if the Trunk Signaling Type is “dis” or “cont” and the trunk group Direction is “two-way” or “outgoing”. Valid entries are 1 to 40; default is 10. Only TN2140 ports receive this timer.
- **Normal Outgoing Seize Send (msec)** — Enter the number of milliseconds to ground the M-lead. Outgoing seizure is signaled by the calling switch momentarily grounding the M-lead for the duration specified by this timer. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “two-way” or “outgoing”. Valid entries are 60 to 250 in increments of 10. Default is 70. Only TN2140 ports receive this timer.
- **Release Ack Send (msec)** — Enter the duration (in msec) of the forward release acknowledgment signal. After receiving a forward release signal, the called switch must send the forward release acknowledgment signal. This signal is sent by grounding the M-lead for the duration specified by this timer. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 500 to 1200 in increments of 100. Default is 600. Only TN2140 ports receive this timer.
- **Seize Ack Delay (msec)** — Enter the maximum time (in msec) between receiving a seizure and the sending of seizure acknowledgment by the called switch. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 40 to 120 in increments of 10. Default is 100. Only TN2140 ports receive this timer.

- **Answer Send (msec)** — Enter the duration (in msec) of the answer signal pulse. This field appears only if Trunk Signaling Type is “dis” and the Direction is “incoming” or “two-way”. Valid entries are 60 to 120 in increments of 10. Default is 80. Only TN2140 ports receive this timer.
- **Outgoing Disconnect Send (msec)** — Enter the duration (in msec) of the M-lead ground at the calling switch during disconnect. Forward release is signaled by the calling switch by grounding the M-lead for the duration specified by this timer. It is only administrable if the Trunk Signaling Type is “dis” and the trunk group Direction is “two-way” or “outgoing”. Valid entries are 500 to 1200 in increments of 100. Default is 800. Only TN2140 ports receive this timer.
- **Seize Ack Send (msec)** — Enter the duration (in msec) of the seize acknowledge pulse. This field appears only if Trunk Signaling Type is “dis” and the Direction is “incoming” or “two-way”. Valid entries are 40 to 120 in increments of 10. Default is 80. Only TN2140 ports receive this timer.
- **Incoming Disconnect Send (msec)** — Enter the duration (in msec) of the M-lead ground at the called switch during disconnect. Calls may be cleared by either the calling switch (forward release) or the called switch (backward release). Backward release is signaled by the called switch by grounding the M-lead for the duration specified by this timer. It is only administrable if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 500 to 1200 in increments of 100. Default is 800. Only TN2140 ports receive this timer.
- **Glare** — Enter the minimum time (in msec) between sending an outgoing seizure and receiving a seizure acknowledgment. If seizure acknowledgment is received before expiration of the timer, a glare condition is assumed. It is only administrable if Trunk Signaling Type is “cont” and the Direction is “two-way” or “outgoing”. Valid entries are 40 to 100 in increments of 10. Default is 40. Only TN2140 ports receive this timer.
- **Tone (msec)** — Enter the length of a DTMF tone sent in response to a button depression at a hybrid station set. Valid entries are 20 to 2550 in increments of 10; default is 350. This timer is only administrable when the Trunk Signaling Type is blank.
- **Pause (msec)** — Enter the minimum length of a pause between tones being sent in response to button depressions at a hybrid station set. It is only administrable if the Trunk Signaling Type is blank. Valid entries are 20 to 2550 in increments of 10; default is 150.
- **PPS** — Enter either “10” or “20” to specify the pulses per second (PPS) assigned to rotary dial pulse trunk groups. Valid entries are “10” or “20”. Default is “10”.

**NOTE:**

The TN439, TN458, and TN767 circuit packs can only do 10pps.

- **Make (msec)** — Enter the duration of the make interval (the pause between pulses) while the system is outpulsing digits using dial pulse signaling.

If the PPS field is "10", the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of five. The field cannot be blank. The default is 40.

If the PPS field is "20", the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of five. The field cannot be blank. The default is 20.

- **Break (msec)** — Enter the duration of the break interval (the pulse duration) while the system is outpulsing digits using dial pulse signaling.

If the PPS field is "10", the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of five. The field cannot be blank. The default is 60.

If the PPS field is "20", the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of five. The field cannot be blank. The default is 30.

Page 4 of the Form (ATMS Thresholds)

This form appears when the Direction on Page 1 is "outgoing" or "two-way" and ATMS is enabled on the Feature-Related System Parameters form.

- **TTL Type** — Specifies the type of TTL selected for testing trunks. The TTL type determines what ATMS tests can be completed and thus which threshold values need to be administered. The different TTLs supported are 105 with return loss (105-w-rl) (default), 105 without return loss (105-wo-rl), high-level tone source (high-level-tone), low-level tone source (low-level-tone), 100-type (100), and 102 type (102). The following table explains the differences between TTL Types:

Type TTL	Description	Example
<i>105-w-rl</i>	Full range of 18 measurements or some defaults for return loss used (56A)	TN771B, ZLC12 and SN261B circuit packs and new 56A mini-responder
<i>105-wo-rl</i>	Cannot return default values for far-end return loss	Older 56A mini-responder
<i>high-level-tone</i>	Sends a fixed sequence of tones at 0 dBm	ZLC12 and SN261B circuit packs
<i>low-level-tone</i>	Sends a fixed sequence of tones at -16dBm	SN261B circuit pack
<i>100</i>	Up to 5 measurements that sends a 1004 Hz tone then a quiet termination	
<i>102</i>	One measurement that sends a 1004 Hz tone	

The far-end switch containing the TTL may be any of the following:

- System 85 R3 PBX equipped with the Maintenance/Test Board (TN771B)
- System 75 R1V2 and beyond, all of which contain the circuitry required to perform the TTL function
- System 85 R2 PBX equipped with the Analog/Digital Facility Test Circuit (ADFTC,SN261)
- DIMENSION FP8 equipped with the Analog Facility Test Circuit (AFTC, ZLC-12)
- Central Office switches equipped with various TTL equipment that provide 100, 102, or 105 test line capabilities (56A)

Other vendor PBXs *may* be supported if compatible test lines are provided by these switches.

Four different versions of the ATMS Threshold Administration page can occur depending upon the measurements allowed by the TTL type selected. The four possibilities are:

1. 105-w-rl and 105-wo-rl — all thresholds appear.
2. high-lts and low-lts — all thresholds (except maximum C-notched noise) appear.
3. 100 — all thresholds (except maximum c-notched noise, 404Hz loss, and 2804 Hz loss) appear.
4. 102 — only 1004 Hz loss threshold appears.

Page 4 of x

TTL Type: 105-w-rl _____

TTL Vendor: _____

Trunk Vendor: _____

Trunk Length: _____

ATMS THRESHOLDS

Far End Test No: _____

TTL Contact: _____

Trunk Contact: _____

	MARGINAL		UNACCEPTABLE	
	Min	Max	Min	Max
1004 Hz Loss:	-2	21	-2	21
	-Dev	+Dev	-Dev	+Dev
404 Hz Loss:	9	9	9	9
2804 Hz Loss:	9	9	9	9
Maximum C Message Noise:	55		55	
Maximum C Notched Noise:	74		74	
Minimum SRL-HI:	0_		0_	
Minimum SRL-LO:	0_		0_	
Minimum ERL:	0_		0_	

Allow ATMS Busyout, Error Logging and Alarming? y

Maximum Percentage of Trunks Which Can Be Removed from Service by ATMS: 0_

Screen 4-86. ATMS Thresholds Form

- **Far End Test No.** — Enter the access number (1 to 20 digits) dialed to reach the TTL.
- **TTL Vendor** — Enter the 0 to 22 alphanumeric character TTL vendor name (the name of the vendor supplying the terminating test line); default is blank.
- **TTL Contact** — Enter the 0 to 25 alphanumeric character TTL vendor contact (the name and/or telephone number of someone from the TTL vendor who can be contacted in the event of problems with the TTL); default is blank.
- **Trunk Vendor** — Enter the 0 to 22 alphanumeric character trunk vendor name (who to notify in the event of problems with the trunks); default is blank.
- **Trunk Contact** — Enter the 0 to 25 alphanumeric character trunk vendor contact (the name and/or telephone number of someone from the trunk vendor who can be contacted in the event of problems with the trunks); default is blank.

- **Trunk Length** — Enter 0 to 4 digits followed by “k” (for kilometers) or “m” (for miles) showing the length of trunk. This field is not required, since it is not used by the G3-MT. It has been included for the G3-MA adjunct to use in aiding with threshold establishment, since noise on a trunk increases with the length of the trunk. The default is “Om”.
- **Marginal Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance. A larger dB value is more restrictive.
- **Marginal Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance; default is 21. A smaller dB value is more restrictive.
- **Unacceptable Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable. A larger dB value is more restrictive.
- **Unacceptable Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable; default is 21. A smaller dB value is more restrictive.
- **Marginal Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone noise level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.

- **Unacceptable Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as out of tolerance. The default is 55. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as unacceptable. The default is 55. Smaller values are more restrictive.
- **Marginal Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as out of tolerance. The default is 74. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as unacceptable. The default is 74. Smaller values are more restrictive.
- **Marginal Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.

- **Marginal Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Allow ATMS Busyout, Error Logging and Alarming** — Enter “y” to allow ATMS error logging and alarming (subject to filtering depending on the service organization used to deal with alarms); default is n.
- **Maximum Percentage of Trunks Which Can Be Removed From Service by ATMS** — Enter the highest percentage of trunks from the trunk group (0 to 100) that can be removed from service at one time because of unacceptable transmission measurement results; default is 0.

Pages 4 through X of the Form (Group Member Assignments)

NOTE:

The total number of pages, and the first page of Group Member Assignments, will vary depending on whether the Administrable Timer and ATMS Threshold pages are displayed.

- **Administered Members (min/max)** — Indicates the minimum and maximum member number that has been administered for the particular trunk group. This field is displayed on all member pages.
- **Total Administered Members** — Indicates the total number of members administered in the trunk group. This field will appear on all trunk group member pages.
- **Port** — Enter seven characters. The first two characters identify the cabinet (01 to 22 [G3r V2], 1 to 3 [G3s V2, G3i V2]); the third character identifies the carrier (A to E); the fourth and fifth identify the slot number in the carrier (01 to 20 for multi-carrier cabinets or 01 to 18 for single-carrier cabinets); the last two characters identify the circuit number (01 to 31).

NOTE:

When supporting DCS, it is required that the trunk be the same member number on both nodes. The member number of the trunk is the display only field at the far left of the screen, just before the Port field.

- **Code** — Display-only field. Displays the type of circuit pack physically installed or logically administered at the location to which this member has been assigned. If a circuit pack is neither installed nor administered at the member's location, the field is blank.
- **Sfx** — Displays the type of circuit pack (suffix only) physically installed at the location to which this member has been assigned. Field is blank if a circuit pack has not been physically installed.

- **Name** — Enter up to ten characters to identify the member of the trunk group. The name can be a 7-digit telephone number or a 10-digit Trunk Circuit Identification number (provided by trunk supplier).



NOTE:

Previously, Generic 1 Night Service and Balance/Loss information was entered in the Name field as “NT#...” and “TT#)...”.. This information must now be entered in the Night field (below) or the STT Loss field on Page 1 of the form, as applicable.

- **Night** — Enter the extension of the night destination for the trunk. This individual night destination overrides the group night service destination on the first page of the trunk group form. Incoming calls are routed to this destination when the system is placed in night service mode. (If “attd” is entered, night service will be to the attendant.)
- **Mode** — Specifies the signaling mode used on Tie Trunks with TN722A, TN722B, TN760B (or later), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are “e&m” (interface), “simplex” (phantomed), or “protected”. This entry must correspond to associated dip switch settings on the circuit pack.

- **Type** — Specifies the signaling type to be used. This field should only be used with TN760B (or later release), TN722 (with any suffix), TN767, TN2140 (when the Trunk Signaling Type field is “cont”), TN437, TN439, TN464 (with any suffix), or TN458 circuit packs. The Type field appears with the Trunk Signaling Type field is “cont” or blank.

The value of “t5 rev” is only allowed for the TN760D vintage 10 or later. When the Type field is “t5 rev”, the Mode field must be “e&m”..

Valid entries are “t1 stan”, “t1 comp”, “t5rev”, or “type 5”. Default is blank.

- **Ans Delay** — Specifies the length of the wait for answer supervision delay (in ms) for Trunks using the TN722A, TN722B, TN760 (B, C, or D), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are 20 to 5100 in increments of 20. The default is no entry (blank) and internally treated as a zero. This delay serves two purposes:
 1. Used to assure that the answer supervision signal is valid and not a secondary delay-dial or wink-start signal.
 2. Used to bridge over momentary off-hook signals resulting from connections made off-network through certain No. 5 Crossbar CCSA switches as the connection is being established.

TRUNK GROUP		Page 1 of X
Group Number: xxx	Group Type: tandem	CDR Reports? y
Group Name: OUTSIDE_CALL_	COR: 1_	TAC: _____
Direction: two-way	Outgoing Display? n	Trunk Signaling Type:
Dial Access? y	Busy Threshold: 99	Night Service: _____
Queue Length: 0_	Incoming Destination: _____	
Comm Type: voice		
TRUNK PARAMETERS		
Trunk Type(in/out) : _____	Incoming Rotary Timeout(sec) : 5_	
Outgoing Dial Type: tone_	Incoming Dial Type: tone_	
	Disconnect Timing(msec) : 500_	
Digit Treatment:	Digits: _____	
	Sig Bit Inversion: none	
Incoming Dial Tone? y		
Disconnect Supervision- In? y Out? n		
Answer Supervision Timeout: _10	Receive Answer Supervision? n	

Screen 4-87. Tandem Trunk Group Form (Page 1 of X)

Implementation Notes:

The BCC field is displayed when the Comm Type is "avd", or when ISDN-PRI is optioned for on the System-Parameters Customer-Options form and the Comm Type field is "avd", "rbavd", or "data".

The Connected to Toll and DTT to DCO Loss fields are displayed when the Trunk Type field is "auto/...", "delay/...", "wink/...", or "immed/...".

The STT Loss field is displayed when the Connected to Toll field is "n". .

The Bit Rate, Synchronization, and Duplex fields are displayed when the Comm Type field is "avd" or "rbavd"..

The ITC field displayed when the Comm Type field is "data", "avd" ,or "rbavd" and the BCC field is not "0".

The Queue Length field is displayed when Direction is "outgoing" or "two-way".

The Send Release Ack, Receive Release Ack, and Send Answer Supervision fields are displayed when Trunk Signaling Type is "cont" or "dis".

TRUNK FEATURES		Page 2 of X
ACA Assignment? n		Measured: none
	Data Restriction? n	
Used for DCS? n		Maintenance Tests? y
Suppress # Outpulsing? n		
	Seize When Maintenance Busy: neither-end	

Screen 4-88. Tandem Trunk Group Form (Page 2 of X)

Implementation Notes:

The Long Holding Time (hours), Short Holding Time (seconds), and Short Holding Threshold fields are displayed when ACA Assignment is "y".

The PBX ID field is displayed if the Used for DCS field is "y".

Page 3 of X

ADMINISTRABLE TIMERS

Incoming Disconnect(msec): 500	Outgoing Disconnect(msec): 500
Incoming Dial Guard(msec): 70	Outgoing Dial Guard(msec) : 1600
Incoming Glare Guard(msec): 1500	Outgoing Glare Guard(msec) : 1500

Outgoing Rotary Dial Interdigit(msec) : 800_

Outgoing End of Dial (sec): 10	Outgoing Seizure Response (sec) : 5
Programmed Dial Pause (msec) : 1500	Disconnect Signal Error(sec): 240
	Incoming Incomplete Dial Alarm(sec) : 255

END To END SIGNALING

Tone (msec): 350	Pause (msec): 150

OUTPUTSING TIMING

PPS: 10	Make (msec): 40	Break (msec): 60

Screen 4-89. Tandem Trunk Group Administrable Timers Form (Page 3 of X)**Implementation Notes:**

The Incoming Partial Dial field is only displayed when the Incoming Dial type field from Page 1 is "rotary".

The Outgoing End of Dial field is only displayed if the Receive Answer Supervision field from Page 1 is "n".

The Incoming Glare Guard field is only displayed when Direction is "two-way".

The Outgoing Glare Guard field is only displayed when Direction is "outgoing" or "two-way".

The Normal Outgoing Seize Send field is only displayed when Trunk Signaling Type is "dis" and Direction is "two-way" or "outgoing".

The Incoming Disconnect field is only displayed when Trunk Signaling Type is blank or "cont" and Direction is "incoming" or "two-way".

The Outgoing Disconnect field is only displayed when Trunk Signaling Type is blank or "cont" and Direction is "outgoing" or "two-way".

The Incoming Seize field is only displayed when Trunk Signaling Type is "cont" and Direction is "incoming" or "two-way".

									Page 4 of X
									TRUNK GROUP
									Administered Members (min/max) : xxx/yyy
									Total Administered Members: xxx
GROUP MEMBER ASSIGNMENTS									
	Port	Code	Sfx	Name	Night	Mode	Type	Ans	Delay
1:	_____	_____	—	_____	_____	_____	_____	_____	_____
2:	_____	_____	—	_____	_____	_____	_____	_____	_____
3:	_____	_____	—	_____	_____	_____	_____	_____	_____
4:	_____	_____	—	_____	_____	_____	_____	_____	_____
5:	_____	_____	—	_____	_____	_____	_____	_____	_____
6:	_____	_____	—	_____	_____	_____	_____	_____	_____
7:	_____	_____	—	_____	_____	_____	_____	_____	_____
8:	_____	_____	—	_____	_____	_____	_____	_____	_____
9:	_____	_____	—	_____	_____	_____	_____	_____	_____
10:	_____	_____	—	_____	_____	_____	_____	_____	_____
11:	_____	_____	—	_____	_____	_____	_____	_____	_____
12:	_____	_____	—	_____	_____	_____	_____	_____	_____
13:	_____	_____	—	_____	_____	_____	_____	_____	_____
14:	_____	_____	—	_____	_____	_____	_____	_____	_____
15:	_____	_____	—	_____	_____	_____	_____	_____	_____

Screen 4-90. Tandem Trunk Group Form (Pages 4 through X)

To reduce repetition, the remaining pages are not shown, For a complete set of forms, refer to the "Blank Forms Package."

Implementation Note:

The Type field does not appear if the Trunk Signaling Type field on Page 1 is "dis".

Tie Trunk Group

This form is used to provide private access between the System and another PBX or CENTREX. The trunks are used to interconnect a satellite, tributary, and a main PBX in an Electronic Tandem Network. The trunk group can also be used to interface a 4ESS switch in support of MEGACOM service, MEGACOM 800 service, and MEGACOM 800 DNIS service.

**NOTE:**

For private-network ISDN-PRI tie trunks connecting a Generic 3r and a Generic 2, the Generic 3r must be defined as “network” on its DS1 and the Generic 2 as “user” on the DS1 circuit pack form.

Administration Commands

The following administration commands can be used to access the Tie Trunk Group form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	trunk-group	1-MAX (or 'next')
change	trunk-group	1-MAX or TAC X...
display	trunk-group	1-MAX ['number' X]['to-number' X]['count' N] ['tac' assigned TAC]['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-MAX or TAC X...

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.

**NOTE:**

When supporting DCS, it is required that the far-end node trunk group be assigned the same group number.

- **Group Type** — Enter “tie” to identify the trunk group type.

- **CDR Reports** — Enter “y” (default) to provide a detailed Call Detail Recording (CDR) record of both incoming and outgoing calls made on all trunks in the trunk group.
- **Group Name** — Enter a unique name that identifies the trunk group. Up to 15 characters can be used; default is OUTSIDE CALL.
- **COR** — Enter a class of restriction (COR) number from 0 to 95 that reflects the desired restriction; default is 1.
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. CDR also uses the TAC to identify the trunk group on associated CDR reports. A different TAC must be assigned to each trunk group. Valid entries are TACs that are compatible with the System Dial Plan (1 to 4 digits; 1 to 3 digits for DCS or to remotely control it).
- **Direction** — Enter whether the trunk group is “incoming”, “outgoing”, or “two-way” (default). Note that the Direction administered will affect which timers will appear on the Administrable Timer page.
- **Outgoing Display** — Specifies whether or not the trunk group name is displayed on a terminal placing an outgoing call. Valid entries are “y” or “n” (default).
- **Trunk Signaling Type** — This field specifies the kind of signaling to use for members in the trunk group, and if administered to a non-blank value, severely restricts the ports that can be administered in the trunk group.

Valid values are “cont” (continuous) or “dis” (discontinuous). Entering one of these values indicates that only ports from a TN2140 Italian tie trunk may be administered as trunk group members. Entering one of these values will cause the Send Release Ack?, Receive Release Ack? and Send Answer Supervision? fields to appear. If the field is blank (default), ports from any other Tie trunk circuit pack may be added as trunk group members. The value in this field will also affect which timers will appear on the Administrable Timer Page.
- **Dial Access** — Enter “y” to allow the trunk group to be accessed via a TAC. Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter the number of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console.
- **Night Service** — Enter the extension number assigned to Night Service. The extension number entered will receive all incoming calls when Night Service is activated and the individual trunk member Night field is not administered to override this group extension. Valid entries are an extension number (can be a VDN extension), the attendant group access code (“attd”), or leave blank if the Trunk Type (in/out) field is not “auto/...”.
- **Queue Length** — Enter the number of outgoing calls that can be held waiting. A “0” (default) indicates no calls will be held in queue. Enter “0” for DCS trunks. This field is not displayed if the Direction field is “incoming”.

- **Incoming Destination** — Indicates where incoming calls will terminate. Valid entries are an extension number, the attendant group access code ("attd"), VDN, or leave blank if the Trunk Type (in/out) field is not "auto/...". If "attd" is entered, a call is treated as an LDN call.
- **Comm Type** — Indicates if the trunk is to be used for voice, data, alternate voice-data (avd), or alternate voice/voice grade data and 56-kbps digital data (rbavd) calls. Valid entries are "avd", "rbavd", "voice" (default), or "data". Type "rbavd" supports access to voice/data SDN service on robbed-bit T1 transmission facilities.



NOTE:

"avd" and "rbavd" types require trunk member ports on a DS1 circuit pack. An "rbavd" type requires that the DS1 circuit pack be administered for robbed-bit, or (if mixed mode signaling is allowed on the DS1 circuit pack) ISDN-EXT, or ISDN-PRI. An "avd" type requires that the DS1 circuit pack be administered for either common-chan or CAS signaling.

- **Auth Code** — Enter "y" if an authorization code must be dialed to complete incoming calls on the trunk group; otherwise, enter "n" (default). This field can only be "y" if the Authorization Codes feature is enabled on the System-Parameters Customer-Options form.
- **BCC** (Bearer Capability Class) — Displayed when the ISDN-PRI is enabled on the System-Parameters Customer-Options form and the Comm Type is "data", "avd", or "rbavd". Used by the Generalized Route Selection feature and identifies the type of traffic on trunks in the group. The BCC entry is used by far-end tandem switches to select outgoing routing facilities with equivalent BCC classes. Valid entries are 0, 1, 2, 3, and 4; default is 0 for "avd" and 2 for "data".



NOTE:

Refer to "Generalized Route Selection" in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls.

- **ITC** (Information Transfer Capability) — Displayed when the Comm Type field is "data", "avd", or "rbavd" and the BCC field is not "0". Used by the GRS feature and enables the system to route calls to restricted or unrestricted facilities according to the endpoint's information transfer capability; default is restricted. A trunk member is said to be restricted if the circuit pack it belongs to is administered as "zcs" in the Line Coding field of the DS1 form. A trunk member is said to be unrestricted if the circuit pack it belongs to is administered as "b8zs" or "hdb3" in the Line Coding field of the DS1 form. A restricted trunk member can only carry restricted calls. An unrestricted trunk member may carry restricted or unrestricted calls. A trunk group with a transfer capability of unrestricted may have only unrestricted trunk members.

- **Trunk Type (in/out)** — This field is not displayed if the “Trunk Signaling Type” is “tge”, “tgi”, or “tgu”. Identifies the physical type of incoming and outgoing trunks. The trunks may be “automatic”, “immed-start”, “wink-start” or “delay-dial”; additionally, they may be “cont” (continuous-seize-ack) if Trunk Signaling Type is “cont”. If the Trunk Signaling Type is “dis”, only “disc” (discontinuous-seize-ack) and “immed” are allowed.

When the Trunk Signaling Type is “dis”, the valid values are:

disc/disc disc/immed immed/disc immed/immed

When the Trunk Signaling Type is “cont”, the valid values are:

auto/auto	auto/cont	auto/delay	auto/immed	auto/wink
cont/auto	cont/cont	cont/delay	cont/immed	cont/wink
delay/auto	delay/cont	delay/delay	delay/immed	delay/wink
immed/auto	immed/cont	immed/delay	immed/immed	immed/immed
wink/auto	wink/cont	wink/delay	wink/immed	wink/wink

Otherwise, the valid values are:

auto/auto	auto/delay	auto/immed	auto/wink
delay/auto	delay/delay	delay/immed	delay/wink
immed/auto	immed/delay	immed/immed	immed/wink
wink/auto	wink/delay	wink/immed	wink/wink

**NOTE:**

For “immed/immed” trunks (on incoming trunks), the far-end PBX seizes the trunk and then sends digits without waiting for acknowledgment from the receiving PBX. When heavily loaded, the receiving PBX may incur a short delay in attaching a Touch Tone Receiver to this call and, therefore, cause it to lose digits. Using wink-start trunks or increasing the dial-guard timer value on the far-end PBX avoids this problem.

- **Incoming Rotary Timeout (sec)** — The timing interval required by the central office that the System is connected to. If the System is connected to a Step-by-Step office, 18 or more seconds must be used; if the System is not connected to a Step-by-Step office, 5 or more seconds may be used. Valid entries are 5 to 99, or leave blank; default is 5.
- **Outgoing Dial Type** — Not displayed if the Trunk Signaling Type is “tge”, “tgu”, or “tgi”; the Dial Type is internally set to “rotary”. Identifies the type of pulsing required on an outgoing call. Valid entries are “tone” (default), “rotary”, or (if the Trunk Signaling Type is blank) “mf”.

**NOTE:**

Multifrequency Signaling must be enabled on the System-Parameters Customer-Options form before a value of “mf” may be administered.

Outgoing Dial Type may not be set to “mf” if the Used for DCS field (Page 2 of the form) is set to “y”.

- **Incoming Dial Type** — Not displayed if the Trunk Signaling Type is “tge”, “tgu”, or “tgi”; the Dial Type is internally set to “rotary”. Indicates the type of pulses required on an incoming trunk group. Valid entries are “tone” (default), “rotary”, or if the Trunk Signaling Type is blank, “mf”. The value in this field impact the appearance of the Incoming Partial Dial Timer on the Administrable Timer Page.

**NOTE:**

Multifrequency Signaling must be enabled on the System-Parameters Customer-Options form before a value of “mf” may be administered.

Incoming Dial Type may not be set to “mf” if the Used for DCS field (Page 2 of the form) is set to “y”.

- **Wink Timer (msec)** — Displayed when the Trunk Type for the “out” side of the in/out field is “wink” or “delay”. Enter a number between 300 to 5000 in increments of 50; default is 300. This timer is sent only to TN760C (vintage 4 or later), TN767, and TN464C (or later) circuit packs.

**NOTE:**

This value is the same for each member of the trunk group where the timing is administered; that is, if members from TN760B ports are mixed with members from TN760C V4 ports, only the TN760C V4 ports are set to this value. (The TN760B ports use a default value on the circuit pack itself.)

United States domestic requirements state that for a “wink” start trunk, the wink must begin within five seconds (the “wait-for-wink-to-start” time) and must end within 290 ms (the “wait-for-wink-to-end” time). For a “delay” dial trunk, the wink must begin within 140 ms (the “wait-for-wink-to-start” time). and end when the switch is ready to receive digits.

The “wink” start “wait-for-wink-to-end” time and the “delay” dial “wait-for-wink-to-start” time are **both** administered through the use of this field.

- **Disconnect Timing (msec)** — Specifies the minimum time period (in ms) that is required for recognition of disconnect by the serving central office or far-end PBX. The time interval must be in increments of 10 (from 140 to 2550 ins); default is 500. This timer is not used for ports on a circuit pack that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers. These latter two timers replace Disconnect Timing.
- **Digit Treatment** — Indicates if digits are to be absorbed or inserted. A blank indicates no digit absorption or insertion. Valid entries are “absorption” or “insertion”, or leave blank.

⇒ **NOTE:**

DCS features that use the remote-tgs button (on the remote switch) do not work when the local trunk group deletes or inserts digits on the incoming call. These buttons try to dial a local TAC. Adding or deleting digits defeats this operation and renders the remote feature inoperable. If digit manipulation is needed, use it on the outgoing side, based on the routing pattern. One reason for digit manipulation is insertion of the AAR feature access code (FAC).

- **Digits** — Indicates the digits to be inserted or number of digits to be absorbed. This field is used with the Digit Treatment field. No entry indicates no digit absorption or insertion is done. Valid entries are the number of digits to be absorbed (1 to 5) or the actual digits to be inserted (up to 5 digits including the characters '*' and '#') (incoming).
- **Expected Digits** — This field specifies the number of digits that the far-end sends for an incoming connection. Valid values are between 1 and 9 inclusive. This field only appears if the Trunk Signaling Type field is left blank, the Direction is "incoming" or "two-way", and the Incoming Dial Type is "mf".
- **Sig Bit Inversion** — This field allows the user to administer the signaling bit inversion (the A-bit and B-bit inversion) on a per port basis. This field applies only to TN464B or later suffixed circuit packs. The CCITT standards define on-hook to be "1" in the A-bit and off-hook to be "0". This definition is the opposite of the EIA definition. The default in the TN464 firmware for signaling bit inversion is use the CCITT standard for 32-channel mode and to use the EIA standard for 24-channel mode. Valid entries are "A", "A&B", "B", and "none" (default).
- **Connected to Toll** — Enter "y" if connected to a CO toll office. This field is displayed when the Trunk Type field contains an entry of "auto/...", "delay/...", "wink/...", or "immed/...".
- **STT Loss (Satellite PBX Tie Trunk Loss)** — Displayed when Connected to Toll is "n". Specifies the loss plan to be used for the trunk group. Valid entries are "normal" (default) or "low". This option affects the transmission performance of a private PBX network.

Although the use of this option has wider applications, only for the simplest network arrangements should this field be administered without Network Engineering advice. The "low" option (described as the ISL digital low loss plan in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Reference*, 555-025-101) should be used when:

1. Stations on the satellite PBX complain of too much loss on calls to the public network.
2. The PBX network consists of no more than three PBXs: one main and one or two satellite PBXs.
3. All PBXs have the "low" option available.

4. The total DS1 trunk connection length is less than 100 miles.

If the preceding conditions are not met, obtain Network Engineering assistance. The field entry is based on the following:

normal — Applies to AIU-TT (Analog Interface Unit at Customer Switching System for Tie Trunk — 4-wire E&M interface) and DIU-TT (Digital Interface Unit at Customer Switching System for Tie Trunk — voice or AVD DS1 interface) loss plans.

- **low** — Applies to AIU-TTS (same as AIU-TT, but suitable for private network connections that can be connected in tandem with public network connections) and DIU-TTS (same as DIU-TT, but suitable for private network connections that can be connected in tandem with public network connections). These interfaces were formerly referred to as DIU DTT ISL.

- **DTT to DCO Loss** (Digital Tie to Digital CO Trunk Loss) — Specifies the loss plan to be used for the trunk group for interconnections from a DIU-CO (Digital Interface Unit at a Central Office) to a DIU-DTT (Digital Interface Unit for a Digital Tie Trunk Interface). This field is displayed when the Trunk Type field contains an entry of “auto/...”, “delay/...”, “wink/...”, or “dimmed/...”.

This option affects the transmission performance of public network access via a private PBX network. Choose the “low” option if private network users complain about too much loss on calls to the public network otherwise, the “normal” option should be used. Valid entries are “normal” (default) and “low”. The entry is based on the following:

- **normal** — Corresponds to a (0, -6) dB gain pair and is used as the default option. (This corresponds to the DTT/EIA DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Reference*, 555-025-101.)
- **low** — Corresponds to (+3, -3) dB gain pair. Low is used for internetwork applications in which no significant configuration will encounter echo, stability, or overload problems because of reduced loss. With the low gain pair, subscriber station DTMF signals transmitted through the digital class 5 office into the customer network may experience non-recoverable digit mutilation in secondary signaling applications (that is, DTMF signaling after the connection has been established). (This corresponds to the DTT/ISL DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Reference*, 555-025-101.)

- **Incoming Dial Tone** — Indicates whether or not the trunk group will pass on incoming dial tone to the calling party. Valid entries are “y” or “n”.
- **Send Release Ack** — This field appears only when the Trunk Signaling Type has a value of either “cont” or “dis”. (Thus, this field only applies to TN2140 ports.) Enter “y” (default) if the switch must send a release acknowledgment in response to a forward or backward release signal.

- **Receive Release Ack** — This field appears only when the Trunk Signaling Type has a value of either “cont” or “dis”. (Thus, this field only applies to TN2140 ports.) Enter “y” (default) if the switch should expect to receive a release acknowledgment in response to a forward or backward release signal.
- **Line Length** — This field appears only when the Trunk Signaling Type has a value of “tge”, “tgi”, or “tgu”. (Thus, this field only applies to TN497 ports.) This field, in combination with other characteristics of a particular call, is used to determine the transmission plan requirements for the call. Valid entries are “long” and “short” (default).
- **Bit Rate** — Displayed when Comm Type is “avd” or “rbavd.” It also appears if the Comm Type is “data,” but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form. Specifies the baud rate to be used by pooled modems. Valid entries are 300, 1200 (default), 2400, 4800, 9600, and 19200.
- **Synchronization** — Displayed when Comm Type is “avd” or “rbavd.” It also appears if the Comm Type is “data,” but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form. Enter whether the trunk group will use synchronous or asynchronous communications. Valid entries are “async” (default) and “sync.”
- **Duplex** — Displayed when Comm Type is “avd” or “rbavd”. It also appears if the Comm Type is “data”, but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form. Specifies either full or half duplex for the trunk group. Valid entries are “full” (default) or “half.”
- **Disconnect Supervision-In** — This field appears when the Direction is either “incoming” or “two-way”. Internally, the field is set to “n” if the Direction is “outgoing”. Enter “y” (default) to indicate that the far-end has the ability to release a trunk when the calling party releases from a call and the system is able to recognize the release signal.
- **Disconnect Supervision-Out** — This field appears when the Direction is either “outgoing” or “two-way”. Internally, the field is set to “n” (default) if the Direction is “incoming”. If the field is set to “y” a Warning Message appears to alert the user of possible trunk lockups. This field specifies whether trunks in this trunk group provide disconnect supervision when seized outgoing (that is, whether these trunks should be allowed to participate in outgoing trunk to outgoing trunk calls. This field is set independently of the trunk-to-trunk transfer system parameter, although both options must be set appropriately if outgoing trunk to outgoing trunk transfers are desired.
- **Send Answer Supervision** — Appears when Trunk Signaling Type is “cont” or “dis”. Enter “y” (default) if the switch should signal that the destination party has answered. This field only applies to TN2140 ports.
- **Answer Supervision Timeout** — Used for analog port circuits to indicate the amount of time in seconds the System allows for a call to be answered before beginning a CDR record of a call. This interval begins as soon as the outgoing trunk is seized. Valid entries are 0 to 250; default is 10.

⇒ NOTE:

This timeout does not override answer supervision sent from the network or other firmware (DS1 port circuit timers). DS1 firmware-sent answer supervision is administered in the Outgoing End of Dialing field on Page 3 of the Trunk Group form (Administrable Timers page).

- **Receive Answer Supervision** — Not displayed if the Trunk Signaling Type is "tge", "tgu", or "tgi". Specifies whether or not the network provides answer supervision for the trunks. Answer supervision refers to notification from the far-end that the called party has gone off-hook to answer the call. When answer supervision is provided, the originating PBX can classify a call as answered using the Answer Supervision Timeout field entry (for domestic circuit packs) or, for circuit packs that take administrable timers, by using the Outgoing End of Dial timer. For trunks over which answer supervision is provided by the network, set this field to "y" and the Answer Supervision Timeout field to "0" so that the firmware timeout is disabled. The firmware timeout is automatically set to "0" on circuit packs that take the administrable Outgoing End of Dial timers. Receive Answer Supervision must be set to "n" (default) if the Direction field is "incoming".

Page 2 of the Form

- **ACA Assignment** — Specifies whether or not Automatic Circuit Assurance (ACA) measurements will be taken for this trunk group. Valid entries are "y" or "n" (default). If "y" is entered, complete the next three fields.
- **Long Holding Time (hours)** — Only displayed if ACA Assignment is "y". The length in hours that the System will consider as being a long holding time. If "0" is entered, the System will not consider long holding calls. Valid entries are 0 to 10; default is 1.
- **Short Holding Time (secs.)** — Only displayed if ACA Assignment is "y". Specifies the length in seconds that the System will consider as being a short holding time. If "0" is entered, the System will not consider short holding calls. Valid entries are 0 to 160; default is 10.
- **Short Holding Threshold** — Only displayed if ACA Assignment is "y". The number of times that the System will record a short holding call before an attendant or display-equipped voice terminal user is alerted to the possibility of a faulty trunk. Valid entries are 0 to 30; default is 15.
- **Measured** — Indicates if the System will transmit data for this trunk group to the Call Management System. Enter "internal" if the data is to be sent to the Basic Call Management System (internal to the switch) for subsequent measurement reports and "external" to send the data to the Call Management System Adjunct. Enter "both" to send the data to both systems for measurement reports. Enter "none" (default) if trunk group measurements are not required.
- **Internal Alert** — Specifies if internal ringing and coverage will be used for incoming calls. Valid entries are "y" or "n" (default).

- **Data Restriction** — Used to prevent System features from generating tones on a data call that would cause erroneous data transmission. Valid entries are “y” or “n” (default).
- **Glare Handling** — Only displayed when the Direction field is “two-way” and the outgoing side of the Trunk Type field is either “wink” or “delay”. This field determines how glare situations should be treated. Valid entries are “control”, “backoff”, or “none” (default).

Warnings are generated if the field is changed to either “control” or “backoff” and ports for the trunk group are not capable of detecting glare.

- **Used for DCS** — Specifies whether the trunk group will send and receive messages on a DCS signaling link. Valid entries are “y” or “n” (default).



NOTE:

This field cannot be activated if the tie trunk group number is greater than 255, if there are more than 255 members in the trunk group, or if the Trunk Access code is more than 3 digits long.

- **PBX ID** — Displayed when the Used for DCS field is “y”. Enter the ID of the PBX at the other end of this trunk.
- **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are “y” or “n” (default).
- **Suppress # Outpulsing** — Indicates end-to-end signaling begins with (and includes) the “#” when “y” is entered in this field. The final “#” is suppressed in cases where System would normally outpulse it. This field should be “y” when the Central Office (for example, rotary) or any other facility treats “#” as an error; default is n.
- **Seize When Maintenance Busy** — This field is effective only for ports on TN760C (or later release), TN767, and TN464C (or later release) circuit packs. It indicates whether an outgoing seize is generated when a trunk is maintenance busied, and whether the far-end switch is administered to do likewise. This supports the Electronic Tandem Network Busyout feature. The intended use of this feature is to prevent the far-end PBX from reporting problems concerning a trunk that has been removed from service at the near-end. The setting of this field has no effect on the behavior of the far-end machine; it controls the behavior of the near-end switch and the *expected* far-end behavior.

If the administered value of this field is either “near-end” or “both-ends”, an outgoing seize will be initiated whenever a trunk in this trunk group is maintenance busied. The seize is maintained until the maintenance busyout is released. This action will likely cause alarms at the far-end switch, perhaps leading to a far-end maintenance busy out, unless the far-end switch is administered to expect this behavior.

If the administered value of this field is either "far-end" or "both-ends", any abnormally long incoming seize⁷ (including failure to drop from a completed call) is *assumed to be the result of a far-end maintenance busy condition*. Note that this assumption may be incorrect since the abnormally long seize may actually be due to a transient or permanent failure of the trunk circuit. Regardless of the cause of the abnormally long seize, the near-end response is to:

1. generate a warning alarm indicating the trunk is assumed to be maintenance busy at the far-end,
2. remove the trunk from service, and
3. keep the trunk out of service until a far-end disconnect is received.

The values allowed depend on the Direction field. When the Direction is "incoming", the valid values are "far-end", and "neither-end".

When the Direction is "outgoing", the valid values are "near-end", and "neither-end".

When the Direction is "two-way", the valid values are "both-ends", "far-end", "near-end", and "neither-end".

Page 3 of the Form (Administrable Timers)

- **Incoming Disconnect (msec)** — A disconnect signal on an incoming call is considered valid only if it continues at least for the time specified by this timer. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank; default is 500. The field appears only for an incoming or two-way trunk group when the Trunk Signaling Type is either blank or "cont."
- **Incoming Dial Guard (msec)** — Enter the interval between the detection of an incoming seizure and the acceptance of the first digit. The PBX will not accept digits before this timer expires. This timer is administrable when the Trunk Signaling Type is blank. Valid entries are 10 to 2550 in increments of 10; default is 70.
- **Incoming Partial Dial (sec)** — Enter the time (in sec) allowed between digits. Valid entries are 5 to 255 in increments of 1; default is 18. This timer appears if the Trunk Signaling Type is blank, "cont", or "dis", and the Incoming Dial Type is "rotary". It also appears if the Trunk Signaling Type is "tge", "tgu", or "tgi".

7. When an incoming seize is detected, the normal behavior is to either immediately direct the call to an administered destination, or to wait for an administered period of time for incoming destination digits. If digits are expected but not received, the calling party receives the DID/TIE intercept treatment administered on the feature related system parameters form.

- **Incoming Incomplete Dial Alarm (sec)** — Enter the maximum time (in sec) between incoming seizure and receipt of all digits. Intervals greater than this generate an inline error. Valid entries are 1 to 255 in increments of 1; default is 255. This timer only appears if the Trunk Signaling Type is blank, "cont", or "dis". This timer is sent to the TN464C (or later), TN767, and TN2140 tie circuit packs.
- **Outgoing Disconnect (msec)** — A disconnect signal on an outgoing call is considered valid only if it continues at least for the time specified by this timer. This timer begins timing when a disconnect signal has been detected on an outgoing call over the trunk, and resets when the signal is no longer detected. If the timer times out, the trunk is dropped. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank. Default is 500. This field only appears for outgoing or two-way trunk groups when the Trunk Signaling Type is either blank or "cont".
- **Outgoing Dial Guard (msec)** — This timer specifies the time between seizure acknowledgment of a trunk and the outpulsing of digits. For trunks that do not provide seizure acknowledgment, the timer specifies the minimum time between seizure and the outpulsing of digits. Any digit dialed by the station user after they lift the receiver, but before the timer times out, will not be outpulsed until the timer expires. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1600. This field appears when the Trunk Signaling Type is blank, "cont", or "dis".
- **Incoming Glare Guard (msec)** — Enter the minimum time (in msec) between the time an incoming trunk is released and the same trunk can be seized for an outgoing call. This guard time will ensure the far-end has released all equipment after the incoming trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1500. This field only appears when the Direction is "two-way".
- **Outgoing Glare Guard (msec)** — Enter the minimum time (in msec) between the time an outgoing trunk is released and the same trunk can be seized for another outgoing call. This guard time will ensure that the far-end has released all equipment after the outgoing trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank. Default is 1500. This field only appears for outgoing and two-way trunk groups.
- **Outgoing Rotary Dial Interdigit (msec)** — Enter the interval (in msec) between rotary dial digits being outpulsed by the system (that is, PBX). Valid entries are 150 to 2550 in increments of 10. The field cannot be blank. Default is 800. This timer appears if the Trunk Signaling Type is blank, "cont", or "dis", and the Outgoing Dial Type is "rotary". It also appears if the Trunk Signaling Type is "tge", "tgu", or "tgi".
- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the far-end. Valid entries are 20 to 2550 in increments of 10. The field cannot be blank. Default is 500. This field appears when the Trunk Signaling Type is "cont" and the Direction is "incoming" or "two-way".

⇒ NOTE:

TN2140 ports are the only tie ports that can receive this timer.

- **Outgoing End of Dial (sec)** — Enter the maximum time (in sec) a trunk may wait for answer supervision after dialing an outgoing call. During cut-through operation, timing begins after each outgoing digit is sent by the PBX and timing ceases after the far-end sends answer supervision. If the timer expires, the PBX acts as if it had received answer supervision. On slenderized operation, the timer begins after the last digit collected is sent by the PBX. The timer ceases when the far-end sends answer supervision. If the timer expires, the PBX acts as if it has received answer supervision. This field appears when Direction is "outgoing" or "two-way" and Receive Answer Supervision is "n". It also appears when Direction is "outgoing" or "two-way" and Trunk Signaling Type is "tge", or "tgi". This field will not appear if the Receive Answer Supervision field is "y", but a zero (0) value will be sent down to the firmware to disable the timer. This timer applies to outgoing and two-way trunk groups. Valid entries are 1 to 254 in increments of 1. Default is 10.

⇒ NOTE:

This field controls the firmware answer-supervision timer on ports that take the administrable timers; the Answer Supervision Timeout field on Page 1 of the Trunk Group form controls answer supervision for ports that do not take administrable timers. This field and the value administered in the Answer Supervision Timeout field on the Trunk Group form should be the same value.

- **Outgoing Seizure Response (sec)** — Enter a maximum time (in sec) by which the PBX should receive the proceed-to-dial indication from the far-end after sending the seize signal. If the indication is not received in this time, a seizure failure response is uplinked. Valid entries are 1 to 255 in increments of 1. Default is 5 sec. This timer only appears when Trunk Signaling Type is blank, "cont", or "dis". This timer is sent to the TN464B (or later), TN767, TN439, TN458, TN760Dv15 (or later), and TN2140 tie circuit packs.
- **Programmed Dial Pause (msec)** — Enter the length (in msec) of a pause during abbreviated dialing, ARS outpulsing, and terminal dialing operations. This timer is administrable for all outgoing and two-way trunk groups when Trunk Signaling Type is "cont" or "dis". Valid entries are 100 to 25500 in increments of 100. Default is 1500 msec. This timer is sent to the TN464B (or later), TN767, TN458, TN760Dv15 (or later), and TN2140 tie circuit packs.
- **Disconnect Signal Error (sec)** — Enter a maximum time (in sec) within which a disconnect signal from the far-end is expected after the internal party (a station or a tie trunk) goes on-hook. If the timer expires, the system can assume a disconnect failure and take an appropriate action (such as an error message). Valid entries are 1 to 255 in increments of 1. Default is 240 sec. This timer appears when the Trunk Signaling Type is blank, "cont", or "dis".

- **Outgoing Last Digit (sec)** — Enter the maximum time (in seconds) to wait for the next digit dialed. After the timer expires, no more digits are accepted by the circuit pack. It will only be administrable if the Trunk Signaling Type is “tgu”, “dis” or “cont” and the trunk group Direction is “two-way” or “outgoing”. Valid entries are 1 to 40; default is 10. Only TN2140 and TN497 ports receive this timer.
- **Normal Outgoing Seize Send (msec)** — Enter the number of milliseconds to ground the M-lead. Outgoing seizure is signaled by the calling switch momentarily grounding the M-lead for the duration specified by this timer. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “two-way” or “outgoing”. Valid entries are 60 to 250 in increments of 10. Default is 70. Only TN2140 ports receive this timer.
- **Release Ack Send (msec)** — Enter the duration (in msec) of the forward release acknowledgment signal. After receiving a forward release signal, the called switch must send the forward release acknowledgment signal. This signal is sent by grounding the M-lead for the duration specified by this timer. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “two-way” or “incoming”. Valid entries are 500 to 1200 in increments of 100. Default is 600. Only TN2140 ports receive this timer.
- **Seize Ack Delay (msec)** — Enter the maximum time (in msec) between receiving a seizure and the sending of seizure acknowledgment by the called switch. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 40 to 120 in increments of 10. Default is 100. Only TN2140 ports receive this timer.
- **Answer Send (msec)** — Enter the duration (in msec) of the answer signal pulse. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 60 to 120 in increments of 10. Default is 80. Only TN2140 ports receive this timer.
- **Outgoing Disconnect Send (msec)** — Enter the duration (in msec) of the M-lead ground at the calling switch during disconnect. Forward release is signaled by the calling switch by grounding the M-lead for the duration specified by this timer. It is only administrable if the Trunk Signaling Type is “dis” and the trunk group Direction is “two-way” or “outgoing”. Valid entries are 500 to 1200 in increments of 100. Default is 800. Only TN2140 ports receive this timer.
- **Seize Ack Send (msec)** — Enter the duration (in msec) of the seize acknowledge pulse. This field appears only if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 40 to 120 in increments of 10. Default is 80. Only TN2140 ports receive this timer.

- **Incoming Disconnect Send (msec)** — Enter the duration (in msec) of the M-lead ground at the called switch during disconnect. Calls may be cleared by either the calling switch (forward release) or the called switch (backward release). Backward release is signaled by the called switch by grounding the M-lead for the duration specified by this timer. It is only administrable if the Trunk Signaling Type is “dis” and the trunk group Direction is “incoming” or “two-way”. Valid entries are 500 to 1200 in increments of 100. Default is 800. Only TN2140 ports receive this timer.
- **Glare** — Enter the minimum time (in msec) between sending an outgoing seizure and receiving a seizure acknowledgment. If seizure acknowledgment is received before expiration of the timer, a glare condition is assumed. It is only administrable if the Trunk Signaling Type is “cont” and the trunk group Direction is “two-way” or “outgoing”. Valid entries are 40 to 100 in increments of 10. Default is 40. Only TN2140 ports receive this timer.
- **Tone (msec)** — Enter the length of a DTMF tone sent in response to a button depression at a hybrid station set. Valid entries are 20 to 2550 in increments of 10; default is 350. This timer is only administrable when the Trunk Signaling Type is blank.
- **Pause (msec)** — Enter the minimum length of a pause between tones being sent in response to button depressions at a hybrid station set. It is only administrable if the Trunk Signaling Type is blank. Valid entries are 20 to 2550 in increments of 10; default is 150.
- **PPS** — Enter either “10” or “20” to specify the pulses per second (PPS) assigned to rotary dial pulse trunk groups. Valid entries are “10” or “20”. Default is “10”.

**NOTE:**

The TN439, TN458, TN497, and TN767 circuit packs can only perform at 10pps.

- **Make (msec)** — Enter the duration of the make interval (the pause between pulses) while the system is outputting digits using dial pulse signaling.

If the PPS field is “10”, the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of five. The field cannot be blank. The default is 40.

If the PPS field is “20”, the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of five. The field cannot be blank. The default is 20.
- **Break (msec)** — Enter the duration of the break interval (the pulse duration) while the system is outputting digits using dial pulse signaling.

If the PPS field is “10”, the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of five. The field cannot be blank. The default is 60.

If the PPS field is "20", the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of five. The field cannot be blank. The default is 30.

Page 4 of the Form (ATMS Thresholds)

This form appears when the Direction on Page 1 is "outgoing" or "two-way" and ATMS is enabled on the Feature-Related System Parameters form.

- **TTL Type** — Specifies the type of TTL selected for testing trunks. The TTL type determines what ATMS tests can be completed and thus which threshold values need to be administered. The different TTLs supported are 105 with return loss (105-w-rl) (default), 105 without return loss (105-wo-rl), high-level tone source (high-level-tone), low-level tone source (low-level-tone), 100-type (100), and 102 type (102). The following table explains the differences between TTL Types:

Type TTL	Description	Example
<i>105-w-rl</i>	Full range of 18 measurements or some defaults for return loss used (56A)	TN771B, ZLC12 and SN261B circuit packs and new 56A mini-responder
<i>105-wo-rl</i>	Cannot return default values for far-end return loss	Older 56A mini-responder
<i>high-level-tone</i>	Sends a fixed sequence of tones at 0 dBm	ZLC12 and SN261B circuit packs
<i>low-level-tone</i>	Sends a fixed sequence of tones at -16dBm	SN261B circuit pack
<i>100</i>	Up to 5 measurements that sends a 1004 Hz tone then a quiet termination	
<i>102</i>	One measurement that sends a 1004 Hz tone	

The far-end switch containing the TTL may be any of the following:

- System 85 R3 PBX equipped with the Maintenance/Test Board (TN771B)
- System 75 R1V2 and beyond, all of which contain the circuitry required to perform the TTL function
- System 85 R2 PBX equipped with the Analog/Digital Facility Test Circuit (ADFTC,SN261)
- DIMENSION FP8 equipped with the Analog Facility Test Circuit (AFTC,ZLC-12)
- Central Office switches equipped with various TTL equipment that provide 100, 102, or 105 test line capabilities (56A)

Other vendor PBXs *may* be supported if compatible test lines are provided by these switches.

Four different versions of the ATMS Threshold Administration page can occur depending upon the measurements allowed by the TTL type selected. The four possibilities are:

1. 105-w-rl and 105-wo-rl — all thresholds appear.
2. high-lts and low-lts — all thresholds (except maximum C-notched noise) appear.
3. 100 — all thresholds (except maximum c-notched noise, 404 Hz loss, and 2804 Hz loss) appear.
4. 102 — only 1004 Hz loss threshold appears.

Page 4 of X

ATMS THRESHOLDS

TTL Type: 105-w-rl_____

TTL Vendor: _____

Trunk Vendor: _____

Trunk Length: _____

Far End Test No: _____

TTL Contact : _____

Trunk Contact : _____

	MARGINAL		UNACCEPTABLE	
	Min	Max	Min	MAX
1004 Hz Loss:	-2	21	-2	21
	-Dev	+Dev	-Dev	-Dev
404 Hz Loss:	9	9	9	9
2804 Hz Loss:	9	9	9	9
Maximum C Message Noise:		55		55
Maximum C Notched Noise:		74		-4
Minimum SRL-HI:		0_		0_
Minimum SRL-LO:		0_		0-
Minimum ERL:		0_		0-

Allow ATMS Busyout, Error Logging and Alarming? y

Maximum Percentage of Trunks Which Can Be Removed from service by ATMS: 0_

Screen 4-91. ATMS Thresholds Form

- **Far End Test No.** — Enter the access number (1 to 20 digits) dialed to reach the TTL.
- **TTL Vendor** — Enter the 0 to 22 alphanumeric character TTL vendor name (the name of the vendor supplying the terminating test line); default is blank.
- **TTL Contact** — Enter the 0 to 25 alphanumeric character TTL vendor contact (the name and/or telephone number of someone from the TTL vendor who can be contacted in the event of problems with the TTL); default is blank.

- **Trunk Vendor** — Enter the 0 to 22 alphanumeric character trunk vendor name (who to notify in the event of problems with the trunks); default is blank.
- **Trunk Contact** — Enter the 0 to 25 alphanumeric character trunk vendor contact (the name and/or telephone number of someone from the trunk vendor who can be contacted in the event of problems with the trunks); default is blank.
- **Trunk Length** — Enter 0 to 4 digits followed by “k” (for kilometers) or “m” (for miles) showing the length of trunk. This field is not required, since it is not used by the G3-MT. It has been included for the G3-MA adjunct to use in aiding with threshold establishment, since noise on a trunk increases with the length of the trunk. The default is “Om”.
- **Marginal Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance. A larger dB value is more restrictive.
- **Marginal Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance; default is 21. A smaller dB value is more restrictive.
- **Unacceptable Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable. A larger dB value is more restrictive.
- **Unacceptable Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable; default is 21. A smaller dB value is more restrictive.
- **Marginal Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone noise level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.

- **Marginal Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as out of tolerance. The default is 55. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as unacceptable. The default is 55. Smaller values are more restrictive.
- **Marginal Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as out of tolerance. The default is 74. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as unacceptable, The default is 74. Smaller values are more restrictive.
- **Marginal Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.

- **Marginal Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Allow ATMS Busyout, Error Logging and Alarming** — Enter “y” to allow ATMS error logging and alarming (subject to filtering depending on the service organization used to deal with alarms); default is n.
- **Maximum Percentage of Trunks Which Can Be Removed From Service by ATMS** — Enter the highest percentage of trunks from the trunk group (0 to 100) that can be removed from service at one time because of unacceptable transmission measurement results; default is 0.

Pages 4 through X of the Form (Group Member Assignments)



NOTE:

The total number of pages, and the first page of Group Member Assignments, will vary depending on whether the Administrable Timer and ATMS Threshold pages are displayed.

- **Administered Members (min/max)** — Indicates the minimum and maximum member number that has been administered for the particular trunk group. This field is displayed on all member pages.
- **Total Administered Members** — Indicates the total number of members administered in the trunk group. This field will appear on all trunk group member pages.
- **Port** — Enter seven characters. The first two characters identify the cabinet (01 to 22 [G3r V2], 1 to 3 [G3s V2, G3i V2]); the third character identifies the carrier (A through E); the fourth and fifth identify the slot number in the carrier (01 to 20 for multi-carrier cabinets or 01 to 18 for single-carrier cabinets); the last two characters identify the circuit number (01 to 31).



NOTE:

When supporting DCS, the trunk must be the same member number on both nodes. The member number of the trunk is the display only field at the far left of the screen, just before the Port field.

- **Code** — Display-only field. Displays the type of circuit pack physically installed or logically administered at the location to which this member has been assigned. If a circuit pack is neither installed nor administered at the member's location, the field is blank.
- **Sfx** — Displays the type of circuit pack (suffix only) physically installed at the location to which this member has been assigned. Field is blank if a circuit pack has not been physically installed.
- **Name** — Enter up to ten characters to identify the member of the trunk group. The name can be a 7-digit telephone number or a 10-digit Trunk Circuit Identification number (provided by trunk supplier).



NOTE:

Previously, Generic 1 Night Service and Balance/Loss information was entered in the Name field as "NT#..." and "TT#...". This information must now be entered in the Night field (below) or the STT Loss field on Page 1 of the form, as applicable.

- **Night** — Enter the extension of the night destination for the trunk. This individual night destination overrides the group night service destination on the first page of the trunk group form. Incoming calls are routed to this destination when the system is placed in night service mode. (If "attd" is entered, night service will be to the attendant.)
- **Mode** — Specifies the signaling mode used on Tie Trunks with TN722A, TN722B, TN760B (or later), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are "e&m" (interface), "simplex" (phantomed), or "protected". This entry must correspond to associated dip switch settings on the circuit pack. This column does not appear if the Trunk Signaling Type is "tge", "tgi", or "tgu".
- **Type** — Specifies the signaling type to be used. This field should only be used with TN760B (or later release), TN722 (with any suffix), TN767, TN2140 (when the Trunk Signaling Type field is "cont"), TN437, TN439, TN464 (with any suffix), or TN458 circuit packs. The Type field appears with the Trunk Signaling Type field is "cont" or blank".

The value of "t5 rev" is only allowed for the TN760D vintage 10 or later. When the Type field is "t5 rev", the Mode field must be "e&m".

Valid entries are "t1 stan", "t1 comp", "t5rev", or "type 5". Default is blank.

- **Ans Delay** — Specifies the length of the wait for answer supervision delay (in ms) for Trunks using the TN722A, TN722B, TN760 (B, C, or D), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are 20 to 5100 in increments of 20; default is no entry (blank) and internally treated as a zero. This delay serves two purposes:
 1. Used to assure that the answer supervision signal is valid and not a secondary delay-dial or wink-start signal.
 2. Used to bridge over momentary off-hook signals resulting from connections made off-network through certain No. 5 Crossbar CCSA switches as the connection is being established.

TRUNK GROUP		Page 1 of X
Group Number: 1	Group Type: tie	CDR Reports? y
Group Name: OUTSIDE_CALL_____	COR: 1_	TAC: _____
Direction: two-way_	Outgoing Display? n	Trunk Signaling Type: _
Dial Access? n	Busy Threshold: 99	Night Service: _____
Queue Length: 0_		Incoming Destination: _____
Comm Type: voice	Auth Code? n	
TRUNK PARAMETERS		
Trunk Type(in/out) : _____	Incoming Rotary Timeout(sec) : 5_	
Outgoing Dial Type: tone_	Incoming Dial Type: tone_	
	Disconnect Timing(msec) : 500_	
Digit Treatment: _____	Digits: _____	
	Sig Bit Inversion: none	
Incoming Dial Tone? y		
Disconnect Supervision- In y Out? n		
Answer Supervision Timeout: 10	Receive Answer Supervision? n	

Screen 4-92. Tie Trunk Group Form (Page 1 of X)**Implementation Notes:**

BCC is displayed when the Comm Type is "avd" or when ISDN-PRI is optioned on the System-Parameters Customer-Options form and Comm Type is "avd", "rbavd", or "data".

Connected to Toll and DTT to DCO Loss are displayed when Trunk Type is "auto/...", "delay/...", "immed/", or "wink/...".

STT Loss is displayed when Connected to Toll is "n".

Bit Rate, Synchronization, and Duplex are displayed when Comm Type is "avd" or "rbavd".

ITC is displayed when Comm Type is "data", "avd", or "rbavd" and BCC is "0".

The Expected Digits field appears if the Direction is "incoming" or "two-way", the Trunk Signaling type is blank, and the Incoming Dial Type is "mf."

The Trunk Type, Outgoing Dial Type, incoming Dial Type, and Receive Answer Supervision fields are not displayed if the Trunk Signaling Type field is "tge," "tgi" or "tgu."

The Line Length field only displays if the Trunk Signaling type field is "tge", "tgi", or "tgu."

The Send Release Ack and Receive Release Ack fields are only displayed if Trunk Signaling Type is "cont" or "dis".

TRUNK FEATURES		Page 2 of X
ACA Assignment? n	Measured: none	
	Internal Alert? n	
	Data Restriction? n	
Used for DCS? n	Maintenance Tests? y	
Suppress # Outpulsing? n		
Seize When Maintenance Busy: neither-end		

Screen 4-93. Tie Trunk Group Form (Page 2 of X)**Implementation Notes:**

The Long Holding Time (hours), Short Holding Time (seconds), and Short Holding Threshold fields are displayed when ACA Assignment is "y".

The PBX ID field is displayed if the Used for DCS field is "y".

ADMINISTRABLE TIMERS		Page 3 of X
Incoming Disconnect(msec) : 500	Outgoing Disconnect (msec) : 500	
Incoming Dial Guard(msec) : 70	Outgoing Dial Guard(msec) : 1600	
Incoming Glare Guard(msec) : 1500	Outgoing Glare Guara(msec) : 1500	
Incoming Partial Dial(sec): 18	Outgoing Rotary Dial Interdigit(msec) : 800_	
Outgoing End of Dial (sec): 10	Outgoing Seizure Response (sec) : 5	
Programmed Dial Pause (msec) : 1500	Disconnect Signal Error(sec) : 240	
	Incoming Incomplete Dial Alarm(sec) : 255	
END TO END SIGNALING		
Tone (msec): 350	Pause: (msec): 150	
OUTPULSING TIMING		
PPS: 10	Make (msec): 40	Break (msec): 60

Screen 4-94. Tie Trunk Group Form Administrable Timers Form (Page 3 of X)**Implementation Note:**

The Outgoing Rotary Dial Interdigit field only appears if the Outgoing Dial Type on Page 1 is "rotary".

ADMINISTRABLE TIMERS

Incoming Glare Guard(msec) : 1500_

Outgoing Glare Guard(msec) : 1500_

Incoming Partial Dial(sec) : 18_

Outgoing Rotary Dial Interdigit(msec) : 800_

outgoing End of Dial(sec): 10_

OUTPULSING INFORMATION

PPS: 10

Make(msec) : 40

Break(msec): 60

Screen 4-95. Administrable Timer Page for TGE/TGI type Trunk Group (two-way)

Page 4 of X

TRUNK GROUP

Administered Members (min/max) : xxx/yyy
Total Administered Members: xxx

GROUP	MEMBER	ASSIGNMENTS						
	Port	Code	Sfx	Name	Night	Mode	Type	Ans Delay
1:	_____	_____	-	_____	_____	_____	_____	_____
2:	_____	_____	-	_____	_____	_____	_____	_____
3:	_____	_____	-	_____	_____	_____	_____	_____
4:	_____	_____	-	_____	_____	_____	_____	_____
5:	_____	_____	-	_____	_____	_____	_____	_____
6:	_____	_____	-	_____	_____	_____	_____	_____
7:	_____	_____	-	_____	_____	_____	_____	_____
8:	_____	_____	-	_____	_____	_____	_____	_____
9:	_____	_____	-	_____	_____	_____	_____	_____
10:	_____	_____	-	_____	_____	_____	_____	_____
11:	_____	_____	-	_____	_____	_____	_____	_____
12:	_____	_____	-	_____	_____	_____	_____	_____
13:	_____	_____	-	_____	_____	_____	_____	_____
14:	_____	_____	-	_____	_____	_____	_____	_____
15:	_____	_____	-	_____	_____	_____	_____	_____

Screen 4-96. Tie Trunk Group Form (Pages 4 through X)

To reduce repetition, the remaining pages are not shown. For a complete set of forms, refer to the “Blank Forms Package.”

Implementation Notes:

The Type field does not appear if the Trunk Signaling Type field on Page 1 is “dis”.

The Mode, Type, and Ans Delay fields do not appear if the Trunk Signaling Type field on Page 1 is “tge”, “tgi”, or “tgu.”

Wide Area Telecommunications Service Trunk Group

This form is used to provide access to and/or from a portion of the DDD network via dedicated trunks to and/or from a WATS serving office.

Administration Commands

The following administration commands can be used to access the WATS Trunk Group form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	trunk-group	1-MAX (or 'next')
change	trunk-group	1-MAX or TAC X...
display	trunk-group	1-MAX ['number X']['to-number' X]['count' N] ['tac' assigned TAC]['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-MAX or TAC X...

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Group Type** — Enter "wats" to identify the trunk group type.
- **CDR Reports** — Enter "y" (default) to provide a detailed Call Detail Recording (CDR) record of both incoming and outgoing calls made on all trunks in the trunk group.
- **Group Name** — Enter a unique name that identifies the trunk group. Up to 15 characters can be used; default is OUTSIDE CALL.
- **COR** — Enter a class of restriction (COR) number from 0 to 95 that reflects the desired restriction; default is 1.
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. CDR also uses the TAC to identify the trunk group on associated CDR reports. A different TAC must be assigned to each trunk group. Valid entries are TACs that are compatible with the System Dial Plan (1 to 4 digits; 1 to 3 digits for DCS or to remotely control it).

- **Direction** — Enter whether the trunk group is “incoming”, “outgoing”, or “two-way” (default). Note that the Direction administered will affect which timers will appear on the Administrable Timer page.
- **Outgoing Display** — Specifies whether or not the trunk group name is displayed on a terminal placing an outgoing call. Valid entries are “y” or “n” (default).
- **Dial Access** — Enter “y” to allow the trunk group to be accessed via a TAC; otherwise, enter “n” (default). Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter the number of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console.
- **Night Service** — Enter the extension number assigned to Night Service. The extension number entered will receive all incoming calls when Night Service is activated and the individual trunk member Night field is not administered to override this group extension. Valid entries are an extension number (can be a VDN extension), the attendant group access code (“attd”), or leave blank if the Trunk Type (in/out) field is not “auto/...”.
- **Queue Length** — Enter the number of outgoing calls that can be held waiting. A “0” (default) indicates no calls will be held in queue. Enter “0” for DCS trunks. This field is not displayed if the Direction field is “incoming”.
- **Country** — This field specifies the country code for each subscriber line. Valid values are any number between 1 and 17, inclusive. The value of this field, in conjunction with the values of the Trunk Termination and Trunk Gain fields, will determine the input and trans-hybrid balance impedance requirements for TN465B, TN2146, and TN2147 ports. Refer to the “Country Code Assignments” table in Appendix B for a complete list of valid country codes.

**NOTE:**

Although defined, country codes 12 (France) and 13 (Germany) are not supported and, if entered, will cause an error message to be displayed.

- **Incoming Destination** — Indicates where incoming calls will terminate. Valid entries are an extension number, the attendant group access code (“attd”), VDN, or leave blank if the Trunk Type (in/out) field is not “auto/...”. If “attd” is entered, a call is treated as an LDN call.
- **Comm Type** — Indicates if the trunk is to be used for voice, data, alternate voice-data (avd), or alternate voice/voice grade data and 56-kbps digital data (rbavd) calls. Valid entries are “avd”, “rbavd”, “voice” (default), or “data”. Type “rbavd” supports access to voice/data SDN service on robbed-bit T1 transmission facilities.

⇒ NOTE:

“avd” and “rbavd” types require trunk member ports on a DS1 circuit pack. An “rbavd” type requires that the DS1 circuit pack be administered for robbed-bit, or (if mixed mode signaling is allowed on the DS1 circuit pack) ISDN-EXT, or ISDN-PRI. An “avd” type requires that the DS1 circuit pack be administered for either common-chan or CAS signaling.

- **Auth Code** — Enter “y” if an authorization code must be dialed to complete incoming calls on the trunk group; otherwise, enter “n” (default). This field can only be “y” if the Authorization Codes feature is enabled on the System-Parameters Customer-Options form.
- **Trunk Flash** — Enter “y” or “n” (default) to indicate if access to customized services provided by a far-end (such as Centrex Services) is permitted for this trunk group. The PBX must be directly connected to a far-end that provides such services.
- **BCC (Bearer Capability Class)** — Displayed when the ISDN-PRI is optioned on the System-Parameters Customer-Options form and Comm Type is “data”, “avd”, or “rbavd”. Used by the Generalized Route Selection feature and identifies the type of traffic on trunks in the group. The BCC entry is used by far-end tandem switches to select outgoing routing facilities with equivalent BCC classes. Valid entries are 0, 1, 2, 3, and 4. Default is 0 for “avd” and 2 for “data”.

⇒ NOTE:

Refer to “Generalized Route Selection” in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls.

- **ITC (Information Transfer Capability)** — Displayed for non-ISDN trunk groups, and when Comm Type is “data”, “avd”, or “rbavd” and BCC is not “0”. Used by the GRS feature and enables the system to route calls to restricted (default) or unrestricted facilities according to the endpoint’s information transfer capability. A trunk member is said to be restricted if the circuit pack it belongs to is administered as “zcs” in the Line Coding field of the DS1 form. A trunk member is said to be unrestricted if the circuit pack it belongs to is administered as “b8zs” or “hdb3” in the Line Coding field of the DS1 form. A restricted trunk member can only carry restricted calls. An unrestricted trunk member may carry restricted or unrestricted calls. A trunk group with a transfer capability of “unrestricted” may have only unrestricted trunk members.
- **Trunk Type** — Identifies the physical type of WATS trunk. It may differ for incoming and outgoing types. Valid entries are “ground-start”, “loop-start”, “auto/auto”, “auto/delay”, “auto/immed”, and “auto/wink”.
- **Outgoing Dial Type** — Identifies the type of pulsing required on an outgoing call. Valid entries are “automatic”, “mf”, “tone” (default) or “rotary.”

 NOTE:

Multifrequency Signaling must be enabled on the System-Parameters Customer-Options form before a value of "mf" may be administered.

- **Incoming Dial Type** — Indicates the type of pulses required on an incoming trunk group. Valid entries are "tone" (default) or "rotary".
- **Trunk Termination** — Specifies how the trunk group is terminated. Valid entries are "600ohm" or "rc"; 600ohm is used when the PBX trunk port is connected to terminal equipment (for example, SLC carrier or compensators optioned for 600 ohms input impedance) and the distance to the terminal equipment from the System is less than 3000 feet. Enter "rc" (default) in all other cases.
- **Disconnect Timing (msec)** — Specifies the minimum time period (in ms) that is required for recognition of disconnect by the serving central office or far-end PBX. The time interval must be in increments of 10 (from 140 to 2550 ins); default is 500. This timer is not used for ports on a circuit pack that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers. These latter two timers replace Disconnect Timing.
- **Sig Bit Inversion** — This field allows the user to administer the signaling bit inversion (the A-bit and B-bit inversion) on a per-port basis. This field applies only to TN464B or later suffixed circuit packs. The CCITT standards define on-hook to be "1" in the A-bit and off-hook to be "0". This definition is the opposite of the EIA definition. The default in the TN464 firmware for signaling bit inversion is use the CCITT standard for 32-channel mode and to use the EIA standard for 24-channel mode. Valid entries are "A", "A&B", "B", and "none" (default).
- **Connected to Toll** — Displayed when Trunk Type is "auto/...", "delay/...", "wink/...", or "dimmed/...". Enter "y" if connected to a CO toll office.
- **STT Loss** (Satellite PBX Tie Trunk Loss) — Displayed when Connected to Toll is "n". Specifies the loss plan to be used for the trunk group. Valid entries are "normal" (default) or "low". This option affects the transmission performance of a private PBX network.

Although the use of this option has wider applications, only for the simplest network arrangements should this field be administered without Network Engineering advice. The "low" option (described as the ISL digital low loss plan in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DMI/ISDN-PRI Reference*, 555-025-101) should be used when:

1. Stations on the satellite PBX complain of too much loss on calls to the public network.
2. The PBX network consists of **no more** than three PBXs: one main and one or two satellite PBXs.
3. All PBXs have the "low" option available.

- 4. The total DS1 trunk connection length is less than 100 miles.

If the preceding conditions are not met, obtain Network Engineering assistance. The field entry is based on the following:

- **normal** — Applies to AIU-TT (Analog Interface Unit at Customer Switching System for Tie Trunk — 4-wire E&M interface) and DIU-TT (Digital Interface Unit at Customer Switching System for Tie Trunk — voice or AVD DS1 interface) toss plans.
 - **low** — Applies to AIU-TTS (same as AIU-TT, but suitable for private network connections that can be connected in tandem with public network connections) and DIU-TTS (same as DIU-TT, but suitable for private network connections that can be connected in tandem with public network connections). These interfaces were formerly referred to as DIU DTT ISL.
- **DTT to DCO Loss** (Digital Tie to Digital CO Trunk Loss) — Specifies the loss plan to be used for the trunk group for interconnections from a DIU-CO (Digital Interface Unit at a Central Office) to a DIU-DTT (Digital Interface Unit for a Digital Tie Trunk Interface). This field is displayed when the Trunk Type field contains an entry of “auto/...”, “delay/...”, “wink/...”, or “immed/...”.
- This option affects the transmission performance of public network access via a private PBX network. Choose the “low” option if private network users complain about too much loss on calls to the public network; otherwise, the “normal” option should be used. Valid entries are “normal” (default) and “low”. The entry is based on the following:
- **normal** — Corresponds to a (0, -6) dB gain pair and is used as the default option. (This corresponds to the DTT/EIA DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DNI/ISDN-PRI Reference*, 555-025-101.)
 - **low** — Corresponds to (+3, -3) dB gain pair. Low is used for internetwork applications in which no significant configuration will encounter echo, stability, or overload problems because of reduced loss. With the low gain pair, subscriber station DTMF signals transmitted through the digital class 5 office into the customer network may experience non-recoverable digit mutilation in secondary signaling applications (that is, DTMF signaling after the connection has been established). (This corresponds to the DTT/ISL DCO port to port configuration as described in *DEFINITY Communications System Generic 1 and System 75 and System 85 DS1/DNI/ISDN-PRI Reference*, 555-025-101.)
- **Trunk Gain** — This field specifies the gain of the trunk, and can have the values of “high” (default) or “low”. The value of this field, in conjunction with the values of the Trunk Termination and Country fields, will determine the input and trans-hybrid balance impedance for TN465B, TN2147, and TN2146 ports. All other CO and DID circuit packs will be automatically set to “high”.

- **Bit Rate** — Displayed when Comm Type is “avd” or “rbavd.” It also appears if the Comm Type is “data,” but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form. Specifies the baud rate to be used by pooled modems. Valid entries are 300, 1200 (default), 2400, 4800, 9600, and 19200.
- **Synchronization** — Displayed when Comm Type is “avd” or “rbavd.” It also appears if the Comm Type is “data,” but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form. Enter whether the trunk group will use synchronous or asynchronous communications. Valid entries are “async” (default) and “sync.”
- **Duplex** — Displayed when Comm Type is “avd” or “rbavd.” It also appears if the Comm Type is “data,” but only if the option for ISDN-PRI is enabled on the System-Parameters Customer-Options form. Specifies either full or half duplex for the trunk group. Valid entries are “full” (default) or “half.”
- **Disconnect Supervision-In** — This field appears when the Direction is either “incoming” or “two-way”. Internally, the field is set to “n” if the Direction is “outgoing”. Enter “y” (default) to indicate that the far-end has the ability to release a trunk when the calling party releases from a call and the system is able to recognize the release signal.
- **Disconnect Supervision-Out** — This field appears when the Direction is either “outgoing” or “two-way”. Internally, the field is set to “n” (default) if the Direction is “incoming”. If the field is set to “y” a Warning Message appears to alert the user of possible trunk lockups. This field specifies whether trunks in this trunk group provide disconnect supervision when seized outgoing (that is, whether these trunks should be allowed to participate in outgoing trunk to outgoing trunk calls). This field is set independently of the trunk-to-trunk transfer system parameter, although both options must be set appropriately if outgoing trunk to outgoing trunk transfers are desired.
- **Cyclical Hunt** — Enter “y” (default) if a preferential hunting algorithm is to be used. Otherwise, a linear hunting algorithm will be used.
- **Answer Supervision Timeout** — Used for analog port circuits to indicate the amount of time in seconds the System allows for a call to be answered before beginning a CDR record of a call. This interval begins as soon as the outgoing trunk is seized. Valid entries are 0 to 250; default is 10.

 NOTE:

This timeout does not override answer supervision sent from the network or other firmware (DS1 port circuit timers). DS1 firmware-sent answer supervision is administered in the Outgoing End of Dialing field on Page 3 of the Trunk Group form (Administrable Timers page).

- **Receive Answer Supervision** — Specifies whether or not the network provides answer supervision for the trunks. Answer supervision refers to notification from the far-end that the called party has gone off-hook to answer the call. When answer supervision is provided, the originating PBX can classify a call as answered using the Answer Supervision Timeout field entry (for domestic circuit packs) or, for circuit packs that take administrable timers, by using the Outgoing End of Dial timer. For trunks over which answer supervision is provided by the network, set this field to "y" and the Answer Supervision Timeout field to "0" so that the firmware timeout is disabled. The firmware timeout is automatically set to "0" on circuit packs that take the administrable Outgoing End of Dial timers. Receive Answer Supervision must be set to "n" (default) if the Direction field is "incoming."

Page 2 of the Form

- **ACA Assignment** — Specifies whether or not Automatic Circuit Assurance (ACA) measurements will be taken for this trunk group. Valid entries are "y" or "n" (default). If "y" is entered, complete the next three fields.
- **Long Holding Time (hours)** — Only displayed when ACA Assignment is "y". Is the length in hours that the System will consider as being a long holding time. If "0" is entered, the System will not consider long holding calls. Valid entries are 0 to 10; default is 1.
- **Short Holding Time (secs.)** — Only displayed when ACA Assignment is "y". Specifies the length in seconds that the System will consider as being a short holding time. If "0" is entered, the System will not consider short holding calls. Valid entries are 0 to 160; default is 10.
- **Short Holding Threshold** — Only displayed when ACA Assignment is "y". Is the number of times that the System will record a short holding call before an attendant or display-equipped voice terminal user is alerted to the possibility of a faulty trunk. Valid entries are 0 to 30; default is 15.
- **Measured** — Indicates if the System will transmit data for this trunk group to the Call Management System. Valid entries are "internal", "external", "both", or "none" (default). Enter "internal" if the data is to be sent to the Basic Call Management System (internal to the switch) for subsequent measurement reports and "external" to send the data to the Call Management System Adjunct. Enter "both" to send the data to both systems for measurement reports. Enter "none" if trunk group measurements are not required.
- **Data Restriction** — Is used to prevent System features from generating tones on a data call that would cause erroneous data transmission. Valid entries are "y" or "n" (default).
- **Glare Handling** — Only displayed when the Direction field is "two-way" and the outgoing side of the Trunk Type field is either "wink" or "delay". This field determines how glare situations should be treated. Valid entries are "control", "backoff", or "none".

Warnings are generated if the field is changed to either "control" or "backoff" and ports for the trunk group are not capable of detecting glare.

- **Abandoned Call Search** — Applicable when Trunk Type is "ground-start". Enter a "y" if this trunk group will conduct an Abandoned Call Search to identify a ghost call.

 NOTE:

Abandoned Call Search is designed to work with CO trunks (ground start - analog) that *do not* provide disconnect supervision, Central offices that provide disconnect supervision do not require use of the Abandoned Call Search feature. The CO must support Abandoned Call Search for the feature to work properly.

- **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are "y" (default) or "n".
- **Suppress # Outpulsing** — Indicates end-to-end signaling begins with (and includes) the "#" when "y" is entered in this field. The final "#" is suppressed in cases where System would normally outpulse it. This field should be "y" when the Central Office (for example, rotary) or any other facility treats "#" as an error; default is n.

Page 3 of the Form (Administrable Timers)

- **Incoming Disconnect (msec)** — A disconnect signal on an incoming call is considered valid only if it continues at least for the time specified by this timer. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank; default is 500. This timer is sent to ground-start trunks that are "incoming" or "two-way". The only "incoming" or "two-way" loop-start circuit packs that receive this timer are the TN2138 and TN2147.
- **Outgoing Disconnect (msec)** — A disconnect signal on an outgoing call is considered valid only if it continues at least for the time specified by this timer. This timer begins timing when a disconnect signal has been detected on an outgoing call over the trunk, and resets when the signal is no longer detected. If the timer times out, the trunk is dropped. Valid entries are 50 to 2550 in increments of 10. The field cannot be blank; default is 500. This timer is sent to ground-start trunks that are "outgoing" or "two-way". The only "outgoing" or "two-way" loop-start circuit packs that receive this timer are the TN2138 and TN2147.
- **Outgoing Dial Guard (msec)** — This timer specifies the time between seizure acknowledgment of a trunk and the outpulsing of digits. For trunks that do not provide seizure acknowledgment, the timer specifies the minimum time between seizure and the outpulsing of digits. Any digit dialed by the station user after they lift the receiver, but before the timer times out, will not be outpulsed until the timer expires. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank; default is 1600.

- **Incoming Glare Guard (msec)** — Enter the minimum time between the time an incoming trunk is released and the same trunk can be seized for an outgoing call. This time ensures that the far-end has released all equipment after the incoming trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank; default is 1500. This field only appears when the trunk group is “two-way”.
- **Outgoing Glare Guard (msec)** — Enter the minimum time between the time an outgoing trunk is released and the same trunk can be seized for another outgoing call. This time ensures that the far-end has released all equipment after the outgoing trunk is released. Valid entries are 100 to 25500 in increments of 100. The field cannot be blank; default is 1500. This field only appears when the trunk group is “two-way” or “outgoing”.
- **Outgoing Rotary Dial Interdigit (msec)** — Enter the interval between rotary dial digits being outpulsed by the system (that is, PBX). Valid entries are 150 to 2550 in increments of 10. The field cannot be blank; default is 800. This field only appears when the Outgoing Dial Type is “rotary”.
- **Ringing Monitor (msec)** — Enter the minimum time required to determine if the trunk is disconnected. If the ringing signal disappears for a duration longer than the time specified in this field, the call will be assumed to be disconnected. Valid entries are 200 to 51000 in increments of 200. The field cannot be blank; default is 5200. This timer is sent to TN464C (or later), TN767, TN438 (all), TN465 (all), TN447, TN2138, and TN2147 circuit packs.
- **Incoming Seizure (msec)** — Enter the minimum time required for recognition of incoming ringing signal from the serving CO. Valid entries are 20 to 2550 in increments of 10. The field cannot be blank; default is 500. This timer is sent to TN464C (or later), TN767, TN438 (all), TN465 (all), TN447, TN2138, and TN2147 circuit packs.
- **Outgoing End of Dial (sec)** — Enter the maximum time (in sec) a trunk may wait for answer supervision after dialing an outgoing call. During cut-through operation, timing begins after each outgoing digit is sent by the PBX and timing ceases after the far-end sends answer supervision. If the timer expires, the PBX acts as if it had received answer supervision. On slenderized operation, the timer begins after the last digit collected is sent by the PBX. The timer ceases when the far-end sends answer supervision. If the timer expires, the PBX acts as if it has received answer supervision. This field appears when Direction is “outgoing” or “two-way” and Receive Answer Supervision is “n”. This field will not appear if the Receive Answer Supervision field is “y”, but a zero (0) value will be sent down to the firmware to disable the timer. Valid entries are 1 to 254 in increments of 1. Default is 10.

⇒ NOTE:

This field controls the firmware answer-supervision timer on ports that take the administrable timers; the Answer Supervision Timeout field on Page 1 of the Trunk Group form controls answer supervision for ports that do not take administrable timers. This field and the value administered in the Answer Supervision Timeout field on the Trunk Group form should be the same value.

- **Outgoing Seizure Response (sec)** — Enter the time (in sec) by which the PBX should receive the proceed-to-dial indication from the far-end after sending the seize signal. If the indication is not received in this time, a seizure failure response is uplinked. This timer is sent to TN464B (or later), TN767, TN438B, TN447, TN465B, and TN2147 circuit packs. Valid entries are 1 to 255; default is 5.
- **Programmed Dial Pause (msec)** — Enter the length of a pause during abbreviated dialing, ARS outputting, and terminal dialing operations. This timer is administrable for all outgoing and two-way trunk groups. Valid entries are 100 to 25500 in increments of 100; default is 1500.
- **Disconnect Signal Error (sec)** — Enter the time (in sec) within which a disconnect signal from the far-end is expected after the internal party (a station or a tie trunk) goes on-hook. If the timer expires, the system can assume a disconnect failure and take an appropriate action (such as error message). This timer is administrable on ground-start trunk groups. Valid entries are 1 to 255 in increments of 1; default is 240.
- **Flash Length (msec)** — Specifies the length of the flash signal to be generated toward the Central Office. Valid entries are 10 to 2550 in increments of 10; default is 540. This timer is sent to TN464C (or later), TN465B, and TN2147 ports.
- **Tone (msec)** — Enter the length of a DTMF tone sent to the public network in response to a button depression at a hybrid station set. Valid entries are 20 to 2550 in increments of 10; default is 350.
- **Pause (msec)** — Enter the minimum length of a pause between tones being sent in response to button depressions at a hybrid station set. Valid entries are 20 to 2550 in increments of 10; default is 150.
- **PPS** — Enter either “10” or “20” to specify the pulses per second (PPS) assigned to rotary dial pulse trunk groups. Valid entries are “10” (default) or “20”.

⇒ NOTE:

The TN767 and TN747Bv12 (or later) circuit packs can do only “10” PPS.

- **Make (msec)** — Enter the duration of the make interval (the pause between pulses) while the system is outpulsing digits using dial pulse signaling.

If the PPS field is "10", the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of 5. The field cannot be blank; default is 40.

If the PPS field is "20", the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of 5. The field cannot be blank; default is 20.

- **Break (msec)** — Enter the duration of the break interval (the pulse duration) while the system is outpulsing digits using dial pulse signaling.

If the PPS field is "10", the sum of the Make and Break fields must equal 100. Valid entries are 20 to 80 in increments of 5. The field cannot be blank; default is 60.

If the PPS field is "20", the sum of the Make and Break fields must equal 50. Valid entries are 10 to 40 in increments of 5. The field cannot be blank; default is 30.

- **PPM** — Enter "y" if Periodical Pulse Metering (PPM) pulses should be collected from the public network to determine call cost. If this field is "y," the Frequency field is displayed.

- **Frequency** — Displayed if the PPM field is "y." Identifies the PPM pulse frequency(ies). Circuit packs can listen for up to three different frequencies, (12kHz, 16kHz, and 50Hz), plus two frequency combinations, (50Hz/12kHz and 50Hz/16kHz). Valid entries are "12K", "16k", "50", "50/12k" (default), and "50/16k". This field is sent to the TN465B and TN2138 circuit packs.

⇒ NOTE:

The TN465B can only detect 12k and 16kHz PPM. Therefore, if "50/12k" or "12k" is administered, the circuit pack will be set to detect 12kHz. If "16k", "50", or "50/16k" is administered, the circuit pack will be set to detect 16kHz.

Page 4 of the Form (ATMS Thresholds)

This form appears when the Direction field on Page 1 is "outgoing" or "two-way" and ATMS is enabled on the Feature-Related Systems Parameters form.

- **TTL Type** — Determines what ATMS tests can be completed and thus which threshold values need to be administered. The different TTLs supported are: 105 with return loss (105-w-rl) (default), 105 without return loss (105-wo-rl), high level tone source (high-level-tone), low level tone source (low-level-tone), 100 type (100), and 102 type (102). The following table explains the differences between TTL Types:

Type TTL	Description	Example
<i>105-w-rl</i>	Full range of 18 measurements or some defaults for return loss used (56A)	TN771B, ZLC12 and SN261B circuit packs and new 56A mini-responder
<i>105-wo-rl</i>	Cannot return default values for far-end return loss	Older 56A mini-responder
<i>high-level-tone</i>	Sends a fixed sequence of tones at 0 dBm	ZLC12 and SN261B circuit packs_
<i>low-level-tone</i>	Sends a fixed sequence of tones at -16dBm	SN261B circuit pack
<i>100</i>	Up to 5 measurements that sends a 1004 Hz tone then a quiet termination	
<i>102</i>	One measurement that sends a 1004 Hz tone	

The far-end switch containing the TTL may be any of the following:

- System 85 R3 PBX equipped with the Maintenance/Test Board (TN771B)
- System 75 R1V2 and beyond, all of which contain the circuitry required to perform the TTL function
- System 85 R2 PBX equipped with the Analog/Digital Facility Test Circuit (ADFTC,SN261)
- DIMENSION FP8 equipped with the Analog Facility Test Circuit (AFTC, ZLC-12)
- Central Office switches equipped with various TTL equipment that provide 100, 102, or 105 test line capabilities (56A)

Other vendor PBXs *may* be supported if compatible test lines are provided by these switches.

Four different versions of the ATMS Threshold Administration page can occur depending upon the measurements allowed by the TTL type selected. The four possibilities are:

1. 105-w-rl and 105-wo-rl — all thresholds appear.
2. high-its and low-its — all thresholds (except maximum C-notched noise) appear.
3. 100 — all thresholds (except maximum c-notched noise, 404 Hz loss, and 2804 Hz loss) appear.
4. 102 — only 1004 Hz loss threshold appears.

Page 4 of x

ATMS THRESHOLDS

TTL Type: 105-w-rl_____

TTL Vendor: _____

Trunk Vendor: _____

Trunk Length: _____

Far End Test No: _____

TTL Contact: _____

Trunk Contact: _____

	MARGINAL		UNACCEPTABLE	
	Min	Max	Min	Max
1004 Hz Loss:	-2	21	-2	21
	-Dev	+Dev	-Dev	+Dev
404 Hz Loss:	9	9	9	9
2804 Hz Loss:	9	9	9	9
Maximum C Message Noise:	55		55	
Maximum C Notched Noise:	74		74	
Minimum SRL-HI:	0_		0_	
Minimum SRL-LO:	0_		0_	
Minimum ERL:	0_		0_	
ALLOW ATMS Busyout, Error Logging and Alarming? y				
Maximum percentage of Trunks Which Can Be Removed from Service by ATMS: 0_				

Screen 4-97. ATMS Thresholds Form

- **Far End Test No.**— Enter the access number (1 to 20 digits) dialed to reach the TTL.
- **TTL Vendor**— Enter the 0 to 22 alphanumeric character TTL vendor name (the name of the vendor supplying the terminating test line); default is blank.
- **TTL Contact**— Enter the 0 to 25 alphanumeric character TTL vendor contact (the name and/or telephone number of someone from the TTL vendor who can be contacted in the event of problems with the TTL); default is blank.
- **Trunk Vendor**— Enter the 0 to 22 alphanumeric character trunk vendor name (who to notify in the event of problems with the trunks); default is blank.
- **Trunk Contact**— Enter the 0 to 25 alphanumeric character trunk vendor contact (the name and/or telephone number of someone from the trunk vendor who can be contacted in the event of problems with the trunks); default is blank.
- **Trunk Length** — Enter 0 to 4 digits followed by “k” (for kilometers) or “m” (for miles) showing the length of trunk. This field is not required, since it is not used by the G3-MT. It has been included for the G3-MA adjunct to use in aiding with threshold establishment, since noise on a trunk increases with the length of the trunk. The default is “Om”.

- **Marginal Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance. A larger dB value is more restrictive.
- **Marginal Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as out of tolerance; default is 21. A smaller dB value is more restrictive.
- **Unacceptable Threshold - Minimum 1004 Hz Loss** — Enter -2 (default), -1, or 0 to 21 to indicate the minimum signal loss for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable. A larger dB value is more restrictive.
- **Unacceptable Threshold - Maximum 1004 Hz Loss** — Enter the maximum signal loss (0 to 21) for a 1004 Hz test tone (in dB) allowed before reporting a trunk as unacceptable; default is 21. A smaller dB value is more restrictive.
- **Marginal Threshold - 404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone noise level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold - 404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold - 404 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold - 404 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 404 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold - 2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk as out of tolerance; default is 9. Smaller dB values are more restrictive.
- **Unacceptable Threshold -2804 Hz Loss Negative Deviation** — Enter the maximum negative deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.

- **Unacceptable Threshold - 2804 Hz Loss Positive Deviation** — Enter the maximum positive deviation of measured loss (0 to 9) at 2804 Hz from the 1004 Hz test tone loss level (in dB) allowed before reporting a trunk unacceptable; default is 9. Smaller dB values are more restrictive.
- **Marginal Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as out of tolerance. The default is 55. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Message Noise** — Enter the maximum C-message noise interference (15 to 55) in dBmC above reference noise terminating on a voice terminal as measured within the voice band frequency range (500 to 2500 Hz) allowed before reporting a trunk as unacceptable. The default is 55. Smaller values are more restrictive.
- **Marginal Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as out of tolerance. The default is 74. Smaller values are more restrictive.
- **Unacceptable Threshold - Maximum C Notched Noise** — Enter the maximum C-notched signal dependent noise interference (34 to 74) in dBmC allowed before reporting a trunk as unacceptable. The default is 74. Smaller values are more restrictive.
- **Marginal Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-HI** — Enter the minimum high-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.
- **Unacceptable Threshold - Minimum SRL-LO** — Enter the minimum low-frequency signaling return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Marginal Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as out of tolerance. The default is 0. Larger values are more restrictive.

- **Unacceptable Threshold - Minimum ERL** — Enter the minimum low-frequency echo return loss (0 to 40) in dB allowed before reporting a trunk as unacceptable. The default is 0. Larger values are more restrictive.
- **Allow ATMS Busyout, Error Logging and Alarming** — Enter “y” to allow ATMS error logging and alarming (subject to filtering depending on the service organization used to deal with alarms); default is n.
- **Maximum Percentage of Trunks Which Can Be Removed From Service by ATMS** — Enter the highest percentage of trunks from the trunk group (0 to 100) that can be removed from service at one time because of unacceptable transmission measurement results; default is 0.

Pages 4 through X of the Form (Group Member Assignments)

NOTE:

The total number of pages, and the first page of Group Member Assignments, will vary depending on whether the Administrable Timer and ATMS Threshold pages are displayed.

- **Administered Members (min/max)** — Indicates the minimum and maximum member number that has been administered for the particular trunk group. This field is displayed on all member pages.
- **Total Administered Members** — Indicates the total number of members administered in the trunk group. This field will appear on all trunk group member pages.
- **Port** — Enter seven characters. The first two characters identify the cabinet (01 to 22 [G3r V2], 1 to 3 [G3s V2, G3i V2]); the third character identifies the carrier (A through E); the fourth and fifth identify the slot number in the carrier (01 to 20 for multi-carrier cabinets or 01 to 18 for single-carrier cabinets); the last two characters identify the circuit number (01 to 31).
- **Code** — Display-only field. Displays the type of circuit pack physically installed or logically administered at the location to which this member has been assigned. If a circuit pack is neither installed nor administered at the member's location, the field is blank.
- **Sfx** — Displays the type of circuit pack (suffix only) physically installed at the location to which this member has been assigned. Field is blank if a circuit pack has not been physically installed.
- **Name** — Enter up to ten characters to identify the member of the trunk group. The name can be a 7-digit telephone number or a 10-digit Trunk Circuit Identification number (provided by trunk supplier).

NOTE:

Previously, Generic 1 Night Service and Balance/Loss information was entered in the Name field as “NT#...” and “TT#...”. This information must now be entered in the Night field (below) or the STT Loss field on Page 1 of the form, as applicable.

- **Night** — Enter the extension of the night destination for the trunk. This individual night destination overrides the group night service destination on the first page of the trunk group form. Incoming calls are routed to this destination when the system is placed in night service mode. (If “attd” is entered, night service will be to the attendant.)
- **Mode** — Specifies the signaling mode used on Tie Trunks with TN722A, TN722B, TN760B (or later), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN2140 circuit packs. Valid entries are “e&m” (interface), “simplex” (phantomed), or “protected”. This entry must correspond to associated dip switch settings on the circuit pack.
- **Type** — Specifies the signaling type to be used. This field should only be used with TN760B (or later release), TN722 (with any suffix), TN767, TN2140 (when the Trunk Signaling Type field is “cont”), TN437, TN439, TN464 (with any suffix), or TN458 circuit packs. The Type field appears with the Trunk Signaling Type field is “cont” or blank.

The value of “t5 rev” is only allowed for the TN760D vintage 10 or later. When the Type field is “t5 rev”, the Mode field must be “e&m”.

Valid entries are “t1 stan”, “t1 comp”, “t5rev”, or “type 5”. Default is blank.

- **Ans Delay** — Specifies the length of the wait for answer supervision delay (in ms) for Trunks using the TN722A, TN722B, TN760 (B, C, or D), TN767, TN464 (any suffix), TN437, TN439, TN458, or TN12140 circuit packs. Valid entries are 20 to 5100 in increments of 20; default is no entry (blank) and internally treated as a zero. This delay serves two purposes:
 1. Used to assure that the answer supervision signal is valid and not a secondary delay-dial or wink-start signal.
 2. Used to bridge over momentary off-hook signals resulting from connections made off-network through certain No. 5 Crossbar CCSA switches as the connection is being established.

TRUNK GROUP		Page 1 of X
Group Number: xxx	Group Type: wats	CDR Reports? y
Group Name: OUTSIDE_CALL _____	COR: I_	TAC: _____
Direction: two-way	Outgoing Display? n	
Dial Access? n	Busy Threshold: 99	Night Service: _____
Queue Length: 0_	Country: 1	Incoming Destination: _____
Comm Type: voice	Auth Code? n	
Trunk Flash? n		
TRUNK PARAMETERS		
Trunk Type: _____		
Outgoing Dial Type: tone _____	Incoming Dial Type: tone_	
Trunk Termination: rc _____	Disconnect Timing(msec) : 500_	
Sig Bit Inversion: none		
Trunk Gain: high		
Disconnect Supervision- In? y Out? n		
Answer Supervision Timeout: 10_	Receive Answer Supervision? n	

Screen 4-98. WATS Trunk Group Form (Page 1 of X)**Implementation Notes:**

The BCC field is displayed when ISDN-PRI is optioned for on the System-Parameters Customer-Options form and the Comm Type field is "avd", "rbavd", or "data".

The Connected to Toll and DTT to DCO Loss fields are displayed when the Trunk Type field is "auto/...".

The STT Loss field is displayed when the Connected to Toll field is "n".

The Terminal Balanced field is displayed when the Trunk Type is "ground-start" or "loop-start".

The RA Trunk Loss is displayed when the Terminal Balanced field is "n".

The Bit Rate, Synchronization, and Duplex fields are displayed when the Comm Type field is "avd".

The ITC (Information Transfer Capability) field appears for non-ISDN trunk groups and is displayed when the Comm Type field is "data", "avd", or "rbavd" and the BCC field is "0".

TRUNK FEATURES	TRUNK GROUP	Page 2 of X
ACA Assignment? n		Measured: none
	Data Restriction? n	
Abandoned Call Search? n		Maintenance Tests? y
Suppress # Outpulsing? n		

Screen 4-99. WATS Trunk Group Form (Page 2 of X)**Implementation Note:**

The Long Holding Time (hours), Short Holding Time (seconds), and Short Holding Threshold fields are displayed when ACA Assignment is "y".

ADMINISTRABLE TIMERS	TRUNK GROUP	Page 3 of X
Incoming Disconnect (msec) : 500		Outgoing Disconnect (msec) : 500
		Outgoing Dial Guard(msec) : 1600
Incoming Glare Guard(msec) : 1500		Outgoing Glare Guard(msec) : 1500
		Outgoing Rotary Dial Interdigit (msec) : 800
Ringing Monitor (msec) : 5200		Incoming Seizure (msec) : 500
Outgoing End of Dial (sec) : 10**		Outgoing Seizure Response (sec) : 5
Programmed Dial Pause (msec) : 1500		Disconnect Signal Error(sec) : 240
Flash Length (msec) : 540*		
END TO END SIGNALING		
Tone (msec): 350		Pause (msec) : 150
OUTPULSING INFORMATION		
PPS: 10	Make (msec): 40 Break msec : 60 PPM? y	Frequency: 50/12k

Screen 4-100. Timers Page for Ground Start WATS Trunk Group (two-way) with PPM**Implementation Note:**

The Frequency field is only displayed when PPM is "y".

ADMINISTRABLE TIMERS		TRUNK GROUP	Page 3 of X
Incoming Disconnect (msec): 500		Outgoing Disconnect (msec) : 500	
		Outgoing Dial Guard(msec) : 1600	
Incoming Glare Guard(msec) : 1500		Outgoing Glare Guard(msec) : 1500	
		Outgoing Rotary Dial Interdigit (msec) : 800	
Ringing Monitor (msec) : 5200		Incoming Seizure (msec): 500	
Outgoing End of Dial (sec) : 10**		Outgoing Seizure Response (sec) : 5	
Programmed Dial Pause (msec) : 1500			
Flash Length (msec) : 540*			
END TO END SIGNALING			
Tone (msec): 350		Pause: (msec): 150	
OUTPULSING INFORMATION			
PPS: 10	Make (msec) : 40	Break (msec): 60	PPM? n

Screen 4.-101. Timers Page for Loop Start WATS Trunk Group (two-way)**Implementation Note:**

The Outgoing End of Dial field is only displayed if the Receive Answer Supervision field is "n".

TRUNK GROUP					Page 4 of X				
					Administered Members (min/max) : xxx/yyy				
					Total Administered Members: xxx				
GROUP	MEMBER	ASSIGNMENTS							
	Port	Code	Sfx	Name	Night	Mode	Type	Ans Delay	
1:	_____	_____	-	_____	_____	_____	_____	_____	
2:	_____	_____	-	_____	_____	_____	_____	_____	
3:	_____	_____	-	_____	_____	_____	_____	_____	
4:	_____	_____	-	_____	_____	_____	_____	_____	
5:	_____	_____	-	_____	_____	_____	_____	_____	
6:	_____	_____	-	_____	_____	_____	_____	_____	
7:	_____	_____	-	_____	_____	_____	_____	_____	
8:	_____	_____	-	_____	_____	_____	_____	_____	
9:	_____	_____	-	_____	_____	_____	_____	_____	
10:	_____	_____	-	_____	_____	_____	_____	_____	
11:	_____	_____	-	_____	_____	_____	_____	_____	
12:	_____	_____	-	_____	_____	_____	_____	_____	
13:	_____	_____	-	_____	_____	_____	_____	_____	
14:	_____	_____	-	_____	_____	_____	_____	_____	
15:	_____	_____	-	_____	_____	_____	_____	_____	

Screen 4-102. WATS Trunk Group Form (Pages 4 to X)

To reduce repetition, the remaining pages are not shown. For a complete set of forms, refer to the "Blank Forms Package."

Uniform Dial Plan (UDP)

This form is used to administer the Uniform Dial Plan (UDP). UDP is distinct from the local dial plan form. A PBX code match chooses an RNX and PBX-ID, and such a match can choose one of five different types of treatment which identify the RNX and PBX-ID in different ways. Additionally, each extension is matched first against the local extension translation and then against the UDP, so if an extension is administered to be on the local node, even though a matching UDP pattern exists, dialing it reaches the local extension and the call is not routed off the node.

The UDP consists of patterns that may match all the digits of the dialed extension.

NOTE:

The Total number of patterns will vary depending on System configuration. Refer to the Capacity Table in Appendix C for more information.

These patterns consist of digits and a trailing wildcard “x” pattern, thus entires can be conserved by using wildcards. For example, “20xxx” would match and route all extensions beginning with “20”. More exact matches take precedence over less, so the extension 20100 would match the entry “201 xx” before it matched “20xxx”.

Once a pattern is matched, one of five different routing treatments can be applied.

1. **Local** (Local) — Intercept treatment is given to the caller. The call is not routed anywhere.
2. **Reorder treatment** (TempOOS) — Used on the old home of a station while it is being moved.
3. **AAR Location Code** (AARCode) — This code is prefixed to the last 4 digits of the extension and the resulting digit string is given to AAR. AAR performs digit conversion and/or analysis. There are two tables: the aar digit conversion and aar digit analysis tables. The best match may be in either one. Conversion matches take precedence over analysis matches only to break a tie (identical matching digits). Conversion matches can form a new number and send the digit string to ARS, through AAR again, or back to UDP. Eventually, analysis is used to route the call.
4. **UDP Code** (UDPCode) — Most likely used in a DCS network. This is identical to AARCode, except that no digit conversion is ever performed (the call must route via AAR).
5. **ENP Node** (ENPNode) — Most likely used in a DCS network. This node number is the PBX-ID for DCS. The node-number-routing form maps this node number into a routing pattern for routing the call. The enp-number-plan form provides the information to convert the extension into a 7-digit number, in a manner similar to the UDPCode. A difference here is that the AAR analysis table is never used in this form of routing.

Using this example, the following shows the information required for the various forms on node 1 of the DCS network. UDPCode routing is used to node 2, while Node Number routing will be used to reach nodes 3 and 4.

Uniform Dialing Plan			
Extension Codes	Type	Node Number/Location	Code
20xxx	TempOOS		
21xxx	TempOOS		
22xxx	TempOOS		
30xxx	UDPCode		630
31xxx	UDPCode		631
32xxx	UDPCode		632
40xxx	ENPNode	003	
41xxx	ENPNode	003	
42xxx	ENPNode	003	
50xxx	ENPNode	004	
51xxx	ENPNode	004	
52xxx	ENPNode	004	

Once the UDPCode is determined from the UDP table, the AAR digit analysis table (one per PGN) is used to route the call and/or identify the node number (PBX-ID). In this example, routing pattern number 100 is used to identify the trunk group over which the call should be routed.

AAR Digit Analysis					
Dialed String	Total		Route Pat	Call Type	Node Number
	Min	Max			
630	7	7	100	aar	2
631	7	7	100	aar	2
632	7	7	100	aar	2

For ENPNode routing, the routing pattern used to route the call is identified by the following table (one per PGN).

Node Number Routing	
Node Number	Route Pattern
3	101
4	102

For ENPNode routing, the 7-digit number is formed with information from the following table.

Extension Number Portability Numbering Plan	
Pattern	ENP Code
40	640
41	641
42	642
50	650
51	651
52	652

Because 7-digit numbers are used throughout this network, when they arrive at a node, they must be converted back into an extension to identify a station or route further. These 7-digit numbers can arrive from neighbor nodes with the AAR access code prepended (performed in routing pattern of neighbor node) or the AAR access code can be prepended by the local node (performed by digit insertion by the trunk group). The following table is then used to convert the 7-digit numbers.

AAR Digit Conversion						
Matching Pattern	Min	Max	Del	Replacement String	Net	Conv
620	7	7	3	2	ext	n
621	7	7	3	2	ext	n
622	7	7	3	2	ext	n

If the neighbor nodes only send 5-digit extensions, with no AAR access code prepending, then the previous table need not be used. The 5-digit extensions will be interpreted directly as if they were dialed on the local node. Sending 5-digit extensions requires the neighbor nodes to use the routing pattern to replace the UDP (or ENP) codes with the appropriate digit (such as 621 with 2 for node 1).

Administration Commands

The following administration commands can be used to access the Uniform Dial Plan form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	udp	Enter 1-MAX digits between 0-9, 'x' or 'X'
display	udp	Enter 1-MAX digits between 0-9, 'x' or 'X' ['print' or 'schedule']
list	udp	Enter ['ext' x]['to-ext' x]['type' x [['dest' x]['to-dest' x]]] ['count' n]['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on the form.

- **Ext Codes** — Displays a string of digits, “x”, and “dd”. The position of the dd shows which digit positions of the Ext Codes are being administered. For example, “512dd” means that the last two digits of the Ext Codes, for the leading digits 512, are being administered on the form. The string, 5ddxx, shows that the second and third digits of the Ext Codes, for the leading digit 5, are being administered on the form (these entries would all be wildcard entries).
- **Ext Code, Type** (and associated data) — Displays what rules apply if the entries on the form are not administered. For example, Appendix A shows a form for Ext Codes starting with 512. If these entries are not administered, the entry for Ext Code 51xxx applies to these entries, and if Ext Code 51 xxx is not administered, the entry for Ext Code 5xxxx applies to these entries. In a 5-digit UDP, these read-only fields are displayed only if at least 3 digits are specified in the command-line key, although one set (the set on the left) of these fields would still be displayed if 2 digits are specified in the command-line key. If only 1 digit is specified or if 'x' or 'X' is specified in the command-line key, then neither of these sets of fields is displayed, since there is no Ext Code more general than those listed on the form.
- **dd** — Displays the two digits (or “x”s) representing the extension or group of extensions to be administered. For this field, “xx:” is repeated on both pages, since it is the default for all other entries on both pages. Changing the type associated with this field on one page changes it on both pages.

- **Type** — Specify the type of treatment for the extension (“AARCode”, “ENPNode”, “Local”, “TempOOS”, “UDPCode”, or blank). That is, specify whether the extension should receive intercept treatment, be converted to AAR, or be converted via ENP. The difference between AAR Location Codes and UDP Location Codes is that 7-digit AAR Numbers created from AAR Location Codes may be changed during AAR analysis by AAR digit conversion before being routed. Seven-digit AAR Numbers created from UDP Location Codes are not subject to digit conversion before being routed with AAR digit analysis.

When an extension code that is displayed on the UDP form is not administrable because it conflicts with the translations in the first and/or second digit tables, then the type field for that extension code displays “NotInDP”.

The entry “TempOOS” indicates that an extension is temporarily out-of-service. Calls to these extensions receive reorder.

A blank entry indicates that this Ext code is not administered. If no matching code can be found, then the call will receive intercept treatment.

- **Location Code** — Specify the 3-digit location code for Ext Codes administered with a type of AARCode or UDPCode. This field pops up if AARCode or UDPCode is entered as the type.
- **Node Number** — Specify the node number for Ext Codes administered with a type of ENPNode. This field pops up if ENPNode is entered as the type.



NOTE:

This node number must not be the same as the local, node number on the dial plan form.

Page 1 of 2

UNIFORM DIALING PLAN

Ext Codes: _____

Ext Code: _____ Type: _____

dd	Type	dd	Type	dd	Type	dd	Type	dd	Type
0x: _____	_____	1x: _____	_____	2x: _____	_____	3x: _____	_____	4x: _____	_____
00: _____	_____	10: _____	_____	20: _____	_____	30: _____	_____	40: _____	_____
01: _____	_____	11: _____	_____	21: _____	_____	31: _____	_____	41: _____	_____
02: _____	_____	12: _____	_____	22: _____	_____	32: _____	_____	42: _____	_____
03: _____	_____	13: _____	_____	23: _____	_____	33: _____	_____	43: _____	_____
04: _____	_____	14: _____	_____	24: _____	_____	34: _____	_____	44: _____	_____
05: _____	_____	15: _____	_____	25: _____	_____	35: _____	_____	45: _____	_____
06: _____	_____	16: _____	_____	26: _____	_____	36: _____	_____	46: _____	_____
07: _____	_____	17: _____	_____	27: _____	_____	37: _____	_____	47: _____	_____
08: _____	_____	18: _____	_____	28: _____	_____	38: _____	_____	48: _____	_____
09: _____	_____	19: _____	_____	29: _____	_____	39: _____	_____	49: _____	_____

Screen 4-103. Uniform Dial Plan Form (Page 1 of 2)

Page 2 of 2

UNIFORM DIALING PLAN

Ext Codes:_____

Ext Code: _____ Type: _____

dd	Type	dd	Type	dd	Type	dd	Type	dd	Type
5x: _____	_____	6x: _____	_____	7x: _____	_____	8x: _____	_____	9x: _____	_____
50: _____	_____	60: _____	_____	70: _____	_____	80: _____	_____	90: _____	_____
51: _____	_____	61: _____	_____	71: _____	_____	81: _____	_____	91: _____	_____
52: _____	_____	62: _____	_____	72: _____	_____	82: _____	_____	92: _____	_____
53: _____	_____	63: _____	_____	73: _____	_____	83: _____	_____	93: _____	_____
54: _____	_____	64: _____	_____	74: _____	_____	84: _____	_____	94: _____	_____
55: _____	_____	65: _____	_____	75: _____	_____	85: _____	_____	95: _____	_____
56: _____	_____	66: _____	_____	76: _____	_____	86: _____	_____	96: _____	_____
57: _____	_____	67: _____	_____	77: _____	_____	87: _____	_____	97: _____	_____
58: _____	_____	68: _____	_____	78: _____	_____	88: _____	_____	98: _____	_____
59: _____	_____	69: _____	_____	79: _____	_____	89: _____	_____	99: _____	_____

Screen 4-104. Uniform Dial Plan Form (Page 2 of 2)

User Defined Adjunct Names

This form is used to name the AUDIX and Message Server adjuncts.

NOTE:

This form applies to G3r V2 configurations only.

Administration Commands

The following administration commands can be used to access the User Defined Adjunct Names form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object
change	adjunct-names
display	adjunct-names

Form Instructions

Make assignments as required in the following fields.

- **AUDIX Names** — Enter the names of the AUDIX adjuncts here. Entries can be alphanumeric and up to 7 characters long.
- **Messaging Server Names** — Enter the names of the Messaging Server adjuncts here. Entries can be alphanumeric and up to 7 characters long.

Page 1 of 1	
USER DEFINED ADJUNCT NAMES	
AUDIX NAMES	MESSAGING SERVER NAMES
1: _____	1: _____
2: _____	2: _____
3: _____	3: _____
4: _____	4: _____
5: _____	5: _____
6: _____	6: _____
7: _____	7: _____
8: _____	

Screen 4-105. User Defined Adjunct Names Form



AT&T 555-230-653
Issue 1, July 1993

DEFINITY® Communications System

Generic 3 V2 Implementation
Volume 2

Forms for System Features and Services

5

This chapter contains the forms and associated instructions required to implement the System's voice management, data management, call management, and hospitality features, functions, and services.

The forms included in this chapter are dedicated primarily for non-network type features such as voice management and data management. Chapter 4 contains the forms dedicated to networking such as Automatic Alternate Routing, Automatic Route Selection, Centralized Attendant Service, Distributed Communications Service, DS1 Tie Trunk Service, Integrated Services Digital Network, and trunk groups. Multiuse forms such as the Dial Plan and Feature Access Codes that support both network, voice management, data management, and so on, are covered in this chapter.

The forms are accurate representations of the screens that will be displayed on the System's administration terminal. Default data that is shown when the form is displayed is provided on the forms. In addition, administration commands required to access the forms is provided along with each form's coverage. In some cases, just the most commonly used commands are given. Chapter 2 provides a complete listing of the System's administration commands and describes the "make-up" of the command line. Specifically, the "action", "object", and "qualifier" command words are described in detail.

Blank forms (without default data) are provided in the Blank Forms Package and may be reproduced as required. The copies are to be used as worksheets when using this manual to assign features and services. The completed forms are later used with administration commands contained in Appendix D of Implementation. The hard-copy forms should then be retained as part of the System's hard-copy records.

Abbreviated Dialing — Enhanced List

This form is used to implement an Enhanced Abbreviated Dialing List. The Enhanced List consists of separate forms numbered from 0 through 9, which allows up to 1000 numbers to be assigned that can be accessed by users to place local, long-distance, and international calls; to activate/deactivate features; or to access remote computer equipment.

**NOTE:**

The Abbreviated Dialing Enhanced List option must be enabled on the System-Parameters Customer-Options form before an Enhanced List can be administered.

The Abbreviated Dialing Enhanced List option is not supported by the G3s V2 ABP configuration.

Form 0 is used to assign dial code list entries 000 to 099, Form 1 — 100 to 199, Form 2 — 200 to 299, Form 3 — 300 to 399, Form 4 — 400 to 499, Form 5 — 500 to 599, Form 6 — 600 to 699, Form 7 — 700 to 799, Form 8 — 800 to 899, and Form 9 — 900 to 999 (the Form number indicates the first digit of the dial code).

Only one Enhanced Abbreviated Dialing List can be assigned in the System. The list is controlled by the System Manager.

For attendants with abbreviated dialing, the Console Parameters form must also be administered.

Administration Commands

The following administration commands can be used to access the Abbreviated Dialing Enhanced List form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier
add	abbreviated-dialing enhanced	Enter form number between 0 and 9
change	abbreviated-dialing enhanced	Enter form number between 0 and 9
display	abbreviated-dialing enhanced	Enter form number between 0 and 9
remove	abbreviated-dialing enhanced	Enter form number between 0 and 9

Form Instructions

Make assignments as required for the following fields on each page of the form. The example screen form shows only Form 0.

Page 1 of the Form

- **Size (multiple of 5)** — Enter the number of dial code list entries that will be entered on the form. Up to 100 entries perform are allowed. The size must be entered in multiples of 5 up to 100. Default is "5".
- **Privileged** — Enter "y" or "n". If "y" is entered, the originating party's class of restriction (COR) is never checked and any number in-the list will be dialed. If "n" is entered, the COR is checked to determine if the number can be dialed. Default is "n".

Pages 1 through 4 of the Form

- **DIAL CODE** — Enter the numbers you want to assign to each dial code.



NOTE:

A Vector Directory Number extension may also be assigned.

Up to 24 characters can be used for each entry.

Valid entries for each dial code are:

- digits 0-9
- * (star) used for a feature activation code
- # (pound) used for a feature deactivation code
- special characters (count as two characters each):
 - ~p (pause)
 - ~w (wait)
 - ~m (mark)
 - ~s (suppress)
 - ~W (wait forever)



NOTE:

If ~W is used, the switch waits indefinitely for dial tone. This should be used only where network response time is more than 30 seconds.

While the system is waiting, a call progress tone receiver is tied up, and, since there are only two receivers per tone decoder, outgoing calling capability may be impaired.

See "Abbreviated Dialing" in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of the special characters.

Page 1 of 4

ABBREVIATED DIALING LIST
Enhanced List

Size (multiple of 5): 100 Privileged? n

DIAL CODE		
000:	_____	015: _____
001:	_____	016: _____
002:	_____	017: _____
003:	_____	018: _____
004:	_____	019: _____
005:	_____	020: _____
006:	_____	021: _____
007:	_____	022: _____
008:	_____	023: _____
009:	_____	024: _____
010:	_____	025: _____
011:	_____	026: _____
012:	_____	027: _____
013:	_____	028: _____
014:	_____	029: _____

Screen 5-1. Abbreviated Dialing Enhanced List— Form 0 (Page 1 of 4)**Implementation Notes:**

The default value for the Size field is 5. Therefore, only DIAL CODEs 000 through 004 will be displayed initially.

To reduce repetition, Pages 2 through 4 of Form 0 (and all pages of Forms 1 through 9) are not shown. For a complete set of blank forms, refer to the "Blank Forms Package."

Abbreviated Dialing — Group List

This form is used to implement the Abbreviated Dialing Group List. The Group Lists are controlled by the System Manager. Up to 90 numbers can be entered per group list that can be accessed by users to place local, long-distance, and international calls; to activate/deactivate features; or to access remote computer equipment.

Administration Commands

The following administration commands can be used to access the Abbreviated Dialing Group List form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	abbreviated-dialing group	1-MAX (or 'next')
change	abbreviated-dialing group	1-MAX
display	abbreviated-dialing group	1-MAX ['print' or 'schedule']
list	abbreviated-dialing group	[xx]['number' x]['to-number' x]['count' n]['print' or 'schedule']
remove	abbreviated-dialing group	1-MAX

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments, as required, for the following fields on each page of the form:

Page 1 of the Form

- **Group List** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Size (multiple of 5)** — Enter the number of abbreviated dialing codes you want to assign. The number must be entered in multiples of five. Default is “5”.
- **Privileged** — Enter “y” or “n”. If “y” is entered, the calling voice terminal's class of restriction (COR) is never checked and any number in the group list will be dialed. If “n” is entered, the calling voice terminal's COR is checked to determine if the number can be dialed. Default is “n”.

Pages 1 through 3 of the Form

- **DIAL CODE** — Enter the numbers you want to assign to each dial code.



NOTE:

A Vector Directory Number extension may also be assigned.

Up to 24 characters can be used for each entry.

Valid entries for each dial code are:

- digits 0-9
- * (star) used for a feature activation code
- # (pound) used for a feature deactivation code
- special characters (count as two characters each):

~p (pause)

~w (wait)

~m (mark)

~s (suppress)

~W (wait forever)



NOTE:

If ~W is used, the switch waits indefinitely for dial tone. This should be used only where network response time is more than 30 seconds.

While the system is waiting, a call progress tone receiver is tied up, and, since there are only two receivers per tone decoder, outgoing calling capability may be impaired.

See “Abbreviated Dialing” in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of special characters.

Page 1 of X

ABBREVIATED DIALING LIST
Group List: _____
Size (multiple of 5): 30

Privileged? n

DIAL CODE		
11:	_____	26: _____
12:	_____	27: _____
13:	_____	28: _____
14:	_____	29: _____
15:	_____	30: _____
16:	_____	31: _____
17:	_____	32: _____
18:	_____	33: _____
19:	_____	34: _____
20:	_____	35: _____
21:	_____	36: _____
22:	_____	37: _____
23:	_____	38: _____
24:	_____	39: _____
25:	_____	40: _____

Screen 5-2. Abbreviated Dialing Group List Form (Page 1 of X)**Implementation Note:**

The default value for the Size field is 5. Therefore, only DIAL CODEs 11 through 15 will be displayed initially. This form becomes two pages for Size field entries of 35 through 60 and three pages for entries of 65 through 90.

To reduce repetition, Pages 2 and 3 are not shown. For a complete set of blank forms, refer to the "Blank Forms Package."

Abbreviated Dialing — Personal List

This form is used to establish a personal dialing list for voice terminal/data module users. The personal list must first be assigned to the voice terminal by the System Manager before the voice terminal user can add entries to the list. The lists can be accessed by users to place local, long-distance, and international calls; to activate/deactivate features; or to access remote computer equipment.

Administration Commands

The following administration commands can be used to access the Abbreviated Dialing Personal List form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	abbreviated-dialing personal	xxxx (extension number of assigned personal list) and List 1-3
display	abbreviated-dialing personal	xxxx (extension number of assigned personal list) and List 1-3 ['print' or 'schedule']
list	abbreviated-dialing personal	[xxxx (extension)]['ext' x]['to-ext' x]['count' n] ['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on the form:

- **Personal List** — Enter the extension number of the voice terminal that will use this list.
- **List Number** — Enter a number from 1 to 3. This number identifies each of the three personal lists that can be assigned to the voice terminal.
- **Size (5 or 10)** — Enter the number of personal abbreviated dialing numbers you want to assign. Default is “5”.

- **DIAL CODE** — Enter the numbers you want to assign to each dial code.



NOTE:

A Vector Directory Number extension may also be assigned.

Up to 24 characters can be used for each entry.

Valid entries for each dial code are:

- digits 0-9
- * (star) used for a feature activation code
- # (pound) used for a feature deactivation code
- special characters (count as two characters each):
 - ~p (pause)
 - ~w (wait)
 - ~m (mark)
 - ~s (suppress)
 - ~W (wait forever)



NOTE:

If -W is used, the switch waits indefinitely for dial tone. This should be used only where network response time is more than 30 seconds.

While the system is waiting, a call progress tone receiver is tied up, and, since there are only two receivers per tone decoder, outgoing calling capability may be impaired.

See "Abbreviated Dialing" in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of special characters.

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ABBREVIATED DIALING LIST

Personal List: List Number:

Size (multiple of 5): 10

DIAL CODE

1:

2:

3:

4:

5:

6:

7:

8:

9:

10:

Screen 5-3. Abbreviated Dialing Personal List Form (Page 1 of 1)

Implementation Note:

The default value for Size is 5. Therefore, only DIAL CODEs 1 through 5 will be displayed initially. DIAL CODES 6 through 10 will also be displayed if the Size field is "10".

Abbreviated Dialing — System List

This form is used to implement a System abbreviated dialing list. Only one system list can be assigned and is administered by the System Manager. The list can be accessed by users to place local, long-distance, and international calls; to activate/deactivate features; or to access remote computer equipment.

Administration Commands

The following administration commands can be used to access the Abbreviated Dialing System List form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	abbreviated-dialing system	—
change	abbreviated-dialing system	—
display	abbreviated-dialing system	['print' or 'schedule']
remove	abbreviated-dialing system	—

* Brackets [] indicate the qualifier is optional.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Size (multiple of 5)** — Enter the number of abbreviated dialing numbers to be assigned. This number must be entered in multiples of five, up to 90. Default is “5”.
- **Privileged** — Enter “y” if the originating party’s class of restriction (COR) is never checked and any number in the list can be dialed. Enter “n” if the COR is to be checked to determine if the number can be dialed. Default is “n”.

Pages 1 through 3 of the Form

- **DIAL CODE** — Enter the numbers you want to assign to each dial code.



NOTE:

A Vector Directory Number extension may also be assigned.

Up to 24 characters can be used for each entry.

Valid entries for each dial code are:

- digits 0-9
- * (star) used for a feature activation code
- # (pound) used for a feature deactivation code
- special characters (count as two characters each):

~p (pause)

~w (wait)

~m (mark)

~s (suppress)

~W (wait forever)



NOTE:

If ~W is used, the switch waits indefinitely for dial tone. This should be used only where network response time is more than 30 seconds.

While the system is waiting, a call progress tone receiver is tied up, and, since there are only two receivers per tone decoder, outgoing calling capability may be impaired.

See "Abbreviated Dialing" in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of special characters.

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ABBREVIATED DIALING LIST
System List

Size (multiple of 5): 30

Privileged? n

DIAL CODE		
11:	_____	26: _____
12:	_____	27: _____
13:	_____	28: _____
14:	_____	29: _____
15:	_____	30: _____
16:	_____	31: _____
17:	_____	32: _____
18:	_____	33: _____
19:	_____	34: _____
20:	_____	35: _____
21:	_____	36: _____
22:	_____	37: _____
23:	_____	38: _____
24:	_____	39: _____
25:	_____	40: _____

Screen 5-4. Abbreviated Dialing System List Form (Page 1 of X)**Implementation Note:**

The default value for the Size field is 5. Therefore, only DIAL CODEs 11 through 15 will be displayed initially. This form becomes two pages for Size field entries of 35 through 60 and three pages for entries of 65 through 90.

To reduce repetition, Pages 2 and 3 are not shown. For a complete set of blank forms, refer to the "Blank Forms Package."

Abbreviated Dialing — 7103A List

This form is used to assign abbreviated dialing numbers to the 7103A voice terminal buttons. The entries can then be accessed by 7103A voice terminal users to place local, long-distance, and international calls; activate/deactivate features; or to access remote computer equipment. This form applies only to 7103A fixed feature voice terminals. Only one 7103A abbreviated dialing list can be implemented in the System and it applies to all 7103A fixed feature voice terminals in the System. This list is controlled by the System Manager.

Administration Commands

The following administration commands can be used to access the Abbreviated Dialing 7103A List form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	abbreviated-dialing 7103A-buttons	—
change	abbreviated-dialing 7103A-buttons	—
display	abbreviated-dialing 7103A-buttons	['print' or 'schedule']
remove	abbreviated-dialing 7103A-buttons	—

* Brackets [] indicate the qualifier is optional.

Form Instructions

Make assignments as required for each field on the form:

(In the following, the dial code numbers 1 through 8 as shown on the form relate to the buttons on the 7103A voice terminal.)

- **DIAL CODE (FOR THE 7103A STATION BUTTONS)** — Enter the desired number you want to assign to each dial code (button). Any additions or changes apply to all 7103A fixed feature voice terminals.

Valid entries for abbreviated dialing codes:

- digits 0-9
- * (star) used for a feature activation code
- # (pound) used for a feature deactivation code

— special characters (count as two characters each):

~p (pause)

~w (wait)

~m (mark)

~s (suppress)

~W (wait forever)



NOTE:

If ~W is used, the switch waits indefinitely for dial tone. This should be used only where network response time is more than 30 seconds.

While the system is waiting, a call progress tone receiver is tied up, and, since there are only two receivers per tone decoder, outgoing calling capability may be impaired.

See “Abbreviated Dialing” in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of special characters.

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ABBREVIATED DIALING LIST
7103A Button Assignment

DIAL CODE (FOR THE 7103A STATION BUTTONS)	
1: _____	5: _____
2: _____	6: _____
3: _____	7: _____
4: _____	8: _____

Screen 5-5. Abbreviated Dialing 7103A List Form (Page 1 of 1)

Access Endpoint

This form is used to administer Access Endpoints and Wideband Access endpoints.

**NOTE:**

Wideband Access Endpoints may be administered only if the Wideband Switching feature has been enabled on the System-Parameters Customer-Options form.

An Access Endpoint is a nonsignaling trunk that neither responds to signaling nor generates signaling. Access Endpoints eliminate the need to dedicate an entire trunk group for the access of a single trunk by providing the capability to assign an extension number to a single trunk. An Access Endpoint can be specified as the Originator or Destination endpoint of an administered connection.

A Wideband Access Endpoint (WAE) is an endpoint application connected to line-side non-ISDN T1 or E1 facilities and, like Access Endpoints, have no signaling interface with the System. For information on endpoint applications connected to line-side ISDN-PRI facilities, refer to "PRI Endpoints" in this chapter.

The WAE is defined by a starting port (DS0) and a width specifying the number of adjacent nonsignaling DS0s (positioned within a DS1 facility) that makeup the endpoint. This width may be between 2 and 31 adjacent DS0s.

**NOTE:**

Access Endpoints and Wideband Access Endpoints consume the same resources that trunks use. Thus, the sum of Access Endpoints and trunks cannot exceed the maximum number of trunks available in your system configuration. Refer to the Capacity Table in Appendix C.

Refer to "Administered Connection/Access Endpoint" or "Wideband Switching" in Chapter 3 for additional information.

Administration Commands

The following administration commands can be used to access the Access Endpoint form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	access-endpoint	xxxx (ext. or 'next')
change	access-endpoint	xxxx (ext. or 'next')
display	access-endpoint	xxxx (ext. or 'next') ['print' or 'schedule']

duplicate	access-endpoint	xxxx (ext. or 'next')
remove	access-endpoint	xxxx (ext. or 'next')
list	access-endpoint	xxxx ['count' 1-MAX] ['print' or 'schedule']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on the form:

- **Extension** — Display-only field. Shows the extension number as specified in the command line, or the next available extension number is “next” was entered on the command line. This is the extension number assigned to the nonsignaling trunk and used to access the trunk endpoint.
- **(Starting) Port** — Enter seven characters.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 04 (Analog TIE trunks) 01 through 31 (DS1 Interface ports)

NOTE:

For Wideband Access Endpoints, Analog TIE trunks cannot be used and the Tn464C (or greater) UDS1 circuit pack must be used.

The DS1 circuit number corresponds to the channel that will carry the data traffic. Channels 1 through 31 (TN464 only) or channels 1 through 24 (TN722, TN767, or TN464) may be used when the DS1 Signaling Type is “robbed-bit” or “isdn-ext”. For Common Channel or ISDN-PRI signaling, channel use is limited to channels 1 through 30 (TN464 only) or channels 1 through 23 (TN722, TN767, or TN464). A channel can be administered as an access endpoint regardless of the DS1 signaling type.

- **Communication Type** — For an analog tie trunk access endpoint, enter “voice-grade-data”. For a DS1 access endpoint, enter either “56k-data”, “64k-data”, or “voice-grade-data” as appropriate (64k-data is not allowed for robbed-bit trunks). For a Wideband access endpoint, enter “wideband”. Default is “voice-grade-data”.
- **Name** — Enter up to 10 alphanumeric characters to identify the endpoint. Default is blank.

- **Width** — Only displayed if the Communication Type field is “wideband”. Enter the number of adjacent DS0 ports (2 to 31), beginning with the specified Starting Port, that make up the WAE. A width of “6” (default) defines a 384 kbps WAE. This field cannot be blank.
- **COR** — Enter the appropriate class of restriction (COR) number in the range from 0 to 95. The COR is administered (see COR form instructions) so that only an administered connection (AC) endpoint can be connected to another AC endpoint. Default is “1”.
- **ITC (Information Transfer Capability)** — Displayed when the Comm Type field is “56k-data”, “64k-data”, or “wideband”. Valid entries are “restricted” (default) or “unrestricted”. This field is used to determine the type of transmission facilities to be used for ISDN calls originated from this endpoint.

When “unrestricted”, only unrestricted transmission facilities will be used to complete the call. An unrestricted facility is a transmission facility that does not enforce 1's density digital transmission (that is, digital information is sent exactly as is).

When “restricted”, either restricted or unrestricted transmission facilities will be used to complete the call. A restricted facility is a transmission facility that enforces 1's density digital transmission (that is, a sequence of eight digital zeros will be converted to a sequence of seven zeros and a digital one).



NOTE:

For Wideband Access Endpoints, enter “unrestricted”.

When adding an access endpoint with the ITC administered as unrestricted its associated port has to be a channel of a DS1 circuit pack with the Zero Code Suppression field administered as B8ZS. If the port is not a channel of a DS1 circuit pack with its Zero Code Suppression field administered as B8ZS, the end validation fails and the form submission is rejected. The cursor is moved to the ITC field with the following error message:

An unrestricted access endpoint can only be from B8ZS DS1 circuit

When adding an access endpoint with the ITC administered as restricted, its associated port can be a channel from a DS1 circuit pack with the Zero Code Suppression field administered as ZCS or B8ZS.

For an existing access endpoint, the ITC field can only be changed from restricted to unrestricted if its associated port is a channel of a DS1 circuit pack with its Zero Code Suppression field administered as B8ZS. If the port is not a channel of a DS1 circuit pack with its Zero Code Suppression field administered as B8ZS, the end validation fails and the form submission is rejected. The cursor is moved to the ITC field with the following error message.

An unrestricted access endpoint can only be from B8ZS DS1 circuit pack

Without this end validation, a user could administer an access endpoint as unrestricted when in fact it is restricted, that is its associated port is a member of a DS1 circuit pack that uses ZCS data transmission.

- **COS** — Enter the appropriate COS number in the range from 0 to 15. The COS is administered (see COS form instructions) so that the use of the Call Forwarding All Calls feature for access endpoints is prohibited. Default is "1".

ACCESS ENDPOINT	
Extension: _____	(Starting) Port: _____
Communication Type: wideband	Name: _____
Width: 6	
COR: 1_	COS: __
ITC: restricted	

Screen 5-6. Access Endpoint Form

Implementation Notes:

The Width field is only displayed if the Communication Type is "wideband".

The ITC field is only displayed if the Communication Type is "56k-data", "64k-data", or "wideband".

Administered Connection

This form is used to assign an end-to-end Administered Connection (AC) between two access endpoints or data endpoints. The AC is automatically established by the System whenever the System is restarted or the AC is due to be active. Refer to “Administered Connection/Access Endpoint” in Chapter 3 for additional information.

Administration Commands

The following administration commands can be used to access the Administered Connection form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	administered-connection	1-MAX (or 'next')
change	administered-connection	1-MAX (or 'next')
display	administered-connection	1-MAX (or 'next') ['print' or 'schedule']
duplicate	administered-connection	1-MAX (or 'next')
remove	administered-connection	1-MAX (or 'next')
list	administered-connection	1-MAX ['count'11-MAX] ['print' or 'schedule']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on the form:

- **Connection Number** — This is a display-only field when the form is accessed using an administration command such as *change* or *display*. Enter an unassigned AC number.
- **Enable** — Enter “y” to indicate that an attempt will be made to establish the AC when the AC is due to be active. Default is “y”.
- **Originator**— Enter the assigned extension of the originating access endpoint or data endpoint. The endpoint must be local to the switch on which the AC is administered. Endpoints may be:
 - Nonsignaling DS1 trunk or analog tie trunk
 - TN726 Data Line Circuit Pack
 - Asynchronous EIA 232C compatible equipment

- TN754 Digital Line Circuit Pack connections, including:
 - MPDM (700A, 700D), MTDM (700B, 700C, 700E)
 - 7400A, 7400B, or 7400C HSL Data Module
 - 7401 D Voice Terminal with 7400B Data Module
 - 7403D/7405D/7407D/7410D/7434D Voice Terminal with DTDM or 7400B Data Module
 - 7404D or 7406D Voice Terminal
 - 510D Personal Terminal
 - 515 BCT, 615 BCS, or 715 BCS Terminal
 - PC/PBX Connection
- TN556 ISDN-BRI Line Circuit Pack connections, including:
 - 6500 Data Module
 - 7505D/7506D/7507D Voice Terminal with ADM

Default is blank.

- **Destination** — Used to route the AC to a desired endpoint. Enter the address of the destination access or data endpoint. This endpoint is the terminating party of the AC and need not be local to the switch on which the AC is assigned. Valid entries are the digits 0 through 9, *, #, and special characters “~m” (mark), “~s” (suppress), “~p” (pause), “~w” (wait), “~W” (wait forever). The entry must be consistent with the local switch's dial plan (that is, the first digits are assigned as an extension, feature access code, or trunk access code, or DDD Number). If a local extension is entered, it must be assigned to either an access or data endpoint. Up to 36 characters may be entered. Special characters count as two characters. Abbreviated Dialing entries may be used in this field. Default is blank.



NOTE:

If ~W is used, the switch waits indefinitely for dial tone. This should be used only where network response time is more than 30 seconds.

While the system is waiting, a call progress tone receiver is tied up, and, since there are only two receivers per tone decoder, outgoing calling capability may be impaired.

- **Name** — Enter a short identification of the AC. This entry is optional. Up to 15 printable alphanumeric characters may be entered. Default is blank.

- **Continuous** — Enter “y” to indicate that the AC is continuous (that is, not scheduled to be active at a certain time). If “y” is entered, the seven Start Days and associated Duration fields **are not** displayed. Default is “y”.
- **Start Days (Sun through Sat)** — Only displayed if the Continuous field entry is “n”. Enter a “y” in each of the required days of the week fields to indicate that an attempt will be made to establish the AC. Default is “n”.



NOTE:

These fields indicate only the days on which an attempt will be made to establish the AC and not necessarily the days on which the AC is active. A scheduled AC may be active over a number of days, and, in this situation, these fields should be used only to specify the days on which the AC starts and not other days on which the AC may be active.

- **Start Time** — Only displayed if the Continuous field entry is “n”. Enter the time of the day when an attempt should begin to establish a scheduled AC. The time is specified in two fields separated by a colon. Valid entries are in the range 00:00 through 23:59. Default is “00:00”.
- **Duration** — Only displayed if the Continuous field entry is “n”. Enter the period of time that the scheduled AC should remain active. This period is specified in two fields separated by a colon. The maximum duration is 167 hours and 59 minutes (that is, 1 minute less than 1 week). Valid entries are 000 through 167 for the hour field and 00 through 59 for the minute field. Default is “000:00”.
- **Alarm Type** — Enter the type of alarm to be generated if the AC cannot be initially established, or fails and cannot be reestablished, and the number of consecutive failures equals the alarm threshold. The alarm notification may be disabled for this AC by entering “none” in this field. Valid entries are “major”, “minor”, “warning”, or “none”. Default is “warning”.



NOTE:

All AC alarms and the errors that caused the alarms are recorded in the System's alarm and error log. In addition, a status lamp associated with an attendant console or voice terminal feature button (at-alarm) may be used to indicate the AC alarm.

- **Alarm Threshold** — Only displayed if an entry of other than “none” is entered in the Alarm Type field. Enter the number of times an attempt to establish or reestablish an AC must fail consecutively before an AC alarm will be generated. An alarm will be generated on the first failure if a “1” is entered in this field. Valid entries are 1 through 10. Default is 5 (an alarm will be generated after the fourth retry has failed, thus, with the default retry interval of 2 minutes, an alarm will be generated approximately 8 minutes after the first failure occurred).
- **Retry Interval** — Enter the number of minutes between attempts to establish or reestablish the AC. Valid entries are 1 through 60. Default is 2.
- **Auto Restoration** — Enter “y” to indicate that an attempt is to be made to reestablish an AC that has failed. Auto Restoration is only available for an AC that is established over an ISDN-PRI Software Defined Data Network (SDDN) trunk group. A “y” entered in this field is ignored in all other situations. Default is “y”.
- **Priority** — Enter a number in the range from 1 through 8 that is to be used to determine the order in which ACs are to be established (1 is the highest and 8 the lowest priority). Default is “5”.

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ADMINISTERED CONNECTION

Connection Number: 1Enable? y

Originator: _____

Destination: _____

Name: _____

AUTHORIZED TIME OF DAY

Continuous ? n

Sun? n Mon? n Tue? n Wed? n Thu? n Fri? n Sat? n

Start Time: 00:00

Duration: 000:00

MISCELLANEOUS PARAMETERS

Alarm Type: warningAlarm Threshold: 5

Retry Interval: 2Auto Restoration? y

Priority: 5

Screen 5-7. Administered Connection Form (Page 1 of 1)**Implementation Notes:**

Sun-Sat, Start Time and Duration fields only displayed when the Continuous field entry is “n”.

Alarm Threshold field only displayed if the Alarm Type field entry is other than “none”.

Agent LoginID

This form is used to administer Agent LoginIDs for the Expert Agent Selection feature.

Administration Commands

The following administration commands can be used to access the Agent LoginID form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	agent-loginid	xxxxx (extension) or 'next'
change	agent-loginid	xxxxx (extension)
display	agent-loginid	xxxxx (extension) ['print' or 'schedule']
remove	agent-loginid	xxxxx (extension)
list	agent-loginid	['staffed' 'unstaffed' ['name' x]['aas' y/n]]

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form.

- **Login ID** — Display-only field. Contains the identifier for the Logical Agent as entered on the command line.
- **Name** — Enter a 15-character string naming the agent. Any alphanumeric character is valid. Default is blank.
- **COR** — Enter the Class of Restriction (from 0 to 95) for the agent. Default is 1.
- **Coverage Path** — Enter the number of the Coverage Path used by calls to the LoginID or leave blank (default). This is used when the agent is logged out, busy, or does not answer.
- **Security Code** — Enter the 4-digit security code (password) for the Demand Print messages feature. This field may be blank (default).
- **LWC Reception** — Enter where LWC messages will be stored for this Agent LoginID. For G3r V2 configurations, valid entries are “audix”, “msa”, “spe” (default), and “none”. For G3i V2 and G3s V2 configurations, valid entries are “audix”, “msa-spe” (default), and “none”.
- **AUDIX Name for Messaging** — Only applicable to G3r V2 configurations. Enter the name of the AUDIX used for LWC Reception and/or the name of the AUDIX that provides coverage for this Agent LoginID or leave blank (default).

- **Messaging Server Name for Messaging** — Only applicable to G3r V2 configurations. Enter the name of the Messaging Server used for LWC Reception and/or the name of the Messaging Server that provides coverage for this Agent LoginID or leave blank (default).

- **AAS** — Enter “y” if this extension will be used as a port for an Auto Available Split/Skill. Default is “n”.



WARNING:

Entering “y” in the AAS field clears the password and requires execution of the “remove agent-loginid” command. To set AAS to “n”, this logical agent must be removed then re-added.

This option is intended for switch adjunct equipment ports only, not human agents.

- **AUDIX** — Enter “y” if this extension will be used as a port for an AUDIX. Default is “n”.



NOTE:

The AAS and AUDIX fields cannot both be “y”.

- **Port Extension** — Only displayed if either the AAS or AUDIX field is “y”. Enter the assigned extension for the AAS or AUDIX port. This extension cannot be a VDN or an Agent LoginID.
- **Password** — Only displayed if both the AAS and AUDIX fields are “n”. Enter up to nine digits as the password the Agent must enter upon login. Valid entries are the digits 0 through 9. The minimum number of digits that must be entered in this field is specified in the Minimum Agent-LoginID Password Length field on the Feature-Related System Parameters form.



NOTE:

Values entered into this field will not be echoed to the screen.

- **Password (enter again)** — Only displayed if both the AAS and AUDIX fields are “n”. Reenter the same password exactly as it was entered in the Password field.



NOTE:

Values entered into this field will not be echoed to the screen.

- **LoginID for ISDN Display** — Enter “y” if the Agent LoginID Name field is to be included in ISDN messaging over network facilities. Default is “n”.
- **Skill** — Enter the Skill Hunt Group(s) that this Agent handles. Up to four Skills may be entered, the same Skill may not be entered twice.
- **Primary/Secondary** — Enter whether the Skill associated with the Hunt Group is a “primary” Skill or a “secondary” Skill. This field may not be left blank if a skill is entered.

Page 1 of 1

AGENT LOGINID

Login ID: _____

Name: _____

COR: 1

Coverage Path: _____

Security Code: _____

LWC Reception: spe

AUDIX Name for Messaging: _____

Messaging Server Name for Messaging: _____

AAS? n

AUDIX? n

Password: _____

Password (enter again): _____

LoginID for ISDN Display? _

Skill	Primary/Secondary
1: _____	_____
2: _____	_____
3: _____	_____
4: _____	_____

WARNING: Agent must log in again before skill changes take effect

Screen 5-8. Agent LoginID Form**Implementation Notes:**

The Port Extension field is only displayed if either the AAS or AUDIX field is "y".

The AUDIX Name for Messaging and Messaging Server Name for Messaging fields are only displayed for G3r V2 configurations.

The Password and Password (enter again) fields are only displayed when both the AAS and AUDIX fields are "n".

Alias Station

This form is used to administer new voice terminal types that are not supported by system software. The Alias Station form allows the mapping of new terminal types to the supported terminal types. This mapping does not guarantee compatibility, but allows nonsupported terminals to be administered and tracked by their own names.

System Administration must refer to customer voice terminal documentation for supported types and associated manuals for non-supported types to avoid type mismatches between the new terminal and the supported terminal.

**NOTE:**

Data Communication Protocol (DCP) terminal types must be mapped (aliased) to DCP terminal types, hybrid types to hybrid types, and analog to analog types.

Refer to the “Enhanced Terminal Administration” feature in Chapter 3 for additional information.

Administration Commands

The following administration commands can be used to access the Alias Station form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	alias station	—
display	alias station	['print' or 'schedule']

* Brackets [] indicate the qualifier is optional.

Form Instructions

Make assignments as required for the following fields on the form.

- **Alias Set Type** — Enter a nonsupported voice terminal type that is to be aliased to a similar supported voice terminal type. Up to five characters (all printable characters except blank characters) are allowed.

**NOTE:**

A duplicate nonsupported type entry is not allowed on the form (that is, SET20 and Set20 are considered as duplicates).

- **Supported Set Type** — Enter a supported voice terminal type that is to be mapped or aliased to the nonsupported type entered immediately to the left in the “Alias Set Type” field. Up to five characters (all printable characters except blank characters) are allowed. Supported voice terminal types are summarized in the “Voice Terminals — General” information provided later in this chapter.

Page 1 of 1

ALIAS STATION	
Alias Set Type	Supported Set Type
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

'#' indicates previously aliased set type is now native

Screen 5-9. Alias Station Form (Page 1 of 1)

Implementation Note:

When a System containing an alias set type is upgraded to a new release that supports the previously aliased set type as a native set type, the last character of the aliased set type will be changed to a “#”.

This indicates that it is no longer necessary to alias the set type to another supported type. It is recommended (though not required) that stations using the alias set type be changed to use the newly supported set type, and the alias set type be removed from the Alias Station form.

Alphanumeric Dialing Table

This form is used to associate alpha-names to dialed digit strings. This allows terminal users to place a *data call* by simply typing the alpha-name. Users need only remember far-end alpha-names instead of the actual digit strings.

The form consists of paired Alpha-name/Mapped String fields. Entries may be made in any order on the form. However, before the form is displayed for changing or reviewing, the entries in the table are sorted alphanumerically by the alpha-name. All entries will be moved to the beginning of the table, leaving all blank entries at the end.

Administration Commands

The following administration commands can be used to access the Alphanumeric Dialing Table form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	alphanumeric-dial-table	—
display	alphanumeric-dial-table	[print]

* Brackets [] indicate the qualifier is optional.

Form Instructions

Make assignments as required for the following fields on the form:

- **Alpha-name** — Enter from one to eight alphanumeric characters. The entry must start with an alphabetic character and may not have blank spaces between characters. All alpha-names in the table must be unique and cannot be referenced in their own "Mapped String". The alpha-names can be used in any other "Mapped String" and multiple times in a "Mapped String". Default is blank.
- **Mapped String** — Enter from 1 to 24 characters that may contain alphanumeric, readability, delimiters, and/or special characters. The entry is used to generate the final dialing string and can include Facility Access Codes. The following characters are allowed:

Numeric — Digits 0 through 9.

Alpha — A through Z, a through z (note uppercase entries are mapped to lowercase).

Readability — Character delimiters used for easy reading of the dial string. The characters are "(", ")", "/", "-", and the space character.



NOTE:

A Mapped String may not contain an Alpha-Name whose Mapped String also contains a Alpha-Name.

- **Special Characters** — Used to identify a special operation. The characters are:

“#” and “*” — Each treated as a numeric.

“^” — Treated as a readability character.

“~w” — Suspend digit outputting until a dial tone is detected.

“~p” — Pause 1.5 seconds. (Used only for outgoing trunk calls. If used internally, the 1.5 second pause is ignored.)

“~m” — Digits following this character are for end-to-end signaling. Following digits to be outputted as tones regardless of type of trunk signaling, pulse, or tone.

Delimiters can consist of both readability and special characters and are used to separate tokens of “alpha-names” or numeric sub-strings. For example, “(205) mt-1234+0000”.

[illegible]

Screen 5-10. Alphanumeric Dialing Form (Page 1 of 2)

Implementation Note:

To reduce repetition, Page 2 is not shown. For a complete set of blank forms, refer to the “Blank Forms Package.”

Alternate Facility Restriction Level (AFRL)

This form is used to remap engineered FRLs for all originating devices and Authorization codes to a new value. For example, all FRLs less than 3 are assigned a value of 3 and FRLs greater than 3 are assigned a value of 7. The control of whether the original FRL value or the AFRL value is used is controlled through any attendant or station with console permissions that has an AFRL feature button. By depressing the button, the user can control whether calls in the switch that require FRLs for determining access will be using FRLs or AFRLs.

Administration Commands

The following administration commands can be used to access the Alternate Facility Restriction Level form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier
change	alternate-frl	
display	alternate-frl	

Form Instructions

Make assignments as required for the following fields on the form.

- **Current Status** — Enter "active" to enable or "inactive" to disable AFRLs.
- **AFRL** — Enter an alternate FRL for each of the eight original FRLs.

Page 1 of 1

ALTERNATE FACILITY RESTRICTION LEVEL

Current Status: _____

Original Alternate

FRL FRL

0 —

1 —

2 —

3 —

4 —

5 —

6 —

7 —

Screen 5-11. Alternate Facility Restriction Level Form (Page 1 of 1)

Attendant Console

This form is used to assign one Attendant Console in the System. The form is used to administer either a Basic Attendant Console (Figure 5-1) or Enhanced Attendant Console (Figure 5-2). As far as administration is concerned, the basic console and enhanced console are treated as the same console.

Administration Commands

The following administration commands can be used to access the Attendant Console form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	attendant	1-MAX
change	attendant	1-MAX
display	attendant	1-MAX ['print' or 'schedule']
remove	attendant	1-MAX

- * Brackets [] indicate the qualifier is optional. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments in the following fields on each page of the form:

Page 1 of the Form

- **Attendant Console x** — Enter the console number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Type** — System default is "console". Display-only field.
- **Extension (Optional)** — Enter the extension for the individual attendant console. If an extension is not assigned, then the attendant can only be addressed as a member of the attendant group. Default is blank. Refer to the "Individual Attendant Access" feature in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for additional information.

Once administered, the individual attendant extension may also be entered in any of the following:

- Any coverage point in a call coverage path (Call Coverage Paths form)

- CAS Backup Extension (Console Parameters form)
- Hunt Group Supervisor Extension (Hunt Group form)
- LDN Night Extension (Listed Directory Numbers form)
- Stations with Systemwide Message Retrieval Permission (Feature-Related System Parameters form)
- Member of a Hunt Group (Hunt Group form)
- Incoming Destination for a Trunk Group (Trunk Group forms)
- Night Service Destination for a Hunt Group (Hunt Group form)
- **Name** — Enter the name of this console (up to 15 alphanumeric characters). Any entry is accepted, default is blank.
- **Console Type** — Enter the intended use for this console; valid entries are “principal”, “day-only”, “night-only”, or “day/night”. Default is blank. There can only be one night-only or one day/night console in the System. Night Service is activated from the principal console only.
- **COS** — Enter the class of service (COS) for this attendant console (0 through 15). Default is “1”.
- **Auto Answer**— Entering “all” for Auto Answer indicates that an incoming call to an idle attendant will be automatically answered without any action (no button presses required) by the attendant. Entering “acd” for Auto Answer indicates that only ACD split/skill calls and direct agent calls will auto answer. Non-ACD calls terminated to an attendant console with Auto Answer set to “acd” will ring audibly. Entering “none” causes all calls terminated to this attendant console to receive some sort of audible ringing treatment. Default is “none”.
- **Port** — Enter seven characters.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 08 (Digital Line circuit pack)

**NOTE:**

When using the Administration Without Hardware feature, place an “X” in this field to indicate that there is no hardware associated with this port assignment. An individual attendant extension must be assigned in the Extension field.

Each attendant console requires a port on a TN754B Digital Line circuit pack. For reliability, the attendant consoles should not be assigned to ports on the same TN754B circuit pack. For example, if three attendant consoles are to be provided, assign each console to a port on three different TN754Bs, if possible. However, if required, all attendant consoles may be assigned to ports on the same TN754B circuit pack.



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate circuit packs.

- **COR** — Enter the class of restriction (0 through 95) that reflects the desired restriction. Default is “1”.
- **Data Module** — Enter “y” if the console is to be connected to a data terminal via 7400B Data Module. If “y” is entered, the Data Module form (Page 4) must be completed. Default is “n”.
- **Display Language**— Enter the language in which you want console messages displayed. English, French, Italian, Spanish, and “user-defined” are acceptable entries. English is the default.

Refer to the Language Translations forms in this chapter, and the “Administrable Language Display” feature in Chapter 3, to administer the “user-defined” language set.

- **DIRECT TRUNK GROUP SELECT BUTTON ASSIGNMENTS (Trunk Access Codes)** — Enter the trunk access codes (TACs) for local and remote PBXs. (There are fields for one local TAC and one remote TAC per button labeled *Local* and *Remote*.) The local TAC (1 to 4 digits) refers to a trunk group or Loudspeaker Paging zone on this PBX. Remote TACs are only useful in a Distributed Communications System (DCS) network. The remote TAC (1 to 3 digits) refers to a trunk group on the remote PBX. If a remote TAC is given, then the local TAC must refer to a trunk group that connects directly to the remote PBX and is also limited to 1 to 3 digits.

It is recommended that a DCS trunk be specified as the local TAC between the local and remote switches. If the TAC specified as local between the local and remote switches is not a DCS trunk, the remote trunk cannot be monitored by the local switch.

- **HUNDREDS SELECT BUTTON ASSIGNMENTS** — Enter in the appropriate field (1 through 20), the hundreds group to be associated with a Hundreds Group Select button located on an optional Selector Console (Figure 5-3 and Figure 5-4). Fields 1 through 8 are used when the Selector Console is a 24A-type console (Figure 5-3) and fields 1 through 20 are used when the console is a 26A-type console (Figure 5-4). The hundreds group number entered in the field represents all but the last two digits of an extension number (for example, the Hundreds Select Button — on the Selector Console — for extension 3822 would be “38”; the Hundreds Select Button for extension 27105 would be “271”). The last two digits of an extension number are obtained (after pressing a Hundreds

Group Select button) by pressing the appropriate extension button (00 through 99) on the console.

Page 2 of the Form

**This page is only displayed if the Data Module field on Page 1 is “y”.
Complete the Data Module form as follows:**

- **Data Extension** — Enter the extension number assigned to the data module. A data extension can be a 1-to 5-digit number and must agree with the System’s Dial Plan.
- **BCC** — Display-only field. Only displayed when the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

NOTE:

Refer to “Generalized Route Selection” in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls. The BCC value is used to determine compatibility when non-ISDN-PRI facilities are connected to ISDN facilities (ISDN-PRI Interworking feature).

- **ITC** — Enter “restricted” or “unrestricted”.
- **Name** — Enter the name of the user associated with the data module. The name is optional, it can be left blank.
- **COR** — Enter the desired class of restriction (COR) number from 0 through 95. Default is “1”.
- **COS** — Enter the desired class of service (COS) number from 0 through 15 to designate allowed features. Refer to “Class of Service” form for additional information on the allowed features. Default is “1”.
- **ABBREVIATED DIALING List1:** — Enter “p” (personal), “s” (system), “g” (group), or “e” (enhanced). If “g” or “p” is entered, a group number or personal list number is also required.
- **SPECIAL DIALING OPTION** — Enter one of three dialing options that are available. This identifies the destination of all call when this data module originates calls. Valid entries are “hot-tine”, “default”, or leave blank.
- **HOT LINE DESTINATION — Abbreviated Dialing Dial Code** — Only displayed when the SPECIAL DIALING OPTION field is “hot-line”. Enter a dial code within the range of the abbreviated dialing list type. The associated AD number will be dialed when the user goes off-hook on a Data Hot Line call.
- **DEFAULT DIALING Abbreviated Dialing Dial Code** — Only displayed when the Special Dialing Option field is “default”. Enter a dial code within the range of the abbreviated dialing list type. The associated AD number will be dialed when the user goes off-hook and enters a carriage return following the “DIAL” prompt. The data call originator can also perform data terminal dialing by specifying a dial string that may or may not

contain alphanumeric names.

- **Ext** — Display-only field. This is the extension number of a previously administered user who has an associated Data Extension buttons and who will share the use of the module.
- **Name** — Display-only field. Contains the name assigned to the above extension number.

Page 3 of the Form (Page 2 if the Data Module form is not displayed)

- **FEATURE BUTTON ASSIGNMENTS** — Enter the desired feature buttons from Table 5-1 that you want to assign to the attendant console. The freed buttons that cannot be changed (that is, split and forced release) are shown on the form. The hold, night-serv, and pos-busy buttons are shown in the System default locations. These buttons may be administered elsewhere on the form. The following provides descriptions of feature buttons that are unique to the attendant console. Refer to Table 5-1 and to the "Voice Terminals — General" section in this chapter for a description of the feature buttons.
 - Audible Tones On/Off
 - "cw-ringoff" — Call waiting ringer off; turns on/off the audible tone for call waiting on attendant console (1 per console).
 - "in-ringoff" — Incoming call ringer off; turns on/off the audible tone for incoming call ringer (1 per console).
 - "re-ringoff" — Timed reminder ringer off; turns on/off the audible tone for timer reminder ringer (1 per console).
 - Alternate FRL ("alt-frl") — Alternate facility restriction level; allows the attendant to activate or deactivate the AFRL feature. When activated, this allows the originating device (lines or trunks) to use an alternate set of the facility restriction levels to originate a call (1 per console).
 - Attendant Control of Trunk Group Access
 - "act-tr-grp" — Activate trunk group access; allows the attendant to control a trunk group. All calls going to the trunks will be routed to the attendant (1 per console).
 - "deact-tr-g" — Deactivate trunk group access; allows the attendant to release control of a trunk group (1 per console).
 - Display Class of Restriction ("class-rstr") — Display Class of Restriction; used to display the COR associated with a call (1 per console).
 - Emergency Access to the Attendant ("em-acc-att") — Emergency access to attendant; the associated status lamp is flashed when there is one or more calls on the emergency attendant queue (1 per console).
 - Hold ("hold") — When the hold button is pressed while the attendant is active on a loop, the party on the loop is put on hold

and the "Hold" button associated with the loop is lit (1 per console).

- Position Busy ("pos-busy") — When this button is pushed, the attendant is put into position busy mode, the "Pos Avail" light is turned off, and the light associated with the pos-busy button is lit. Pushing the pos-busy button a second time will take the console out of "position busy" mode, turn on the "Pos Avail" light and turn off the light associated with the pos-busy button.

If the pos-busy button is administered on a 2-LED button, the top LED will flash when the last attendant goes into "Position Busy" mode. Otherwise, if the button has only one LED, the single LED associated with the pos-busy button will flash (1 per console).

- Serial Call ("serial-cal") — This button allows the attendant-extended calls to return to the same attendant if the trunk remains off-hook (1 per console).
- Attendant Override ("override") — This button will enable the attendant to override diversion features such as, Call Forwarding, Call Coverage, and soon (1 per console).
- Call Offer ("intrusion") — Depression of this button allows the attendant to extend a call when the called party is active on another call (1 per console).
- Don't Split ("dont-split") — This button allows the attendant to not split away a call when dialing (1 per console).
- Visually Impaired Attendant Service ("vis") — This button activates visually impaired service for the attendant. When this service is activated, the attendant can listen to console status or messages by pressing buttons that have been translated as follows:
 - "con-stat" repeats the console status.
 - "display" calls out display contents.
 - "dtgs-stat" calls out the DTGS status.
 - "last-mess" repeats the last message.
 - "last-op" repeats the last operation.
- Trunk Group Select

In addition to the 12 Direct Trunk Group Selection (DTGS) Button Assignments on Page 1 of the form, up to 12 single lamp DTGS buttons may be administered on this page. The status lamp associated with the feature button is used to monitor the busy/idle status of the trunk. Trunk groups administered on these buttons cannot be controlled using Attendant Control of Trunk Group Select buttons. The single lamp DTGS buttons may be administered as follows:

- "local-tgs" — Local trunk group select; allows the attendant to access trunk groups on the local PBX (combination of 12 local-tgs/remote-tgs per console).

- “remote-tgs” — Remote trunk group select; allows the attendant to access trunk groups on a remote PBX (combination of 12 local-tgs/remote-tgs per console).
- “hundrd-sel” — Hundreds group select. In addition to the fixed HGS buttons on Page 1 of the form, a user can administer hundreds group select feature buttons on this page. When a feature button is administered as “hundrd-sel”, a subfield appears that must then be administered in the same manner as the fixed HGS button fields (a 1 to 3 digit hundreds group plus prefix, if needed). Administered “hundrd-sel” feature buttons operate in the same manner as fixed HGS buttons.

The total number of hundreds group select buttons (fixed and administered) allowed on a console is 20. Thus, if all 20 fixed HGS buttons have been administered, no “hundrd-sel” feature buttons may be administered.



NOTE:

If no fixed HGS buttons are administered, 19 “hundrd-sel” feature buttons are available. This is because 5 of the 24 feature buttons must be used for required feature buttons (hold, pos-busy, night-serv, forced-rel, and split).

If 12 HGS buttons are assigned on page 2 of the form, it is recommended that the “night”, “pos-busy”, and “hold” buttons be reassigned to locations 20, 21, and 3, respectively. The HGS buttons should then be assigned to the right-most three columns, as required.

Page 4 of the Form (Page 3 if the Data Module form is not displayed)

- **DISPLAY MODULE BUTTON ASSIGNMENTS** — Enter the desired feature or functions from Table 5-1. Display-type buttons are used to obtain display functions on the associated alphanumeric display. These buttons are noted as “[display button]” in the Feature or Function column on the table. Also, several feature buttons can be administered so that their associated status lamps can be used to provide visual indications of the associated feature or function. In some cases, the button itself is not operational. These buttons are noted as “[status lamp]”. If a Call Cover Msg Rt (cov-msg-rt) button is assigned, a Leave Word Calling Delete Msg (delete-msg) button and a Next (next) button must also be assigned.

Page 1 of X

ATTENDANT CONSOLE _

Type: console

Extension: _____ Name: _____

Console Type: _____ COS: 1 Auto Answer: none

Port: _____ COR: 1 Data Module? n

Display Language: english

DIRECT TRUNK GROUP SELECT BUTTON ASSIGNMENTS (Trunk Access Codes)

Local Remote		Local Remote	
1: _____	_____	7: _____	_____
2: _____	_____	8: _____	_____
3: _____	_____	9: _____	_____
4: _____	_____	10: _____	_____
5: _____	_____	11: _____	_____
6: _____	_____	12: _____	_____

HUNDREDS SELECT BUTTON ASSIGNMENTS

1: _____	6: _____	11: _____	16: _____
2: _____	7: _____	12: _____	17: _____
3: _____	8: _____	13: _____	18: _____
4: _____	9: _____	14: _____	19: _____
5: _____	10: _____	15: _____	20: _____

Screen 5-12. Attendant Console Form (Page 1 of X)

Page 2 of 4

STATION

DATA MODULE

 Data Extension: _____ BCC: 2 ITC: rest

 Name: _____ COR: 1_ COS: 1_

ABBREVIATED DIALING

 List1: _____

SPECIAL DIALING OPTION: default

 DEFAULT DIALING

 Abbreviated Dialing Dial Code (From above list): _

ASSIGNED MEMBER (Station with a data extension button for this data module)

Ext	Name
1:	

Screen 5-13. Attendant Console Data Module Form (Page 2 of 4)

Implementation Notes:

This page is only displayed if the Data Module field on Page 1 is "y".

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

HOT LINE DESTINATION is only displayed when the SPECIAL DIALING OPTION field is "hot-line".

DEFAULT DIALING is only displayed when the SPECIAL DIALING OPTION field is "default".

Abbreviated Dialing Dial Code only displayed when SPECIAL DIALING OPTION is "hot-line" or "default".

Page Y of X

ATTENDANT CONSOLE

FEATURE	BUTTON	ASSIGNMENTS
1:	split	_____
2:		_____
3:		_____
4:		_____
5:		_____
6:	hold	_____ *
7:		_____
8:		_____
9:		_____
10:		_____
11:		_____
12:		_____
13:		_____
14:		_____
15:		_____
16:		_____
17:		_____
18:		_____
19:		forced-rel
20:		_____
21:		_____
22:		_____
23:		night-serv *
24:		pos-busy__ *

Screen 5-14. Attendant Console Form (Page Y of X)

Implementation Note:

* Feature button administrable to other button locations (shown in system default location).

Page Y of X

ATTENDANT CONSOLE

DISPLAY	MODULE	BUTTON	ASSIGNMENTS
1:	normal		_____
2:	inspect		_____
3:	cov-msg-rt		_____
4:	next		_____
5:			delete-msg
6:			call-disp_
7:			date-time_
8:			timer _____

Screen 5-15. Attendant Console Form (Page Y of X)

Implementation Note:

Default feature buttons shown above. Other display feature buttons as noted on Table 5-1 may be administered here, as required.

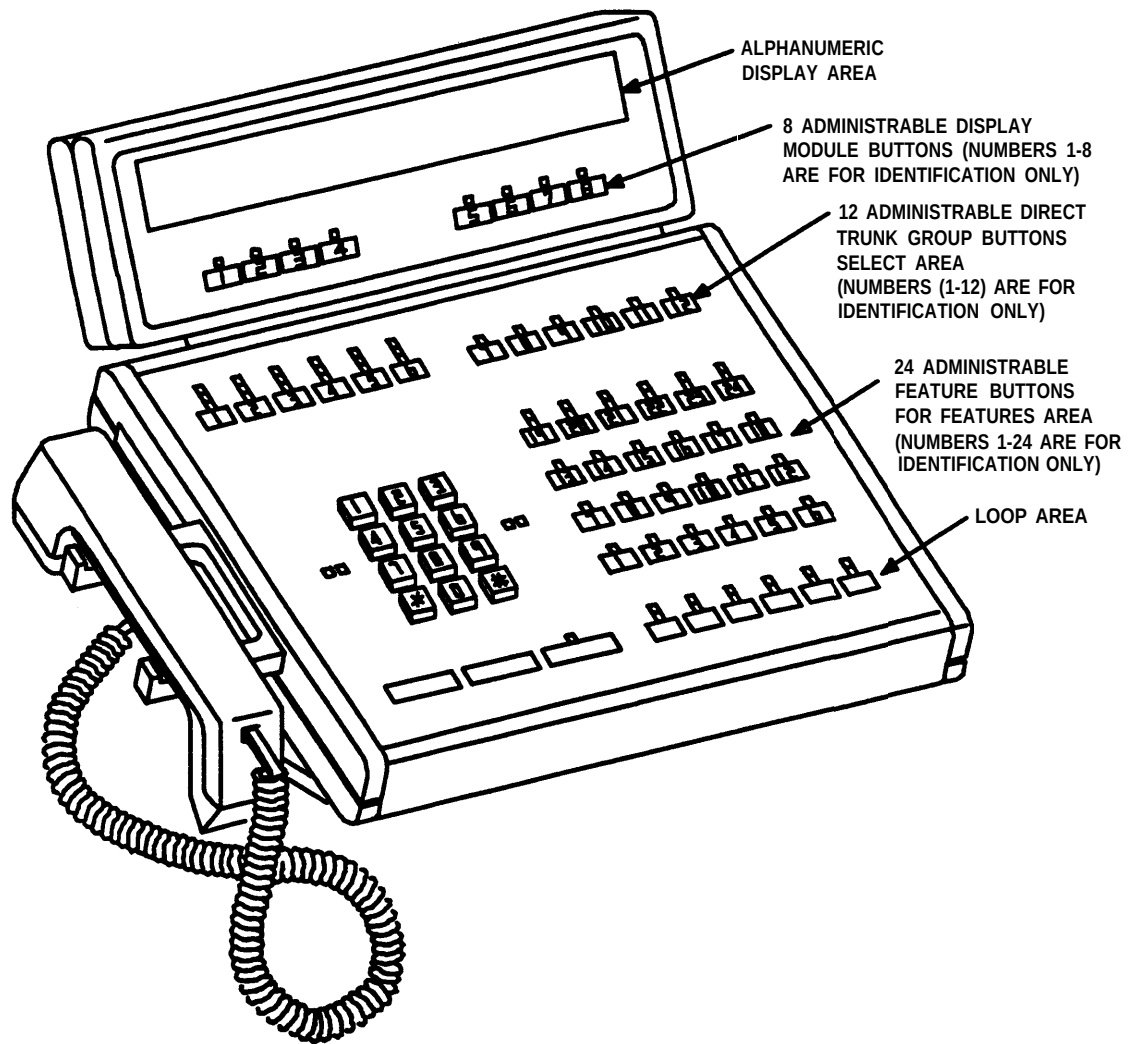


Figure 5-1. Basic Attendant Console (301A) Button Assignments

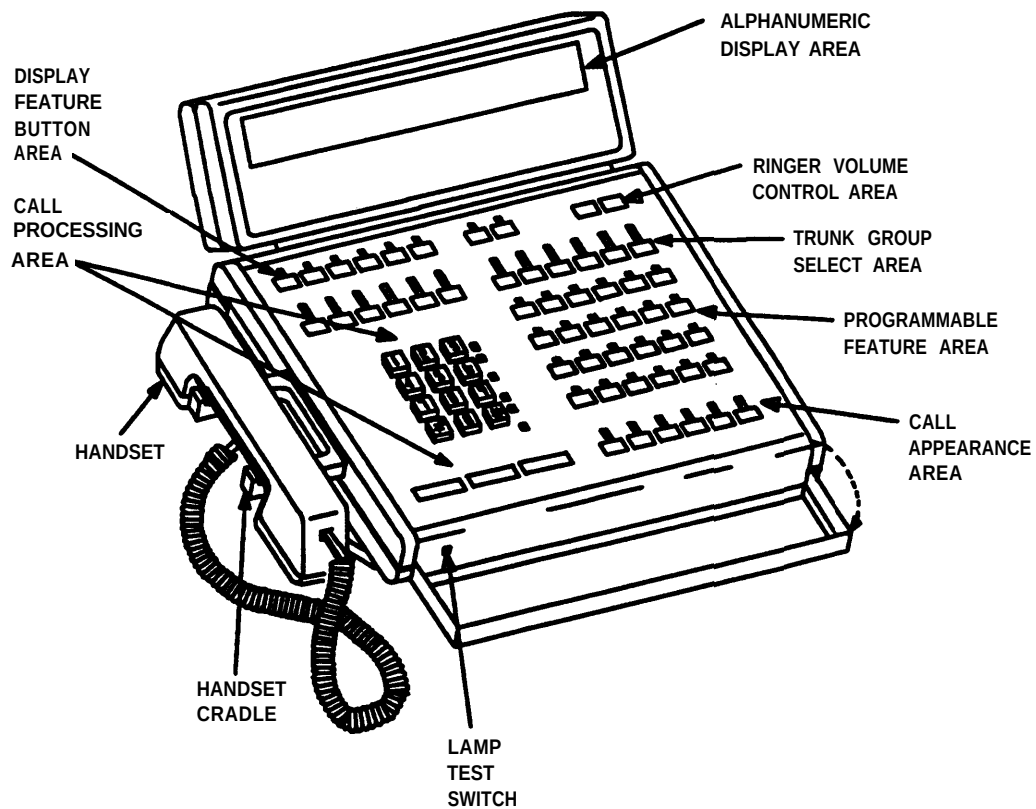
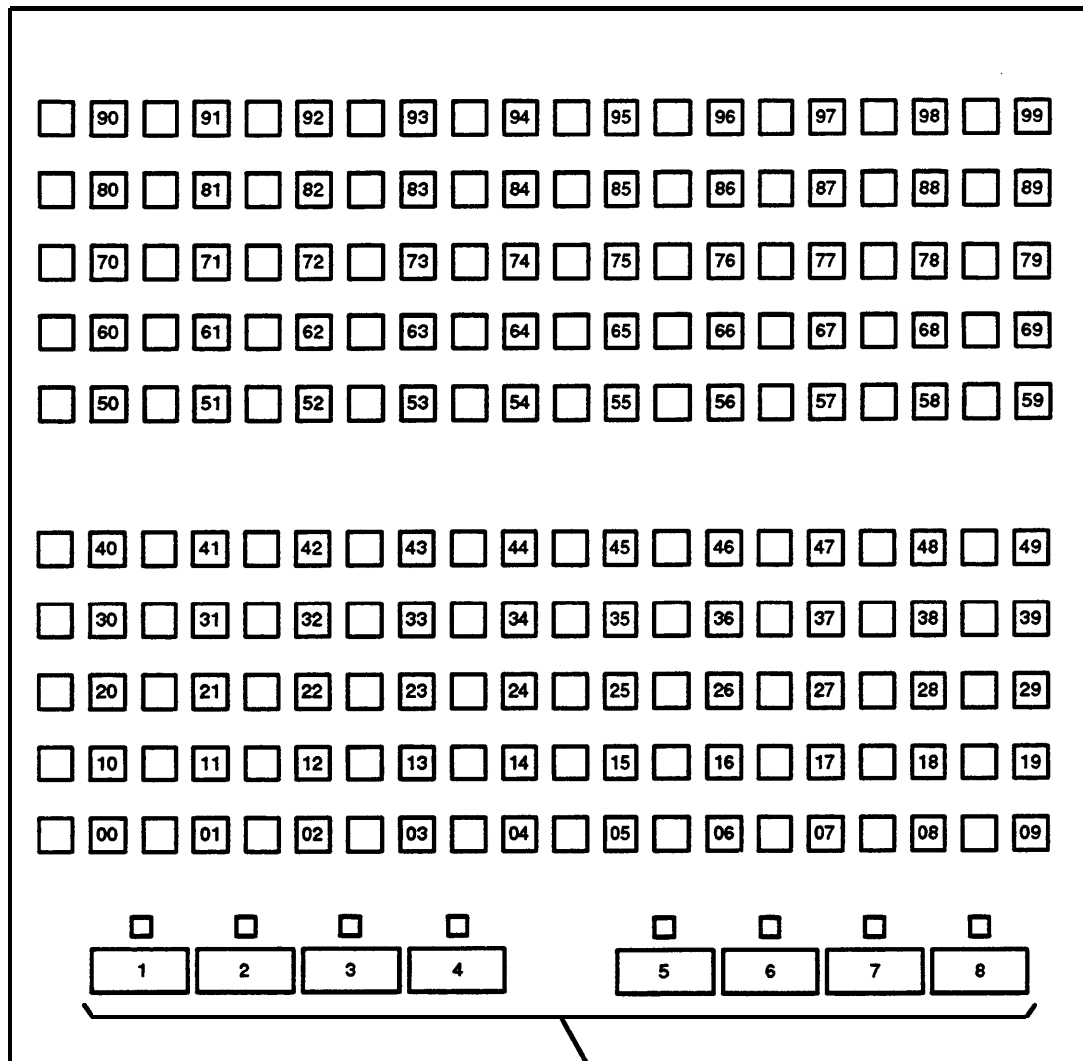


Figure 5-2. Enhanced Attendant Console (302A) Button Assignments



EIGHT ADMINISTRABLE
HUNDREDS GROUP
SELECT BUTTONS
(NUMBERS 1-8 ARE
FOR IDENTIFICATION
ONLY)

Figure 5-3. Selector Console (24A) Administrable Hundreds Group Select Buttons

☐	90	☐	91	☐	92	☐	93	☐	94	☐	95	☐	96	☐	97	☐	98	☐	99
☐	80	☐	81	☐	82	☐	83	☐	84	☐	85	☐	86	☐	87	☐	88	☐	89
☐	70	☐	71	☐	72	☐	73	☐	74	☐	75	☐	76	☐	77	☐	78	☐	79
☐	60	☐	61	☐	62	☐	63	☐	64	☐	65	☐	66	☐	67	☐	68	☐	69
☐	50	☐	51	☐	52	☐	53	☐	54	☐	55	☐	56	☐	57	☐	58	☐	59
☐	40	☐	41	☐	42	☐	43	☐	44	☐	45	☐	46	☐	47	☐	48	☐	49
☐	30	☐	31	☐	32	☐	33	☐	34	☐	35	☐	36	☐	37	☐	38	☐	39
☐	20	☐	21	☐	22	☐	23	☐	24	☐	25	☐	26	☐	27	☐	28	☐	29
☐	10	☐	11	☐	12	☐	13	☐	14	☐	15	☐	16	☐	17	☐	18	☐	19
☐	00	☐	01	☐	02	☐	03	☐	04	☐	05	☐	06	☐	07	☐	08	☐	09
☐		☐		☐		☐		☐		☐		☐		☐		☐		☐	
☐	1	☐	2	☐	3	☐	4	☐	5	☐	6	☐	7	☐	8	☐	9	☐	10
☐		☐		☐		☐		☐		☐		☐		☐		☐		☐	
☐	11	☐	12	☐	13	☐	14	☐	15	☐	16	☐	17	☐	18	☐	19	☐	20

Twenty Administrable
Hundreds Group
Select Buttons
(Numbers 1-20 Are
For Identification
Only)

Figure 5-4. Enhanced Selector Console (26A) Administrable Hundreds Group Select Buttons

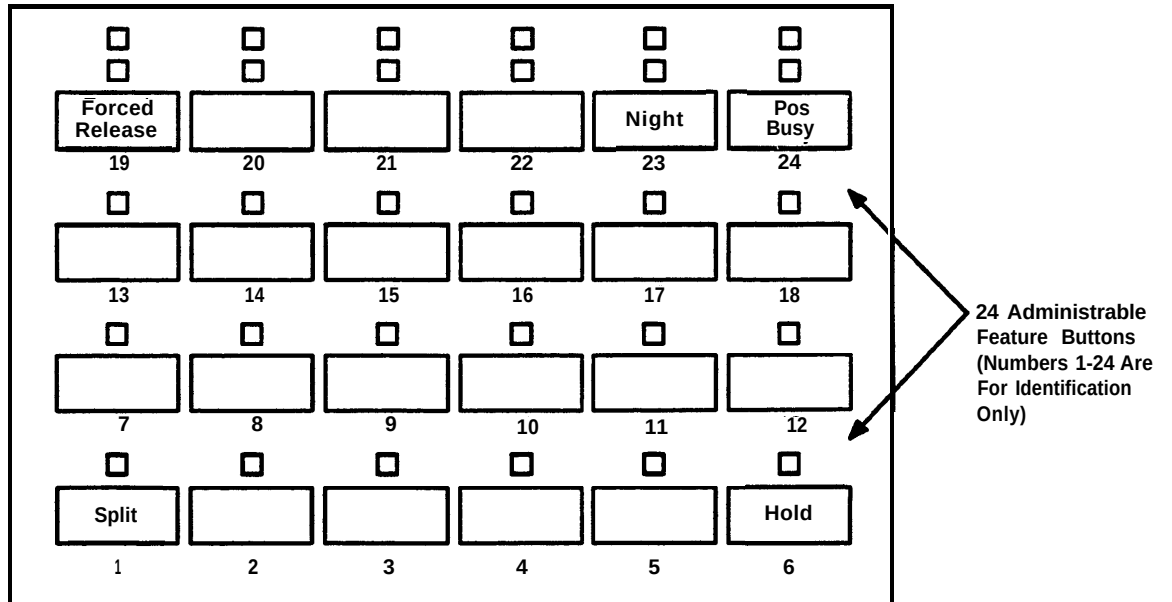


Figure 5-5. Attendant Console 24 Administrable Feature Button Number Assignments

Table 5-1. Attendant Console Feature Button Characteristics

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
Abbreviated Dialing	AD	abrv-dial (List: ____ DC: ____)	1 per List/DC	1
Administered Connection [status lamp]	AC Alarm	at-alarm	1	
Automatic Call Distribution (ACD)	After Call Work	after-call (Grp. No. __)	N	2
	Assist	assist (Grp. No: __)	1 per split group	2
	Auto In	auto-in (Grp. No. __)	1 per split group	2
	Auxiliary Work	aux-work (Grp. No. __)	1 per split group	2
	Manual-h	manual-in (Grp. No. __)	1 per split group	2
	Release	release	1	
	Work Code	work-code	1	
	Stroke (0-9)	stroke-cnt (Code: __)	1	10
Attendant Console (Calls Waiting)	CW Aud Off	cw-ringoff	1	
Attendant Control of Trunk Group Access (Activate)	Cont Act	act-tr-gtp	1	
Attendant Control of Trunk Group Access (Deactivate)	Cont Deact	deact-tr-g	1	
Attendant Direct Trunk Group Select	Local TG Remote TG	local-tgs remote-tgs	12	9
Attendant Display [display buttons]	Data/Time	date-time	1	
	Inspect Mode	inspect	1	
	Normal Mode	normal	1	
	Stored Number	stored-num	1	
	Timer	timer	1	

* N = any number of buttons on the voice terminal can be assigned to this feature. Feature button descriptions are provided in the "Voice Terminals — General" section of this chapter.

** See Notes at end of table.

Table 5-1. Attendant Console Feature Button Characteristics (continued)

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
Attendant Hundreds Group Select	Group Select _	hundrd-sel (Grp: _)	20 per console	11
Attendant Override	Override	override	1	
Automatic Circuit Assurance	ACA	aca-call	1 per System	
Automatic Wakeup (Hospitality)	Auto Wakeup	auto-wkup	1	
Busy Verification	Busy Verify	verify	1	
Call Coverage	Cover Cback	cov-cback	1	
	Consult	consult	1	
	Go To Cover	goto-cover	1	
Call Coverage [display button]	Cover Msg Rt	cov-msg-rt	1	
Call Offer	Intrusion	intrusion	1	
Call Prompting [display button]	Caller Info	callr-info	1	
Centralized Attendant Service	CAS-Backup	cas-backup	1	
Check In/Out (Hospitality) [display buttons]	Check in	check-in	1	
	Check Out	check-out	1	
Class of Restriction [display button]	COR	class-rstr	1	
Demand Print	Print Msgs	print-msgs	1	
Do Not Disturb (Hospitality)	Do Not Disturb	dn-dst	1	
Do Not Disturb (Hospitality) [display buttons]	Do Not Disturb Ext	ext-dn-dst	1	
	Do Not Disturb Grp	grp-dn-dst	1	
Don't Split	Don't Split	dent-split	1	
Emergency Access To the Attendant	Emerg. Access To Atndt	em-acc-att	1	

* Feature button descriptions are provided in the "Voice Terminals — General" section of this chapter.

** See Notes at end of table.

Table 5-1. Attendant Console Feature Button Characteristics (continued)

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
Facility Busy Indication [status lamp]	Busy (trunk or extension)	busy-ind (TAC/Ext:_)	1 per TAC/Ext.	a
Facility Test Calls [status lamp]	FTC Alarm	trk-ac-alm	1	
Hardware Failure [status lamps]	Major Hdwe Failure	major-alm	10 per System	
	Auto Wakeup	pr-awu-alm	1	
	DS1 (facility)	ds1-alarm	10 per system	
	PMS Failure	pros-alarm	1	
	PMS Ptr Alm	pr-pms-alm	1	
	CDR 1 Failure	cdr1-alm	1	
	CDR 2 Failure	cdr2-alm	1	
	Sys Ptr Alm	pr-sys-alm	1	
Hold	Hold	hold	1	
Integrated Directory [display button]	Integrtd Directory	directory	1	
Incoming Call Identification	Coverage (Group number, type, name, or ext.#)	in-call-id	N	
Leave Word Calling	Cancel LWC	lwc-cancel	1	
	LWC	lwc-store	1	
Leave Word Calling [display buttons]	Delete Msg	delete-msg	1	
	Next	next	1	
	Call Display	call-disp	1	
Leave Word Calling (Remote Message Waiting) [status lamp]	Msg (name or extension #)	aut-msg-wt (Ext: __)	N	8
Link Failure	Link Failure (Link No.__)	link-alarm (Link No.__)	1 per Link #	3
Night Service (ACD)	Hunt Group	hunt-ns (Grp. No.__)	3 per hunt group	4
	Trunk Grp.	trunk-ns (Grp. No.__)	1 per trunk group	5

* Feature button descriptions are provided in the "Voice Terminals — General" section of this chapter.

** See Notes at end of table.

Table 5-1. Attendant Console Feature Button Characteristics (continued)

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
PMS Interface [display buttons]	Message Waiting Act.	mwn-act	1 per system	
	Message Waiting Deact	mwn-deact	1 per System	
Priority Calling	Prior Call	priority	N	
Position Busy	Position Busy	pos-busy	1	
Queue Status Indications (ACD) [display buttons]	AQC	atd-qcalls (Grp:_)	1	6
	AQT	atd-qtime (Grp:_)		6
Queue Status Indications (ACD) [status lamps]	NQC	q-calls (Ext:_)	1	7
	OQT	q-time (Ext:_)	1 per hunt group	7
Ringing	In Aud Off	in-ringoff	1	
Serial Call	Serial Call	serial-cal	1	
System Reset Alert	System Reset Alert [status lamp]	rs-alert	1	
Time of Day Routing [display buttons]	Immediate Override	man-ovrid	1	
	Clocked Override	clk-overid	1	
Timed Reminder	RC Aud Off	re-ringoff	1	
Trunk Identification [display button]	Trunk-ID	trk-id	1	
Trunk Group Name [display button]	Trunk-Name	trunk-name	1	
Visually Impaired Service (VIAS)	VIS	vis	1	
	Console Status	con-stat	1	
	Display	display	1	
	DTGS Status	dtgs-stat	1	
	Last Message	last-mess	1	
	Last Operation	last-op	1	

* N = any number of buttons on the voice terminal can be assigned to this feature. Feature button descriptions are provided in the "Voice Terminals — General" section of this chapter.

** See Notes at end of table.

Notes:

1. List: List number 1 to 3 where the destination number is stored.
DC: Dial codes of destination number.
2. Grp: The split group number for ACD.
3. Link: A link number — 1 to 8 for multi-carrier cabinets, 1 to 4 for single-carrier cabinets).
4. Grp: A hunt group number.
5. Grp: A trunk group number.
6. Grp: Group number of the hunt group.
7. Ext: Extension number of the hunt group (may not be a VDN extension).
8. Ext: May be a VDN extension.
9. TAC: local-tgs — TAC of local TG
remote-tgs — (L-TAC) TAC of TG to remote PBX
remote-tgs — (R-TAC) TAC of TG on remote PBX

The combination of local-tgs/remote-tgs per console must not exceed 12 (maximum). Label associated button appropriately so as to easily identify the trunk group.
10. Code: Enter a stroke code (0 through 9).
11. Grp: Enter a hundreds group number (1 through 20).

Authorization Codes

This form is used to assign authorization codes and associate them with classes of restriction (CORs). On an internal originating call, the COR assigned the facility (such as station) being used to originate the call and its PGN (when assigned) is used to select a routing pattern. With this, the calling party can dial a 4- to 7-digit authorization code to override the FRL assigned the COR (may be associated with voice/data terminals, incoming trunk groups, remote access trunk groups, or attendant consoles). This allows users within each PGN to have access to all seven FRLs (when assigned) and still remain partitioned. On an incoming remote access call, dialing an authorization code as part of the call dialing sequence selects the COR and the associated PGN to be used in processing the call.



NOTE:

The use of authorization codes when accessing a Vector Directory Number extension will be denied.

To maximize the security of the System, the following should be considered:

1. Authorization Codes should be administered to the maximum length allowed by the System.
2. Authorization Codes should be nonconsecutive (random) and changed at least quarterly.
3. Authorization Codes should be deactivated immediately if a user leaves the company or changes assignments.
4. Assign each Authorization Code the minimum level of calling permissions required.

Administration Commands

The following administration commands can be used to access the Authorization Codes form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier
change	authorization-code	auth (4-7 digit number)
display	authorization-code	auth (4-7 digit number)

Form Instructions

Make assignments as required for the following fields on each page of the form:

- **Number of Codes Administered** — This is a display-only field and contains the sum of the number of Authorization Codes that has been administered using the Authorization Codes form.

- 

For System security reasons, it is recommended that Authorization Codes be seven random digits in length.

- **COR** — Enter the desired COR number from 0 through 95.

Screen 5-16. Authorization Code Form (Page 1 of 1)

Cabinet Administration

**NOTE:**

This form is applicable only to G3r V2 configurations.

This form is used to describe cabinets and to define mapping between external and internal board addresses so that boards and ports can be identified in a uniform way.

Administration Commands

The following administration commands can be used to access the Cabinet Administration form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	cabinet xx	(cabinet number)
remove	cabinet xx	(cabinet number)
change	cabinet xx	(cabinet number)
display	cabinet xx	(cabinet number) ['print' or 'schedule']
list	cabinet	['print' or 'schedule']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

- **Cabinet** — Display-only field. This field shows the cabinet number as entered in the command line.
- **Cabinet Layout** — Enter the type of physical carrier layout. Valid entries are “five-carrier”, and “single-carrier-stack”. Default is blank.
- **Cabinet Type** — Display-only field. This field shows the type of cabinet being administered. If cabinet “01” is being administered, this field will be “processor”. If cabinets “02” through “22” are being administered, this field will be “expansion-portnetwork”.
- **Number of Portnetworks** — Enter the number of PNs in the cabinet. Valid entries are “1” (default), and “2”.
- **Room** — Enter up to ten characters identifying the room where the cabinet is located. Default is blank.
- **Floor** — Enter up to ten characters identifying the floor in the building where the cabinet is located. Default is blank.

- **Building** — Enter up to ten characters identifying the building where the cabinet is located. Default is blank.
- **Carrier Type** — Enter the type of carrier in the cabinet being administered. Valid entries are "dup-switch-node", "expansion-control", "not-used", "port", "processor", and "switch-node".
- **Number** — Display-only field. Consists of two fields: the Designator field and the Number field. The Designator field will contain one of the following entries:
 - PN if the carrier is a port carrier, processor carrier, or unused carrier.
 - SN if the carrier is a switch node carrier, or duplicate switch node carrier.The Number field will contain either the switch node number or portnetwork number.
- **Duplicate** — The location for the duplicate of a switch node. Only displayed when administration of PNC Duplication is enabled. If the Carrier Type is "dup-switch-node", the field displays the three-character carrier address of the duplicate. The first two characters represent the cabinet number (1 to 22); the third character represents the carrier (A through E).

This is a display-only field if the Carrier Type is "switch-node".

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CABINET

CABINET DESCRIPTION

Cabinet: _____

Cabinet Layout: _____

Cabinet Type: _____

Number of Portnetworks: _____

Room: _____

Floor: _____

Building: _____

CARRIER DESCRIPTION

Carrier	Carrier Type	Number	Duplicate
C	_____	____	____
B	_____	____	____
A	_____	____	____
X	Fan _____	____	____
D	_____	____	____
E	_____	____	____

Screen 5-17. Cabinet Administration Form**Implementation Notes:**

This form is only displayed for G3r V2 configurations.

The Duplicate field is only displayed when PNC Duplication has been enabled and the Carrier Type field is "switch-node" or "dup-switch-node".

Call Coverage Answer Group

This form is used to establish Call Coverage Answer Groups.

An answer group contains up to eight members who act as a coverage point for another user. For example, if several secretaries are responsible for answering a department's redirected calls, all the secretaries could be assigned to an answer group. The answer group is assigned a group number, and that group number appears in the department's coverage path. All terminals in an answer group ring (alert) simultaneously. Any member of the group can answer the call.

Each coverage answer group is identified by a number from 1 through the maximum number allowed by your system configuration (refer to the Capacity Table in Appendix C). The members of the group are identified by their extension number. Any installed voice terminal (but not attendants) can be assigned to a coverage answer group.

Administration Commands

The following administration commands can be used to access the Coverage Answer Group form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object		Qualifier*
add	coverage	answer-group	1-MAX (or 'next')
change	coverage	answer-group	1-MAX
display	coverage	answer-group	1-MAX ['print' or 'schedule']
list	coverage	answer-group	[1-MAX]['number' x]['to-number' x]['name' x] ['count' n]['print' or 'schedule']
remove	coverage	answer-group	1-MAX

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on the form:

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Group Name** — Enter the group name you want to use to identify this group. Up to 16 characters can be used, for example, typing pool, room 12, secy, and so on. Default is "COVERAGE GROUP".



Performance Tip:

Enter the extension numbers that are group members. This allows a *list coverage answer group* command to be used to list the voice terminals that will be alerted. The *list* command can be used in conjunction with the *list station*, *list coverage path*, and *list hunt group* commands to determine stations involved in call coverage. This makes it possible to follow call coverage for any extension, allowing the administrator to easily track call coverage paths.

- **Ext** — Enter the extension number (may not be a Vector Directory Number extension) for each member of this coverage answer group.
- **Name** — Display-only field. The name is assigned when the member's voice terminal is administered.

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COVERAGE ANSWER GROUP

Group Number: _____

Group Name: COVERAGE_GROUP_

GROUP	MEMBER	ASSIGNMENTS	Ext	Name
	1:	_____	5:	_____
	2:	_____	6:	_____
	3:	_____	7:	_____
	4:	_____	8:	_____

Screen 5-18. Coverage Answer Group Form (Page 1 of 1)

Call Coverage Paths

This form is used to implement Call Coverage Paths. The form includes the don't answer time interval (number of rings), the call coverage criteria, and the points in the coverage path used to redirect calls.

Call coverage provides internal System users with automatic redirection of calls to answering positions. Both internal and outside calls may be redirected to coverage.

Reproduce a blank form for each coverage path to be implemented.

Administration Commands

The following administration commands can be used to access the Call Coverage Paths form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

	Action	Object	Qualifier*
Without Hospitality Parameter Reduction Feature	add	coverage path	1-MAX (or 'next')
	change	coverage path	1-MAX
	display	coverage path	1-MAX ['print' or 'schedule']
	list	coverage path	[1-MAX]['path' x]['to-path' x]['count' n] ['print' or 'schedule']
With Hospitality Parameter Reduction Feature	remove	coverage path	1-MAX
	add	coverage path	1-5 (or 'next')
	change	coverage path	1-5
	display	coverage path	1-5 ['print' or 'schedule']
	list	coverage path	[1-5]['path' x]['to-path' x]['count' n] ['print' or 'schedule']
	remove	coverage path	1-5

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on the form:

- **Coverage Path Number** — Enter a coverage path number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*. If the Hospitality Parameter Reduction option is enabled on the System-Parameters Customer-Options form, only five (maximum) coverage paths can be assigned in the System.



NOTE:

Hospitality Parameter Reduction is not supported by the G3s V2 ABP configuration.

- **Next Path Number** — Enter the number of the coverage path to which a call will be redirected in case of coverage failure (the path's coverage criteria does not match the call status) at the current path. If the next path's coverage criteria matches the call status, that path is used to redirect the call and no other path is searched.
- **Linkage** — This is a display-only field that shows up to two additional coverage paths, when assigned, that the Next Path Number field entry is linked to. Figures 5-6 and 5-7 provide a typical linkage example. Three Coverage Paths (1, 2, 3) are shown.
- **COVERAGE CRITERIA** are the conditions that, when met, cause the call to redirect to coverage. Figure 5-8 shows three examples of varied coverage criteria. The criteria that may be assigned are:
 - **Active** — means that at least one call appearance is busy.
 - **Busy** — means that only one call appearance is idle.
 - **Don't Answer** — means that the ringing has exceeded the preset number.
 - **All** — means users with this path assigned will never answer their own calls; instead, all calls go immediately to coverage.
 - **DND/SAC/Goto Cover** — allows users to activate Send All Calls and to temporality direct all incoming calls to coverage regardless of the assigned Call Coverage redirection criteria. This feature also allows covering users to temporarily remove their voice terminals from the coverage path.
- **Active, Busy, Don't Answer, All and DND/SAC/Goto Cover** — Enter a "y" to activate. This specifies the condition that, when met, causes a call to redirect to coverage.
- **Number of Rings** — Enter the number of rings from 1 through 99. Three rings is the recommended timing. This is the number of rings a user's voice terminal will ring before the System sees a "no answer" condition and sends the call to the first coverage point. Default is "3".
- **COVERAGE POINTS:** allows you to define the Call Coverage Paths. Coverage points must be assigned sequentially beginning with Point 1 (do not leave gaps).



NOTE:

A Vector Directory Number may be translated as the last administered point in a coverage path.

Each coverage path can have up to three alternate answering points, any of which can be:

- A Voice Terminal or Individual Attendant (an extension number of a user who will be responsible for answering another user's redirected calls)
- Recorded Announcement
- Audio Information Exchange (AUDIX)
- A Hunt Group Number
- A Coverage Answer Group Number
- The Attendant Group ("attd")
- A Vector Directory Number (as the last administered point in the coverage path only)

When entering data for the three coverage points, use the following notations

- Use the letter "h" to indicate hunt, followed by a hunt group number. For example, you would enter "h32" if you want a coverage point to be routed to hunt group number 32.
 - Use the letter "c" to indicate coverage answer group followed by the coverage group number. For example, you would enter "c20" if you wanted a coverage point to be routed to call coverage answer group 20.
 - Use the letter "v" to indicate VDN followed by the VDN extension number. For example, you would enter "v12345" if you want the last administered coverage point to be the VDN associated with extension 12345.
 - Use "attd" if you want a coverage point to be the attendant group.
 - Use the extension number assigned to a voice terminal, announcement, and AUDIX.
- **Point1:, Point2:, Point3:** — Enter one of the following: an extension number for the voice terminal, AUDIX, announcement, hunt group number, coverage answer group number, vector directory number, **or** "attd" for the attendant group. If an AUDIX in a DCS is used and this is a remote switch served by the AUDIX on a host switch, enter an associated AUDIX hunt group number. A unique Hunt Group form must be administered with the AUDIX extension number in the Group Extension field. If "attd" is entered and the System has Centralized Attendant Service (CAS), the call will go to the CAS attendant.

If calls redirect to Message Center (a special Uniform Call Distribution hunt group), AUDIX, or to the attendant, do not list any additional coverage points. These calls will normally queue and never redirect to another coverage point. Calls to any hunt group will queue if possible. Calls redirect from a hunt group only if all hunt group members are busy and either the queue is full or there is no queue.

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COVERAGE PATH

Coverage Path Number: _

Next Path Number: ____ Linkage: ____ ____

COVERAGE CRITERIA

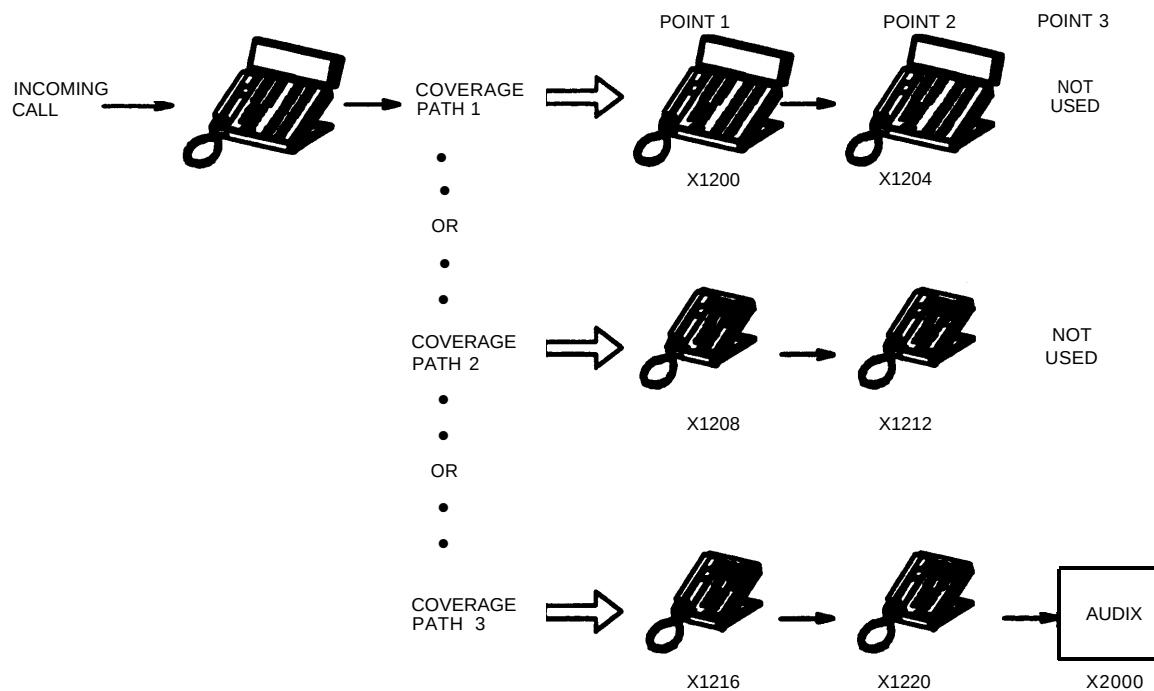
Station/Group	Status	Inside Call	Outside Call	
Active?		n	n	
Busy?		Y	Y	
Don't Answer?		Y	Y	Number of Rings: 3
All?		n	n	
DND/SAC/Goto Cover?		Y	Y	

COVERAGE POINTS

Point1: ____ Point3: ____

Point2: ____

Screen 5-19. Coverage Path Form (Page 1 of 1)



ADD COVERAGE
PATH 1 FROM

Page 1 of 1

COVERAGE PATH
 Coverage Path Number: ____
 Next Path Number: ____ Linkage: ____

COVERAGE CRITERIA

Station/Group	Status	Inside Call	Outside Call
Active?	n	n	
Busy?	y	y	
Don't Answer?	y	y	Number of Rings: 3
All?	n	n	
DND/SAC/Go to Cover?	y	y	

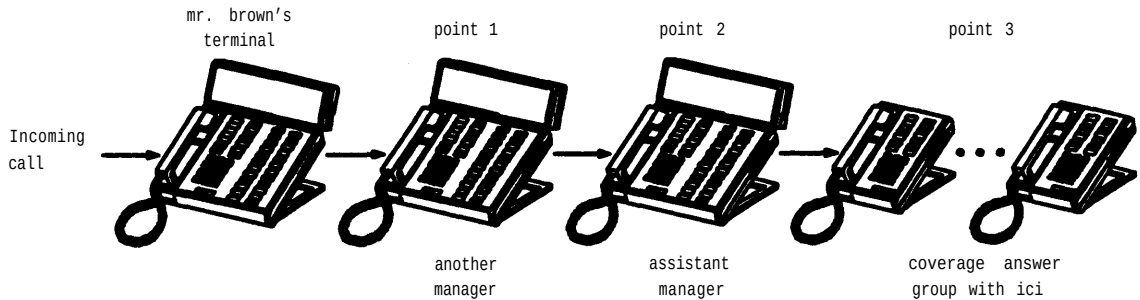
COVERAGE POINTS
 Point1: ____ Point3: ____
 Point2: ____

Figure 5-6. Example of Call Coverage Paths and Associated Linkage

EXAMPLE 1 COVERAGE PATH FOR OUTSIDE CALLS

call type - OUTSIDE

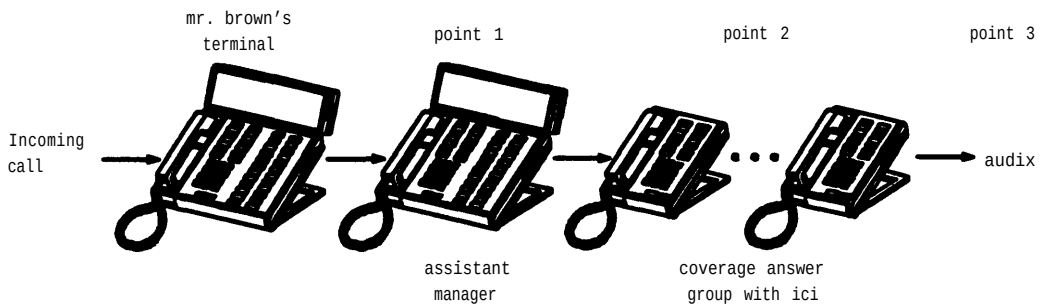
CRITERIA - busy, don't answer, and send all calls (when activated)



EXAMPLE 2 COVERAGE PATH FOR INSIDE CALLS

call type - INSIDE

criteria - BUSY AND DON'T ANSWER (SEND ALL CALLS NOT ACTIVATED)



EXAMPLE 3 COVERAGE PATH FOR INSIDE CALLS

call type - INSIDE

criteria - SEND ALL CALLS ACTIVATED

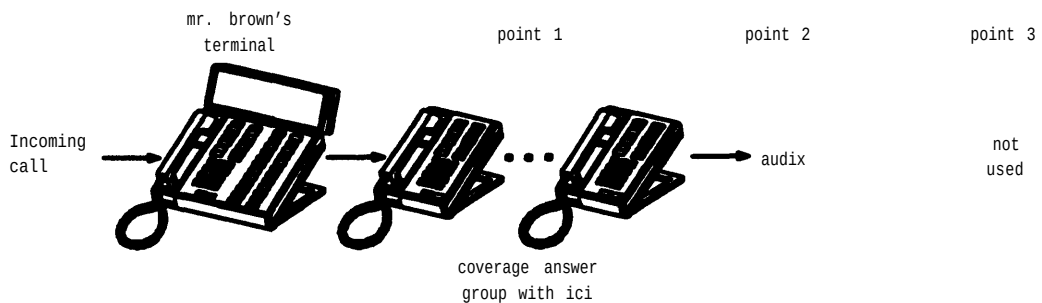


Figure 5-7. Typical Call Coverage Path Assignments

COVERAGE PATH

Page 1 of 1

Coverage Path Number: 1

Next Path Number: 2 Linkage 3

COVERAGE CRITERIA

Station/Group	Status	Inside Call	Outside Call
Active?		n	n
Busy?		n	y
Don't Answer?		n	y
All?		n	n
DND/SAC/Goto Cover?		n	y

COVERAGE POINTS

Point1: 1205 Point3: 2200

Point2: 1215

FORM OBTAINED USING
"display_coverage_path1"
COMMAND. SHOWS LINK FROM
CALL COVERAGE PATH 2 TO 3.

COVERAGE PATH

Page 1 of 1

Coverage Path Number: 2

Next Path Number: 3 Linkage

COVERAGE CRITERIA

Station/Group	Status	Inside call	outside Call
Active?		n	n
Busy?		y	n
Don't Answer?		y	n
All?		n	n
DND/SAC/Goto Cover?		n	n

COVERAGE POINTS

Point1: 1215 Point3: 2000

Point2: 2200

COVERAGE PATH

Page 1 of 1

Coverage Path Number: 3

Next Path Number: Linkage

COVERAGE CRITERIA

Station/Group	Status	Inside Call	Outside Call
Active?		n	n
Busy?		n	n
Don't Answer?		n	n
All?		n	n
DND/SAC/Goto Cover?		y	n

COVERAGE POINTS

Point1: 2200 Point3:

Point2: 2000

Extension Number 1205 = Another manager

1215 = Assistant manager

2000 = AUDIX

2200 = Coverage answer group with ici

Figure 5-8. Example Coverage Path Forms

Call Detail Recording (CDR) System Parameters

This form allows the generating of records that contain information about particular calls controlled by the switch. This information is useful for call costing, diagnostics, abuse detection, and network optimization.

Administration Commands

The following administration commands can be used to access the CDR System Parameters form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	system-parameters cdr	
display	system-parameters cdr	['print']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form.

Page 1 of the Form

- **Node Number (Local PBX ID)** — Enter the DCS switch node number in a network of switches. It is not necessary to make this field equal to other Local Node Number fields. However, it may be useful to administer this field with the same value used on the Dial Plan form for the Local Node Number. Default is blank.
- **CDR Date Format** — Enter "month/day" or "day/month" (default) to select the format for recoding CDR date information for timestamp date records of all formats. This only affects the International Direct Output format ("int-direct") as this is the only format that outputs month and day information in a data record.
- **Primary Output Format** — Controls data presentation sent to the primary output device. Entering "customized" generates the second page of this form with the customized record administration. Other options are "59-char", "expanded", "lsu", "lsu-expand", "int-direct", "int-isdn", "int-process", "printer", "unformatted", or blank (default).
- **Primary Output Extension** — Appears when the Primary Output Format is administered. Enter the extension number assigned to the primary output device, or "eia" for G3s V2 and G3i V2 configurations. Default is blank.



NOTE:

The first digit of the CDR extension number and the length of that number must agree with the first digit table of the dial plan.

- **Secondary Output Format** — Controls data presentation sent to the secondary output device. Valid entries are "Isu", "Isu-expand", "unformatted", "int-direct", "int-process" or blank (default).



NOTE:

This option should only be used by AT&T service personnel. This option may lose data when there are large amounts of data in the buffer.

- **Secondary Output Extension** — Appears when the secondary output format is administered. Enter the extension number assigned to the secondary output device, or "eia" for G3s V2 and G3i V2 configurations. Default is blank.



NOTE:

The first digit of the CDR extension number and the length of that number must agree with the first digit table of the dial plan.

- **Use ISDN Layouts** — Only administrable if the Use Enhanced Layouts field is "n". Enter "y" to use ISDN record layouts. This field applies to both the primary and secondary formats if applicable; however, only the "Isu" and "printer" output formats will be affected. Default is "n".
- **EIA Device Bit Rate** — Applies to G3s V2 and G3i V2 configurations only. Displayed if either the Primary or Secondary Output Format fields are "eia". Enter the bit rate of the CDR device connected to the EIA port. Valid entries are "300", "1200", "2400", and "9600".
- **Use Enhanced Layouts** — Administrable only when the Use ISDN Layouts field is "n". Enter "y" to enable the use of the Enhanced version of the specified primary output layout. This field applies to both the primary and secondary output formats if applicable; however, only the "expanded", "Isu", "printer", and "unformatted" output formats will be affected.
- **Record Outgoing Calls Only** — Enter "y" to report outgoing calls; enter "n" (default) to report both outgoing and incoming calls.
- **Suppress CDR for Ineffective Call Attempts** — Enter "y" (default) to ignore reporting of ineffective call attempts. An ineffective call attempt occurs when a call originating at a voice/data terminal is blocked because of an authorization feature or unavailability of outgoing trunks. Enter "n" to report ineffective call attempts.
- **Disconnect Information in Place of FRL** — Enter "y" to record disconnect information or "n" (default) to record the call's FRL.



NOTE:

This field changes the *Facility Restriction Level (FRL)* field of the CDR record to record the reason for disconnect of a call rather than the FRL. It is used for isolating problems between the Generic 3r and the telephone network.

- **Intra-Switch CDR** — Enter “y” to record calls within the switch. Default is “n”.
- **CDR Call Splitting** — Enter “y” to enable the splitting of call charges on transferred and conference calls.
- **Attendant Call Recording** — Only displayed if the CDR Call Splitting field is “y”. Enter “y” to enable the separate recording for attendant portions of call duration.
- **Forced Entry of Acct. Code Calls Marked on Toll Analysis Form** — Specifies whether an account code will be required when making a toll call. A toll call is defined to be any outgoing call with a “0” or “1” in either of the first two positions of the dialed number, except service calls (911, 411, and so on), directory assistance calls, or WATS calls (800). This will not necessarily be all chargeable calls and it may even include some non-chargeable calls. Entering “y” denies all toll calls without an account code. Entering “prompt” allows the call to proceed through the called number digit collection and if the account code has not been entered, the system will provide recall dial tone and collect the account code at that time.



NOTE:

A “prompt” entry is required for the Feature Group B/D feature.

Default is “n”.

- **Calls to Hunt Group - Record** — This field appears when the Record Called Vector Directory Number Instead of Group or Member field is “n”. Enter “member-ext” (default) to record the extension of the voice/data terminal where the call terminated; enter “group-ext” to record the extension that was dialed. The extension of the voice/data terminal in the hunt group that answered the call is the extension assigned to the hunt group.
- **Record Called Vector Directory Number Instead of Group or Member** — Enter “y” to include the Vector Directory Number (VDN) in the Dialed Number Field of a CDR record. This field and the Record Called Agent Login ID Instead of Group or Member field cannot both be “y”. Default is “n”.



NOTE:

A VDN overrides group or member information that is otherwise stored in the Dialed Number Field of the CDR record. If a call is directed through more than one VDN, the first VDN used for the call is stored.

- **Record Called Agent Login ID Instead of Group or Member** — Only displayed if Expert Agent Selection (EAS) is enabled on the System-Parameters Customer-Options form. Enter “y” to indicate whether the EAS agents LoginID is recorded instead of the physical extension in the Dialed Number. This field and the Record Called Vector Directory Number Instead of Group or Member field cannot both be “y”.
- **Record Non-Call-Associated TSC** — Enter “y” to record non-call-associated TSC information (such as a leave-word calling message left across DCS. Default is “n”.
- **Record Call-Associated TSC** — Enter “y” to record call-associated TSC information. Default is “n”.
- **Privacy — Digits to Hide** — Enter the number of digits (0 to 7) to be blanked from the back (right to left) of the Digits Dialed field on the CDR record; default is 0.
For example, if “4” is entered in this field and the user dials 555-1234, only “555” would appear in the Digits Dialed field of the CDR record.

NOTE:

Some countries require that a certain number of digits must be blanked for every call to retain calling privacy. Refer to Appendix B, *Application Notes*, for information specific to each supported country.

- **Call Record Handling Option** — Field displayed on G3r V2 configuration only. Used to control call routing when new calls come in, the CDR link is down, and the buffer is filled. Enter “reorder” to block with an intercept, “warning” (default) to stop recording when the buffer is full, or “attendant” to route the call to an attendant with options to proceed as a non-CDR call.

NOTE:

Changing this field from the default “Warning” will cause the message “WARNING: Pressing [ENTER] redirects CDR measured ACD & vector calls” to be displayed.

- **Digits to Record for Outgoing Calls** — Enter “dialed” or “outpulsed” to record the dialed or outpulsed digits in the Dialed Number field of the CDR.
- **CDR Account Cods Length** — Enter the number of digits collected when the CDR account code is entered. Default is 2.

Page 2 of the Form

- **Data Item** — Enter the data items in the order they should appear on the customized record. Valid entries are “acct-code”, “attd-console”, “auth-code”, “bandwidth”, “bcc”, “calling-num”, “code-dial”, “code-used”, “cond-code”, “dialed-num”, “duration”, “feat-flag”, “frl”, “in-crt-id”, “in-trk-code”, “ins”, “ixc-code”, “ma-uuu”, “node-num”, “out-crt-id”, “res-flag”, “time”, “line-feed”, “null”, “ppm”, “return”, “space”, “tsc-at”, “tsc-flag”,

and "vdr". Default is blank, but at least one field must be entered. A "line-feed" and "return" must be used to complete a customized record (see Page 2 sample).

- **Length** — Enter the length of each data item (used with the Record Length field to determine the total length of the customized record). The default for each field is the maximum length (except for "space" where the default is "1").
- **Record Length** — A display-only field that shows the length the customized record. This field is updated each time the data item length field is changed.

CDR SYSTEM PARAMETERS		Page 1 of X
Node Number (Local PBX ID): _____	CDR Date Format: _____	
Primary Output Format: _____	Primary Output Ext: _____	
Secondary Output Format: _____	Secondary Output Ext: _____	
Use ISDN Layouts? _	EIA Device Bit Rate: _____	
Use Enhanced Layouts? _		
Record Outgoing Calls Only? _	Intra-switch CDR? _	
Suppress CDR for Ineffective Call Attempts? _	CDR Call Splitting? _	
Disconnect Information in Place of FRL? _	Attendant Call Recording? _	
Force Entry of Acct Code for Calls Marked on Toll Analysis Form? _		
	Calls to Hunt Group - Record: _____	
Record Called Vector Directory Number Instead of Group or Member? _		
Record Called Agent Login ID Instead of Group or Member? _		
Record Non-Call-Assoc TSC? _	Call Record Handling Option: _____	
Record Call-Assoc TSC? _	Digits to Record for Outgoing Calls: _____	
Privacy - Digits to Hide: _	CDR Account Code Length: _____	

Screen 5-20. CDR System Parameters Form (Page 1 of X)**Implementation Notes:**

The Primary Output Extension and Secondary Output Extension fields only appear when the Primary Output Format and Secondary Output Format fields are administered.

The Call Record Handling Option field is displayed for G3r V2 configurations only.

The EIA Device Bit Rate field only appears when either the Primary or Secondary Output Extension fields are "eia".

CDR SYSTEM PARAMETERS			Page 2 of 2		
Data Item - Length	Data Item - Length	Data Item - Length	Data Item - Length	Data Item - Length	Data Item - Length
1: time_____ - 4_	17: _____ - __	33: _____ - __	34: _____ - __	35: _____ - __	36: _____ - __
2: space_____ - 1_	18: _____ - __	37: _____ - __	38: _____ - __	39: _____ - __	40: _____ - __
3: duration_____ - 4_	19: _____ - __	41: _____ - __	42: _____ - __	43: _____ - __	44: _____ - __
4: return_____ - 1_	20: _____ - __	45: _____ - __	46: _____ - __	47: _____ - __	48: _____ - __
5: line-feed _____ - 1_	21: _____ - __				
6: _____ - __	22: _____ - __				
7: _____ - __	23: _____ - __				
8: _____ - __	24: _____ - __				
9: _____ - __	25: _____ - __				
10: _____ - __	26: _____ - __				
11: _____ - __	27: _____ - __				
12: _____ - __	28: _____ - __				
13: _____ - __	29: _____ - __				
14: _____ - __	30: _____ - __				
15: _____ - __	31: _____ - __				
16: _____ - __	32: _____ - __				

Record length = 11

Screen 5-21. CDR System Parameters Form (Page 2 of 2)

Implementation Note:

Page 2 appears when the Primary Output Format is "customized".

Call Vector

This form is used to program a series of commands that specify how to handle calls directed to a Vector Directory Number (VDN). For additional information on Call Vectors, refer to Call Vectoring in Chapter 3.

**NOTE:**

Call Vectoring is not supported by the G3s V2 ABP configuration.

Administration Commands

The following administration commands can be used to access the Call Vector form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviations when entering a command.

Action	Object	Qualifier*
change**	vector	1-MAX
display	vector	1-MAX ['print' or 'schedule']
list	vector	1-MAX ['count' 1-MAX] ['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

** Do not change a call vector while it is processing a call. It is recommended to add a new vector with the Call Vector form, and then use the Vector Directory Number form to point an existing VDN to the new vector.

Form Instructions

Make assignments as required for the following fields on the form:

- **Number** — Display-only field when the form is accessed using a *change* or *display* administration command. Enter a vector number when completing a paper form.
- **Name** — Enter up to 15 alphanumeric characters to represent the vector name. This is an optional field. Default is blank
- **ASAI Routing** — Display-only field. Indicates whether or not the CallVisor Adjunct/Switch Applications Interface (ASAI) Routing option is enabled on the System-Parameters Customer-Options form. Valid values are “y” or “n”.
- **Basic** — Display-only field. Indicates whether or not the “Vectoring (Basic)” option is enabled on the System-Parameters Customer-Options form. Valid values are “y” or “n”.

- **Prompting** — Display-only field. Indicates whether or not the “Vectoring (Prompting)” option is enabled on the System-Parameters Customer-Options form. Valid values are “y” or “n”.
- **EAS** — Display-only field. Indicates whether or not the “Expert Agent Selection (EAS)” option is enabled on the System-Parameters Customer-Options form. Valid values are “y” or “n”.



NOTE:

When Expert Agent Selection is enabled, the help messages and error messages associated with this form will reflect a terminology change from “Split” to “Skill”. In addition, the vector commands entered will also be affected by this terminology change (for example, *check backup split* becomes *check backup skill* when EAS is enabled).

- **01 through XX** — Enter vector commands as required (up to the maximum allowed in your configuration). Any Command field that is left blank is skipped during vector processing. There is an implicit “Stop” after the last allowable step. Valid vector commands are: “adjunct”, “announcement”, “busy”, “check”, “collect”, “converse”, “disconnect”, “goto”, “messaging”, “queue”, “route”, “stop”, or “wait”. Blank steps may appear anywhere in a vector. Default is blank.

The Basic field must be “y” before “busy”, “check”, “converse”, “disconnect”, “queue”, or “wait” can be entered. The Prompting field must be “y” before “collect” can be entered. “Adjunct” can only be entered if ASAI Routing and Basic are “y”.

Call Vector – Dynamic Fields

Table 5-2 provides a summary of the Call Vector commands that can be entered in the Command field. The vector command line is shown in each of the following descriptions. The bold entry indicates the required data for the particular vector command and underlined entries indicate variable fields on the command line. When EAS is enabled, the text “split” is changed to “skill”. Branching to other vectors from a vector is permitted but the system will stop all vector processing after 1,000 vector steps have been processed.

CALL VECTOR				Page 1 of X
Number: ____	Name: _____			
ASAI Routing? y	Basic? y	Prompting? y	EAS? y	
01	_____	_____	_____	
02	_____	_____	_____	
03	_____	_____	_____	
04	_____	_____	_____	
05	_____	_____	_____	
06	_____	_____	_____	
07	_____	_____	_____	
08	_____	_____	_____	
09	_____	_____	_____	
10	_____	_____	_____	
11	_____	_____	_____	
12	_____	_____	_____	
13	_____	_____	_____	
14	_____	_____	_____	
15	_____	_____	_____	

Screen 5-22. Call Vector Form (Page 1 of X)

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CALL VECTOR

16	_____	_____	_____
17	_____	_____	_____
18	_____	_____	_____
19	_____	_____	_____
20	_____	_____	_____
21	_____	_____	_____
22	_____	_____	_____
23	_____	_____	_____
24	_____	_____	_____
25	_____	_____	_____
26	_____	_____	_____
27	_____	_____	_____
28	_____	_____	_____
29	_____	_____	_____
30	_____	_____	_____
31	_____	_____	_____
32	_____	_____	_____

Screen 5-23. Call Vector Form (Page 2 of 2)

Implementation Note:

This page will not be displayed for G3i V2 -286 configurations.

Table 5-2. Call Vector Commands

Command	Conditions *	Description **
adjunct	routing link extension ____ Form Fields "ASAI Routing" and "Basic" must be "y".	Enter the ASAI link extension (must be a valid ISDN-BRI link extension) through which the switch will send a muting request to the associated adjunct. This command is only available when the Inbound Call Management feature is active.
announcement	extension ____. extension: "none" or valid announcement extension. Default is "none". Form Fields: "Basic" or "Prompting" must be "y".	Enter a valid announcement extension to be given callers. The announcement is treated as a forced announcement. If the announcement's queue is currently full, the call retries the announcement step indefinitely before processing any new vector steps. If the requested announcement is not available, the current step will be skipped and vector processing will continue at the next vector step.
busy	Form Fields "Basic" must be "y".	Causes termination of vector processing and gives the caller busy tone. If the call is a CO trunk call and answer supervision (via announcement command or wait command with music) has not been sent, the CO will ignore the busy and continue giving the caller CO ringback Busy, if successfully applied will timeout and the call will drop after 45 seconds.
check backup split_ (split: 1-MAX***)	priority _ if unconditionally . priority l (low), m (medium), h (high), t (top). Default is "m". Form Fields: "Basic" must be "y".	Enter the priority for queuing a call unconditionally (will always attempt to queue) to a second split or hunt group queue. (Split or hunt group must be vector controlled.)
check backup split _ (split: 1-MAX)	priority _ if available agents > ____. priority l (low), m (medium), h (high), t (top). Default is "m". available agents >: 0 to MAX-1, default is 0. Form Fields: "Basic" must be "y".	Enter the priority and the number of available agents requirement before queuing a call to the backup split.

* Legend: < (less than), > (greater than). Variable field entries shown below command line.

** Data that must be entered as part of the command line is shown in bold. Variable fields that must be completed are shown underlined. When EAS is enabled, the text "split" in the command is changed to "skill" and the values "1st", "2nd", or "3rd" may be placed in these fields. Detailed descriptions of the Call Vector and Call Prompting commands are provided in *DEFINITY Communications System Call Vectoring Guide*, 555-230-520, and *DEFINITY Communications System Genetic 3 V2 Feature Description*, 555-230-204.

*** MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Table 5-2. Call Vector Commands (continued)

Command	Conditions *	Description **
check backup split _ (split: 1-MAX)	priority _ if staffed-agents > ____. priority l (low), m (medium), h (high), t (top). Default is "m". staffed agents >: 0 to MAX-1, default is 0. Form Fields: "Basic" must be "y".	Enter the priority and the number of staffed (logged in) agents requirement before queuing a call to the backup split.
check backup split _ (split: 1-MAX)	priority _ if calls-queued < ____. priority l (low), m (medium), h (high), t (top). Default is "m". calls queued <: 1-MAX, default is 1. Form Fields "Basic" must be "y".	Enter the priority and the number of calls queued requirement before queuing a call to the backup split.
check backup split _ (split: 1-MAX)	priority _ if oldest-call-waiting < ____. priority l (low), m (medium), h (high), t (top). Default is "m". oldest-call-waiting <: 0-998, default is 2. Form Fields: "Basic" must be "y".	Enter the priority and the oldest-call-waiting requirement before queuing a call to the backup split. The call will queue if the oldest call has been waiting less than the specified number of seconds.
collect __digits collect: (1 to 16, default is 1)	after announcement extension _____. extension: "none" or valid announcement extension. Default is "none". Form Fields "Prompting" must be "y".	Enter the number of digits to collect from a touch-tone phone and the extension number associated with an optional announcement to be given the calling party before receiving the digits: otherwise, enter "none".
disarmed	after announcement extension _____. extension: "none" or valid announcement extension. Form Fields: "Basic" must be "y".	Enter a valid announcement extension if an announcement is to be given a caller before disconnect occurs. Disconnect ends treatment of a call and removes the call from the switch.
goto step __ (step: 1-MAX) -or- goto vector __ (vector: 1-MAX)	unconditionally Form Fields: "Basic" or "Prompting" must be "y".	Enter the vector step or vector to branch to. This command always branches.

* Legend: < (less than), > (greater than). Variable field entries shown below command line.

** Data that must be entered as part of the command line is shown in bold. Variable fields that must be completed are shown underlined. When EAS is enabled, the text "split" in the command is changed to "skill" and the values "1st", "2nd", or "3rd" may be placed in these fields. Detailed descriptions of the Call Vector and Call Prompting commands are provided in *DEFINITY Communications System Call Vectoring Guide*, 555-230-520, and *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204.

Table 5-2. Call Vector Commands (continued)

Command	Conditions *	Description **
goto step ____ (step: 1-MAX) -or- goto vector ____ (vector: 1-MAX)	if available-agents in split__is_ ____. split: 1-MAX. is < or>, 0-MAX, defaults are > and 1. Form Fields: "Basic" must be "y".	Enter the vector step or vector to branch to. This command executes if the available agents in the indicated split is less than (<) or greater than (>) the number specified.
goto step ____ (step: 1-MAX) -or- goto vector ____ (vector: 1-MAX)	if staffed-agent sin split__is_ ____. split: 1-MAX. is <or>: 0-MAX, defaults are > and 1. Form Fields: "Basic" must be "y".	Enter the vector step or vector to branch to. This command executes if the staffed (logged in) agents in the indicated split is less than (<) or greater than (>) the number specified.
goto step ____ (step: 1-MAX) -or- goto vector ____ (vector: 1-MAX)	if calls-queued in split__is_ ____pri__. split: 1-MAX. is: < or>, 0-MAX, defaults are < and 1. pri: Priority — l (low), m (medium), h (high), t (top). Default is "m". Form Fields: "Basic" must be "y".	Enter the vector step or vector to branch to. This command executes if the calls queued in the indicated split is less than (<) or greater than (>) the number specified. Check for queued calls at the priority level specified or at higher priority levels.
goto step ____ (step: 1-MAX) -or- goto vector ____ (vector: 1-MAX)	if oldest-call-waiting in split__is_ ____. split: 1-MAX. is: <or>, 0-998 (even numbers only), defaults are > and 2. Form Fields: "Basic" must be "y".	Enter the vector step or vector to branch to. This command executes if the oldest-call-waiting in the indicated split has been waiting less than (<) or greater than (>) the number of seconds specified (0-998).
goto step ____ (step: 1-MAX) -or- goto vector ____ (vector: 1-MAX)	if digits equal ____ digits: 1 to 16 digits Form Fields: "Prompting" must be "y".	Enter the vector step or vector to branch to. This command executes if the digits from the <i>Collect</i> command match the specified digit string.

* Legend: < (less than), > (greater than). Variable field entries shown below command line.

** Data that must be entered as part of the command line is shown in bold. Variable fields that must be completed are shown underlined. When EAS is enabled, the text "split" in the command is changed to "skill". Detailed descriptions of the Call Vector and Call Prompting commands are provided in *DEFINITY Communications System Call Vectoring Guide*, 555-230-520, and *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204.

Table 5-2. Call Vector Commands (continued)

Command	Conditions *	Description **
goto step ____ (step: 1-MAX) -or- goto vector ____ (vector: 1-MAX)	if time-of-day is ____ :__ to ____ :__. is (day) (hour):(minute) to (day) (hour):(minute): day men, tue, wed, thu, fri, sat, sun, all. Default is "mon" and "fri". hour: 00 to 23 (military format), Default is "09" and "17". minute: 00 to 59 (military format). Default is "00" and "00". Form Fields: "Basic" must be "y".	Enter the vector step or vector to branch to. This command executes if the time of day criteria are met.
messaging split ____ (split: 1-MAX)	for extension _____. Default is none. extension: "none", or valid extension. Form Fields: "Basic" or "Prompting" must be "y".	Enter the split or hunt group number and extension where the caller can leave a message; otherwise, enter "none". See Note ***.
queue > to main split ____ (split: 1-MAX, default is blank)	priority ____. priority l (low), m (medium), h (high), t (top). Default is "m". Form Fields: "Basic" must be "y".	Enter the split number and priority level to have a call queue at a split. A call sent with this command will either connect to an agent in the split or enter the split's queue.
route	to number _____ if unconditionally number: 1 to 16 digits (includes AD special characters) Form Fields: "Basic" or "Prompting" must be "y".	Enter the number to route a call to. Abbreviated Dialing special characters ~p (pause), ~w (wait), ~m (mark), and ~s (suppress) can also be used. These characters count as two digits each when used. The destination can be; an attendant or attendant queue, a local extension, a remote extension (that is, UDP extension), an external number, or a VDN number.

* Legend: < (less than), > (greater than). Variable field entries shown below command line.

** Data that must be entered as part of the command line is shown in bold. Variable fields that must be completed are shown underlined. When EAS is enabled, the text "split" in the command is changed to "skill". Detailed descriptions of the Call Vector and Call Prompting commands are provided in *DEFINITY Communications System Call Vectoring Guide*, 555-230-520, and *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204.

*** If this vector step is used for a hunt group administered as an MSA hunt group with ports that go to a Digital Port Embedded (DPE) AUDIX, then the extension number specified in this field must be a station, **or** the name administered for the extension (that is, the hunt group name or VDN name) must have the extension embedded in it and the extension must have the maximum number of digits allowed in the dial plan.

Table 5-2. Call Vector Commands (continued)

Command	Conditions *	Description **
route	to number _____ if digit equals ____ number: 1 to 16 digits (includes AD special characters) equals 0 -9 Form Fields: "Prompting" must be "y".	Enter the number to route a call to if the digit entered by the calling party for the last <i>collect</i> digits command matches the single digit (0-9) entered following the word "equals". Note that this command can only be used for muting based on single digit comparisons.
route	to digits with coverage ____ coverage: n, y. Default is "n". Form Fields: "Prompting" must be "y".	Enter whether call coverage should apply when routing a call based on the digits collected from the calling party using the last <i>collect</i> digits command.
stop	Form Fields "Basic" or "Prompting" must be "y".	Enter <i>stop</i> to terminate processing of any subsequent vector steps. The following remain in effect after processing the <i>stop</i> command any calls that are already queued, remain queued, and any wait treatment such as silence, ringback, or music is continued.
wait	time ____ secs hearing _____ time: 0-998 (even numbers only) hearing: silence, ringing, music. Default is "silence". Form Fields: "Basic" or "Prompting" must be "y".	Enter the time (in seconds) before processing the next vector step and indicate the treatment to be given a caller during the wait period. A wait time of "0" seconds can be used to change the call treatment without executing a delay.

* Legend: < (less than), > (greater than). Variable field entries shown below command line.

** Data that must be entered as part of the command line is shown in bold. Variable fields that must be completed are shown underlined. When EAS is enabled, the text "split" in the command is changed to "skill". Detailed descriptions of the Call Vector and Call Prompting commands are provided in *DEFINITY Communications System Call Vectoring Guide*, 555-230-520, and *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204.

CallVisor Adjunct-Switch Application Interface Link

This form is used to administer a CallVisor Adjunct-Switch Application Interface (ASAI) Link. This assigns a port interface from the switch's TN556 Integrated Services Digital Network-Basic Rate Interface (ISDN-BRI) circuit pack (12 ports) to an adjunct such as an Inbound Call Management adjunct.

**NOTE:**

For more detailed information on ASAI, refer to *DEFINITY CallVisor ASAI Protocol Reference*, 555-230-221, and *DEFINITY CallVisor ASAI Technical Reference*, 555-230-220.

Administration Commands

The following administration commands can be used to access the Adjunct-Switch Application Interface Link form, or to gain information about an ASAI link or its effect on the System. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	station	xxxxx (extension number) or ('next')
change	station	xxxxx (extension number)
display	station	xxxxx (extension number)
list	hunt-group	
list	monitored-station	['start' extension] [count xxxxx] [print]
list	station	[xxxxx] ('count' 1-MAX) type ASAI ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-MAX) port ['print' or 'schedule']
remove	station	xxxxx (extension number)

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Extension** — This is a display-only field when accessing this form using an administration command such as *change* or *display*. When completing a blank paper form, enter a valid extension number (1-5 digits) that agrees with the dial plan.

- **Type** — Enter “asai”.
- **BCC** — Display-only field. Only displayed when the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

**NOTE:**

Refer to “Generalized Route Selection” in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls. The BCC value is used to determine compatibility when non-ISDN-PRI facilities are connected to ISDN facilities (ISDN-PRI Interworking feature).

- **COR** — Make no entry. Not required for the ASAI Link. (Default is “1”.)
- **Port** — Enter seven characters.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 12

- **COS** — Make no entry. Not required for the ASAI Link. Default is “1”.
- **Name** — Enter the name of the adjunct associated with this interface. Up to 15 characters can be used or the field may be left blank.
- **XID** — Enter “y” to indicate layer 2 XID testing capability; otherwise, enter “n”. When supporting the CONVERSANT Voice Information System, set XID to “y”. Setting is dependent on specific vendor’s office and managing applications. Default is “y”.
- **Fixed TEI** — Enter “y” or “n” depending on the vendor of the adjunct. Default is “n”.
- **TEI** — Displayed when Fixed TEI is “y”. This field identifies if the ASAI Link has a Fixed Terminal Endpoint Identification (TEI) capability. TEI identifies a unique access point in the system. When Fixed TEI is “y”, the TEI field must be administered. Enter a 1- or 2-digit number used to identify the unique access point within the service. Valid entries are 0-63. For example, if the CONVERSANT Voice Information System is supported, set the TEI to “3”.
- **MIM Support** (Management Information Message Support) — Used to support two types of capabilities: MIM endpoint initialization capability (SPID support), and other Maintenance/Management capability. Valid entries are “y” or “n”. Enter “n” for ASAI and for all other vendors. Default is “n” when the Type field is “asa”.

- **CRV Length** (Call Reference Value Length) — Used to indicate the length of Call Reference Value (CRV) for each ASAI interface. Enter “1” or “2”. Default is “1”.

Page 1 of 1

Extension: _____

Type: asai

Port: _____

Name: _____

STATION

BCC : 0

COR: 1

COS: 1

FEATURE OPTIONS

XID? y

MIM Support? n

Fixed TEI? y TEI: 3

CRV Length: 1

Screen 5-24. ASAI Station Form (Page 1 of 1)

Implementation Note:

TEI field only displayed when the Freed TEI field is “y”.

Circuit Pack Administration

This form is used to administer circuit packs to carrier slots before the circuit packs are actually installed in the carrier or cabinet. This allows the System to be configured (administered) when the circuit packs have not yet been physically inserted in their appropriate slots. Before any voice terminals, attendant consoles, or trunks can be administered in the System, the correct type of circuit pack must be installed in the appropriate slot, or using the Circuit Pack form, a circuit pack must be assigned to the slot.

The Circuit Pack Administration forms do not have to be completed if the System cabinet is equipped with the circuit packs at the time of administration. However, for switch node carriers, these forms must be administered.

Refer to *DEFINITY Communications System Generic 3 V2 Planning and Configuration*, 555-230-601, for additional information on circuit pack administration and Port Assignment Records. (The DS1 circuit pack and associated translation coverage is provided in Chapters 3 and 4).

**WARNING:**

For initial installation procedures, circuit packs should only be assigned slots per the hardware Configuration Layout record (obtained from the factory or Customer Services Support Organization). Arbitrarily assigning circuit packs to slots should not be attempted because this will eventually require (at the time of installation and test) realignment of the circuit packs and reworking associated wiring to agree with the software translations or new software translations to agree with the shipped hardware configuration.

Administration Commands

The following administration commands can be used to access the Circuit Pack form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	circuit-packs	xx (cabinet number)
display	circuit-packs	xx (cabinet number) ['print' or 'schedule']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

**NOTE:**

If no Cabinet Number is specified, this command will default to "1".

Form Instructions

Make assignments as required for the following fields on the form:

Page 1 of Form

**NOTE:**

Each page of the form represents one carrier within the cabinet specified on the command line. For G3i V2 and G3s V2 configurations, all carriers and slots will appear even if they are not included in the actual hardware. This is done for reconfiguration purposes.

- **Cabinet** — Display-only field. This field shows the cabinet number as entered on the command line.
- **Carrier** — Display-only field. This field shows the letter of the carrier (A through E) circuit packs are being administered on.
- **Cabinet Layout** — Display-only field. This field is only displayed for G3r V2 configurations. This field describes the physical layout of the cabinet. Values that may be displayed are “five-carrier” and “single-carrier-stack”.
- **Carrier Type** — Display-only field. This field shows the type of carrier. Values that may be displayed are “dup-switch-node”, “expansion-control”, “not-used”, “port”, “processor”, and “switch-node”.

**NOTE:**

For G3r V2 configurations, if the Carrier Type (as administered through the Cabinet Administration form) does not match the physical hardware, the Code fields may display question marks.

- **Slot** — Display-only field. The slot equates to the physical slot of the given carrier; the number of slots displayed will depend on the System being configured.

- For G3r V2 configurations, the number of slots represent all administrable slots available for the given carrier type.

The following table lists the administrable slots, and the circuit pack types that may be administered in those slots, for each Cabinet Layout/Carrier Type combination in a G3r V2 configuration.

CABINET LAYOUT	CARRIER TYPE	SLOTS	CIRCUIT PACK TYPES
five-carrier	port	00	TN420, TN433, TN457, TN725, TN744, TN748, TN750, TN771
		01-20	All port circuit packs
	not-used	00-21	Fields are display only.
	switch-node	01	TN570 or TN574
		02-09	TN573
		10	TN572
		11	Not administrable
		12	TN572
		13-20	TN573
		21	TN574
single-carrier-stack	expansion-control	01	TN570
		02-17	All port circuit packs
	port	01-18	All port circuit packs

- For G3i V2 configurations, **ALL** slots that could possibly be administered are displayed even if they do not apply to the current configuration of the System. This is to accommodate the situation when a System is being reconfigured.

The following table lists the slots to use, and the circuit pack types that may be administered in those slots, for each combination of Cabinet/Carrier/Carrier Type in a G3i V2 configuration.

CABINET/ CARRIER	CARRIER TYPE	USE SLOTS	CIRCUIT PACK TYPES
1A (MCC control Carrier)	processor	01-09	All Port circuit packs
1A (SCC Basic Control Cabinet)	processor	01-10	All port circuit packs
1A (SCC Enhanced Control Cabinet)	processor	01-16	All port circuit packs
1B (MCC Duplicated Control Carrier)	processor	01-09	All port circuit packs
1B (SCC Duplicated control Cabinet)	processor	01-10	All port circuit packs
1B, C, D (SCC Port Cabinet)	port	01-18	All port circuit packs
1B, C, D, E (MCC Port Carrier)	port	00	TN420, TN433, TN457, TN725, TN744, TN748, TN750, TN771
		01-20	All Port circuit packs
2A & 3A (SCC Expansion Control Cabinet)	expansion-control	01	TN570, TN776
		02-17	All port circuit packs
2A & 3A (MCC Expansion Control Carrier)	expansion-control	01	TN570, TN776
		02-19	All port circuit packs
2B, C, D (SCC Port Cabinet) 3B, C, D	port	01-18	All port circuit packs
2B, C, D, E (MCC Port Carrier) 3B, C, D, E	port	00	TN420, TN433, TN457, TN725, TN744, TN748, TN750, TN771
		01-20	All port circuit packs

- **Code** — Enter the circuit pack code ("TN" followed by a 3- or 4-digit number). If there is a physical circuit pack installed in the slot, the entry must match that of the circuit pack. If there is equipment administered on a slot, the equipment must be removed from the circuit pack before the circuit pack can be changed or removed.
- **Sfx** — Enter the circuit pack suffix, if applicable.
- **Name** — Display-only field. This field shows the alphanumeric name of the circuit pack (such as Digital Line).

**NOTE:**

When the circuit pack physically inserted in the slot differs from what has been administered on this form, a "#" will be displayed between the Sfx and Name fields.

CIRCUIT PACKS

Page 1 of X

Cabinet:

Carrier:

Cabinet Layout:

Carrier Type:

Slot	Code	Sfx	Name
00:			
01:			
02:			
03:			
04:			
05:			
06:			
07:			
08:			
09:			
10:			

Slot	Code	Sfx	Name
11:			
12:			
13:			
14:			
15:			
16:			
17:			
18:			
19:			
20:			
21:			

'#' indicates circuit pack conflict.

Screen 5-25. Circuit Pack Administration Form

To reduce repetition, the remaining pages are not shown. Refer to the “Blank Forms Package” for a complete set of forms.

Implementation Notes:

The screen above shows all fields that may be displayed. The fields that appear on a particular screen will vary depending upon the System configuration (Cabinet Layout and Carrier Type) being administered.

The Cabinet Layout field is only displayed for G3r V2 configurations.

The number of Slot fields displayed will vary depending on the System being configured. For G3r V2 configurations, the number of Slot fields displayed will represent all administrable slots available for the given Carrier Type. For G3i V2 and G3s V2 configurations, all possible Slots will be displayed.

Class of Restriction (COR)

This form is used to implement classes of restriction (CORs). A COR is used to control call origination and termination. A system may have only one COR or as many as necessary to control calling privileges. Up to 96 different CORs (0 through 95) can be assigned. CORs can be assigned to any of the following facilities:

- Attendant Console
- Hunt Groups
- Loudspeaker Paging/Code Calling Access
- Data Module
- Station
- Remote Access
- Terminating Extension Group
- Authorization Codes
- Trunk Groups



NOTE:

When a call is to a Vector Directory Number (VDN) extension, the COR of the caller and the VDN are compared to determine if the associated Call Vector can be accessed. After the vector is accessed, the COR of the VDN is used for further call permission checking.

To maximize the security of the System, the following should be considered:

1. Assign a separate COR to incoming and to outgoing trunk groups, then restrict calling between the two groups.
2. Limit the calling permissions as much as possible by setting appropriate Calling Party Restrictions and FRLs.

Administration Commands

The following administration commands can be used to access the Class of Restriction form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	cor	0-95
display	cor	0-95 ['print' or 'schedule']
list	partitioned group	['print' or 'schedule']

* Brackets [] indicate the qualifier is optional.

Form Instructions

Make assignments as required for the following fields on the form:

Page 1 of Form

- **COR Number** — Enter a number from 0 through 95 when completing a paper form. This is a display-only field when the form is accessed via an administration command such as *change* or *display*.
- **FRL** — Enter an originating Facility Restriction Level (FRL) number from 0-7. This entry is used by AAR and/or ARS features to determine call access to an outgoing trunk group. Outgoing call routing is determined by a comparison of the FRLs in the AAR/ARS Routing Pattern and the FRL associated with the COR of the call originator (typically, a voice terminal user). An originating FRL of 0 has the least calling privileges. Default is "7".

Attendants use the FRL assigned via COR administration. This FRL is used for attendant origination and assisted calls.



NOTE:

For System security reasons, it is recommended that the lowest possible FRL be assigned.

- **APLT** — Enter "n" to allow access to APLT trunk group Enhanced Private Switched Communications System (EPSCS) or Common Control Switched Arrangement (CCSA) off-net facilities. Default is "y".



NOTE:

If fully restricted service is enabled, this field must be set to "n".

- **Calling Party Restriction** — Enter one of the following: "code", "origination", "outward", "all-toll", "tac-toll", or "none".
 - *code* — Blocks calling party from making any calls on the exchange network except to selected office codes, special service codes, and area codes.
 - *origination* — Blocks the calling party from originating a call from the facility at anytime. The party can only receive calls.
 - *outward* — Blocks the calling party from directly accessing the exchange network.
 - *all-toll* — Blocks the calling party from making ARS and trunk access calls from a facility assigned the COR to certain toll areas as defined in the Dialed String Field on the Toll Analysis form. The Dialed String field on the form must be marked as being associated with the System's Toll List. The call will complete if the facilities COR is also associated with an Unrestricted Call List and whose Dialed String field on the Toll Analysis form also matches the dialed number.

- *tac-toll* — Blocks the calling party from making trunk access calls from the facility assigned the COR to certain toll areas as defined in the Dialed String field on the Toll Analysis form. The Dialed String field on the form must be marked as being associated with the System's Toll List. The call will complete if the facilities COR is also associated with an Unrestricted Call List and whose Dialed String field on the Toll Analysis form also matches the dialed number. Refer to "Toll Analysis" elsewhere in this chapter for additional information.
- *none* — No calling party restrictions.



NOTE:

For System security reasons, it is recommended that calling permissions be limited as much as possible.

- **Called Party Restriction** — Enter one of the following: "inward", "manual", "public", "termination", or "none".
 - *Inward* — Blocks the calling party from receiving incoming exchange network calls, attendant originated calls, and attendant completed calls.
 - *Manual* — Blocks the called party from receiving all calls except for those originated or extended by the attendant.
 - *Public* — Blocks the called party from receiving public network calls. Attendant calls are allowed to go through to the called party as are attendant-assisted calls if the Restriction Override field in the public restricted station's COR is set to "attd" or "all".
 - *Termination* — Blocks the called party from receiving any calls at any time.
 - *none* — No called party restrictions.
- **Time of Day Chart** — Enter the AAR/ARS time-of-day-chart number (1 to 8) associated with this COR.
- **Service Observing** (see Caution) — Enter "y" to allow a voice terminal user to be monitored by a service observer. Default is "n".



NOTE:

If the Service Observing option is not enabled on the System-Parameters Customer-Options form, this field must be set to "n".



CAUTION:

The use of Service Observing features may be subject to federal, state, or local laws, rules, or regulations; or require the consent of one or both of the parties to the conversation. Customers should familiarize themselves with and comply with all applicable laws, rules, and regulations before using these features.

- **Forced Entry of Account Codes** — Enter “y” to indicate that an account code must be dialed when making outgoing trunk calls. Entering “n” indicates that an account code is not required. Default is “n”. As a result of entering a “y”, any voice terminal assigned the associated COR must dial an account code before making an outgoing call. Any trunk group assigned that COR cannot be accessed until an account code is dialed. If a call is being routed by AAR or ARS, account code checking is not done on the COR.



NOTE:

For System security reasons, it is recommended that this field be administered to “y”.

If the Forced Entry of Account Codes for Toll Calls field on the System-Parameters Customer-Options form is set to “y”, Forced Entry of Account Codes may also be required for all outgoing calls.

If a COR requiring entry of account codes is assigned a Vector Directory Number, the *route* to commands executed by the associated vector will not be successful.

- **Priority Queuing** — Enter “y” to allow the voice terminal user’s calls to be placed ahead of nonpriority calls in a hunt group queue. Default is “n”.



NOTE:

If the ACD Option is not enabled on the System-Parameters Customer-Options form, this field must be set to “n”.

- **Direct Agent Calling** — Enter “y” to allow a user to originate or receive direct agent calls. This is used whenever a user should talk directly with a specific ACD agent, not just anyone in the agent pool. If the System is in Night Service, the call routes to the Night Service extension. Default is “n”.
- **Restricted Call List** — Enter “y” to specify that this COR will have access to the System’s Restricted Call List (see Toll Analysis form). This list can be used whether or not the COR is toll restricted. The Restricted Call List (RCL) has priority over the Toll Analysis Unrestricted Call List (UCL). A call attempt from a facility assigned a COR (with RCL field = “y”), whose dialed digit string is on the Toll Analysis form and is marked as being associated with the RCL, will be denied. Default is “n”.
- **Facility Access Trunk Test** — Enter “y” to allow Facility Access Trunk Tests (FAT). Test calls from facilities (for example, voice terminals) will be allowed to complete if their COR FAT field = “y”. For calls from facilities whose COR FAT field = “n”, intercept treatment will be given. An associated feature button (“trk-ac-alm”) status lamp will light when a successful FAT access has occurred. Pressing one of the alarm buttons (ten maximum) when its associated status lamp is lighted will turnoff all lamps on all buttons whether or not the access is still in progress or has completed. Default is “n”.

- **Unrestricted Call List** — Enter the identifying number of up to ten lists of exceptions that this COR should access.
- **Restriction Override** — Enter the type of user who is allowed to bypass restriction on the conference/transfer or call forwarding operations. Valid entries are “all”, “attendant”, or “none”. Default is “all”.
- **Access to MCT?** — This field refers to Malicious Call Trace. If “y” is entered in this field, then the class has permissions to activate a request to trace a malicious call. Default is “y”.
- **Fully Restricted Service** — When enabled (“y” entered in field) for a given COR, stations assigned that COR will not have access to the public network for either incoming or outgoing calls.



NOTE:

If this field is enabled, the APLT field must be set to “n”.

- **Category For C.I.S. ANI** — Only applicable in the Commonwealth of Independent States (C.I.S.). The Calling Party Category digit administered in this field is included as part of the ANI information sent to the Central Office on request. Valid entries are numbers 1 through 10. Default is 7.

Page 2 of Form

- **CALLING PERMISSION 0 through 95** — Enter “n” for each COR number (0 through 95) that cannot be called by the COR being implemented. A “y” means that an originating facility assigned this COR can be used to call facilities assigned this COR. Default is “y”.

Page 1 of 2

CLASS OF RESTRICTION

COR Number: __	FRL: 7
APLT? y	Calling Party Restriction: none_____
Time of Day Chart: 1	Called Party Restriction: none_____
Service Observing? n	Forced Entry of Account Codes? n
Priority Queuing? n	Direct Agent Calling? n
Restricted Call List? n	Facility Access Trunk Test? n
Unrestricted. Call Lists: __ _ _ _ _	
Restriction Override: all_____	
Access to MCT? y	Fully Restricted Service? n
Category For C.I.S. ANI: __	

Screen 5-26. COR Form (Page 1 of 2)

Implementation Note:

The Category For C.I.S. ANI field is only applicable in the Commonwealth of Independent States (C.I.S.).

CLASS OF RESTRICTION

CALLING PERMISSION (Enter "y" to grant permission to call specified COR)

0? y	12? y	24? y	36? y	48? y	60? y	72? y	84? y
1? y	13? y	25? y	37? y	49? y	61? y	73? y	85? y
2? y	14? y	26? y	38? y	50? y	62? y	74? y	86? y
3? y	15? y	27? y	39? y	51? y	63? y	75? y	87? y
4? y	16? y	28? y	40? y	52? y	64? y	76? y	88? y
5? y	17? y	29? y	41? y	53? y	65? y	77? y	89? y
6? y	18? y	30? y	42? y	54? y	66? y	78? y	90? y
7? y	19? y	31? y	43? y	55? y	67? y	79? y	91? y
8? y	20? y	32? y	44? y	56? y	68? y	80? y	92? y
9? y	21? y	33? y	45? y	57? y	69? y	81? y	93? y
10? y	22? y	34? y	46? y	58? y	70? y	82? y	94? y
11? y	23? y	35? y	47? y	59? y	71? y	83? y	95? y

Screen 5-27. COR Form (Page 2 of 2)

Class of Service (COS)

This form is used to administer access permissions for call processing features that require dial code and/or feature button access permission.



NOTE:

Class of Service (COS) does not apply to trunk groups except for the Remote Access feature.

A COS assignment defines whether or not a voice terminal user may access or use the following features and functions. Refer to *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for descriptions of the listed features. Up to 16 different COS numbers may be administered (0 through 15).

- **Automatic Callback** — (feature)
- **Call Forwarding All Calls** — (feature)
- **Data Privacy** — (feature)
- **Priority Calling** — (feature)
- **Console Permission** — (allows multi-appearance voice terminal users to control the following features (normally controlled by the attendant):
 - Automatic Wakeup
 - Controlled Restrictions
 - Do Not Disturb
 - Call Forwarding All Calls
 - Integrated Announcement Recording
- **Off-Hook Alert** — (See “Emergency Access to Attendant” feature). Requires that either the Hospitality or Emergency Access to Attendant (optional features) be enabled on the System-Parameters Customer-Option form.
- **Client Room** — (See “Hospitality Services” — allows use of the Check-In, Check-Out, Room Change/Swap, and Maid Status features). Requires that the Hospitality feature (optional feature) be enabled on the System-Parameters Customer-Option form. When Client Room is “y”, a user is required to dial a feature access code (FAC) and then the extension when activating a feature.

Administration Commands

The following administration commands can be used to access the Class of Service form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	cos	—
display	cos	['print' or 'schedule']

* Brackets [] indicate the qualifier is optional.

Form Instructions

Make assignments as required on the form.

The form lists the default values for each COS/feature combination. For a particular combination, a "y" allows access to the feature and an "n" denies access to the feature. Assign entries on the form for each COS to be implemented. Default values are shown on the form.

NOTE:

For System security reasons, it is recommended that the calling permissions be limited as much as possible.

Page 1 of 1																
	CLASS OF SERVICE															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Auto Callback	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Call Fwd-All Cls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Data Privacy	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Priority Calling	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Console Perms	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n
Off-hook Alert	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n
Client Room	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n

Screen 5-28. Class of Service Form (Page 1 of 1)

Console Parameters

This form is used to administer attendant console group parameters. This includes basic parameters for Centralized Attendant Service (CAS) and Inter-PBX Attendant Service (IAS). A list of the administered attendant consoles is also displayed on this form.

Administration Commands

The following administration commands can be used to access the Console Parameters form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	console-parameters	—
display	console-parameters	['print' or 'schedule']

* Brackets [] indicate the qualifier is optional.

Form Instructions

Make assignments as required for the following fields on the form:

Page 1 of Form

- **Attendant Group Name** — Enter the name (up to 16 characters) of the attendant group.
- **COS** — Enter a class of service (COS) number (0 through 15) that reflects the desired features for the attendant. Default is "1".
- **COR** — Enter the class of restriction (COR) number (0 through 95) that reflects the desired restrictions for the attendant console group. Default is "1".
- **Calls In Queue Warning** — Enter a number to indicate the number of incoming calls that can be in the attendant queue before the console's Call Waiting lamp lights. The first (left most) console's Call Waiting lamp lights when one, or more, incoming call(s) is waiting to be answered. The second lamp lights when the preset number is reached.
- **Attendant Lockout** — Enter "y" to activate the Privacy - Attendant Lockout feature. If "y" is entered, the attendant is prohibited from reentering a conference call that has been placed on hold unless recalled by a voice terminal user on the call. Default is "y".

- **Ext Alert Port (TAAS)** — Enter the seven-digit port number assigned to the external alerting device (this supports the Night Service - Trunk Answer From Any Station feature).

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
8-7	Circuit Number	01 through 08 (Digital Line circuit pack)

⇒ NOTE:

When using the Administration Without Hardware feature, place an "X" in this field to indicate that there is no hardware associated with this port assignment.

If an "X" is used here, you must also fill in the Ext Alert (TAAS) Extension field.

When the attendant is not on duty, a voice terminal user can answer calls made to the attendant. The incoming call will activate a gong, bell, or chime. The voice terminal user then dials an access code from any unrestricted voice terminal and answers the call.

- **Ext Alert (TAAS) Extension** — Displayed only when an "X" is entered in the Ext Alert Port (TAAS) field. This extension is used by the Terminal Translation Feature (TTI) to assign a port to the Ext Alert Port from a terminal on the Ext Alert port during system installation or provisioning. Once a port is assigned (either via TTI or by changing the Ext Alert Port field from the G3-MA) the extension is automatically removed and treated as unassigned.
- **CAS** — Enter "main" to enable the CAS Main feature; enter "branch" to enable the CAS Branch feature; otherwise, enter "none". Default is "none".

⇒ NOTE:

The CAS Main or Branch features must be enabled on the System-Parameters Customer-Options form for either of these features to be functional here.

- **RLT Trunk Group No.** — Enter the trunk group number corresponding to the Release Link Trunk (RLT) trunk group to the main location when supporting CAS Branch service.

- **CAS Back-Up Ext.** — If the system is a CAS Branch location, a CAS Back-Up Extension can be the extension of a station, individual attendant console, hunt group, or Terminating Extension Group (TEG). The CAS Back-Up Extension handles attendant-seeking calls if the RLT trunk group to the CAS Main PBX is out of service or if CAS Back-Up is activated. The CAS Back-Up Extension must be explicitly defined as an extension in the dial plan; prefixed extensions cannot be used. A VDN extension is not allowed. Valid entries are an extension number for a station, individual attendant console, hunt group, TEG, or leave blank.
- **Night Service Act. Ext.** — Is a display-only field that contains the extension of the current night service activation station, if any. Such a station is administered by assigning it a “night-serv” button.
- **IAS (Branch)** — Enter “y” to enable or “n” to disable the inter-PBX Attendant Service (IAS) Branch feature. Default is “n”.



NOTE:

CAS and IAS cannot both be active at the same time.

- **IAS Tie Trunk Group No.** — Enter the number of the tie trunk group to the main for the IAS (Branch). This entry is required when the IAS Branch field is “y”.
- **IAS Att. Access Code** — Enter the extension number of the attendant group at the main PBX (typically “0”). This entry is required when the IAS Branch field is “y”.
- **Alternate FRL Station** — Displays the extension of the alternate FRL activation station.
- **DID-LDN Only to LDN Night Ext.** — Enter “y” to allow only listed directory number (LDN) calls to go to the listed directory night service number extension; otherwise, enter “n” (all attendant seeking calls will be routed there). Default is “n”.
- **Timed Reminder on Hold (sec)** — Enter the time in seconds (10 through 1024) that a call remains on hold at the console before the attendant is alerted. In a CAS arrangement, the main and the branch consoles (when administered) should be administered the same. Default is “10”.
- **Return Call Timeout (sec)** — Enter the time in seconds (10 through 1024) before a split away call (call removed from the console by the attendant for the purpose of answering another call) returns to the console, or leave blank. Default is “10”.
- **Time In Queue Warning (sec)** — Enter the number of seconds from 0 through 999 that a call can remain in the attendant queue before activating an alert. Valid entries are 0 through 999, or leave blank.
- **No Answer Timeout (sec)** — Enter the number of seconds (10 through 1024) a call to the attendant can remain unanswered without incrementing the delay threshold count, or leave blank.
- **Alerting (sec)** — Enter the number of seconds (10 through 1024) after which a held or unanswered call is disconnected from an attendant loop.

- **List1:, List2:, List3:** — Enter “system”, “group”, or “enhanced” to each List #as required. If “group” is entered, a subfield for the group number is displayed. The subfield has a default of “1”. Abbreviated Dialing Personal Lists cannot be assigned.

COMMON SHARED EXTENSIONS — provided to the attendant group for parking calls. Common Shared Extensions are administered using two fields: a starting extension of the common shared block and the number of common shared extensions in the block. For additional information on the Call Park feature and Common Shared Extensions, refer to *DEFINITY Communications System Genetic 3 V2 Feature Description*, 555-230-204.

- **Starting Extension** — Enter an unassigned extension number that conforms to the Dial Plan Record. The associated numbers are used by the attendant to park calls.
- **Count** — Enter a number to indicate the number of consecutive extensions (beginning with the Start Extension) to be used as common shared extensions.

These extension numbers (with no physical voice terminals assigned) are used by the attendant to park calls. For example, you may enter 4300/3 that directs the System to store three consecutive extension numbers 4300, 4301, and 4302. These numbers are given to the attendant so that they know where to park a call and how many calls can be parked.

The extensions should be assigned to the optional Attendant Selector Console in the 00 through 09 block (bottom row) in any hundreds group for easy identification by the attendant. The lamp associated with the number will identify “call parked” or “no call parked” (instead of busy or idle status).

Page 2 of the Form

- **Queue Priority** — Enter a number (1 through 12) that indicates the order in which the attendant should answer calls of a particular type. The call types listed are:

Emergency Access	Assistance Call	CO Call
DID to Attendant	Tie Call	Redirected DID Call
Redirected Call	Return Call	Serial Call
Individual Attendant Access	Interposition	Miscellaneous Call

Page 3 of the Form

- **ASSIGNED MEMBERS (Installed attendant console types)** — Display-only field. A list of all attendants in the group will be displayed. Individual attendant consoles are administered using the Attendant Console form.

Page 1 of 3

CONSOLE PARAMETERS

Attendant Group Name: _____
 COS: 0_ COR: 0_
 Calls in Queue Warning: 5_ Attendant Lockout? y
 Ext Alert Port (TAAS): _____ Ext Alert (TAAS) Extension: _____
 CAS: none_ RLT Trunk Group No.: _____
 CAS Backup Ext: _____ Night Service Act. Ext.: xxxxx
 IAS (Branch)? n IAS Tie Trunk Group No.: _____
 IAS Att. Access Code: _____ Alternate FRL Station: _____
 DID-LDN Only to LDN Night Ext? n

TIMING

Time Reminder on Hold (sec): 10_ Return Call Timeout (sec): 10_
 Time in Queue Warning (sec): ____

INCOMING CALL REMINDERS

No Answer Timeout (sec): ____ Alerting (sec): ____
 Secondary Alert on Held Reminder Calls? y

ABBREVIATED DIALING

List1: _____ List2: _____ List3: _____

COMMON SHARED EXTENSIONS

Starting Extension: _____ Count: ____

Screen 5-29. Attendant Group Console Parameters Fom (Page 1 of 3)

Implementation Notes:

Default values are defined above.

Ext Alert (TAAS) Extension field only displayed when the Ext Alert Port (TAAS) field is "X".

RLT Trunk Group No. and CAS Backup Ext fields only displayed if CAS is "branch".

Page 2 of 3

CONSOLE PARAMETERS

QUEUE PRIORITIES

Emergency Access:1_
Assistance Call:2_
CO Call:2_
DID to Attendant:2_
Tie Call:2_
Redirected DID Call:2_
Redirected Call:2_
Return Call:2_
Serial Call:2_
Individual Attendant Access:2_
Interpositional:2_
Miscellaneous Call:2_

Screen 5-30. Attendant Group Console Parameters Form (Page 2 of 3)**Implementation Note:**

Default values are defined above.

Page 3 of 3

CONSOLE PARAMETERS

ASSIGNED MEMBERS (Installed attendant console types)

1:	9:
2:	10:
3:	11:
4:	12:
5:	13:
6:	14:
7:	15:
8:	16:

Screen 5-31. Attendant Group Console Parameters Form (Page 3 of 3)**Implementation Note:**

The number of fields will vary based on the maximum number of attendant consoles allowed for your system configuration.

Data Modules

The following types of data modules can be used with the System:

- Announcement
- Data Line
- Netcon (G3s V2, G3i V2 only)
- Processor (PDM)
- Processor Interface (G3s V2, G3i V2 only)
- System Port (G3r V2 only)
- Trunk (TDM)
- X.25 (G3r V2 only)
- 8500



NOTE:

51X series of Business Communications Terminals (BCTs) are not administered on the Data Module form. The 510 BCT (equivalent to a 7405D with a display and built-in DTDM), 515 BCT (equivalent to a 7403D integrated with 7405D display module function, data terminal and built-in DTDM), and the 7505D, 7506D, and 7507D have a DCP interface but have built-in data module functionality. Both are administered through Station form.

The 513 BCT has an EIA interface rather than a DCP interface (no built in data module, attachable telephone, or telephone features). The 513 BCT is not administered; only the data module to which the 513 BCT is connected is administered.

The following pages describe the purpose of each data module type and provide form instructions.

Announcement Data Module

The TN750 Announcement circuit pack has a built-in data module that is administered using the Announcement Data Module form. This data module (in conjunction with an administered Netcon Data Module in G3s V2 and G3i V2 configurations) allows the System to save the recorded announcements file from the TN750 announcement circuit pack to the System tape/disk/memory card (depending on system configuration) and restore from the System tape/disk/memory card to the announcement circuit pack.



NOTE:

Announcements are not saved when a *save translations* command is executed. The *save announcements* command must be executed to save announcements.

The save announcements operation does not save announcements on external announcement units connected to AUX or Analog line circuit packs.

Administration Commands

The following administration commands can be used to access all module types administered on the Data Module form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	data-module	xxxx (extension or 'next')
change	data-module	xxxx (extension number)
display	data-module	xxxx (extension number) [print or schedule]
duplicate	data-module	xxxx (extension number to be duplicated)
list	data-module	(starting ext number) xxxx ('count') [print or schedule]
remove	data-module	xxxx (extension number)

* Brackets [] indicate the qualifier is optional.

Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

Administer only **one** Recorded Announcement Data Module form. If several forms are administered, the last form entered will become part of the current translations (the previous form is overwritten).

- **Data Extension** — When completing a paper form, enter the extension number assigned to the announcement data module. A data extension can be a 1-to 5-digit number. The digits assigned must agree with the Dial Plan Record. When implementing the form using an administration command, the extension number is part of the input command.
- **Type** — Enter “announcement”.
- **Board** — Enter the five-alphanumeric character announcement board number that indicates to which physical board the announcement module is connected.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20

Default is blank.

**NOTE:**

When using the Administration Without Hardware feature, place an “X” in this field to indicate that there is no hardware associated with this port assignment.

- **Name** — Enter the name of the user associated with the data module. The name is optional, it can be left blank.
- **COS** — Enter the desired class of service (COS) number from 0 to 15. Default is “1”.
- **COR** — Enter the desired class of restriction (COR) number from 0 to 95. Default is “1”.
- **Ext** — Make no entry. This is the extension number of the user (previously administered) with associated Data Extension buttons who will share the module.
- **Name** — Make no entry. This is the name assigned to the above extension number.

DATA MODULE		Page 1 of 1
Data Extension: _____	Type: announcement	Board: _____
Name: _____	COS: 1_	COR: 1_
ASSIGNED MEMBER (Station with a data extension button for this data module)		
Ext	Name	
1: _____	_____	

Screen 5-32. Recorded Announcement Data Module Form (Page 1 of 1)

Data Line Data Module

The Data Line Data Module (DLDM) form is used to assign ports on the TN726 Data Line circuit pack (DLC) that allows EIA 232C devices¹ to connect to the System. The DLC, with a companion Asynchronous Data Unit (ADU), provides a less expensive data interface to the System than data modules such as Digital Terminal Data Modules (DTDMs), Modular Processor Data Modules (MPDMS), or Modular Trunk Data Modules (MTDMs).

The DLC supports asynchronous transmissions at speeds of Low and 300, 1200, 2400, 4600, 9600, and 19200 bps over 2-pair (full-duplex) lines. These lines can have various lengths, depending on the transmission speed and wire gauge.

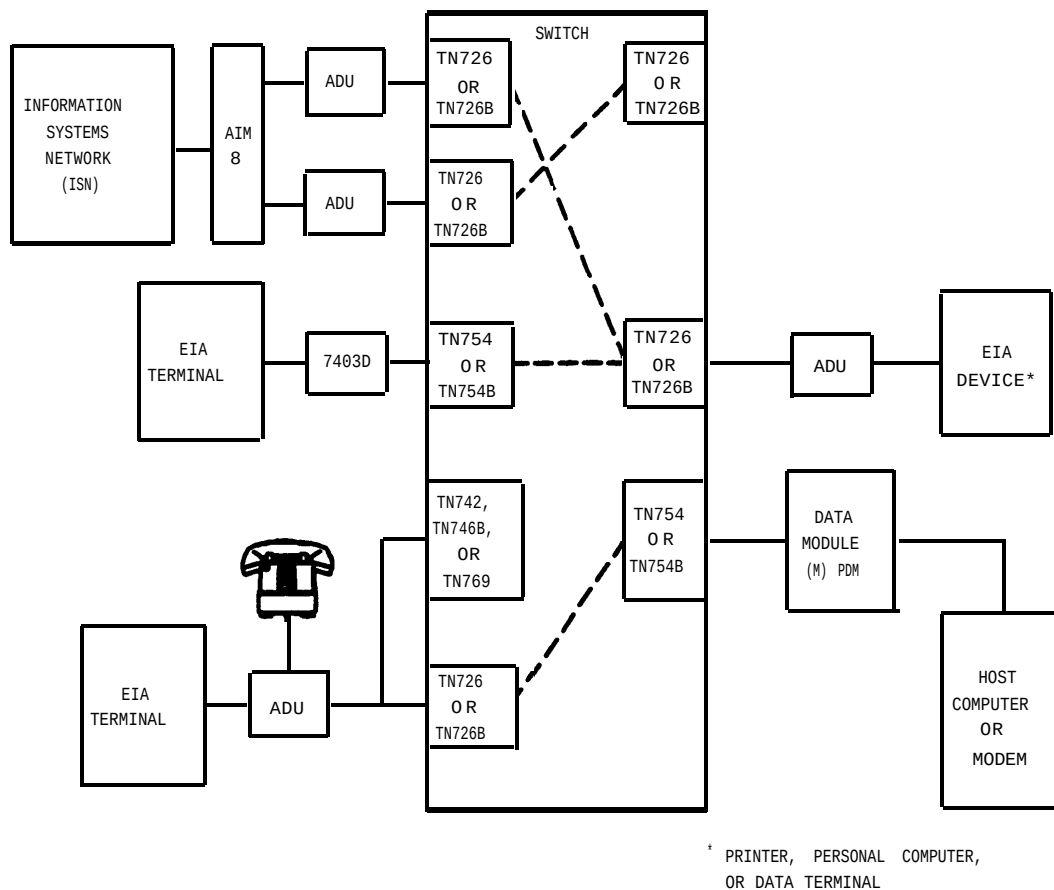
The DLC has eight ports. The connection from the port to the EIA device is *direct*, meaning that no multiplexing is involved. A single port of the DLC is equivalent in functionality to a data module and a digital line port. The DLC appears as a data module to the Digital Terminal Equipment (DTE) and as a digital line port to the switch.

The DLC connects the following EIA 232C equipment to the System:

- Printers
- Non-Intelligent Data Terminals
- Intelligent Terminals, Personal Computers (PCs)
- Host Computers
- Information Systems Network (ISN), RS-232C Local Area Networks (LANs), or other data switches.

Figure 5-9 shows some typical DLC applications.

1. In this chapter, the term "device" refers to EIA 232C equipment including data terminals, personal computers, printers, and host computers.

**Figure 5-9. TN726 Data Line Circuit Pack Applications**

Administration Commands

The following administration commands can be used to access all module types administered on the Data Module form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	data-module	xxxx (extension or 'next')
change	data-module	xxxx (extension number)
display	data-module	xxxx (extension number) [print or schedule]
duplicate	data-module	xxxx (extension number to be duplicated)
list	data-module	(starting ext number) xxxx ('count') [print or schedule]
remove	data-module	xxxx (extension number)

- * Brackets [] indicate the qualifier is optional.
Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Data Extension** — Enter the extension number assigned to the Data Line port. A data extension number can be from 1 to 5 digits. The digits assigned must agree with the Dial Plan Record.
- **BCC (Bearer Capability Class)** — Displayed when the ISDN-PRI option is enabled on the System-Parameters Customer-Options form. It is a display-only field. The value in the field corresponds to the speed setting of the data module. A BCC of "1" relates to 56 kbps, BCC values of 2, 3, and 4 relate to 64 kbps. The entry in this field should be compared with the BCC value in an associated routing pattern when attempted calls utilizing the data module fail to complete. The BCC values must be the same.



NOTE:

Refer to "Generalized Route Selection" in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls. The BCC value is used to determine compatibility when non-ISDN-PRI facilities are connected to ISDN facilities (ISDN-PRI Interworking feature).

- **Type** — enter "data-line".

- **Port** — Enter the seven alphanumeric-digit port location to which the data module is connected.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 04 (x.25 circuit pack) 01 through 32 (G3s V2, G3i V2)

**NOTE:**

When using the Administration Without Hardware feature, place an "X" in this field to indicate that there is no hardware associated with this port assignment.

- **Name** — Enter the name of the user associated with the data module. The name is optional, it can be left blank.
- **COS** — Enter the desired class of service (COS) number from 0 to 15. Default is "1".
- **COR** — Enter the desired class of restriction (COR) number from 0 to 95. Default is "1".
- **ITC** (Information Transfer Capability) — Displayed when the Comm Type field is "56k-data" or "64k-data". Valid entries are "restricted" (default) or "unrestricted". This field is used to determine the type of transmission facilities to be used for ISDN calls originated from this endpoint.

When "unrestricted", only unrestricted transmission facilities will be used to complete the call. An unrestricted facility is a transmission facility that does not enforce 1's density digital transmission (that is, digital information is sent exactly as is).

When "restricted", either restricted or unrestricted transmission facilities will be used to complete the call. A restricted facility is a transmission facility that enforces 1's density digital transmission (that is, a sequence of eight digital zeros will be converted to a sequence of seven zeros and a digital one).

- **Connected To** — Enter "dte" (Data Terminal Equipment) or "isn" (Information Systems Network). This field shows to what the ADU (Asynchronous Data Unit) is connected. Default is "dte".
- **List1** — Enter "p" (personal), "s" (system), "g" (group), or "e" (enhanced). If "g" or "p" is entered, a group number or personal list number is also required.

- **SPECIAL DIALING OPTION** — Enter one of three dialing options that are available. This identifies the type of dialing for calls when this data module originates calls. Valid entries are “hot-line”, “default”, or leave blank for regular (normal) keyboard dialing.
- **HOT LINE DESTINATION Abbreviated Dialing Dial Code** — Displayed when SPECIAL DIALING OPTION is “hot-line”. Enter a list number (associated with the above AD List). The associated AD number will be dialed when the user goes off-hook on a Data Hot Line call.
- **DEFAULT DIALING Abbreviated Dialing Dial Code** — Displayed when SPECIAL DIALING OPTION is “default”. Enter a list number (associated with the above AD List). The associated AD number will be dialed when the user goes off-hook and enters a return following the “DIAL” prompt. The data call originator can also perform data terminal dialing by specifying a dial string that may or may not contain alphanumeric names.
- **Ext** — Make no entry. The extension number is automatically assigned when the system is administered. This is the extension number of the user who has an associated Data Extension button and will share the module.
- **Name** — Make no entry. The name is assigned when the System is administered. This is the name assigned to this extension number.

Page 2 of the Form

Refer to “DLC Option Settings” following these instructions for additional information when assigning entries for the remaining fields on the form.

- **KYBD Dialing** — Enter “y” to allow keyboard dialing. This enables the data endpoint to receive and transmit text during call origination or termination. If “y” is entered, the Low field must be “n”. If “y” is entered, complete the following applicable fields.

This option must be enabled to allow data endpoints to originate calls via the EIA 232C interface and obtain ASCII feedback text. When enabled, the user will get the dial prompt. This option is normally enabled for “originate/receive” DTE that has a need to set up data calls. If this option is disabled, originations cannot be done at the DTE and text feedback will not occur at the DTE during call setup/take down. Data call answering is still allowed but without text feedback.



NOTE:

ADU-type hunt groups connecting the System to terminal servers on a host computer should have these hunt group extensions assigned as “no” keyboard dialing.

- **Configuration** — Displayed when “KYBD Dialing” is enabled. Enter “y” to allow the viewing and changing of options from the DTE.

This option is normally enabled for “originate/receive” DTE such as non-intelligent terminals and disabled for intelligent devices such as computers. Keyboard dialing must be enabled with this option.

- **Busy Out** — Enter “y” to place the DLC port in a busied-out state once the DTE control lead to the DLC is dropped. This option should be enabled for DTEs that are members of a hunt group and to allow “busy out” when DTE turns power off so that calls will not terminate on that DTE.
- **SPEEDS — Low** — Enter “y” to instruct the DLC to operate at a low speed from 0 to 1800 bits per second (bps). Enter “n” if “y” is entered in the Keyboard Dialing field.
- **SPEEDS — 300; 1200; 2400; 4800; 9600; 19200** — Enter “y” beside the desired operating speed. Enter “n” if the speed is not desired. The DLC can be any one of these speeds. The speed will be matched for the duration of the call, from call setup to call takedown.

When multiple speeds are selected (select three or more, do not select just two speeds) and autoadjust is disabled, the DTE's speed must be the highest selected speed. This is required because all feedback text is delivered to the DTE at the highest selected speed.

- **SPEEDS — Autoadjust** — Displayed when “KYBD Dialing” is enabled. Enter “y” which tells the DLC port to automatically adjust to the operating speed and parity of the DTE it is connected to. Enter “n” if this option is not desired. Autoadjust can be selected with any of the speed selected in the previous step. Autoadjust allows the DLC port to determine the speed and parity of the DTE and then match itself to this speed. Autoadjust only applies to calls originated by the user through Keyboard Dialing.
- **Permit Mismatch** — Enter “y” to instruct the DLC to operate at the highest selected speed, which is a higher rate than the far-end data module. Enter “n” if this option is not desired.

This option allows the EIA interface to operate at a rate different than that agreed to in the data module handshake. (The data module handshake is always the highest compatible rate as determined by the reported speed option of each data module.) Permit Mismatch eliminates the need to change the DTE/DLC speed every time a call is placed to/from an endpoint operating at a different speed. When this option is enabled, the DLC reports the highest optioned speed and all the lower speeds (or the previously selected autoadjust speed) during the handshake process.



CAUTION:

Caution must be used when using this option to send information from a DTE/DCE that is transmitting data at higher rates than that of the far end. Sustained usage of this type transmission will result in loss of data. Whenever this option is enabled, the DTE must match the highest speed selected for the associated DLC port.

This option is intended to be used by a DTE device operating locally at a higher baud rate than that of its far-end connection but transmitting relatively low amounts of data (for example, a user typing at a terminal). Also, this option may be selected whether or not Keyboard Dialing is selected.

**NOTE:**

The Low speed setting is not reported as an available speed when Permit Mismatch is enabled.

- **Dial Echoing** — Displayed when “KYBD Dialing” is enabled. Enter “y” to echo characters back to the DTE. Dial echoing should be disabled when keyboard dialing is done by an intelligent device.
- **Disconnect Sequence** — Displayed when “KYBD Dialing” is enabled. Enter “long-break” or “two-breaks” to select the sequence for a disconnect. A long-break is greater than 2 seconds and two-breaks is within 1 second.
- **Answer Text** — Displayed when “KYBD Dialing” is enabled. Enter “y” to allow text messages to be delivered to the DTE when a call is being answered. Enter “n” if this option is not desired.

This option enables text feedback which is normally delivered to the DTE when a call is answered or disconnected. The Answer Text option applies to DLC-generated text as well as text received from the System. If this option is disabled, the System will still generate the text, but the DLC will prevent it from being sent to the device. This applies to the following messages:

- INCOMING CALL
- ANSWERED
- DISCONNECTED
- DISCONNECTED OTHER END

This option is usually disabled when the answering DTE is a computer or an intelligent device.

- **Parity** — Displayed when “KYBD Dialing” is enabled. Enter “even”, “odd”, “mark”, or “space” to select the desired type of parity. The parities (even, odd, mark, and space) are generated by the DLC when call setup text is sent to the DTE. The DLC does not check the parity when receiving dialing characters. Parity has nothing to do with the far end; it is used by the DLC to terminal communications during call setup.

- **Connected Indication** — Displayed when “KYBD Dialing” is enabled. Enter “y” to give text feedback to the DTE when a connection has been established. This option generates a “CONNECTED” message to the DTE when the connection has been established. If KYBD Dialing is not selected, the connected indication is provided by the DLC activating its EIA 232C control lead.

DLC Option Settings

The following provides additional information on the option settings for DLCs when used with the following types of devices:

- Printers
- Non-Intelligent Terminals
- Data Terminals and Personal Computers
- Host Computers
- Information Systems Network (ISN)

This information must be considered when completing the various fields on the Data Line Data Module form.

Printers

A DLC port, attached to a printer, usually terminates a data call. Therefore, in this connection, the printer is the endpoint device. The originating device may be attached to a DCP mode 2 data module (such as the MPDM) or the DLC. A Z3A ADU extends the range of the EIA 232C connection.

When a receive-only printer (or any printer that does not generate the Transmit Data and DTR leads) is used, the ADU must be powered from a small plug-mounted transformer (2012D, or equivalent) connected to pins 7 and 8 of the modular jack. (Refer to *ADU User Manual*, 555-401-701, for details.)

An ADU cannot be used if the printer has hardware flow control using the Clear To Send (CTS) lead. An ADU can be used, however, if the printer is using software flow control.

A printer connected to a DLC is usually assigned as a line. The following table lists the option settings for printer connections:

Table 5-3. DLDM Form Option Settings for Printer Connection

Field On Form	Option	Comments
Speed	Highest speed at which the Printer operates	<i>Subject to distance limitations; Autoadjust not used</i>
KYBD Dialing	no	
Busy Out	yes	<i>If printer is member of Hunt Group</i>
Permit Mismatch	yes	<i>No, if printer is low speed</i>
Parity	-	<i>Don't care</i>
Dial Echoing	-	<i>Don't care</i>
Disconnect Sequence	-	<i>Don't care</i>
Answer Text	-	<i>Don't care</i>
Connected Indication	-	<i>Don't care</i>
Configuration	no	

Non-Intelligent Terminals

A non-intelligent terminal connected to the DLC is usually assigned as a line.

The following table lists the option settings for non-intelligent terminals.

Table 5-4. DLDM Form Option Settings for Connection to Non-Intelligent Terminals

Field On Form	Option	Comments
Speed	All speeds at which the terminal can operate; autoadjust	<i>Subject to distance limitations; Autoadjust when Keyboard Dialing is "y" and the Terminal can generate an ASCII "return"</i>
KYBD Dialing	yes	
Busy Out	no	<i>Yes, if terminal is member of a hunt group</i>
Permit Mismatch	yes	—
Parity	Same as DTE	
Dial Echoing	yes	<i>Only if KYBD Dialing is yes</i>
Disconnect Sequence	2 <BREAK>s	<i>Depends on terminal</i>
Answer Text	yes	
Connected Indication	-	<i>Don't care</i>
Configuration	yes	

Data Terminals and Personal Computers

An intelligent data terminal or a personal computer (PC) attached to a DLC can either originate or terminate a data call. A single ADU at the site of the originating device extends the distance signals can travel to the switch (the model ADU depends on the terminal connector). An analog telephone can be attached to this arrangement whenever an ADU uses the standard building wiring.

The following table lists the option settings used for data terminal and personal computer connections.

Table 5-5. DLDM Form Option Settings for Connection to Data Terminal or Personal Computer

Field On Form	Option	Comments
Speed	All speeds at which the Data Terminal or PC can operate	<i>Subject to distance limitations; Autoadjust not used</i>
KYBD Dialing	yes	
Busy Out	no	<i>Yes, if device is accessed through a hunt group</i>
Permit Mismatch	yes	<i>No, if device does not support XON/XOFF flow control</i>
Parity	Same as DTE	
Dial Echoing	no	<i>These devices can dial in the ASCII stream without human intervention</i>
Disconnect Sequence	Long <BREAK>	-
Answer Text	no	<i>These devices may not want to see any text</i>
Connected Indication	-	<i>Don't care</i>
Configuration	yes	

Host Computers

A host computer may originate and terminate a data call. For this application, the number of DLCs required depend on the number of ports needed. An MADU can be used (instead of eight ADUs) to complete the connection.

The following table lists option settings for a port that has a terminating connection to a host computer.

**NOTE:**

When Keyboard Dialing is disabled, the rest of the option settings are irrelevant.

Table 5-6. DLDM Form Option Settings for Terminating Connection to Host Computer

Field On Form	Option	Comments
Speed	All speeds at which the computer can operate	<i>Subject to distance limitations; Autoadjust not used</i>
KYBD Dialing	n o	
Busy Out	-	<i>Don't care</i>
Permit Mismatch	-	<i>Don't care</i>
Parity	-	<i>Don't care</i>
Dial Echoing	-	<i>Don't care</i>
Disconnect Sequence	-	<i>Don't care</i>
Answer Text	-	<i>Don't care</i>
Connected Indication	-	<i>Don't care</i>
Configuration	-	<i>Don't care</i>

The following table shows the option settings for a port that has an originating connection from a host computer.

Table 5-7. DLDM Form Option Settings for Originating Connection from a Host Computer

Field On Form	Option	Comments
Speed	All speeds at which the computer can operate	<i>Subject to distance limitations; Autoadjust not used</i>
KYBD Dialing	yes	
Busy Out	no	<i>Yes, if computer is accessed through a hunt group</i>
Permit Mismatch	yes	<i>No, if computer does not support XON/XOFF flow control</i>
Parity	Same as DTE	
Dial Echoing	no	<i>The computer can dial in the ASCII stream without human intervention</i>
Disconnect Sequence	Long <BREAK>	-
Answer Text	no	<i>The computer may not want to see any text</i>
Connected Indication	-	<i>Don't care</i>
Configuration	no	

Information Systems Network

The DLC can also connect the Information Systems Network (ISN) to the System. The ISN can originate and terminate data calls.

Two lines are required for bidirectional data transmission between ISN and the System. As viewed by the System, these are one terminating line (from ISN to the System) and one originating line (from the System to ISN). Fixed baud rate lines should be used in both directions.

To successfully connect the Z3A3 ADU to the DLC, a crossover cord (or 25-pair crossover cable) must be used between the DLC and the ADU. This connects the near-end pair of transmit data wires to the far-end receive pair and connects the near-end receive pair to the far-end transmit pair. Without crossover, data transfer cannot take place. Refer to *ADU User Manual*, 555-401-701, for cabling information. Another method to achieve the necessary crossover is to use the D8AM-87 cord.

An ISN connected to a DLC is usually translated as two lines. The following tables list the basic option settings for both the originating (outgoing) and the terminating (incoming) line. See *ISN Application Notes*, 555-300-400, for additional information.

Table 5-8. DLDM Form Option Settings for Outgoing Line to ISN

Field On Form	Option	Comments
Speed	Highest Speed at which the ISN can operate	<i>Subject to distance limitations; Autoadjust not used</i>
KYBD Dialing	no	
Busy Out	no	<i>Yes, if ISN is accessed through a hunt group</i>
Permit Mismatch	no	<i>The ISN can operate at higher speeds than the data communications link; data loss can occur if Permit Mismatch is yes and the ISN is transmitting</i>
Parity	Same as ISN	
Dial Echoing	no	<i>The ISN can dial in the ASCII stream without human intervention</i>
Disconnect Sequence	Long <BREAK>	
Answer Text	no	<i>The ISN may not want to see any text</i>
Connected Indication	-	<i>Don't care</i>
Configuration	no	

Table 5-9. DLDM Form Option Settings for Incoming Line From ISN

Field On Form	Option	COMMENTS
Speed	Highest Speed at which the ISN can operate	<i>Subject to distance limitations; Autoadjust not used</i>
KYBD Dialing	yes	
Busy Out	-	<i>Don't care</i>
Permit Mismatch	no	<i>The ISN can operate at higher speeds than the data communications link; yes, if ISN has its Outgoing port set to high speed such as 9.6-kbps and the far-end connections will beat no greater than 9.6-kbps</i>
Parity	Same as ISN	
Dial Echoing	yes	
Disconnect Sequence	Long <BREAK>	
Answer Text	no	<i>The ISN may not want to see any text</i>
Connected Indication	-	<i>Don't care</i>
Configuration	no	

DATA MODULE		Page 1 of 2	
Data Extension:	BCC: __	Type: data-line	Port: _____
Name: _____	COS: 1_	COR: 1_	
Connected To: dte_		ITC: restricted	
ABBREVIATED DIALING			
List1: _____			
SPECIAL DIALING OPTION: _____			
HOT LINE DESTINATION			
DEFAULT DIALING			
Abbreviated Dialing Dial Code (From above list): _			
ASSIGNED MEMBER (Station with a data extension button for this data module)			
Ext	Name		
1: _____	_____		

Screen 5-33. Data Line Data Module Form (Page 1 of 2)**Implementation Notes:**

This page is displayed when the Data Module field on Page 1 of the Station form is "y".

BCC is displayed when the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

HOTLINE DESTINATION is displayed when the SPECIAL DIALING OPTION field is "hot-line".

DEFAULT DIALING is displayed when the SPECIAL DIALING OPTION field is "default".

Abbreviated Dialing Dial Code is displayed when SPECIAL DIALING OPTION is "hot-line" or "default".

DATA MODULE				Page 2 of 2
CAPABILITIES				
KYBD Dialing? y				Configuration? n
Busy Out? n				
SPEEDS				
Low? y	1200? y	4800? y	19200? y	
300? y	2400? y	9600? y	Autoadjust? n	
OPTIONS				
Permit Mismatch? n				Dial Echoing? y
Disconnect Sequence: two-breaks				Answer Text? y
Parity: even				Connected Indication? y

Screen 5-34. Data Line Data Module Form (Page 2 of 2)

**NOTE:**

If KYBD Dialing is "y", the above page is displayed.

DATA MODULE				Page 2 of 2
CAPABILITIES				
KYBD Dialing? n				
Busy Out? n				
SPEEDS				
Low? y	1200? y	4800? y	19200? y	
300? y	2400? y	9600? y		
OPTIONS				
Permit Mismatch? n				

Screen 5-35. Data Line Data Module Form (page 2 of 2)

**NOTE:**

If KYBD Dialing is "n", the above page is displayed.

Processor/Trunk Data Modules

These forms are used to assign Modular Processor Data Modules (MPDMs) and Modular Trunk Data Modules (MTDMs). One form is required for assigning MPDMs (700A, 700D) or 7400B Data Modules and another form for MTDMs (700B, 700C, 700E, 7400A). One form must be completed for each MPDM, 7400B, or MTDM.

The MPDM or 7400B Data Module provides a Data Communications Equipment (DCE) interface for connection to equipment such as data terminals, CDR output devices, on-premises administration terminal, Message Server, Property Management System (PMS), AUDIX, and host computers. It also provides a Digital Communications Protocol (DCP) interface to the digital switch. (DCE is the equipment on the network side of a communications link that provides all the functions required to make the binary serial data from the source or transmitter compatible with the communications channel.)

The MTDM provides an Electronic Industries Association (EIA) Data Terminal Equipment (DTE) interface for connection to off-premises private line trunk facilities or a switched telecommunications network and a DCP interface for connection to the digital switch. (DTE is the equipment comprising the endpoints in a connection over a data circuit. For example, in a connection between a data terminal and a host computer, the terminal, the host, and their associated modems or data modules makeup the DTE.) The MTDM or 7400A Data Module can also serve as part of a conversion resource for Combined Modem Pooling.

Administration Commands

The following administration commands can be used to access all module types administered on the Data Module form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	data-module	xxxx (extension or 'next')
change	data-module	xxxx (extension number)
display	data-module	xxxx (extension number) [print or schedule]
duplicate	data-module	xxxx (extension number to be duplicated)
list	data-module	(starting ext number) xxxx ('count') [print or schedule]
remove	data-module	xxxx (extension number)

- * Brackets [] indicate the qualifier is optional.
Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

These instructions can be used to assign an MPDM and an MTDM. The differences in the fields on the forms are explained in the instructions.



NOTE:

Administration instructions for a 7400B Data Module associated with a 7400D-series voice terminal are provided in the appropriate voice terminal information provided later in this chapter.

Make assignments as required for the following fields on the form:

- **Data Extension** — When completing a paper form, enter the extension number to be assigned to the data module. A data extension can be a 1- to 5-digit number. The digits assigned must agree with the Dial Plan Record. When implementing the form, “Data Extension” is part of the input command used to access the form and is a display-only field.
- **BCC (Bearer Capability Class)** — Displayed when the ISDN-PRI option is enabled on the System-Parameters Customer-Options form. It is a display-only field. The value in the field corresponds to the speed setting of the data module. A BCC of “1” relates to 56 kbps, BCC values of 2, 3, and 4 relate to 64 kbps. This field may be compared with the BCC value in an associated routing pattern when attempted calls utilizing the data module fail to complete. The BCC values must be the same.



NOTE:

Refer to “Generalized Route Selection” in *DEFINITY Communications System Genetic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls. The BCC value is used to determine compatibility when non-ISDN-PRI facilities are connected to ISDN facilities (ISDN-PRI Interworking feature).

- **Type** — Enter “pdm” when assigning a DCE interface or “tdm” when assigning a DTE interface. Default is “pdm”.
- **Port** — Enter the seven alphanumeric-digit port location to which the data module is connected.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 04 (x.25 circuit pack) 01 through 32 (G3s V2, G3i V2)



NOTE:

When using the Administration Without Hardware feature, place an "X" in this field to indicate that there is no hardware associated with this port assignment. If this data module will be designated as a secondary data module (Secondary data module field set to "y") "X" cannot be entered into the Port field. The Port of a primary data module cannot be changed to "X" if a secondary data module is administered.

- **Name** — Enter the name of the user associated with the data module. The name is optional, it can be left blank.
- **COS** — Enter the desired class of service (COS) number from 0 to 15. Default is "1".
- **COR** — Enter the desired class of restriction (COR) number from 0 to 95; Default is "1".
- **ITC (Information Transfer Capability)** — Displayed when the Comm Type field is "56k-data" or "64k-data". Valid entries are "restricted" (default) or "unrestricted". This field is used to determine the type of transmission facilities to be used for ISDN calls originated from this endpoint.

When "unrestricted", only unrestricted transmission facilities will be used to complete the call. An unrestricted facility is a transmission facility that does not enforce 1's density digital transmission (that is, digital information is sent exactly as is).

When "restricted", either restricted or unrestricted transmission facilities will be used to complete the call. A restricted facility is a transmission facility that enforces 1's density digital transmission (that is, a sequence of eight digital zeros will be converted to a sequence of seven zeros and a digital one).

- **Connected To** — Only displayed when the Type field is "pdm". Enter "dte" if the data module is connected to Data Terminal Equipment (DTE) or enter "isn" if connected to an Information Systems Network (ISN).
- **Remote Loop-Around Test** — Enter "y" if the data module supports a loop-back test at the EIA interface. In general, AT&T equipment will support this test but it is not required by Level 2 Digital Communications Protocol.
- **Secondary data module** — Enter "y" if this PDM is the secondary data module used for Dual I-channel AUDIX networking. Enter "n" if this is the primary PDM, or if this data module is not used for AUDIX networking.



NOTE:

The primary data module must be administered before the secondary data module may be added.

If the Port field is "X", the Secondary data module field cannot be "y".

- **ABBREVIATED DIALING List1** — Enter “p” (personal), “s” (system), “g” (group), or “e” (enhanced). If “g” or “p” is entered, a group number or personal list number, respectively, is also required. The entry in this field and the following HOT LINE DESTINATION field support the Data Hot Line feature. This field can be left blank.
- **SPECIAL DIALING OPTION** — Enter one of three dialing options that are available. This identifies the type of dialing for calls when this data module originates calls. Valid entries are “hot-line”, “default”, or leave blank for regular (normal) keyboard dialing.
- **HOT LINE DESTINATION — Abbreviated Dialing Dial Code** — Displayed when SPECIAL DIALING OPTION is “hot-line”. Enter a list number (associated with the above AD List). The associated AD number will be dialed when the user goes off-hook on a Data Hot Line call.
- **DEFAULT DIALING Abbreviated Dialing Dial Code** — Displayed when SPECIAL DIALING OPTION is “default”. Enter a list number (associated with the above AD List). The associated AD number will be dialed when the user goes off-hook and enters a return following the “DIAL” prompt. The data call originator can also perform data terminal dialing by specifying a dial string that may or may not contain alphanumeric names. Default is blank.
- **Ext** — Make no entry. The extension number is automatically assigned when the system is administered. This is the extension number of the user who has an associated Data Extension button and will share the module.
- **Name** — Make no entry. The name is automatically assigned when the System is administered. This is the name assigned to the above extension number.

DATA MODULE		Page 1 of 1	
Data Extension: ____	BCC: ____	Type: pdm____	Port: ____
Name: ____	COS: 1_	COR: 1_	ITC: restricted
Connected To: dte	Remote Loop-Around Test: ____		
		Secondary data module? n	
ABBREVIATED DIALING			
List1: ____			
SPECIAL DIALING OPTION: ____			
HOT LINE DESTINATION			
DEFAULT DIALING			
Abbreviated Dialing Dial Code (From above list): _			
ASSIGNED MEMBER (Station with a data extension button for this data module)			
Ext	Name		
1: ____	____		

Screen 5-36. MPDM/MTDM Data Module Form (Page 1 of 1)**Implementation Notes:**

The Type field may be either "pdm" or "tdm". If "tdm" is entered, the Connected To field is not displayed.

BCC is displayed when the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

ITC is only displayed when the Comm Type field is "56k-data" or "64k-data".

Secondary data module is only applicable when the Type field is "pdm".

HOT LINE DESTINATION is displayed when the SPECIAL DIALING OPTION field is "hot-line".

DEFAULT DIALING is displayed when the SPECIAL DIALING OPTION field is "default".

Abbreviated Dialing Dial Code is displayed when SPECIAL DIALING OPTION is "hot-line" or "default".

Netcon Data Module

Netcon data modules are the Processor Data Modules (PDMs) that are integrated into the System's network control ports that provide asynchronous circuit switched interfaces to the maintenance and administration terminals, Hospitality journal printers, and CDR line printer. They are characterized by their special locations, that is, special port identifications.

Refer to "Data Modules" in Chapter 3 for information on the administration, considerations, and uses of a Netcon channel interface.

**NOTE:**

The Netcon data module is only applicable to G3s V2 and G3i V2 configurations. For G3r V2 configurations, refer to "System Port Data Modules" in this chapter.

Administration Commands

The following administration commands can be used to access the Netcon Data Module form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	data-module	xxxx (extension or 'next')
change	data-module	xxxx (extension number)
display	data-module	xxxx (extension number) ['print' or 'schedule']
list	data-module	(starting ext number) xxxx ('count') ['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

- **Data Extension** — When completing a paper form, enter the extension number to be assigned to the data module. A data extension can be a 1- to 5-digit number. The digits assigned must agree with the Dial Plan Record. A different extension number must be assigned for each netcon channel. When implementing the form, "Data Extension" is part of the input command used to access the form and is a display-only field.
- **BCC** (Bearer Capability Class) — This field is only displayed when the ISDN-PRI option is enabled on the System-Parameters Customer-Options form. It is a display-only field.

**NOTE:**

Refer to the Generalized Route Selection feature in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of BCCs and their use to provide specialized routing for various types of voice and data calls. The BCC value is used to determine compatibility when non-ISDN-PRI facilities are connected to ISDN facilities (ISDN-PRI Interworking feature).

- **Type** — Enter “netcon”.
- **Physical Channel** — Enter a netcon data channel number from 01 through 04.
- **Name** — Enter the name of the user associated with the netcon channel. The name is optional.
- **COS** — Enter the desired class of service (COS) number from 0 through 15. Default is “1”.
- **COR** — Enter the desired class of restriction (COR) number from 0 through 95 that will allow or deny access. Default is “1”.
- **Maintenance Extension** — Enter the extension number required to perform maintenance functions on the standby netcon physical channel in a duplicated System. The standby remote loop around tests will fail if this field is not administered.
- **ITC (Information Transfer Capability)** — Displayed when the Comm Type field is “56k-data” or “64k-data”. Valid entries are “restricted” (default) or “unrestricted”. This field is used to determine the type of transmission facilities to be used for ISDN calls originated from this endpoint.

When “unrestricted”, only unrestricted transmission facilities will be used to complete the call. An unrestricted facility is a transmission facility that does not enforce 1’s density digital transmission (that is, digital information is sent exactly as is).

When “restricted”, either restricted or unrestricted transmission facilities will be used to complete the call. A restricted facility is a transmission facility that enforces 1’s density digital transmission (that is, a sequence of eight digital zeros will be converted to a sequence of seven zeros and a digital one).
- **ABBREVIATED DIALING List1** — Enter “p” (personal), “s” (system), “g” (group), or “e” (enhanced). If “g” or “p” is entered, a group number or personal list number, respectively, is also required. This field can be left blank. The entry in this field and the following Hot Line Destination field support the Data Hot Line feature.
- **SPECIAL DIALING OPTION** — Enter one of three dialing options that are available. This identifies the destination of all call when this data module originates calls. Valid entries are “hot-line”, “default”, or leave blank.

- **HOT LINE DESTINATION — Abbreviated Dialing Dial Code** — Only displayed when the Special Dialing Option field is “hot-line”. Enter a list number (associated with the above AD List). The associated AD number will be dialed when the user goes off-hook on a Data Hot Line call.
- **Ext** — Make no entry. The extension number is automatically assigned when the system is administered. This is the extension number of the user who has an associated Data Extension button and will share the module.
- **Name** — Make no entry. The name is assigned when the System is administered. This is the name assigned to the above extension number.

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DATA MODULE

Data Extension: BCC: __ Type: netcon Physical Channel : __
 Name: _____ COS: 1_ COR: 1_
 Maintenance Extension: ____ ITC: restricted

ABBREVIATED DIALING
 List1: _____
 SPECIAL DIALING OPTION: ____
 HOT LINE DESTINATION
 Abbreviated Dialing Dial Code (From above list) : _

ASSIGNED MEMBER (Station with a data extension button for this data module)

Ext	Name
1:	

Screen 5-37. Netcon Data Module Form (Page 1 of 1)

Implementation Notes:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

The ITC field is only displayed when the Comm Type field is “56k-data” or “64k-data”.

HOT LINE DESTINATION only displayed when the SPECIAL DIALING OPTION field is “hot-line”.

Abbreviated Dialing Dial Code only displayed when SPECIAL DIALING OPTION is “hot-line”.

Processor Interface Data Module

The Processor Interface data modules are the Processor Data Modules (PDMs) that are integrated into the System's synchronous/asynchronous Processor Interface circuit pack ports.

**NOTE:**

The Processor Interface data module is only applicable to G3s V2 and G3i V2 configurations.

They are used to provide the following interfaces:

- 3B/Call Management System (maximum of one)
- 3B/Message Server (maximum of one)
- Distributed Communications System (maximum of eight)
- AUDIX (maximum of one)
- ISDN-PRI (maximum of eight)

**NOTE:**

Not all maximums can be achieved at the same time

Connections for these interfaces are achieved via a digital line port and MPDM combination, and/or in the case of DCS or ISDN-PRI, via a DS1 interface. One direct EIA connection is available (labeled as Processor Interface on the back of the Control Cabinet) for simplex operation. When used, the physical channel assignment (see below) must be "01". Use of the EIA connection eliminates the need for one digital line port/MPDM combination.

Administration Commands

The following administration commands can be used to access the Processor Interface Data Module form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	data-module	xxxx (extension or 'next')
change	data-module	xxxx (extension number)
display	data-module	xxxx (extension number) ['print' or 'schedule']
list	data-module	(starting ext number) xxxx ('count') ['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

- **Data Extension** — When completing a paper form, enter the extension number to be assigned to the data module. A data extension can be a 1- to 5-digit number. The digits assigned must agree with the Dial Plan Record. When implementing the form, "Data Extension" is part of the input command used to access the form and is a display-only field.
- **Type** — Enter "procr-infc".
- **Physical Channel** — Enter the 2-digit circuit number of the Processor Interface port. A multi-carrier cabinet system supports the use of two Processor Interface circuit packs, the first circuit pack (mounted in Control Carrier A) supports physical channels or links 01 through 04; the second (mounted in Control Carrier A) supports physical channels or links 05 through 08. A single-carrier cabinet system supports one Processor Interface circuit pack and physical channels or links 01 through 04 only. The Physical Channel number is referred to on associated System forms as the interface Link number.
- **Name** — Enter the name of the system associated with the data channel, such as AUDIX, DCS, and so on. This entry is optional.
- **COS** — Enter the desired class of service (COS) number from 0 through 15. Default is "1".
- **COR** — Enter the desired class of restriction (COR) number from 0 through 95 that will allow or deny access. Default is "1".
- **Maintenance Extension** — Enter the extension number required to perform maintenance functions on the standby physical channel in a duplicated System. The standby remote loop around tests will fail if this field is not administered.
- **ABBREVIATED DIALING List1** — Enter "p" (personal), "s" (system), "g" (group), or "e" (enhanced). If "g" or "p" is entered, a group number or personal list number, respectively, is also required. The entry in this field and the Hot Line Destination field support the Data Hot Line feature. This field can be left blank.
- **SPECIAL DIALING OPTION** — Enter one of three dialing options that are available. This identifies the destination of all call when this data module originates calls. Valid entries are "hot-line", "default", or leave blank.
- **HOT LINE DESTINATION** — Abbreviated Dialing Dial Code — Only displayed when the Special Dialing Option field is "hot-line". Enter a list number (associated with the above AD List). The associated AD number will be dialed when the user goes off-hook on a Data Hot Line call.
- **Ext** — Make no entry. The extension number is automatically assigned when the system is administered. This is the extension number of the user who has an associated Data Extension button and will share the module.

- **Name** — Make no entry. The name is assigned when the System is administered. This is the name assigned to the above extension number.

Page 1 of 1

DATA MODULE

Data Extension: _____

Type: procr-infc Physical Channel: _____

Name: _____

COS: 1_

COR: 1_

Maintenance Extension: _____

ABBREVIATED DIALING

List1: _____

SPECIAL DIALING OPTION: _

HOT LINE DESTINATION

Abbreviated Dialing Dial Code (From above list): _

ASSIGNED MEMBER (Station with a data extension button for this data module)

Ext

Name

1:

Screen 5-38. Processor Interface Data Module Form (Page 1 of 1)**Implementation Notes:**

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

HOT LINE DESTINATION only displayed when the SPECIAL DIALING OPTION field is "hot-line".

DEFAULT DIALING only displayed when the SPECIAL DIALING OPTION field is "default".

Abbreviated Dialing Dial Code only displayed when SPECIAL DIALING OPTION is "hot-line".

System Port Data Modules

These forms are used to assign System Port Data Modules for G3r V2 configurations.

Form Instructions

These instructions can be used to assign an System Port data module. Make assignments as required for the following fields on the form:

- **Data Extension** — Display-only field. A 1- to 5-digit extension number to be assigned to the data module. These digits must agree with the Dial Plan Record.
- **BCC (Bearer Capability Class)** — Displayed when the ISDN-PRI option is enabled on the System-Parameters Customer-Options form. It is a display-only field. The value in the field corresponds to the speed setting of the data module. A BCC of "1" relates to 56 bps, BCC values of 2, 3, and 4 relate to 64 kbps. This field may be compared with the BCC value in an associated routing pattern when attempted calls utilizing the data module fail to complete. The BCC values must be the same.



NOTE:

Refer to "Generalized Route Selection" in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls. The BCC value is used to determine compatibility when non-ISDN-PRI facilities are connected to ISDN facilities (ISDN-PRI Interworking feature).

- **Type** — Enter "system-port".
- **Port** — Enter the seven alphanumeric-digit port location to which the data module is connected. The first two characters identify the cabinet number (01 to 22); the third character identifies the carrier (A through E); the fourth and fifth characters identify the slot number in the carrier (01 to 20); the last two characters identify the circuit number (01 to 08).
- **Name** — Enter the name of the user associated with the data module. The name is optional, it can be left blank.
- **COS** — Enter the desired class of service (COS) number from 0 to 15; default is 1.
- **COR** — Enter the desired class of restriction (COR) number from 0 to 95; default is 1.

- **Associated PDATA Port** — Used to relate the physical PDATA port to which the mode 3 portion of the system port is connected. Enter a seven alphanumeric-digit port location to which the data module is connected where the first two characters identify the cabinet number (01 to 22); the third character identifies the carrier (A through E); the fourth and fifth characters identify the slot number in the carrier (01 to 20); the last two characters identify the circuit number (01 to 12). This entry must be assigned to a port on a PDATA Line Board.

For wiring instructions, refer to the *DEFINITY Communications System Generic 3 V2 Installation and Test*, 555-230-104.

- **ASSIGNED MEMBER — Ext** — Make no entry. This is the extension number of the user (previously administered) with associated Data Extension buttons who will share the module.
- **ASSIGNED MEMBER — Name** — Make no entry. This is the name assigned to the above extension number.

DATA MODULE				Page 1 of 4
Data Extension: ____	BCC: _	Type: system-port_	Port: ____	
Name: _____	COS: 1_		COR: 1_	
		Associated PDATA Port: _____		
ASSIGNED MEMBER (Station with a data extension button for this data module)				
Ext	Name			
1: ____	_____			

Screen 5-39. System Port Data Module Form (Page 1 of 4)

X.25 Data Modules

These forms are used to assign BX.25 Data Modules in a G3r V2 configuration for communications to Adjuncts and other nodes in a DCS network. Each one of these data modules must correspond to an entry in the Interface Link form.

Administration Commands

The following administration commands can be used to access all module types administered on the Data Module form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	data-module	xxxx (extension or 'next')
change	data-module	xxxx (extension number)
display	data-module	xxxx (extension number) [print or schedule]
duplicate	data-module	xxxx (extension number to be duplicated)
list	data-module	(starting ext number) xxxx ('count') [print or schedule]
remove	data-module	xxxx (extension number)

- * Brackets [] indicate the qualifier is optional.
Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

These instructions can be used to assign an X.25 data module. Make assignments as required for the following fields on the form:

Page 1 of the Form

- **Data Extension** — When completing a paper form, enter the extension number to be assigned to the data module. A data extension can be a 1- to 5-digit number. The digits assigned must agree with the Dial Plan Record. When implementing the form, “Data Extension” is part of the input command used to access the form and is a display-only field.
- **BCC** (Bearer Capability Class) — Displayed when the ISDN-PRI option is enabled on the System-Parameters Customer-Options form. It is a display-only field. The value in the field corresponds to the speed setting of the data module. A BCC of “1” relates to 56 kbps, BCC values of 2, 3, and 4 relate to 64 kbps. This field may be compared with the BCC value in an associated routing pattern when attempted calls utilizing the data module fail to complete. The BCC values must be the same.



NOTE:

Refer to "Generalized Route Selection" in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls. The BCC value is used to determine compatibility when non-ISDN-PRI facilities are connected to ISDN facilities (ISDN-PRI Interworking feature).

- **Type** — Enter "x.25".
- **Port** — Enter the seven alphanumeric-digit port location to which the data module is connected. The first two characters identify the cabinet number (01 to 22); the third character identifies the carrier (A through E); the fourth and fifth characters identify the slot number in the carrier (01 through 20 for medium cabinets, and 01 through 20 for the x.25 board); the last two characters identify the circuit number (01 through 24 for medium cabinets, and 01 through 04 for the x.25 board).



NOTE:

When using the Administration Without Hardware feature, place an "X" in this field to indicate that there is no hardware associated with this port assignment.

- **Name** — Enter the name of the user associated with the data module. The name is optional, it can be left blank.
- **COS** — Enter the desired class of service (COS) number from 0 to 15. Default is "1".
- **COR** — Enter the desired class of restriction (COR) number from 0 to 95; Default is "1".
- **Endpoint Type** — Must be assigned as "adjunct". An endpoint type is a type of packet switched data endpoint that uses X.25 call control procedures. The X.25 Endpoint connects to external ports on the PGATE board and to the TDM bus via a DS1 trunk. Ports connected to the adjunct endpoint can be either DTEs or DCEs. The type of endpoint (DTE or DCE) is administrable on the "data-mod" form.
- **DTE/DCE** — Specifies how the above endpoint type will act (DTE or DCE). Default is "dte".
- **Baud Rate** — The maximum raw data transmission speed (300, 1200, 2400, 4800, 9500, or 19200; may also be "switched" if the Cable Type field on the PGATE form is set to "none"). Default is blank.
- **Error Logging** — To record X.25 protocol errors in the hardware error log, enter "y". Refer to *DEFINITY Communications System Generic 3 V2 Maintenance*, 555-230-105, for more information about error logs.

- **Remote Loop-Around Test** — To allow remote loop-around tests on this port, enter "y". A "n" will abort a request for this test. Refer to *DEFINITY Communications System Genetic 3 V2 Maintenance*, 555-230-105, for more information about remote loop-around tests.
- **Permanent Virtual Circuit** — Indicates that the logical channels for PVC are allowed for this port; default is "y" (cannot be changed).
- **Switched Virtual Circuit** — Indicates that the Switched Virtual Circuit is not allowed for this port; default is "n" (cannot be changed).
- **Highest PVC Logical Channel** — Indicates that 1 to 64 Logical Channels are allowed on this port. Default is 64 (cannot be changed).

Page 2 of the Form

- **Number of Outstanding Frames (w)** — Specifies layer 2 window size (1 to 7 frames). If the value is 2, up to 2 frames can be sent without confirmation.
- **Retry Attempt Counter (N2)** — Specifies the number of times (0 to 7) to send one frame when this frame is not confirmed for a period of time. Default is 2.
- **Frame Size (N1)** — Specifies the number of bytes (135 or 263) in a frame. Default is 135. If the value is "135", there can be up to 1080 bits within a frame. This value is suitable for all adjuncts and for DCS.
- **Retransmission (T1) Timer (1/10 seconds)** — The T1 timer is started at the beginning or the end of the transmission of a frame. At the end of this timer (0 to 250), retransmission of a frame will be initiated according to the procedures for link set-up and disconnection or information transfer. Default is 10.
- **Idle (T4) Timer (1/10 seconds)** — The T4 timer is a system parameter that represents the time a DTE will allow without frames being exchanged on the data link (0 to 250). Default is 30.
- **Number of Outstanding Packets** — Specifies the number of packets (2 to 7) that can be sent without confirmation. Default is 2.
- **Restart (T20) Timer (seconds)** — The T20 timer is a DTE time-limit (0 to 500) started when DTE issues a restart indication and terminated when the restart request is received or confirmed. Default is 8.
- **Reset (T22) Timer (seconds)** — The T22 timer is a DTE time-limit (0 to 500) started when DTE issues a reset indication and terminated when the reset request is received or confirmed. Default is 10.

DATA MODULE		Page 1 of 2
Data Extension: 20000	Type: x.25_____	Port: 01C0301
Name: G2 DCIU LINK 4	COS: 1_	COR: 1_
Endpoint Type: adjunct	DTE/DTC: dce	Baud Rate: 9600
Error Logging? y	Remote Loop-Around Test? n	
Permanent Virtual Circuit? y	Highest PVC Logical Channel: 64	
Switched Virtual Circuit? n		

Screen 5-40. X.25 Data Module Form (Page 1 of 2)

DATA MODULE		Page 2 of 2
LAYER 2 PARAMETERS		
Number of Outstanding Frames (w): 2		
Retry Attempt Counter (N2): 2		
Frame Size (N1): 135		
Retransmission (T1) Timer (1/10 seconds): 10		
Idle (T4) Timer (1/10 seconds): 30		
LAYER 3 PARAMETERS		
Number of Outstanding Packets: 2		
Restart (T20) Timer (seconds): 8		
Reset (T22) Timer (seconds): 10		

Screen 5-41. Adjunct Data Module Form (Page 2 of 2)

8500 Data Module

The "8500" data module supports automatic tie B-channel, maintenance and management messaging, and SPID initialization capabilities. BRI endpoints, both voice and/or data, are assigned to the TN556 ISDN-BRI port board that can support up to 12 ports. Since BRI provides multipoint capability, more than one ISDN endpoint (voice or data) can be administered on one port. For BRI, multipoint administration allows for terminals having SPID initialization capabilities, and can only be allowed if no endpoint administered on the same port is a fixed tie endpoint and no station on the same port has B-channel data capability. Currently, multipoint is restricted to 2 endpoints per port.

This form is used to implement a 8500 Data Module.

Administration Commands

The following administration commands can be used to access the 8500 Data Module form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	data-module	xxxxx (extension or 'next')
change	data-module	xxxxx (extension number)
display	data-module	xxxxx (extension number) ['ptint' or 'schedule']
duplicate	data-module	xxxxx (extension number)
list	data-module	(starting ext number) xxxxx ('count') ['print' or 'schedule']
remove	data-module	xxxxx (extension number)

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

Page 1 of the Form

- **Data Extension** — When completing a paper form, enter the extension number to be assigned to the data module. A data extension can be a 1- to 5-digit number. The digits assigned must agree with the Dial Plan Record. When implementing the form, "Data Extension" is part of the input command used to access the form and is a display-only field.
- **Type** — Enter "8500".

- **Port** — Enter seven characters.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 04 (Analog TIE trunks) 01 through 32 (DS1 Interface ports)

- **Name** — Enter the name of the user associated with the netcon channel. The name is optional.
- **COS** — Enter the desired class of service (COS) number from 0 through 15. Default is "1".
- **COR** — Enter the desired class of restriction (COR) number from 0 through 95 that will allow or deny access. Default is "1".
- **ABBREVIATED DIALING List1** — Enter "p" for personal, "s" for system, "g" for group, or "e" for enhanced. If "g" or "p" is entered, a group number or personal list number, respectively, is also required. This field can be left blank. The entry in this field and the following Hot Line Destination field support the Data Hot Line feature.
- **SPECIAL DIALING OPTION** — Enter one of three dialing options that are available. This identifies the destination of all call when this data module originates calls. Valid entries are "hot-line", "default", or leave blank.
- **CIRCUIT SWITCHED DATA ATTRIBUTES**

**NOTE:**

These fields represent defaults needed for modem pooling conversion resource insertion when the endpoint does not support data query capability. These fields have no significance for data modules providing data query [all AT&T-supported ISDN-BRI data modules (8500 and ADM)]. For AT&T ISDN-BRI data modules, the default settings should be used.

- **Default Duplex** — Used to identify the duplex mode. Valid entries are "full" or "half". Default is "full".
- **Default Mode** — Used to identify the data mode. Valid entries are "sync" (synchronous) or "async" (asynchronous). Default is "asyn".
- **Default Speed** — Used to identify the data rate. Valid entries are "1200", "2400", "4800", and "19200". Default is "1200".

**NOTE:**

When default mode is "sync", valid entries also include speeds of "56000" and "64000".

■ DATA MODULE CAPABILITIES

- **Origination Default Data Applications** — Used to identify mode to be used for originating data calls when the mode is not specified with the calling parameters. This mode will also be used for terminating trunk calls that do not have bearer capability specified or administered connections. Possible mode values are M0 (mode 0), M1 (mode 1), M2 (mode 2), and M3/2 (mode 3/2 adaptable), or blank. Valid entries are "M0", "M1", "M2_A", "M2_S", or "M3/2". Default is "M2_A".

Page 2 of the Form

- **XID** — Used to identify layer 2 XID testing capability. Valid entries are "y" or "n". Default is "y".
- **Fixed TEI** — Used to indicate whether or not the endpoint has Fixed Terminal Identification (TEI) capability. TEI is used to identify a unique access point within a service. For Freed TEI stations, the TEI must be administered. Terminals with automatic TEI capability, the associated TEI is assigned by the System. Valid entries are "y" or "n". Default is "n".
- **TEI** — Only displayed if the Fixed TEI field entry is "y". Enter a 1- to 2-digit number in the range of 0 through 63.
- **MIM Support** (Management Information Message Support) — Used to support two types of capabilities: MIM endpoint initialization capability (SPID support), and other Maintenance/Management capability. Valid entries are "y" or "n". Default is "y".
- **Endpt Init** — Only displayed if the MIM Support field entry is "y". Used to indicate the terminal's endpoint initialization capability. Endpoint initialization is a procedure, required for multipoint operation, by which User Service Order Profile (USOP) is associated with an endpoint on the ISDN-BRI. This association is made via the Service Profile Identifier (SPID), administered into the system and entered into the ISDN-BRI terminal. For a ISDN-BRI terminal to become operational in a multipoint configuration, both the administered SPID and the SPID programmed into the ISDN-BRI terminal must be the same. This means that the SPID of the new or re-used terminals must be programmed to match the administered SPID value. Valid entries are "y" or "n". Default is "y".
- **SPID** — Only displayed if the Endpt Init field entry is "y". The Service Profile Identifier (SPID) is a variable parameter of up to ten digits. The SPID must be different for all terminals on the ISDN-BRI and from the Service SPID. The SPID should always be assigned, if the SPID is not assigned for the first ISDN-BRI on a port, any other ISDN-BRI assignment to that port will be blocked. Valid entries are numeric strings in the range of 0 through 9999999999. Default is the station's extension number.

- **MIM Mtce/Mgt** — Only displayed if the MIM Support field entry is “y”. Used to indicate if the terminal supports MIM Maintenance and Management capabilities, other than endpoint initialization. Valid entries are “y” or “n”. Default is “y”.

Page 1 of 2

DATA MODULE

Data Extension:	Type: 8500 _____	Port: _____
Name: _____	COS: 1_	COR: 1_

ABBREVIATED DIALING

List1: _____

SPECIAL DIALING OPTION: hot -line

HOT LINE DESTINATION

Abbreviated Dialing Dial Code (From above list): _

CIRCUIT SWITCHED DATA ATTRIBUTES (used for modem pooling)

Default Duplex: full	Default Mode: async	Default Speed: 1200_

DATA MODULE CAPABILITIES

Default ITC: restricted	Default Data Application? M2_A

Screen 5-42. 8500 Data Module Form (Page 1 of 2)**Implementation Notes:**

HOT LINE DESTINATION only displayed when “hot-line” is entered in the SPECIAL DIALING OPTION field.

DEFAULT DIALING only displayed when “default” is entered in the SPECIAL DIALING OPTION field.

Abbreviated Dialing Dial Code only displayed when SPECIAL DIALING OPTION is “hot-line” or “default”.

				Page 2 of 2
DATA MODULE				
BRI LINK/MAINTENANCE PARAMETERS				
XID? y	Fixed TEI? n	TEI: ____		
MIM Support? y	Endpt Init? y	SPID: 300____	MIM Mtce/Mgt? y	

Screen 5-43. 8500 Data Module Form (Page 2 of 2)**Implementation Notes:**

The TEI field is only displayed if the Fixed TEI field entry is "y".

The Endpt Init, SPID, and MIM Mtce/Mgt fields are only displayed if the MIM Support field entry is "y".

The SPID field is only displayed when the Endpt Init field entry is "y".

Dial Plan

The Dial Plan is the System's guide to translating the digits dialed by various System users. Refer to the "Dial Plan" and "Single-Digit Dialing and Mixed Station Numbering" features in the *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for additional information. Typical Dial Plan examples are shown for both Single-Digit and Mixed Station Numbering.

Administration Commands

The following administration commands can be used to access the Dial Plan Record form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	dialplan	—
display	dialplan	[print or schedule]

* Brackets [] indicate the qualifier is optional.

Form Instructions

Make assignments as required for the following fields on each page of the form:

- **North American Area Code** — Required only in North America. Enter the area code number where the System is located. Valid entries are any area code in the form NXX where N is any digit 2 through 9 and X is any digit 0 through 9. Entry must be all digits. Leave blank if not in North America.
- **Local Node Number** — Enter a number from 1 through 63 to uniquely identify a node in a PBX network. The Node Number is used by the automatic restoration capability of Administered Connections. The Node Number entry must match the DCS switch node number and the CDR node number if they are specified. The field may be left blank if automatic restoration, DCS, and CDR are not used.
- **ETA Node Number** — Enter the number of the destination switch for ETA calls.
- **ETA Routing Pattern** — Enter the number of the routing pattern to reach the destination switch.
- **ARS Prefix 1 Required** — Only displayed if the North American Area Code field is not blank. Enter "y" (system default) if dialing a "1" is required to call an area code. Enter "y" if the office codes in the HNPA are interchangeable with NPAs. Requiring a "1" Prefix is typically used within those area codes where local central office codes resemble area codes (that is, middle digit is a "0" or a "1"). For example, 201 in New Jersey, or 212 in New York

- **Uniform Dialing Plan** — Enter either “4-digit” or “5-digit” to signify the use of a 4- or 5-digit Dial Plan, or enter “none” (default) if no Uniform Dialing Plan is to be administered.

**NOTE:**

The Uniform Dialing Plan option must be enabled on the System-Parameters Customer-Option form before any entry other than “none” can be entered in this field.

The Uniform Dialing Plan is a separate form that must be administered if “4-digit” or “5-digit” is entered in this field. Refer to “Uniform Dial Plan” in Chapter 4 for more information.

**CAUTION:**

If the entry in the Uniform Dialing Plan field is changed from its previously administered value, all UDP extension codes will be lost.

The UDP provides a common 4-or 5-digit dial plan that can be shared among a group of switches. Interswitch dialing and intraswitch dialing both require 4-or 5-digit dialing. The Uniform Dial Plan (UDP) is used with Electronic Tandem Network (ETN), Main/Satellite/Tributary, and Distributed Communications System (DCS) configurations. Additionally, UDP can be used alone to provide uniform 4- or 5-digit dialing between two or more private switching systems without ETN, DCS, or Main/Satellite/Tributary configurations.

**NOTE:**

Local extensions of fewer digits can still be administered, but cannot be reached from other switches.

- **UDP Extension Search Order** — Displayed when the Uniform Dialing Plan field is “4-digit” or “5-digit”. Indicates where the System should look for a dialed extension first. Valid entries are “local-extensions-first” (default) and “udp-table-first”.

When “local-extensions-first” is selected, the dialed extension will be searched for in local translation first and, if found, the call will terminate to the local station. If the extension is not found locally, the UDP tables will be searched for an off-switch (UDP) conversion.

When “udp-table-first” is selected, the UDP tables will be searched first.

- **FIRST DIGIT TABLE** — The First Digit table consists of fields for each possible first digit and dialed number length. The first digit ranges from 0 through 9 plus the * (star) and # (pound) symbols. The dialed digit length ranges from 1 through 6. Entries on the table (referred to as dial types) can be the following:
 - blank (no object is assigned) — All fields default to blank.
 - “extension” (primary extension number) — can have a first digit of 0 through 9 (* and # not allowed) and can be one to five digits in length.

**NOTE:**

If the Uniform Dialing Plan is enabled, it is recommended that no extensions be administered that begin with "0". This is because, in the United States of America, "0" is usually the attendant.

For example, if extension numbers 400 through 499 are required, "extension" is entered at the intersection of the "-3-" column and the First Digit "4" row. If a 4-digit number is administered with a first digit of 6, the extension numbers 6000 through 6999 will be allowed ("extension" is entered at the intersection of the "-4-" column and the First Digit "6" row). Note the "extension" cannot have the same first digit as the ARS or AAR facility access code (FAC).

- "fac" (feature access code) — can have a first digit of 0 through 9 plus the * (star) and # (pound) symbols. A FAC can be from one to four digits in length. The * and # symbols count as a digit each when used and must be the first digit. For example, *2 could be used to activate a feature and #2 used to deactivate the feature. It is recommended that a FAC be the last item entered in a row when mixed numbering is used. Otherwise, problems may be encountered when 3-digit FACs and 4-digit extension numbers begin with the same first digit and the FAC is an abbreviated dialing list access code. If the abbreviated dial list entry that a user wants to dial in on a station feature button, no problems will be encountered in dialing. If a user manually dials the access code and the list entry number, he/she must wait for the inter-digit time-out to expire after dialing the list access code and before dialing the list entry number. Otherwise, the call will go to intercept or to an extension number.
- "tac" (trunk access code) — can have a first digit of 0 through 9 (plus the * and # symbols) and be from one to four digits in length. For example, 9 could be used for local trunk access, 8 for WATS trunk access, and 7 for Tie trunk access. The longer 4-digit TACs can be used for ordinary trunk access, but will not work for attendant control of trunk groups, trunk-ID buttons, or DCS, and only the last three digits of the codes can be recorded in CDR records. A TAC must be the last item entered in a row when mixed station numbering is used.

**NOTE:**

The "tac" cannot have the same first digit as the ARS or AAR facility access code (FAC).

- "attd" — the attendant group number can be administered for dialed length of 1, and can have a first digit of 0 through 9, or the two-digit attendant group number whose first digit is defined as "misc" and whose second digit (0 through 9) is defined on the Second Digit Table form.

- “misc” — can have a dialed length of 1, and can have a first digit of 0 through 9. This call type specifies that the call types for this digit are actually determined in the Second Digit Table.
- “pextension” — is made up of a prefix (first digit) that can be a 0 through 9 (* and # not allowed) and an extension number of up to five digits in length. The maximum length of a prefix and extension combination is six digits. When a prefixed extension is entered in the dial plan, a TAC cannot be entered before the prefixed extension on the same row in the table. If a first digit is already assigned as a TAC, a prefixed digit cannot be entered after the tac on the same row in the table. The purpose of the prefix is to identify the dial type as an extension. After digit collection, the prefix digit is removed from the string of dialed digits. The remaining digits (extension number) are then processed. A prefixed extension allows the use of extensions numbers with any first digit (the extension length must be specified on the table). The “prefixed extension” cannot have the same first digit as the ARS or AAR facility access code (FAC).



NOTE:

When a dial plan has mixed station numbering, extension numbers of various lengths (all with the same first digit) are mapped on the First Digit table as shown on Page 1 of the form. The System then employs an inter-digit time-out to ensure that all dialed digits are collected. The inter-digit time-out may add several seconds to the dial time. An alternative to the delay required in the time-out mechanism at the expense of dialing an extra digit is to use prefixed extensions in the dial plan.

Dial Plan for Hotel/Motel Use

The dial plan can be implemented to provide easy access to internal hotel/motel services and to provide the capability to associate room numbers with guest room voice terminals. These numbers can be printed on a faceplate (not provided by AT&T) that can be placed over the front of the voice terminal. The next figure provides an example of how the numbers and features can be used on a faceplate.

				HOT LINE TOUCH 55
ROOM SERVICE TOUCH 1	1	2	3	ROOM TO ROOM TOUCH 7 + ROOM NUMBER
BELL CAPTAIN VALET TOUCH 2	4	5	6	LONG DIST. 8+1 OR 0+ NUMBER
FRONT DESK MESSAGE TOUCH 3	7	8	9	LOCAL TOUCH 9+ NO.
HOUSEKEEPING TOUCH 4	*	0	#	OPERATOR WAKE-UP TOUCH 0
HOSPITALITY TOUCH 51				

Figure 5-10. Typical Hotel/Motel Feature Assignments

SECOND DIGIT TABLE

The following fields appear on the Second Digit Table Screen. A second digit table must be completed each time "misc" is entered in the digit length of 1 column. The second digit table is named for the row where the "misc" appears. In addition, a second digit table can exist for every first digit value.

Administration Commands

The following administration commands can be used to access the Second Digit Table form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	second-digit	0-9
change	second-digit	0-9
display	second-digit	[print or schedule]

* Brackets [] indicate the qualifier is optional.

Form Instructions

- **Digit** — A display-only field that marks the value of the second digit.
- **Identification** — Enter an abbreviation to identify the dialed number if a particular second digit is dialed. Valid entries are “attd”, “extension”, “tac”, and “fac”. See the first digit table information, above, for explanations of these.
- **Number of Digits** — Enter the length of the dialed number. Valid entries are 2 for attd, 2 through 5 for extension, 2 through 4 for tac (2 through 3 with DCS), and 2 through 4 for fac.

DIAL PLAN RECORD				Page 1 of 1		
North American Area Code: 908				Local Node Number: __		
ARS Prefix 1 Required? y				ETA Node Number:		
Uniform Dialing Plan: 4-digit				ETA Routing Pattern:		
UDP Extension Search Order: local-extensions-first						
FIRST DIGIT TABLE						
First	Length					
Digit	-1-	-2-	-3-	-4-	-5-	-6-
1:	_____	_____	_____	_____	_____	_____
2:	_____	_____	_____	_____	_____	_____
3:	_____	_____	_____	_____	_____	_____
4:	_____	_____	_____	_____	_____	_____
5:	_____	_____	_____	_____	_____	_____
6:	_____	_____	_____	_____	_____	_____
7:	_____	_____	_____	_____	_____	_____
8:	_____	_____	_____	_____	_____	_____
9:	_____	_____	_____	_____	_____	_____
0:	_____	_____	_____	_____	_____	_____
*:	_____	_____	_____	_____	_____	_____
#:	_____	_____	_____	_____	_____	_____

Screen 5-44. Dial Plan Record Form (Page 1 of 1)**Implementation Notes:**

The ARS Prefix 1 Required field appears only if the North American Area Code field is not blank.

The UDP Extension Search Order field appears only if the Uniform Dialing Plan field is set to "4-digit" or "5-digit".

SECOND DIGIT TABLE FOR DIGIT _						Page 1 of 1
SECOND DIGIT TABLE						
Digit	Identification	Number of Digits	Digit	Identification	Number of Digits	
0:	_____	0	5:	_____	0	
1:	_____	0	6:	_____	0	
2:	_____	0	7:	_____	0	
3:	_____	0	8:	_____	0	
4:	_____	0	9:	_____	0	

Screen 5-45. Second Digit Form (Page 1 of 1)

Duplication-Related System Parameters

**NOTE:**

This form only applies to G3r V2 configurations.

Used to enable or disable operation of Switch Processing Element (SPE) and Port Network Connectivity (PNC) duplication. The following must be duplicated:

- Each switch node record and every switch node with its duplicate (cabinet administration is a prerequisite)
- Every fiber link containing either an expansion interface circuit pack as an endpoint, or a DS1C (fiber link administration is a prerequisite; circuit pack administration then follows duplication administration)

All nonduplicated switch node interfaces (SNIs) to SNI fiber links are automatically duplicated.

**NOTE:**

PNC Duplication must be enabled with the *system-parameters customer-options* command before any duplication administration can be performed.

Administration Commands

The following administration commands can be used to access the Duplication-Related System Parameters form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier
change	system-parameters duplication	
display	system-parameters duplication	

Form Instructions

Make assignments as required for the following fields on the form.

- **Enable Operation of SPE Duplication** — Enter “y” to enable or “n” (default) to disable operation of SPE duplication.
- **Enable Operation of PNC Duplication** — Enter “y” to enable or “n” (default) to disable operation of PNC duplication. This field only appears if PNC duplication has been enabled on the System-Parameters Customer-Options form.

Page 1 of 1

DUPLICATION RELATED SYSTEM PARAMETERS

Enable Operation of SPE Duplication? y

Enable Operation of PNC Duplication? y

Screen 5-46. Duplication-Related System Parameters Form (Page 1 of 1)

Implementation Note:

The Enable Operation of PNC Duplication field only appears if PNC duplication has been enabled on the System-Parameters Customer-Options form.

Extended Trunk Access Call Screening

This form is used to allow a set of digit strings to be identified that should not be routed via ETA. This form can also block the routing of certain FACs or TACs. For example, if the system administrator were to notice a digit string being mistakenly dialed repeatedly that ended up being routed via ETA to a remote PBX only to have the remote PBX return intercept treatment, then that digit string would be a candidate for the entry into the ETA call screening table. Entry into this table would have the effect of return intercept treatment to the caller without first attempting to route the digits to the remote PBX for interpretation via ETA.

Administration Commands

The following administration commands can be used to access the Extended Trunk Access Call Screening form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	call-screening	
display	call-screening	

* Brackets [] indicate the qualifier is optional.

Form Instructions

Make assignments as required for the following fields on the form.

- **Call Screening Entry** — Assign those digit strings (up to 10) that should be blocked for this RNX. Each string can have up to 6 digits and/or special or wildcard characters. Valid entries are the digits 0 through 9, "x", "X", "*", and "#". The "#" character may only be used as the first character.

ETA CALL SCREENING TABLE

Page 1 of 1

Entry

No. Call Screening Entry

0: _____

1: _____

2: _____

3: _____

4: _____

5: _____

6: _____

7: _____

8: _____

9: _____

Screen 5-47. Extended Trunk Access Call Screening Form (Page 1 of 1)

Feature Access Codes

This form is used to assign feature access codes (FACs) that, when dialed, will activate or cancel certain System features.

Administration Commands

The following administration commands can be used to access the Feature Access Codes form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	feature-access-codes	—
display	feature-access-codes	['print' or 'schedule']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Pages 1 through 4 of the Form

- In each field that ends with **Access Code** — enter the digits required to access the feature.

**NOTE:**

For System security, it is recommended that the Facility Test Calls Access Code field be left blank except when actually testing trunks.

The Emergency Access to Attendant Access Code cannot be used if the feature is not enabled on the System-Parameters Customer-Options form.

The access codes assigned to the Housekeeping Status (Client Room) and Housekeeping Status (Station) are assigned to reflect the customer requirements. These codes are transmitted to the Property Management System (PMS) for processing.

- In each field that ends with **Activation** — enter the digits required to activate the feature.
- In each field that ends with **Deactivation** — enter the digits required to cancel or deactivate a feature.

Valid entries are any 1- to 4-digit number consisting of the digits 0 through 9. The "*" and "#" symbols can be used as the first digit.



NOTE:

Analog rotary dial sets cannot use the "*" and "#" symbols.

Page 2 of the Form

- **Leave Word Calling Message Retrieval Lock**— Enter the digits that must be dialed to lock the display module on voice terminals. Valid entries are a 1- to 4-digit number consisting of the digits 0 through 9; "*" and "#" can be used as the first digit. (The lock function is activated at a voice terminal by dialing the systemwide Lock access code. This prevents unauthorized users from displaying, canceling, or deleting messages associated with the voice terminal.) The Lock Messages field on the voice terminal form must also be enabled.
- **Leave Word Calling Message Retrieval Unlock** — Enter the digits that must be dialed to unlock a voice terminal's display module. Valid entries are a 1-to 4-digit number consisting of the digits 0 through 9; "*" and "#" can be used as the first digit. The lock function is canceled at the voice terminal by dialing the Unlock security code (4 digits) unique to the voice terminal.
- **Leave Word Calling Send A Message** — Enter the digits that must be dialed to send a message. Valid entries are a 1- to 4-digit number consisting of the digits 0 through 9; "*" and "#" can be used as the first digit.
- **Leave Word Calling Cancel A Message** — Enter the digits that must be dialed to cancel a message. Valid entries are a 1- to 4-digit number consisting of the digits 0 through 9; "*" and "#" can be used as the first digit.
- **Transfer into AUDIX** — Enter the digits that must be dialed to allow coverage to transfer the caller to the original call recipient's AUDIX mail where the caller can leave a message. Valid entries are a 1- to 3-digit number consisting of the digits 0 through 9; "*" and "#" can be used as the first digit. Default is blank.

Page 3 of the Form

The next seven fields are only available for administration if the Automatic Call Distribution option has been enabled on the System-Parameters Customer-Options form.



NOTE:

These fields will also be displayed if the Call Vectoring (Basic) and Vectoring (Prompting) features have been enabled on the System-Parameters Customer-Options form; however, they will only be administrable if ACD has been enabled.

- **After Call Work Access Code** — Enter the digits the agent must dial when the agent will be performing work-related ACD activities.
- **Assist Access Code** — Enter the digit the agent must dial to request assistance from the split supervisor.

- **Auto-In Access Code** — Enter the digits the agent must dial to become automatically available to receive another ACD call on completion of a current call.
- **Aux Work Access Code** — Enter the digits the agent must press when the agent will be performing non-ACD activities.
- **Login Access Code** — Enter the digits the agent must enter to gain access to the ACD functions. This is a systemwide digit for all ACD agents.
- **Logout Access Code** — Enter the logout code the agent must enter to exit ACD. This is a systemwide logout code for all ACD agents.
- **Manual-In Access Code** — Enter the digits the agent must press to receive new ACD calls upon the completion of an ACD call.

The next field is only available if the Call Vectoring (Basic) and Vectoring (Prompting) options have been enabled on the System-Parameters Customer-Options form.

- **Converse Data Return Code** — Enter the access code the CONVERSANT must output prior to outputting the digits being returned to the System.

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The next five fields are only available if the Hospitality option has been enabled on the System-Parameters Customer-Options form.

- **Automatic Wakeup Call Access Code** — Enter the access code the user must dial to schedule or cancel a wakeup call.
- **Housekeeping Status (Client Room) Access Code** — Enter the access code the housekeeper dials from the client's room to provide room status. There are six codes.
- **Housekeeping Status (Station) Access Code** — Enter the access code the housekeeper must dial to provide room status. This access code must be dialed from designated voice terminals. There are four codes.
- **Verify Wakeup Announcement Access Code** — Enter the access code the user can dial to verify a wakeup announcement.
- **Voice Do Not Disturb Access Code** — Enter the access code the user must dial to enter or cancel do not disturb request without using a display — through the use of voice prompting.

FEATURE ACCESS CODE (FAC)

Abbreviated Dialing List1 Access Code: ____

Abbreviated Dialing List2 Access Code: ____

Abbreviated Dialing List3 Access Code: ____

Announcement Access Code: ____

Answer Back Access Code: ____

Auto Alternate Routing (AAR) Access Code: ____

Auto Route Selection (ARS) Access Code1: ____ Access Code2: ____

Automatic Callback Activation: ____ Deactivation: ____

Call Forwarding Activation: ____ Deactivation: ____

Call Park Access Code: ____ (see Note)

Call Pickup Access code: ____

cas Remote Hold / Answer Hold-Unhold Access Code: ____

CDR Account Code Access Code: ____

Data Origination Access Code: ____

Data Privacy Access Code: ____

Emergency Access To Attendant Access Code: ____

Facility Test Calls Access Code: ____

Flash Access Code: ____

Screen 5-48. Feature Access Code Form (Page 1 of 4)**Implementation Notes:**

The Emergency Access to Attendant Access Code field is displayed when the optional Emergency Access to the Attendant feature has been enabled on the System-Parameters Customer-Options form.

Call Park Access Code — Do not administer to have the same first digit as another feature access code that is longer in length.

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FEATURE ACCESS CODE (FAC)

Group Control Restrict Activation: _____	Deactivation: _____
Hunt Group Busy Activation: _____	Deactivation: _____
Last Number Dialed Access Code: _____	
Leave Word Calling Message Retrieval Lock: _____	
Leave Word Calling Message Retrieval Unlock: _____	
Leave Word Calling Send A Message: _____	
Leave Word Calling Cancel a Message: _____	
Malicious Call Trace Activation: _____	Deactivation: _____
Print Messages Access Code: _____	
Priority Calling Access Code: _____	
Program Access Code: _____	
Send All Calls Activation: _____	Deactivation: _____
Terminal Translation Initialization Merge Code: _____	Separation Code: _____
Transfer to AUDIX Access Code: _____	(see Note)
Trunk Answer Any Station Access code: _____	
User Control Restrict Activation: _____	Deactivation: _____
Voice Coverage Message Retrieval Access Code: _____	
Voice Principal Message Retrieval Access code: _____	

Screen 5-49. Feature Access Code Form (Page 2 of 4)

Implementation Note:

Transfer into AUDIX Access Code — Do not administer to have the same first digit as another feature access code that is longer in length.

Page 3 of 4

FEATURE ACCESS CODE (FAC)

Automatic Call Distribution Features

After Call Work Access Code: ____

Assist Access Code: ____

Auto-In Access Code: ____

Aux Work Access Code: ____

Login Access Code: ____

Logout Access Code: ____

Manual-In Access Code: ____

Call Vectoring/Call Prompting Features

Converse Data Return Code: ____

Screen 5-50. Feature Access Code Form (Page 3 of 4)

Implementation Notes:

This page is displayed only when the optional ACD feature, or Call Vectoring (Basic) and Vectoring (Prompting) have been enabled on the System-Parameters Customer-Options form.

The Call Vectoring/Call Prompting features are only displayed if Call Vectoring (Basic) and Vectoring (Prompting) have been enabled on the System-Parameters Customer-Options form.

FEATURE ACCESS CODE (FAC)
Hospitality Features
Automatic Wakeup Call Access Code: _____
Housekeeping Status (Client Room) Access Code: _____
Housekeeping Status (Client Room) Access Code: _____
Housekeeping Status (Client Room) Access Code: _____
Housekeeping Status (Client Room) Access Code: _____
Housekeeping Status (Client Room) Access Code: _____
Housekeeping Status (Client Room) Access Code: _____
Housekeeping Status (Station) Access Code: _____
Housekeeping Status (Station) Access Code: _____
Housekeeping Status (Station) Access Code: _____
Housekeeping Status (Station) Access Code: _____
Verify Wakeup Announcement Access Code: _____
Voice Do Not Disturb Access Code: _____

Screen 5-51. Feature Access Code Form (Page 4 of 4)**Implementation Note:**

The Hospitality features are displayed when the Hospitality feature has been enabled on the System-Parameters Customer-Options form.

Feature-Related System Parameters

This form is used to implement System parameters associated with various System features.

Administration Commands

The following administration commands can be used to access the Feature-Related System Parameters form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	system-parameters	features —
display	system-parameters	features ['print' or 'schedule']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Additional information on the parameters listed below can be found within feature descriptions of the same name by referring to *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204.

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Trunk-to-Trunk Transfer** — Enter "y" to enable trunk-to-trunk transfer. This allows voice terminal users to setup trunk-to-trunk transfer, go on-hook without disconnecting the call, and forward the call to a remote location. Trunk-to-Trunk Transfer will only affect calls where both trunks are CO, FX, WATS, or CPE. Enter "n" (default) if this option is not desired.



NOTE:

For installations outside the United States of America, refer to Appendix B, *Application Notes*, for the appropriate entries for this field.

- **Coverage — Subsequent Redirection No Answer Interval** — Enter the number of times (1 through 99) a voice terminal in a Call Coverage path will ring before the call is routed to the next coverage point. A typical (recommended) interval is 2 to 3 rings. Default is 3.
- **Coverage — Caller Response Interval (seconds)** — Enter the time in seconds (0 through 10) that the caller (internal caller only) has before the

call redirects to the called party's first coverage point. The calling party can either hang up, use Leave Word Calling, or press the Go to Cover button during this time interval. Default is 4.

- **Keep Held SBA at Coverage Point** — Enter “y” (default) to keep a simulated bridged appearance on hold at the coverage point when the principal enters the call; otherwise, enter “n”. If the bridged appearance is kept, the covering user may then enter the call along with the principal and the calling party.
- **Automatic Callback — No Answer Timeout Interval (rings)** — Enter the number of times that the callback call rings at the calling station before the callback call is canceled. Valid entries are 2 through 9. Default is 4.
- **Call Park Timeout Interval (minutes)** — Enter the number of minutes (1 through 90) that a call can remain parked before it is canceled. Default is 10.
- **Off-Premises Tone Detect Timeout Interval (seconds)** — Enter the number of seconds (5 through 25) that a call progress tone receiver (CPTR) will try to detect atone from off-premises during dialing. Once the time-out interval occurs, any additional call progress tones will not be recorded. Default is 20.
- **AAR/ARS Dial Tone Required** — Enter “y” to indicate that a second dial tone is to be given to the calling party on a incoming tie or DID trunk call that is to be routed via AAR/ARS. A second dial tone provides feedback to the user that additional dialing can occur. Default is “y”.
- **Music/Tone on Hold** — Enter “music” or “tone” to indicate what a caller will hear while on hold; enter “none” (default) for silence.
- **Port** — Appears when Music/Tone on Hold is “music”. Indicates the port number that provides Music-on-Hold access. This requires a port on a TN763 Auxiliary Trunk circuit pack or any supported Analog Line circuit pack. The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 04 (Analog TIE trunks) 01 through 32 (DS1 Interface ports)

- **Music (or Silence) On Transferred Trunk Calls** — Enter “all” to allow all transferred trunk calls to receive music until the call is answered if the Music-on-Hold feature is available. Enter “n” (default) if trunk callers are to hear music (or silence if Music-on-Hold is not administered) while waiting to be transferred, and then ringback as soon as the transfer is completed till the call is answered. Enter “call-wait” if trunk calls transferred to stations that require the call to wait will hear music (if

administered); all other transferred trunk calls will receive ringback tone.

- **DID/Tie/ISDN Intercept Treatment** — Enter a recorded announcement extension number or “attd” (default) for the attendant to be used for intercept of invalid Direct Inward Dialing and/or tie trunk calls.



NOTE:

For System security, it is recommended that “attd” be entered in this field. This will route intercept calls to the attendant and, if the attendant receives several of these, then they will know a problem exists.

- **Messaging Service Adjunct (MSA) Connected** — This field is only displayed on a G3s V2 or G3i V2 configuration. Enter “y” if MSA is connected to the System. Default is “n”.
- **Internal Automatic Answer for Attendant Extended Calls** — Enter “y” to enable IAA for attendant extended calls. This only applies to the 7313H through 7317H (MERLIN®) voice terminals as well as speaker equipped 73XX-series (ATL) hybrid voice terminals and digital voice terminals (except BRI) with a headphone or speaker capability. Default is “n”.
- **Automatic Circuit Assurance (ACA) Enabled** — Must have an “aca-call” button administered and activated on the user's station. Enter “y” if Automatic Circuit Assurance (ACA) measurements will be taken; otherwise, enter “n”. If “y” is entered, complete the following ACA-related fields. Default is “n”.
- **ACA Referral Calls** — (Only displayed when the ACA Enabled field is “y”.) Enter “local” (default), “primary,” or “remote” to indicate where ACA referral calls will be generated. Remote referral calls are generated at another switch in a DCS network. Local referral calls are generated on and for the local switch. Primary referral calls are generated on the local switch for remote switches as well as the local switch. Also, ACA button status will be transmitted to other switches when in a DCS network. Default is “local”.
- **ACA Referral Destination** — Enter the extension on the local switch that is to receive the ACA referral call or enter “attd” for attendant. The specified extension should be equipped with a display module. This field is only displayed if “local” or “primary” is entered in the ACA Referral Calls field.
- **ACA Short Holding Time Originating Extension and ACA Long Holding Time Originating Extension** — Enter an unassigned extension number in each field. Do not use the same extension number for both fields. The specified extensions are automatically assigned by the System when the form is submitted. These fields are only displayed if “local” or “primary” is entered in the ACA Referral Calls field.

The extension number assigned to ACA Short Holding Time originates ACA referral calls for short holding time warnings and is identified on the destination's display module as “ACA CALL(SHORT)”. The extension number assigned to ACA Long Holding Time originates ACA referral calls for long holding time warnings and is identified on the destination's display

module as "ACA CALL(LONG)".

- **ACA Remote PBX Identification** — Enter a number from 1 through 63 to identify the switch in a DCS network that makes the referral call. This field is only displayed if "remote" is entered in the ACA Referral Calls field. The remote PBX identified in this field must not be defined as "local" on the System's Dial Plan form.

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- **Maximum Number of Messages Per Station (when MSA not in service)** — Enter the maximum number of LWC Messages that can be stored by the System for a voice terminal at a given time. Default is "10".
- **Stations With System-wide Retrieval Permission (enter extension)** — Enter up to 10 voice terminal extension numbers that can retrieve LWC Messages for all other voice terminals. A VDN extension is not allowed. An entry of "attd" gives retrieval permission to all attendants.
- **SVN Login violation Notification Enabled** — Enter "y" if a designated referral destination will be notified in the event of a login security violation. Default is "n".

The following four fields are displayed when SVN Login Violation Notification Enabled is "y".

- **Originating Extension** — Enter the originating extension that is to initiate the referral call in the event of a login security violation. It also triggers the display of the appropriate alerting message on the referral destination display module. Valid entry is an unassigned extension number.
- **Referral Destination** — Enter "attd" or the the extension assigned to the station that will receive the referral call in the event of a login security violation. Valid entry is an assigned extension or "attd". Default is blank. The referral destination, if a station, must be equipped with a display module.
- **Login Threshold** — Enter the minimum number of login security violations (1 to 99) that will be permitted before a referral call is generated. The entry in this field and in the Time interval field will determine whether a login security violation has occurred. Default is "5".
- **Time Interval** — Enter the time period within which the login security violations must occur. The time interval (in hours and minutes) is specified as two fields separated by a colon (h:mm). Default is "0:03".
- **SVN Remote Access Violation Notification Enabled** — Enter "y" if a designated referral destination will be notified in the event of a remote access violation. Default is "n".

The following four fields are displayed when SVN Remote Access Violation Notification Enabled is "y".

- **Originating Extension** — Enter the originating extension that is to initiate the referral call in the event of a remote access security violation. It also triggers the display of the appropriate alerting message on the referral

destination display. Valid entry is an unassigned extension number. Default is blank.

- **Referral Destination** — Enter the extension assigned to the station or attendant console that will receive the referral call in the event of a remote access security violation. Valid entry is an assigned extension or “attd”. Default is blank. The referral destination, if a station, must be equipped with a display module.
- **Barrier Code Threshold** — Enter the minimum number of barrier code security violations (1 to 99) that will be permitted before a referral call is generated. The entry in this field and in the Time Interval field will determine whether a remote access security violation has occurred. Default is “10”.
- **Time Interval** — Enter the time period within which the remote access security violations must occur. The time interval is specified as two fields separated by a colon (h:mm). Default is “0:03”.
- **Terminal Translation Initialization (TTI) Enabled** — Terminal Translation Initialization (TTI) must be enabled on the System-Parameters Customer-Options form before the TTI fields can be administered. Enter “y” to start a background maintenance task to generate TTI port translations for unadministered ports on TTI-supported boards. Enter “n” to remove existing TTI port translations and ensure that no new m port translations will be generated.

**CAUTION:**

Changing the TTI Enable field from “n” to “y” or from “y” to “n” triggers a background maintenance task that either generates (when changed to “y”) or removes (when changed to “n”) TTI port translation for unadministered ports in the system.

The following two fields are only displayed when the Terminal Translation Initialization (TTI) Enabled field is “y”.

- **TTI State** — Enter “data”, “resume”, “suspend”, or “voice”. The value of this field determines what type of TTI default port translation is generated for unadministered digital ports. The “suspend” state allows any current generation or removal of TTI port translations to be halted and access to TTI will also be denied. The “resume” state allows the TTI state to return to what it was before TTI was manually suspended. Default is “voice”.
- **TTI Security Code** — The TTI security code is a 1- to 7-digit code that TTI users must enter when accessing TTI from their terminals. (It is also known as the TTI authorization code but is not the same as system authorization codes.)

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- **Reserved Slots for Attendant Priority Queue** — Enter the number of calls that can go into the emergency queue. Default is “5”.
- **Time Before Off-Hook Alert** — Enter the time in seconds that a voice terminal with an Off-Hook Alert Class of Service can remain off-hook

before an emergency call is sent to the attendant. Valid entries are 1 to 3000 seconds. Default is "10".

- **Emergency Access Redirection Extension** — Enter the assigned extension number (can be a VDN) where emergency queue overflow will redirect.
- **Service Observing Warning Tone** — Service Observing must be enabled on the System-Parameters Customer-Options form before this field may be administered. Enter "y" to assign a warning tone to be given to voice terminal users and calling parties whenever their calls are being monitored using the Service Observing feature. Default is "n".

 NOTE:

The use of Service Observing features may be subject to federal, state, or local laws, rules or regulations or require the consent of one or both of the parties to the conversation. Customers should familiarize themselves with and comply with all applicable laws, rules, and regulations before using these features.

- **Call Pickup Alerting** — Entering "y" enables the Call Pickup Alerting feature on a system-wide basis. This provides pickup group members with a visual indication on the Call Pickup status lamp of calls eligible to be answered via Call Pickup. Default is "n".
- **Deluxe Paging and Call Park Timeout to Originator** — An entry of "y" enables the Loudspeaker Paging - Deluxe feature that essentially integrates the Loudspeaker Paging and Call Park features. All parked calls that time out (not answered by paged party) return to the parking party. An entry of "n" enables the Loudspeaker Paging feature. Paged calls that are to be parked require separate activation of the Call Park feature. All parked calls that time out return to the attendant. Default is "n".
- **Controlled Outward Restriction Intercept Treatment** — Enter the type of intercept treatment the caller receives when the call is outward restricted. Valid entries are "announcement", "attendant", "coverage", "extension" (may not be a VDN extension), or "tone". If announcement or extension is entered, the extension number for the announcement or extension must be entered in an associated field. Default is "tone".
- **Controlled Termination Restriction (Do Not Disturb)** — Enter the type of intercept treatment the caller receives when the call is placed to a termination restricted voice terminal. Valid entries are "announcement", "attendant", "cover", "extension" (may not be a VDN extension), or "tone". If announcement or extension is entered, an associated extension number field must be completed. Default is "tone".
- **Controlled Station-to-station Restriction** — Enter the type of intercept treatment the caller receives when the call is placed to a restricted voice terminal. Valid entries are "announcement", "attendant", "extension" (may not be a VDN extension), or "tone". If announcement or extension is entered, an associated extension number field is displayed. Enter the extension of the restricted voice terminal in the field. Default is "tone".

- **Authorization Codes Enabled** — An entry of "y" enables the Authorization Codes feature on a systemwide basis. This field cannot be administered if the Authorization Codes feature is not enabled on the System-Parameters Customer-Options form. Default is "n".



NOTE:

For System security, it is recommended that Authorization Codes be used .

- **Authorization Code Length** — Enter a number from 4 through 7 that defines the number of digits (length) in the Authorization Code field. This field is only displayed and must be completed if the Authorization Codes Enabled field is "y". This is the number of digits that must be assigned to the Authorization Code (AC) field on the Authorization Code form. Default is "7".



NOTE:

For System security, it is recommended that the maximum length Authorization Code be used.

- **Authorization Code Cancellation Symbol** — Enter the symbol a caller must dial to cancel the 10-second wait period during which the user can enter an authorization code. The cancellation code "#" should be entered if the main and tandem switches are both the same type of switch. The cancellation code "1" *must* be entered if an AT&T System 85 or DIMENSION PBX switch is part of the complex/network. This field is only displayed when the Authorization Code field is "y". Default is "#".
- **Attendant Time Out Flag** — Enter "y" if a call is to be routed to the attendant if the caller does not dial an authorization code within 10 seconds or dials an invalid authorization code. If this field is not enabled, the caller will receive Intercept tone. This flag affects only remote users or incoming calls over trunks requiring an authorization code. This field is only displayed if the Authorization Codes Enabled field is "y". Default is "n".

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System Printer Parameters (printer dedicated to support the Report Scheduler feature):

- **System Printer Extension** — Enter either the data module extension number associated with the System printer or enter "eia" if the DCE jack is used to interface the printer.
- **Lines Per Page** — Enter the number of lines per page required for the report. Valid entries are 24 through 132. Default is "60".
- **EIA Device Bit Rate** — This field is not displayed for G3r V2 configurations. Enter "1200", "2400", "4800", or "9600" per the required printer speed setting. Default is "9600".

System-Wide Parameters:

- **Switch Name** — Enter the name of the switch.

Call Center System Parameters:

- **Expert Agent Selection (EAS) Enabled** — Only displayed if Expert Agent Selection (EAS) is enabled on the System-Parameters Customer-Options form. Enter “y” to enable Expert Agent Selection. To enable this field, either no ACD or vectoring hunt groups may exist or, existing ACD or vectoring hunt groups must be “skilled”. Default is “n”.
- **Minimum Agent-LoginID Password Length**— Only displayed if Expert Agent Selection (EAS) is “y” on the System-Parameters Customer-Options form. Enter the minimum number of digits that must be administered as an EAS Agent’s LoginID password. Valid entries are 0 through 9 or blank. Entering a “0” or blank indicates no password is required. Default is blank.
- **Direct Agent Announcement Extension** — Only displayed if Expert Agent Selection (EAS) or ASAI are enabled on the System-Parameters Customer-Options form. Enter a valid announcement extension (consistent with the dial plan).
- **Direct Agent Announcement Delay** — Only displayed if Expert Agent Selection (EAS) or ASAI are enabled on the System-Parameters Customer-Options form. Enter the number of seconds (0 to 99) the caller will hear ringback before the Direct Agent Announcement is heard by the calling party.
- **Converse First Data Delay** — Only displayed if Vectoring (Basic) is enabled on the the System-Parameters Customer-Options form. This time delay prevents data from being outpulsed (as a result of a converse vector step) from the System to CONVERSANT before CONVERSANT is ready. The delay commences when the CONVERSANT port answers the call. Enter the number of seconds (0 to 9) for the delay. Default is “0”.
- **Converse Second Data Delay** — Only displayed if Vectoring (Basic) is enabled on the the System-Parameters Customer-Options form. When two groups of digits are being outpulsed (as a result of a converse vector step) from the System to CONVERSANT, this time delay prevents the second set from being outpulsed before CONVERSANT is ready. The delay commences when the first group of digits has been outpulsed. Enter the number of seconds (0 to 9) for the delay. Default is “2”.

Call Management System Parameters:

- **BCMS Measurement Interval** — Enter the time interval (“hour” or “half-hour”) to be used for polling and reporting measurement data. There are a maximum of 25 time slots available for measurement intervals. If “hour” is specified, an entire day of traffic information will be available for history reports; otherwise, only half a day will be available. This does not affect daily summaries as they will always reflect traffic information for the entire day. The interval may be changed at any time, but will not go into effect until the current interval completes. Default is “hour”.

The BCMS Measurements option must be enabled on the System-Parameters Customer-Options form before associated forms or fields on forms can be activated.

- **Adjunct CMS Release** — Specifies the release of the CMS adjunct used with the System. Default is "R2".
- **ACD Login Identification Length** — Enter the number of digits (0 through 9) for an ACD Agent Login ID if Expert Agent Selection (EAS) is "n" on the System-Parameters Customer-Options form. Default is "0".

Malicious Call Trace Parameters:

- **Apply MCT Warning Tone** — Enter "y" to provide an audible tone to the controlling station when an MCT recorder is actively recording a malicious call. Default is "n".
- **MCT Voice Recorder Trunk Group** — Assign the trunk group for MCT voice recorders. Default is blank.

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- **Public Network Trunks on Conference Call** — Enter 0 to 5 to indicate the number of public network trunks allowed on a conference call. If this field is "0", the Conference Parties with Public Network Trunks field will not appear on the form. Default is "5".
- **Conference Parties with Public Network Trunks** — Enter a number between 3 and 6 to specify the maximum number of parties allowed in a conference call involving a public network subscriber. If the value of the Public Network Trunks on Conference Call field is "0", this field will not appear on the form. Default is "6".
- **Conference Parties without Public Network Trunks** — Enter a number between 3 and 6 to specify the maximum number of parties allowed in a conference call involving no public network trunks. Default is "6".
- **Night Service Disconnect Timer (seconds)** — Enter a number between 10 and 1024 (or blank) to indicate how long a trunk call can be unanswered during night service before being disconnected. The trunk must not have Disconnect Supervision for this timer to apply. Default is 180.
- **Short Interdigit Timer (seconds)** — Enter a number between 3 and 9 to limit the time that digit analysis will wait for the next digit when it has predicted that all the digits have already been collected. Default is "3".
- **Unanswered DID Call Timer (seconds)** — Enter number between 10 and 1024 (or blank) to limit how long a DID call can remain unanswered before it is routed to the attendant. A value of blank will disable this timer. Default is blank.
- **Line Intercept Tone Timer (seconds)** — Enter a number between 2 and 60 to specify how long an analog station user can wait after hearing warning tone without going on hook, before the station is placed in the lockout state. Default is 30.

- **Auto Start** — Enter “y” to enable the Automatic Start feature. If Auto Start is enabled, the Start buttons on all attendant consoles are disabled. Default is “n”.
- **Auto Hold** — Enter “y” to enable the Automatic Hold feature on a systemwide basis. Default is “n”.
- **Attendant Tone** — Enter “y” to provide call progress tones to the attendants. Default is “y”.
- **Bridging Tone** — Enter “y” to apply a bridging tone when calls are bridged on primary extensions. Default is “n”.
- **Conference Tone** — Enter “y” to provide conference tone as new calls join a conference call. Default is “n”.



NOTE:

Bridging and Conference Tones are not supported by all countries. If these tones are enabled for countries other than Italy, Belgium, United Kingdom, or Australia, the tones will be equivalent to no tone (silence) unless the tone is independently administered or customized on the System Parameters Country Options form. Refer to Appendix B, *Application Notes*, for information regarding tone administration for each individual country.

- **Intrusion Tone** — Enter “y” to apply an intrusion tone (executive override) when an attendant intrudes on the call. Default is “n”.
- **DID Busy Treatment** — Enter “attendant” or “tone” to specify how to handle a DID call to a busy station. Default is “tone”.

The next three fields control the Distinctive Audible Alerting feature. This feature provides an administrable ringing pattern (1-, 2-, or 3-bursts) for internal, external, and priority calls. An internal call is a station to station call, or a call over a tie trunk administered as “internal”. An external call is from the attendant or from a trunk other than a tie trunk administered as “internal”. A priority call is one so designated by the calling party. Only sets with proper permissions can make priority calls.

- **Internal** — Enter a number (1 through 3) to specify the ringing pattern for internal calls. Default is “1”.
- **External** — Enter a number (1 through 3) to specify the ringing pattern for external calls. Default is “2”.
- **Priority** — Enter a number (1 through 3) to specify the ringing pattern for priority calls. Default is “3”.



NOTE:

The administration of these ringing patterns may be different in installations outside the United States of America. Refer to Appendix B, *Application Notes*, for information on administering ringing patterns for each individual country.

- **Pull Transfer** — Enter “y” to enable the Pull Transfer feature on a systemwide basis. Default is “n”.
- **Level of Tone Detection** — Enter “broadband”, “medium”, or “precise” to specify the precision level of tone detection to be supported in the switch. Default is “precise”.
- **Wait Answer Supervision Timer** — Enter “y” to enable the Wait Answer Supervision Timer feature on a systemwide basis. When “y” is entered in this field, calls to stations that are unanswered after 50 seconds will be dropped. When “n” is entered in this field, unanswered calls will be dropped only when the calling party goes on-hook. Default is “n”.
- **Repetitive Call Waiting Tone** — Enter “y” to indicate that a repetitive call waiting tone will be used for all forms of call waiting access. Default is “n”.
- **Outpulse Without Tone** — Enter “y” to indicate that the switch will outpulse digits when an expected tone (dial tone) has not been received. Default is “y”.
- **Network Feedback During Tone Detection** — Enter “y” to provide audible feedback to the user while the system attempts to detect dial tone. Default is “y”.
- **Intercept Treatment on Failed Trunk Transfers** — Enter “y” to provide intercept tone to calls that fail trunk transfers. Enter “n” to drop these calls. Default is “n”.

The next four fields control station-to-switch recall signal timing. If a flashhook interval (recall window) is required, the upper and lower bounds of the interval can be administered. An on-hook that lasts for a period of time greater than or equal to the lower bound and less than or equal to the upper bound will be treated as a recall flash. If an interval is not required, the Disconnect Timing value must be administered. An on-hook that lasts for a period of time less than this value will be ignored; greater than or equal to this value will be regarded as a disconnect.

- **Flashhook Interval** — Enter “y” to indicate that a flashhook interval (recall window) is required. If a “y” is entered, the Upper and Lower Bound fields will appear; if “n” is entered, the Disconnect Timing field will appear. Default is “y”.
- **Upper Bound (msec)** — Appears when the Flashhook Interval field is “y”. Specifies the upper bound of the station-to-switch recall signal timing interval in milliseconds. Enter 150 through 1250 (in increments of 10) to specify the upper bound of the flashhook interval. Default is “1000”.
- **Lower Bound (msec)** — Appears when the Flashhook Interval field is “y”. Specifies the lower bound of the station-to-switch recall signal timing interval in milliseconds. Enter 150 through 1250 (in increments of 10) to specify the lower bound of the flashhook interval. Default is “200”.
- **Disconnect Timing (msec)** — Appears when the Flashhook Interval field is “n”. Enter 150 through 1250 (in increments of 10) to specify the number of seconds an on-hook must last for it to be considered a

disconnect. Default is "150".

The next three fields control the Enhanced DCS feature.

- **Enhanced DCS Enabled?** — Enter "y" to enable the Enhanced DCS feature on a systemwide basis. Default "n".
- **Apply Intercept Locally?** — Enter "y" to indicate that DID/CO intercept treatment will be applied locally instead of on the originating switch. This field appears only if the "Enhanced DCS Enabled" field is set to "y". Default is "y".
- **Enforce PNT-to-PNT Restrictions?** — Enter "y" in this field to indicate that restrictions and denial of PNT-to-PNT connections will be enforced when the EDCS message is unavailable. A "y" in this field means restrictions will be enforced. This field appears only if the "Enhanced DCS Enabled" field is set to "y". Default is "n".

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```

FEATURE-RELATED SYSTEM PARAMETERS
      Trunk-to-Trunk Transfer? n
Coverage - Subsequent Redirection No Answer Interval: 3_
      Coverage - Caller Response Interval (seconds) : 4_
              Keep Held SBA at Coverage Point? Y_
Automatic Callback - No Answer Timeout Interval (rings): 4_
                  Call Park Timeout Interval (minutes): 10
off -premises Tone Detect Timeout Interval (seconds): 20_
                  AAR/ARS Dial Tone Required? y
                  Music/Tone On Hold: music  Port: _____
      Music (or Silence) On Transferred Trunk Calls: all
                  DID/Tie/ISDN Intercept Treatment: attd
                  Messaging Service Adjunct (MSA) Connected? y
Internal Automatic Answer for Attendant Extended Calls? y
                  Automatic Circuit Assurance (ACA) Enabled? y
                  ACA Referral Calls: local
                  ACA Referral Destination: _____
ACA Short Holding Time Originating Extension: _____
ACA Long Holding Time Originating Extension: _____
                  ACA Remote PBX Identification: ____

```

Screen 5-52. Feature-Related System Parameters Form (Page 1 of 6)

Implementation Notes:

If Automatic Circuit Assurance (ACA) Enabled is "n", associated ACA fields will not be displayed.

If ACA Referral Calls is "local" or "primary", the ACA Referral Destination and the ACA Short and Long Holding Time fields are displayed.

If ACA Referral Calls is "remote", the ACA Remote PBX Identification field is displayed.

If the Music/Tone on Hold field is "music", the Port field is displayed.

The Messaging Service Adjunct (MSA) Connected field is only displayed on a G3s V2 or G3i V2 configuration.

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FEATURE-RELATED SYSTEM PARAMETERS

LEAVE WORD CALLING PARAMETERS

Maximum Number of Messages Per Station (when MSA not in service): 10_

Stat ions with System-wide Retrieval Permission (enter extension)

1: 34430	3: attd_	5: _____	7: _____	9: _____
2: 34412	4: _____	6: _____	8: _____	10: _____

SECURITY VIOLATION NOTIFICATION PARAMETERS

SVN Login Violation Notification Enabled? y

Originating Extension: 36661	Referral Destination: 0
Login Threshold: 5	Time Interval: 0:03

SVN Remote Access Violation Notification Enabled? y

Originating Extension: 36662	Referral Destination: 0
Barrier Code Threshold: 1	Time Interval: 0:05

WARNING! SEE USER DOCUMENTATION BEFORE CHANGING TTI STATE

Terminal Translation Initialization (TTI) Enabled? y
TTI State: voice TTI Security Code: _____

Screen 5-53. Feature-Related System Parameters Form (Page 2 of 6)

Implementation Notes:

The four fields immediately under SVN Login Violation Notification Enabled are only displayed if the Enabled field entry is "y".

The four fields immediately under SVN Remote Access Violation Notification Enabled are only displayed if the Enabled field entry is "y".

An Originating Extension must be a previously unadministered extension.

The originating extensions for login and remote access security violations cannot be the same as the originating extensions for ACA long and short holding time originating extensions. However, the destination extensions for both features can be the same.

A Referral Destination must be an extension equipped with a display.

Enter "attnd" or local extension number for Referral Destination.

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FEATURE-RELATED SYSTEM PARAMETERS

Reserved Slots for Attendant Priority Queue: 5_

Time Before Off-Hook Alert: 10__

Emergency Access Redirection Extension: ____

Service Observing Warning Tone? n

Call Pickup Alerting? n

Deluxe Paging and Call Park Timeout to Originator? n

Controlled Outward Restriction Intercept Treatment: tone ____

Controlled Termination Restriction (Do Not Disturb): tone ____

Controlled Station-to-Station Restriction: tone ____

AUTHORIZATION CODE PARAMETERS

Authorization Code Enabled? y

Authorization Code Length: 7

Authorization Code Cancellation Symbol? #

Attendant Time Out Flag? n

Screen 5-54. Feature-Related System Parameters Form (Page 3 of 6)

Implementation Note:

The Authorization Code Length, Cancellation Symbol, and Attendant Time Out Flag fields are only displayed when the Authorization Code Enabled field is "y".

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FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM PRINTER PARAMETERS

System Printer Extension: _____ Lines Per Page: 60

EIA Device Bit Rate: 9600

SYSTEM-WIDE PARAMETERS

Switch Name: _____

CALL CENTER SYSTEM PARAMETERS

Expert Agent Selection (EAS) Enabled? n Direct Agent Announcement Delay: __

Minimum Agent-LoginID Password Length: _ Converse First Data Delay: 0

Direct Agent Announcement Extension: _____ Converse Second Data Delay: 2

CALL MANAGEMENT PARAMETERS

BCS Measurement Interval: hour _____

Adjunct CMS Release: R2

ACD Log-in Identification Length: 0

MALICIOUS CALL TRACE PARAMETERS

Apply MCT Warning Tone? n MCT Voice Recorder Trunk Group: ____

Screen 5-55. Feature-Related System Parameters Form (Page 4 of 6)

Implementation Note:

The EIA Device Bit Rate field is not displayed for G3r V2 configurations.

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FEATURE-RELATED SYSTEM PARAMETERS

Public Network Trunks on Conference Call: 5

Conference Parties with Public Network Trunks: 6

Conference Parties without Public Network Trunks: 6

Night Service Disconnect Timer (seconds): 180

Snort Interdigit Timer (seconds): 3

Unanswered DID Call Timer (seconds): _____

Line Intercept Tone Timer (seconds): 30

Auto Start? n

Auto Hold? n

Attendant Tone? y

Bridging Tone? n

Conference Tone? n

Intrusion Tone? n

DID Busy Treatment: tone

DISTINCTIVE AUDIBLE ALERTING

Internal: 1 External: 2 Priority: 3

Screen 5-56. Feature-Related System Parameters Form (Page 5 of 6)

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FEATURE-RELATED SYSTEM PARAMETERS

Pull Transfer? n

Level of Tone Detection: precise

Wait Answer Supervision Timer? n

Repetitive Call Waiting Tone? n

Outpulse Without Tone? y

Network Feedback During Tone Detection? y

Intercept Treatment On Failed Trunk Transfers? n

RECALL TIMING

Flashhook Interval? n

Upper Bound (msec): 1000

Disconnect Timing (msec): 150

Lower Bound (msec): 200_

ENHANCED DCS

Enhanced DCS Enabled? y

Apply Intercept Locally? y

Enforced PNT-to-PNT Restrictions? n

Screen 5-57. Feature-Related System Parameters Form (Page 6 of 6)**Implementation Notes:**

The Upper Bound and Lower Bound fields appear only if the Flashhook Interval field is "y".

If the Flashhook Interval field is "n", the Disconnect Timing field appears.

The Apply Intercept Locally and Enforce PNT-to-PNT Restrictions fields appear when the Enhanced DCS field is set to "y".

Hospitality

This form is used to implement the System parameters associated with the hospitality features.

Administration Commands

The following administration commands can be used to access the Hospitality form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	system-parameters	hospitality
display	system-parameters	hospitality ['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Message Waiting Configuration** — Indicates if message waiting notification requests and changes are being exchanged between the System and PMS. If it is active, the System and the PMS, when used, exchange message waiting information. Valid entries are “act-nopms” or “act-pms”; act-nopms indicates message waiting is activated but no waiting message information is being transmitted between PMS and the System; act-pms indicates message waiting is activated and transmitting information between the PMS and the System. Default is “act-nopms”.
- **Controlled Restrictions Configuration** — Indicates if notification of controlled restriction is being exchanged between the System and PMS. If “act-pms”, the System and the PMS, when used, exchange controlled restriction information. Valid entries are “act-nopms” or “act-pms”. Default is “act-nopms”.
- **Housekeeper Information Configuration** — Indicates if housekeeper information is being exchanged between the System and PMS. If “act-pms”, the System and PMS exchange housekeeper information. Valid entries are “act-nopms”, or “act-pms”. Default is “act-nopms”.
- **Number of Housekeeper ID Digits** — Enter the number of digits (0 to 6) that the housekeeper must dial for identification. Default is “0”.

- **Extension of PMS Log Printer** — Enter the extension number (may not be a VDN extension) of the data module or data line that is connected to the PMS/Log printer.
- **Extension of Journal/Schedule Printer** — Enter a valid data extension number (may not be a VDN extension) assigned to the Journal/Log printer. This extension number is dialed by the System so it can send log and scheduled hospitality reports information to the printer.
- **Client Room Coverage Path Configuration** — This field indicates if the PBX and PMS exchange coverage path information for guest stations. Setting this field to “act-pms” enables the PMS to update the coverage path of a guest station. Setting this field to “act-nopms” (default) prevents the PMS from setting a room’s coverage path. When upgrading from a release that does not support this field, the field will be “act-pms” if the PMS protocol made was administered as “transparent”. Otherwise, this field will be “act-nopms”.
- **Default Coverage Path For Client Rooms** — Only displayed when the PMS Protocol Mode field is “transparent”. Enter a Coverage Path number or leave blank. This field defines the call coverage path number set for an extension when the System receives a checkout message in the “transparent” mode. The extension must belong to a station that has “Client Room” class of service (COS) and has “occupied” room status (before check out). This value is also used during a “save translations” operation as the coverage path for each station with “Client Room” COS.
- **Extension of PMS** — Enter the data extension number (may not be a VDN extension) the System must dial to access PMS.
- **PMS Protocol Mode** — Enter “normal” or “transparent” to identify the mode of the message protocol and the message set to be used between the digital switch and the PMS. The “normal” mode supports up to 4-digit room extension numbers and the “transparent” mode supports up to 5-digit room extension numbers, name registration, and other enhancements. Default is “normal”.
- **Seconds Before PMS Link Idle Timeout** — Enter the idle time in seconds (5 to 20) the System will wait before it concludes that the PMS is not sending data across the transmission link. Default is “10”.
- **Milliseconds Before PMS Link Acknowledgement Timeout** — Enter the time in milliseconds (100 to 500) the System waits for an acknowledgment from the PMS indicating it correctly received a message. Default is “200”.
- **PMS Link Maximum Retransmissions** — Enter the number of times (1 to 5) that the System will retransmit a message in response to a negative acknowledgment or send an inquiry for an acknowledgment from the PMS for a message before giving up on the message transmission. Default is “3”.
- **PMS Link Maximum Retransmission Request** — Enter the number of times (1 to 5) that the switch will request the PMS to retransmit a message. Default is “3”.

- **Take Down Link for Lost Messages** — Enter a “y” to cause the PBX to take down the PMS link if a message is sent and rejected the number of times specified in the “PMS Link Maximum Retransmissions” field. An “n” in this field causes the PBX to leave up the PMS link but to stop trying to send the message. Careful monitoring of the PMS error log is recommended when using this option. Default is “y”.

**NOTE:**

It is recommended that this field be left at the default setting.

Page 2 of the Form

- **Time of Scheduled Wakeup Activity Report** — Enter the time the Wakeup Activity Report will be printed. This report summarizes the wakeup activity for each extension that had wakeup activity for the past 24 hours. Enter the time hh[:mm][a/pm] where hh=hour, mm=minute, a/pm=am or pm.
- **Time of Scheduled Wakeup Summary Report** — Enter the time the Wakeup Summary Report will be printed. This report gives an hour-by-hour summary of the number of scheduled wakeup calls and a list of extensions to which wakeup calls were attempted but did not complete during the hour. Enter the time hh[:mm][a/pm] where hh=hour, mm=minute, a/pm=am or pm.
- **Time of Scheduled Emergency Access Activity Report** — Enter the time the Emergency Access Activity Report will be printed. Enter the time hh[:mm][a/pm] where hh=hour, mm=minute, a/pm=am or pm.
- **Announcement Type** — Enter the type of automatic wakeup announcement the hotel guest will receive. Valid entries are “external”, “music-on-hold”, “silence”, or “voice-synthesis”.

If “voice-synthesis” is entered, complete the Announcement Ports field. If “external” is entered, complete the Auxiliary Board for Announcement field.
- **Announcement Ports** — Enter two port numbers of seven characters each. The port numbers are assigned to two different ports (01, 02, 03, 04 — any two of the four) on the Voice Synthesizer circuit pack

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 04

- **Auxiliary Board For Announcement** — Enter a 4- or 5-character circuit pack number. This field requests the circuit pack address that connects to the external announcement equipment.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20

- **Length of Time To Remain Connected To Announcement** — Enter the length of time in seconds (0 to 300) the hotel guest will receive a wakeup call announcement. Default is 30.
- **Extension To Receive Failed Wakeup LWC Messages** — Enter the unassigned extension number (may not be a VDN extension) where unsuccessful wakeup LWC messages will be stored. A dedicated unassigned extension is required. Default is blank.
- **Routing Extension On Unavailable Voice Synthesis** — Enter the extension number (may not be a VDN extension) or "attd" (attendant) to which a call will be placed during voice synthesis entry of wakeup requests when a voice synthesis port is not available. Default is blank.
- **Display Room Information in Call Display** — Enter "y" when the information in the Room field on Station forms is to be used in the Extension Display field on display-equipped voice terminals. If the associated station form defines a "Client Room" COS and a non-blank value in the Room field, the characters in the Room field are shown in the extension portion of call displays. If the Room field has more than five characters, only the first five characters are shown. This supports situations where there are several phones with different extension numbers in one guest room. The room number will always be displayed no matter which phone is in use.

This field also affects redirected client room calls if the Disp. Client Redir field is set to "n" on the station form of a display station receiving redirected client room calls.

Default is "n".

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HOSPITALITY

Message Waiting Configuration: act-nopms

Control Restrictions Configuration: act-nopms

Housekeeper Information Configuration: act-nopms

Number of Housekeeper ID Digits: 0

Extension of PMS Log Printer: _____

Extension of Journal/Schedule Printer: _____

Client Room Coverage Path Configuration: act-nopms

Default Coverage Path For Client Rooms: _____

PMS LINK PARAMETERS

Extension of PMS: _____

PMS Protocol Mode: normal_____

Seconds before PMS Link Idle Timeout: 10

Milliseconds before PMS Link Acknowledgement Timeout: 200

PMS Link Maximum Retransmissions: 3

PMS Link Maximum Retransmission Requests: 3

Take Down Link for Lost Messages? Y

Screen 5-58. Hospitality Form (Page 1 of 2)

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HOSPITALITY

Time of Scheduled Wakeup Activity Report: _____

Time of Scheduled Wakeup Summary Report: _____

Time of Scheduled Emergency Access Summary Report: _____

Announcement Type: _____

Announcement Ports: _____

Auxiliary Board for Announcement: _____

Length of Time To Remain Connected To Announcement: 30_____

Extension To Receive Failed Wakeup LWC Messages: _____

Routing Extension On Unavailable Voice Synthesis: _____

Display Room Information in Call Display? n

Screen 5-59. Hospitality Form (Page 2 of 2)

Implementation Notes:

The Announcement Ports field only appears when the Announcement Type field is "voice-synthesis".

The Auxiliary Board for Announcement field only appears when the Announcement Type field is "external".

Hunt Group

Allows calls to be answered by users (agents) at a predesignated group of terminals or devices.

This form is used to create a Hunt Group that is identified by a Hunt Group number. Users assigned to a Hunt Group are identified by their extension number.

⇒ NOTE:

If the Hospitality Parameter Reduction option is enabled on the System-Parameters Customer-Options form, only five Hunt Groups may be assigned.

The Hunt Group form can be used to implement a hunt group and its associated features such as Automatic Call Distribution (ACD) and Hunt Group Queuing. Look at the various hunt group forms and choose the forms that can be used to implement your hunt group requirements.

The System checks for the busy or idle status of extension numbers in the hunt group when answering calls. A Uniform Call Distribution (UCD) type hunt group selects the "most idle" extension in the group when answering a new call. A Direct Department Calling (DDC) type hunt group selects the first available extension (in the administered sequence) when answering a new call.

Once the forms have been chosen, review the following instructions and use them for the fields that appear on the forms. The instructions listed below describe all the fields that can be used; however, some of the fields may not appear on the forms you selected. Implementation Notes at the bottom of the screen form examples lists the field entries required to obtain the associated form.

⇒ NOTE:

Vector controlled splits/skills (that is, ACD hunt group with vector = "y") may be called directly via the split/skill extension (instead of calling a VDN mapped to a vector that will terminate the call to a vector controlled split/skill); however, the calls will not receive any announcements, be forwarded, redirect to coverage, or intraflow/interflow to another hunt group.

Administration Commands

The following administration commands can be used to access the Hunt Group form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

	Action	Object	Qualifier*
Without Hospitality Parameter Reduction Feature	add	hunt-group	1-MAX (or 'next')
	change	hunt-group	1-MAX
	display	hunt-group	1-MAX ['print' or 'schedule']
	list	hunt-group	['print' or 'schedule']
	remove	hunt-group	1 -MAX
With Hospitality Parameter Reduction Feature	add	hunt-group	1-5 (or 'next')
	change	hunt-group	1-5
	display	hunt-group	1-5 ['print' or 'schedule']
	list	hunt-group	['print' or 'schedule']
	remove	hunt-group	1-5

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.



NOTE:

Hospitality Parameter Reduction is not supported by the G3s V2 ABP configuration.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the form

- **Group Number** — Enter a hunt group number when completing a paper form (only five Hunt Groups may be assigned if the Hospitality Parameters Reduction option is enabled on the System-Parameters Customer-Options form). This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Group Extension** — Enter an unused extension number (1 to 5 digits) to be assigned to the hunt group.
- **Group Type** — Enter the type of hunt group: “ucd,” “ddc,” or “ead”. Enter “ucd” if the hunt group has an AUDIX or Messaging Server Adjunct message or if the Skill field has been set to “y”. Also, “ucd” is required when supporting the Outbound Call Management feature and when the “Controlling Adjunct” field is administered as “asai”.

Enter “ead” (expert agent distribution) in the “type” field when EAS is

optioned. When ead is optioned, a call to the hunt group first looks for the most-idle "primary" agent and only if no "primary" agents are available will the call go to the most-idle "secondary" agent. This allows a call to be distributed to an agent best able to handle the call if multiple agents (primary and secondary) are available.

The default is "ucd".

- **Group Name** — Enter a 16-character string that uniquely identifies the group (for example, "parts dept.", "purchasing", or "sales dept").
- **Skill** — Only appears if Expert Agent Selection is enabled on the System-Parameters Customer-Options form. Enter "y" if this hunt group has an associated Skill. When set to "y", the ACD and Vector fields will automatically be set to "y". Default is "n".



NOTE:

If this field is "y", then the Group Type field must be "ucd".

- **ACD** — Enter "y" if the hunt group will function as an ACD split/skill. AUDIX and MSA hunt groups may function as ACD splits/skills. This field cannot be completed if the ACD option is not enabled on the System-Parameters Customer-Options form. Enter "n" if this feature is not desired, even if ACD is enabled on the System-Parameters Customer-Options form. When the hunt group is assigned as an ACD split/skill, the hunt group members will serve as ACD agents. The agents in this split/skill must log in to receive ACD split/skill calls. If this hunt group is on a remote switch using the AUDIX in a DCS feature, enter "n" in this field.
- **Queue** — Enter "y" if the hunt group will be served by a queue. Default is "n".
- **AAS** — Displayed when the "ACD" field for this hunt group is "y". Enter "y" when this hunt group will serve as an Auto-Available Split.
- **Vector** — Enter "y" to indicate that this hunt group will be vector controlled. The Vectoring-Basic option must be enabled on the System-Parameters Customer-Option form before "y" can be entered in the field. Default is "n". (See example screen forms for fields that are displayed when "y" is entered in this field.)
- **Security Code** — Enter a 4-digit security code (password) used for the Demand Print feature. Valid entries are a 4-digit security code or leave blank.
- **Night Service Destination** — Not displayed if Vector is "y". Enter the destination where calls to this ACD split will redirect when the split is in the night service mode. Valid entries are an assigned extension number (can be a VDN extension), the attendant group code, or leave blank.
- **COR** — Enter the class of restriction (COR) number from 0 through 95 that reflects the desired restriction for the hunt group. If this is a hunt group supporting the AUDIX in a DCS feature, the CORs on the Hunt Group form on each switch must be the same. Default is "1".

- **ISDN Caller Disp** — Enter “grp-name” or “mbr-name” to specify whether the hunt group name or member name, respectively, will be sent to the originating user. This field is required if the ISDN-PRI option on the System-Parameters Customer-Options form is enabled. If ISDN-PRI is not enabled, this field must be blank.
- **Coverage Path** — Not displayed if Vector is “y”. Enter a coverage path number. This assigns a coverage path for the Hunt Group. The coverage path is assigned using the Call Coverage Path form. Valid entries vary depending on the system configuration, or this field may be left blank.

The following fields are displayed if ACD is “y”:

- **Measured** — Enter “internal” to have change-of-state messages for the ACD split/skill measured by the Basic Call Management System (internal to switch) and enter “external” to have measurements made by the Call Management System (external to switch). Enter “both” to have data sent to both systems for measurement reports. Enter “none” if measurement reports for this hunt group is not required. Default is “none”.
- **Supervisor Extension** — Enter the extension number (may not be a VDN number) of the ACD split/skill supervisor that agents will reach when using the Assist feature.
- **Priority On Intraflow** — Not displayed if Vector is “y”. Enter “y” if calls intraflowing from this split to a covering split will be given priority over other calls waiting in the covering split queue. Default is “n”.
- **Controlling Adjunct** — Displayed when the ACD field is “y”. Enter “none” to indicate that members of the split/skill or hunt group are not controlled by an adjunct processor. When set to “asai”, all agent logins are controlled by an associated adjunct and logged-in agents can only use their data terminal keyboards to perform voice terminal functions (for example, change work state). If the controlling adjunct is a CONVERSANT voice system (requires an ASAI link), then enter “asai” in this field. (The ASAI option must be enabled on the System-Parameters Customer-Option form for CallVisor ASAI capability.) Valid entries are “asai” or “none”.
- **BCMS Acceptable Service Level (sec)** — Only displayed when the BCMS Acceptable Service Level option is enabled on the System-Parameters Customer-Options form and the Measured field is “internal” or “both”. Enter the number of seconds within which calls to this hunt group should be answered. This will allow BCMS to print out a percentage of calls that were answered within the specified time. Valid entries are 0 through 9999 seconds. Default is blank.
- **ASAI Link Extension** — Displayed when Controlling Adjunct field is “asai”. Enter the appropriate ASAI Link extension (see CallVisor Adjunct/Switch Applications Interface Link information elsewhere in this chapter). This field may not be blank.
- **Redirect on No Answer (rings)** — Only appears when ACD is “y”. Enter the maximum number of rings (1 to 20, or blank) before a call will redirect back to the Split/skill.

- **Forced Entry of Stroke Counts or Call Word Codes** — This field is only displayed when the Controlling Adjunct field is set to “none”. Enter “y” if either a Stroke Count or Call Work Code must be entered for each call answered by an agent when in the Manual-In mode.

The following fields are displayed if Queue is set to “y”:

- **Queue Length** — Enter the maximum number of calls that can be in the queue at the same time. This field must have an entry when Queue is “y”.
- **Calls Warning Threshold** — Enter the number of calls that can be queued before the System flashes the queue status (feature buttons assigned on agents voice terminals) and the optional Auxiliary Queue Call Warning Threshold lamp assigned to the split/skill. These lamps are lighted steadily when at least one call is in queue and the threshold has not yet been reached. Must be less than or equal to the queue length or leave blank. This field must not be left blank if the Calls Warning Port field is assigned a port number.
- **Calls Warning Port** — Enter the seven-character port number assigned to connect the optional external Auxiliary Queue Call Warning Threshold lamp that will flash when the number of calls in queue has exceeded the queue warning threshold (assigned in the Calls Warning Threshold field).

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 32



NOTE:

This port is assigned to an Analog Line circuit pack or given an “X” designation if an extension is used.

- **(Calls Warning) Extension** — An extension is needed when an X is placed in the Calls Warning Port field. This extension may be used by the Terminal Translation Initialization (TTI) feature to assign a port to this extension from the port itself. Once the Calls Warning Port field is assigned a valid port (either via TTI or the *change hunt-group* command), then the extension is removed and considered unassigned.
- **Time Warning Threshold** — Enter the time in seconds (0 through 999, or blank) that a call can remain in the queue before the System flashes the Queue status lamps (feature buttons assigned members voice terminals) and the Auxiliary Queue Time Warning lamp assigned to this split/skill. An entry of “0” provides a warning whenever a call is queued.

- **Time Warning Port** — Enter the seven-character port number assigned to the Auxiliary Queue Time Warning lamp that flashes when the time entered in the Time Warning Threshold field has been reached by a call in queue. The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 32

**NOTE:**

This port is assigned to an Analog Line circuit pack or given an “X” designation if an extension is used.

- **(Time Warning) Extension** — An extension is needed when an X is placed in the Time Warning Port field. This extension may be used by the Terminal Translation Initialization (TTI) feature to assign a port to this extension from the port itself. Once the Time Warning Port field is assigned a valid port (either via TTI or the “change hunt-group command”), then the extension is removed and considered unassigned.

The following field is displayed when ACD is “y” and Queue is “y”:

- **Inflow Threshold** — Enter the number of seconds (0 through 999) that a call can remain in the queue before no more calls will be accepted by the queue. If “0” is entered, a call will be redirected to this split/skill only if there is an available agent.

Page 2 of the Form

- **Message Center** — Enter the type of messaging adjunct for the hunt group. Valid entries are “msa” (Messaging Server Adjunct), “rem-audix” (DCS feature allowing AUDIX to be located on another switch), or “audix” (for AUDIX located on this switch). Entering “none” indicates the hunt group does not serve as a message hunt group. Default is “none”. Except on G3r V2 configurations, only one hunt group in the System may be administered as msa, one as audix, and one as rem-audix.
- **AUDIX Extension** — Displayed when Message Center is “rem-audix”. Enter a valid 4- to 5-digit Uniform Dial Plan (UDP) extension that identifies the AUDIX hunt group on the host switch used as the Message Center for this hunt group (supports the AUDIX In A DCS feature).
- **Message Center MSA Name** — Only appears on G3r V2 configurations for hunt groups with “msa” as the Message Center. Enter the name of the Message Center MSA.
- **Message Center AUDIX Name** — Only appears on G3r V2 configurations for hunt groups with “audix” as the Message Center. Enter the name of the Message Center AUDIX.

- **Primary** — Only appears on G3r V2 configurations for hunt groups with “audix” or “msa” as the Message Center. Enter “y” to indicate that the specified AUDIX or Messaging Server is the primary adjunct.
- **LWC Reception** — Defines the destination for Leave Word Calling (LWC) messages left for the hunt group. Valid entries are “audix”, “msa”, “spe”, or “none”.
- **AUDIX Name** — Only appears on G3r V2 configurations. Enter the name of the AUDIX machine as it appears on the User-Defined Adjunct Names Form.
- **Messaging Server Name** — Name of the server as it appears in the User-Defined Adjunct Names form. Only displayed for G3r V2 configurations.
- **First Announcement Extension** — Appears when either ACD or Queue (or both) are “y”. Not displayed if Vector is “y”. Enter a recorded announcement extension number or leave blank. This is the announcement the caller will receive after being in the queue for the time interval specified in the First Announcement Delay field. If the call hasn’t been answered after the announcement, the caller will hear music (only for first announcement) if Music-on-Hold is provided, or ringing for as long as it remains in the queue. Leaving this field blank indicates there will be no announcement. If this is the forced first announcement, the caller always hears ringback after the announcement; otherwise, the caller will hear music (if provided).
- **First Announcement Delay (sec)** — Displayed only if Queue is “y” and Vector is “n”. Enter the number of seconds (0 through 99) that a call can remain in queue before the associated first announcement is given the calling party. The call retains its place in the queue while the caller is listening to the recorded announcement. If the call hasn’t been answered after the announcement, the caller will hear music (for first announcement only) if Music-on-Hold is provided or ringing for as long as the call remains in queue. When “0” is entered, the first announcement is provided immediately to the caller. This value is automatically set to “0” if there is no queue. This field must be blank if there is no first announcement.

The following fields are displayed only when ACD and Queue are both “y” and Vector is “n”:

- **Second Announcement Extension** — Enter the extension number assigned to a recorded announcement or leave blank. Leaving the field blank indicates that there is no second announcement.
- **Second Announcement Delay (sec)** — Enter the time in seconds (1 through 99) before the call in the queue receives a second recorded announcement or that the second announcement is repeated. It is recommended that, if this split/skill or hunt group is a coverage point for another split/skill, that this delay should not be more than 15 seconds. Leave blank if there is no second announcement.
- **Second Announcement Recurring** — Enter “y” if the second announcement may be repeated. Leave blank if there is no second

announcement.

Pages 3 through X of the Form

The total number of pages will vary depending on your System configuration. Refer to the Capacity Table in Appendix C for the maximum number of Hunt Groups supported by each configuration.



NOTE:

Only Pages 1 and 2 will be displayed if the Hunt Group is Skilled.

- **Group Number** — Display-only field.
- **Group Extension** — Display-only field.
- **Group Type** — Display-only field.
- **Member Range Allowed** — The range of allowed members will be displayed on all member pages. These values vary depending on the particular system and/or configuration.
- **Administered Members (min/max)** — This field will be displayed on all member pages. Indicates the minimum and maximum member number administered for this hunt group.
- **Total Administered Members** — This field will be displayed on all member pages. Indicates the total number of members administered for this hunt group.
- **More Members Exist** — Display-only field showing that there are more members than currently displayed (the current page is not the last page).
- **At End of Member List** — Display-only field showing that the current page is also the last page.
- **Ext** — Display-only field if the Controlling Adjunct field is “asai”. Controlled Agent extensions must be entered on the Adjunct Controlled Agent Table form. If Controlling Adjunct is “none”, enter the extension number associated with a member in the Hunt Group or with an associated data module. The extension may not be a VDN. The data module cannot be a member of an ACD split/skill.
- **Name** — Make no entry, this is a display-only field. The name is assigned to the above extension number when it is administered in the System.

		HUNT GROUP	Page 1 of X
Group Number: ____	Group Extension: ____	Group Type: ucd_	
Group Name: _____	Skill? n	ACD? n	
Queue: n		Vector? n	
Security Code? ____	Night Service Destination: ____	COR: 1	
ISDN Caller Disp: _____	coverage Path: ____		

Screen 5-60. Hunt Group Form (Page 1 of X)

		HUNT GROUP	Page 2 of X
Message Center: _____	AUDIX Extension: ____		
Message Center MSA Name: _____	Primary? _		
LWC Reception: _____			
AUDIX Name: _____			
Messaging Server Name: _____			

Screen 5-61. Hunt Group Form (Page 2 of X)

Implementation Notes:

Pages 1 and 2 when the ACD, Queue, and Vector fields are "n".

Night Service Destination and Coverage Path fields are not displayed if Vector is "y".

AUDIX Extension is only displayed when Message Center is "rem-audix".

The Message Center MSA Name, Message Center AUDIX Name, Primary, AUDIX Name, and Messaging Server Name fields are only displayed for G3r V2 configurations.

Message Center MSA Name is only displayed when Message Center is "msa".

Message Center AUDIX Name is only displayed when Message Center is "audix" or "rem-audix".

Primary is only displayed when Message Center is "audix" or "msa".

		HUNT GROUP	Page 1 of X
Group Number: ____	Group Extension: ____	Group Type: ucd_	
Group Name: _____	Skill? n	ACD? n	
Queue: y		Vector? n	
Security Code? ____	Night Service Destination: ____	COR: 1	
ISDN Caller Disp: ____	coverage Path: ____		
Queue Length: 1			
Calls Warning Threshold: _	Calls Warning Port: X	Extension: ____	
Time Warning Threshold: _	Time Warning Port: X	Extension: ____	

Screen 5-62. Hunt Group Form (Page 1 of X)

		HUNT GROUP	Page 2 of X
Message Center: ____	AUDIX Extension: ____		
Message Center MSA Name: ____	Primary? _		
LWC Reception: ____			
AUDIX Name: ____			
Messaging Server Name: ____			
First Announcement Extension: ____	First Announcement Delay (sec): _		

Screen 5-63. Hunt Group Form (Page 2 of X)**Implementation Notes:**

Pages 1 and 2 when the ACD and Vector fields are "n" and the Queue field is "y".

Night Service Destination, Coverage Path, First Announcement Extension, and First Announcement Delay (sec) fields are not displayed if Vector is "y".

The two Extension fields on Page 1 are displayed only when Calls Warning Port and Time Warning Port are "X".

AUDIX Extension is only displayed when Message Center is "rem-audix".

The Message Center MSA Name, Message Center AUDIX Name, Primary, AUDIX Name, and Messaging Server Name fields are only displayed for G3r V2 configurations.

Message Center MSA Name is only displayed when Message Center is "msa".

Message Center AUDIX Name is only displayed when Message Center is "audix" or "rem-audix".

Primary is only displayed when Message Center is "audix" or "msa".

HUNT GROUP		Page 1 of X
Group Number: ____	Group Extension: ____	Group Type: ucd_
Group Name: _____	Skill? n	ACD? y
Queue: n	AAS? n	Vector? n
Security Code? ____	Night Service Destination: ____	COR: 1
ISDN Caller Disp: ____	coverage Path: ____	
Measured: internal	Supervisor Extension: ____	
Priority On Intraflow? n		
Controlling Adjunct? none		
	BCMS Acceptable Service Level (sec): ____	
	Redirect on No Answer (rings): ____	
Forced Entry of Stroke Counts or Call Work Codes? n		

Screen 5-64. Hunt Group Form (Page 1 of X)

HUNT GROUP		Page 2 of X
Message Center: ____	AUDIX Extension: ____	
Message Center MSA Name: ____	Primary? _	
LWC Reception: ____		
AUDIX Name: ____		
Messaging Server Name: ____		
First Announcement Extension: ____		

Screen 5-65. Hunt Group Form (Page 2 of X)

Implementation Notes:

Pages 1 and 2 when Queue and Vector are "n" and ACD is "y".

Night Service Destination, Coverage Path, Priority On Intraflow, and First Announcement Extension fields are not displayed if Vector is "y".

BCMS Acceptable Service Level (sec) is only displayed when the BCMS Acceptable Service Level option is enabled on the System-Parameters Customer-Options form and the Measured field is "internal" or "both".

AUDIX Extension is only displayed when Message Center is "rem-audix".

The Message Center MSA Name, Message Center AUDIX Name, Primary, AUDIX Name, and Messaging Server Name fields are only displayed for G3r V2 configurations.

Message Center MSA Name is only displayed when Message Center is "msa".

Message Center AUDIX Name is only displayed when Message Center is "audix" or "rem-audix".

Primary is only displayed when Message Center is "audix" or "msa".

HUNT GROUP			Page 1 of X
Group Number: ____	Group Extension: ____	Group Type: ucd_	
Group Name: _____	Skill? n	ACD? y	
Queue: y	AAS? n	Vector? n	
Security Code? ____	Night Service Destination: ____	COR: 1	
ISDN Caller Disp: _____	Coverage Path: ____		
Measured? internal	Supervisor Extension: _____		
Priority On Intraflow? n	Inflow Threshold: 999		
Controlling Adjunct? none			
	BCMS Acceptable Service Level (sec): _____		
Queue Length: 1			
Calls Warning Threshold: ____	Calls Warning Port: X	Extension: ____	
Time Warning Threshold: ____	Time Warning Port: X	Extension: ____	
	Redirect on No Answer (rings): ____		
	Forced Entry of Stroke Count or Call Work Codes? n		

Screen 5-66. Hunt Group Form (Page 1 of X)

HUNT GROUP		Page 2 of X
Message Center: _____	AUDIX Extension: _____	
Message Center MSA Name: _____	Primary? _	
LWC Reception: _____		
AUDIX Name: _____		
Messaging Server Name: _____		
First Announcement Extension: _____	First Announcement Delay (sec): _	
Second Announcement Extension: _____	Second Announcement Delay (sec): _	
Second Announcement Recurring? _		

Screen 5-67. Hunt Group Form (Page 2 of X)

Implementation Notes:

Pages 1 and 2 when the Queue and ACD fields are “y” and the Vector field is “n”.

Night Service Destination, Coverage Path, Priority On Intraflow, Inflow Threshold, First Announcement Extension, First Announcement Delay (sec), Second Announcement Extension, Second Announcement Delay (sec), and Second Announcement Recurring fields are not displayed if Vector is “y”.

BCMS Acceptable Service Level (sec) is only displayed when the BCMS Acceptable Service Level option is enabled on the System-Parameters Customer-Options form and the Measured field is “internal” or “both”.

AUDIX Extension is only displayed when Message Center is “rem-audix”.

The Message Center MSA Name, Message Center AUDIX Name, Primary, AUDIX Name, and Messaging Server Name fields are only displayed for G3r V2 configurations.

Message Center MSA Name is only displayed when Message Center is “msa”.

Message Center AUDIX Name is only displayed when Message Center is “audix” or “rem-audix”.

Primary is only displayed when Message Center is “audix” or “msa”.

						Page 3 of X
HUNT GROUP						
Group Number: ____		Group Extension: ____		Type: ____		
Member Range Allowed: x - yyy		Administered Members (min/max): xxx/yyy				
Total Administered Members: xxx						
GROUP	MEMBER	ASSIGNMENTS				
	Ext	Name	Ext	Name	Ext	Name
	1: ____		14: ____		27: ____	
	2: ____		15: ____		28: ____	
	3: ____		16: ____		29: ____	
	4: ____		17: ____		30: ____	
	5: ____		18: ____		31: ____	
	6: ____		19: ____		32: ____	
	7: ____		20: ____		33: ____	
	8: ____		21: ____		34: ____	
	9: ____		22: ____		35: ____	
	10: ____		23: ____		36: ____	
	11: ____		24: ____		37: ____	
	12: ____		25: ____		38: ____	
	13: ____		26: ____		39: ____	
					40: ____	
More members Exist						

Screen 5-68. Hunt Group Form (Page 3 of X)

To reduce repetition, the remaining pages are not shown. For a complete set of blank forms, refer to the "Blank Forms Package."

Implementation Note:

Pages 3 and above are not displayed if the Hunt Group is Skilled.

Intercom Group

The Automatic and Dial Intercom features are available to users whose voice terminals have intercom feature button assignments. Members of an intercom group may have Dial Intercom, Automatic Intercom, both, or neither with respect to placing an Intercom call. Single-line voice terminals, if a member of the group, can receive an intercom call, but cannot place an Intercom call.

This form is used to specify the group members, not the type of Intercom. (The intercom type and associated feature buttons are assigned to multi-appearance voice terminals using the multi-appearance voice terminal forms.)

Administration Commands

The following administration commands can be used to access the Intercom Group form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	intercom-group	1-MAX (or 'next')
change	intercom-group	1-MAX
display	intercom-group	1-MAX ['print' or 'schedule']
list	intercom-group	[1-MAX]['number' x]['to-number' x]['count' n]['print' or 'schedule']
remove	intercom-group	1-MAX

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Pages 1 and 2 of the Form

- **Group Number** — Enter a Group number (1 to 3 digits) when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Length of Dial Code** — On Page 1, enter "1" or "2". This is the number of digits that must be dialed to access someone in the group. Enter "1" if group members are fewer than ten or "2" if group members are ten or more. Default is "1". (On Page 2, this is a display-only field.)
- **Ext** — Enter the extension number of each member of the group. VDN extensions are not allowed.

- **DC** — Enter a 1- or 2-digit code. The number of digits entered depends on the number assigned in the Length of Dial Code field. This field cannot be left blank. This is the code that must be dialed to access that group member.

 NOTE:

If “2” was entered in the Length of Dial Code field, a 2-digit code must always be dialed. For example, to access member number 8 with a 2-digit dial code specified, “08” must be dialed.

- **Name** — Make no entry. The name is assigned when the members associated extension was administered.

Page 1 of 2

INTERCOM GROUP

Group Number:

Length of Dial Code:

GROUP	MEMBER	ASSIGNMENTS		Ext	DC	Name
	1:			9:		
	2:			10:		
	3:			11:		
	4:			12:		
	5:			13:		
	6:			14:		
	7:			15:		
	8:			16:		

Screen 5-69. Intercom Group Form (Page 1 of 2)

To reduce repetition, Page 2 is not shown. For a complete set of forms, refer to the “Blank Forms Package.”

Inter-Exchange Carrier (IXC) Codes

This form is used to allow identification of the IXC in the CDR record.

Administration Commands

The following administration commands can be used to access the Inter-Exchange Carrier Codes form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	ixc-codes	—
display	ixc-codes	['print' or 'schedule']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

Page 1 of the Form

- **IXC Access Number** — Enter the digits dialed or inserted by AAR/ARS into the outpulsed digit string to gain access to the interexchange carrier. No duplicate access numbers are allowed in the table.
- **IXC Name** — Enter 0 to 15 characters to identify the IXC. This description is for information purposes only.

Page 2 of the Form

- **IXC Prefix** — Enter a valid 1 to 3 digit prefix.
- **IXC Code Format** — Enter a valid 2 to 4 digit code format, or enter "x" or "X".

Page 1 of 2

INTER-EXCHANGE CARRIER CODES

IXC Codes Assignments (Enter up to 15)

CDR	IXC		CDR	IXC	
IXC	Access		IXC	Access	
Code	Number	IXC Name	Code	Number	IXC Name
1:	_____	_____	9:	_____	_____
2:	_____	_____	10:	_____	_____
3:	_____	_____	11:	_____	_____
4:	_____	_____	12:	_____	_____
5:	_____	_____	13:	_____	_____
6:	_____	_____	14:	_____	_____
7:	_____	_____	15:	_____	_____
8:	_____	_____			

Screen 5-70. Inter-Exchange Carrier Codes Form (Page 1 of 2)

Page 2 of 2

	IXC Prefix	IXC Code Format
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____

Screen 5-71. Inter-Exchange Carrier Codes Form (Page 2 of 2)

Intra-switch CDR

This form is used to administer extensions for which Intra-switch CDR is to be enabled.



NOTE:

Attendants are not allowed to be optioned for the Ma-switch CDR feature.

Administration Commands

The following administration commands can be used to access the Intra-Switch CDR form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	intra-switch-cdr	—
display	intra-switch-cdr	['print' or 'schedule']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields of the form:

Page 1 of X of the Form

- **Assigned Members** — To add the Intra-switch CDR feature to additional extensions, enter the extension number(s) on this form.

INTRA-SWITCH CDR

Assigned Members

1: 72447	17: _____	33: _____	49: _____	65: _____	81: _____	97: _____
2: 72448	18: _____	34: _____	50: _____	66: _____	82: _____	98: _____
3: _____	19: _____	35: _____	51: _____	67: _____	83: _____	99: _____
4: _____	20: _____	36: _____	52: _____	68: _____	84: _____	100: _____
5: _____	21: _____	37: _____	53: _____	69: _____	85: _____	
6: _____	22: _____	38: _____	54: _____	70: _____	86: _____	
7: _____	23: _____	39: _____	55: _____	71: _____	87: _____	
8: _____	24: _____	40: _____	56: _____	72: _____	88: _____	
9: _____	25: _____	41: _____	57: _____	73: _____	89: _____	
10: _____	26: _____	42: _____	58: _____	74: _____	90: _____	
11: _____	27: _____	43: _____	59: _____	75: _____	91: _____	
12: _____	28: _____	44: _____	60: _____	76: _____	92: _____	
13: _____	29: _____	45: _____	61: _____	77: _____	93: _____	
14: _____	30: _____	46: _____	62: _____	78: _____	94: _____	
15: _____	31: _____	47: _____	63: _____	79: _____	95: _____	
16: _____	32: _____	48: _____	64: _____	80: _____	96: _____	

Screen 5-72. Intra-Switch CDR Form (Page 1 of X)

Implementation Note:

The number of extensions that can be tracked by Intra-switch CDR varies depending on your System configuration. Refer to the Capacity Table in Appendix C, *Application Notes*, for the maximum values allowed.

If your configuration allows more than 100 trackable extensions, this will be a multi-page form.

Language Translations

These forms are used to administer a “user-defined” language for display messages. This allows a user-customized language to be added to the four languages (English, French, Italian, and Spanish) provided with the System.

Only Roman letters, punctuation, and digits are accepted (blanks are also acceptable). Diacritical marks are not supported.

**NOTE:**

If “user-defined” is selected for the display language and no translations have been made on these forms, all display messages will appear as a string of asterisks.

Administration Commands

The following administration commands can be used to access the Language Translations forms. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	display-messages auto-wakeup-dn-dst	
display	display-messages auto-wakeup-dn-dst	['print' or 'schedule']
change	display-messages call-identifiers	
display	display-messages call-identifiers	['print' or 'schedule']
change	display-messages date-time	
display	display-messages date-time	['print' or 'schedule']
change	display-messages leave-word-calling	
display	display-messages leave-word-calling	['print' or 'schedule']
change	display-messages malicious-call-trace	
display	display-messages malicious-call-trace	['print' or 'schedule']
change	display-messages miscellaneous-features	
display	display-messages miscellaneous-features	['print' or 'schedule']
change	display-messages property-management	
display	display-messages property-management	['print' or 'schedule']
change	display-messages time-of-day-routing	
display	display-messages time-of-day-routing	['print' or 'schedule']

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

- **English** — Display-only field. This field contains the English term to be translated.
- **Meaning of English term** — Display-only field. Only appears on certain forms. This field contains a short explanation of the English message if that message is an abbreviation.
- **Translation** — Enter the desired translation for the corresponding English term.

Page 1 of 3

LANGUAGE TRANSLATIONS

1.	English:	AUTO WAKEUP - Ext:
	Translation:	*****;
2.	English:	WAKEUP ENTRY DENIED
	Translation:	*****
3.	English:	WAKEUP REQUEST CANCELED
	Translation:	*****
4.	English:	WAKEUP REQUEST CONFIRMED
	Translation:	*****
5.	English:	Wakeup Call
	Translation:	*****
6.	English:	Time:
	Translation:	*****;

Screen 5-73. Auto-Wakeup-Dn-Dst Language Translation Form (Page 1 of 3)

LANGUAGE TRANSLATIONS

7. English: DO NOT DIST - Ext:
Translation: *****;
8. English: DO NOT DIST - Group:
Translation: *****;
9. English: DO NOT DIST ENTRY DENIED
Translation: *****
10. English: THANK YOU - DO NOT DIST ENTRY CONFIRMED
Translation: *****
11. English: THANK YOU - DO NOT DIST REQUEST CANCELED
Translation: *****

Screen 5-74. Auto-Wakeup-Dn-Dst Language Translation Form (Page 2 of 3)

LANGUAGE TRANSLATIONS

12. English: INTERVAL FULL
Translation: *****
13. English: NO PERMISSION
Translation: *****
14. English: SYSTEM FULL
Translation: *****
15. English: TOO SOON
Translation: *****
16. English: INVALID EXTENSION - TRY AGAIN
Translation: *****
17. English: INVALID GROUP - TRY AGAIN
Translation: *****

Screen 5-75. Auto-Wakeup-Dn-Dst Language Translation Form (Page 3 of 3)

LANGUAGE TRANSLATIONS

English Term	Meaning of English term	Translated Term
1. sa	ACD Supervisor Assistance	1: **
2. ac	Attendant Assistance Call	2: **
3. tc	Attendant Control Of A Trunk Group	3: **
4. an	Attendant No Answer	4: **
5. pc	Attendant Personal Call	5: **
6. rc	Attendant Recall Call	6: **
7. rt	Attendant Return Call	7: **
8. sc	Attendant Serial Call	8: **
9. co	Controlled Outward Restriction	9: **
10. cs	Controlled Station To Station Restriction	10: **
11. ct	Controlled Termination Restriction	11: **
12. db	DID Find Busy Station With CO Tones	12: **
13. da	DID Recall Go To Attendant	13: **
14. qf	Emergency Queue Full Redirection	14: **

Screen 5-76. Call-Identifiers Language Translation Form (Page 1 of 4)

LANGUAGE TRANSLATIONS			Page 2 of 4
English Term	Meaning of English term	Translated Term	
15. hc	Held Call Timed Reminder	15: **	
16. ic	Intercept	16: **	
17. ip	Interposition Call	17: **	
18. ld	LDN Calls On DID Trunks	18: **	
19. so	Service Observing	19: **	
20. na	Unanswered Or Incomplete DID Call	20: **	
21. ACB	Automatic Callback	21: *****	
22. callback	Callback Call	22: *****	
23. park	Call Park	23: *****	
24. control	Control	24: *****	
25. ICOM	Intercom Call	25: *****	
26. OTQ	Outgoing Trunk Queuing	26: *****	
27. priority	Priority Call	27: *****	
28. recall	Recall Call	28: *****	

Screen 5-77. Call-Identifiers Language Translation Form (Page 2 of 4)

LANGUAGE TRANSLATIONS			Page 3 of 4
English Term	Meaning of English term	Translated Term	
29. return	Return Call	29: *****	
30. ARS	Automatic Route Selection	30: *****	
31. forward	Call Forwarding	31: *****	
32. cover	Cover	32: *****	
33. DND	Do Not Disturb	33: *****	
34. p	Call Pickup	34: *	
35. c	Cover All Calls	35: *	
36. n	Night Station Service, Including No Answer	36: *	
37. B	All Calls Busy	37: *	
38. f	Call Forwarding	38: *	
39. b	Cover Busy	39: *	
40. d	Cover Don't Answer	40: *	
41. s	Send All Calls	41: *	

Screen 5-78. Call-Identifiers Language Translation Form (Page 3 of 4)

LANGUAGE TRANSLATIONS

English Term	Meaning of English term	Translated Term
42. OPERATOR	Operator	42: *****
43. EXT	Extension	43: *****
44. OUTSIDE CALL	Outside Call	44: *****
45. UNKNOWN NAME	Unknown Name	45: *****
46. CONFERENCE	Conference	46: *****
47. ringing	Ringing	47: *****
48. busy	Busy	48: *****
49. busy(I)	Busy With Intrusion Allowed	49: *****
50. wait	Wait	50: ****
51. (I)	Intrusion	51: ***
52. to	<calling party> to <called party>	52: **

Screen 5-79. Call-Identifiers Language Translation Form (Page 4 of 4)

LANGUAGE TRANSLATIONS

English	Translation	English	Translation
1. SUNDAY	1: *****	11. APRIL	11: *****
2. MONDAY	2: *****	12. MAY	12: *****
3. TUESDAY	3: *****	13. JUNE	13: *****
4. WEDNESDAY	4: *****	14. JULY	14: *****
5. THURSDAY	5: *****	15. AUGUST	15: *****
6. FRIDAY	6: *****	16. SEPTEMBER	16: *****
7. SATURDAY	7: *****	17. OCTOBER	17: *****
8. JANUARY	8: *****	18. NOVEMBER	18: *****
9. FEBRUARY	9: *****	19. DECEMBER	19: *****
10. MARCH	10: *****		
20.	English: SORRY, TIME UNAVAILABLE NOW		
	Translation: *****		

Screen 5-80. Date-Time Language Translation Form (Page 1 of 1)

LANGUAGE TRANSLATIONS

1. English: MESSAGES FOR
Translation: *****
2. English: WHOSE MESSAGES? (DIAL EXTENSION NUMBER)
Translation: *****
3. English: END OF MESSAGES (NEXT TO REPEAT)
Translation: *****
4. English: MESSAGES UNAVAILABLE - TRY LATER
Translation: *****
5. English: MESSAGE RETRIEVAL DENIED
Translation: *****
6. English: MESSAGE RETRIEVAL LOCKED
Translation: *****

Screen 5-81. Leave-Word-Calling Language Translation Form (Page 1 of 2)

LANGUAGE TRANSLATIONS

7. English: NO MESSAGES
Translation: *****
8. English: IN PROGRESS
Translation: *****
9. English: DELETED
Translation: *****
10. English: GET DIAL TONE, PUSH Cover Msg Retrieval
Translation: *****
11. English: Message Center (AUDIX) CALL
Translation: *****
12. English: CANNOT BE DELETED - CALL MESSAGE CENTER
Translation: *****

Screen 5-82. Leave-Word-Calling Language Translation Form (Page 2 of 2)

LANGUAGE TRANSLATIONS

1. English: MALICIOUS CALL TRACE REQUEST
Translation: *****
2. English: END OF TRACE INFORMATION
Translation: *****
3. English: original call redirected from:
Translation: *****;
4. English: voice recorder port:
Translation: *****;
5. English: MCT activated by: for:
Translation: *****; ****;

Screen 5-83. Malicious-Call-Trace Language Translation Form (Page 1 of 2)

Page 2 of 2

LANGUAGE TRANSLATIONS

6.	English:	party :	(EXTENSION)
	Translation:	***** :	*****
7.	English:	party :	(ISDN SID/CNI)
	Translation:	***** :	*****
8.	English:	party :	(PORT ID)
	Translation:	***** :	*****
9.	English:	party :	(ISDN PORT ID)
	Translation:	***** :	*****

Screen 5-84. Malicious-Call-Trace Language Translation Form (Page 2 of 2)

Page 1 of 4

LANGUAGE TRANSLATIONS

English	Translation
1. ALL MADE BUSY	1: *****
2. BRIDGED	2: *****
3. DENIED	3: *****
4. INVALID	4: *****
5. NO MEMBER	5: *****
6. OUT OF SERVICE	6: *****
7. RESTRICTED	7: *****
8. TERMINATED	8: *****
9. TRUNK SEIZED	9: *****
10. VERIFIED	10: *****
11. CDR OVERLOAD	11: *****
12. ANSWERED BY	12: *****
13. CALL FROM	13: *****
14. Skills	14: *****

Screen 5-85. Miscellaneous-Features Language Translation Form (Page 1 of 4)

LANGUAGE TRANSLATIONS

English Term	Meaning of English term	Translated Term
15. TOLL	Toll	15: ****
16. FULL	Full	16: ****
17. NONE	None	17: ****
18. ORIG	Origination	18: ****
19. OTWD	Outward	19: ****
20. CALL	<call> This Number	20: ****
21. INTL	International	21: ****
22. Info	Information	22: *****
23. p	Primary	23: *
24. s	Secondary	24: *
25. m	Mark	25: *
26. p	Pause	26: *
27. s -	Suppress	27: *
28. w	Wait For A Specified Time	28: *
29. W	Wait For Off-Premise Dial Tone	29: *

Screen 5-86. Miscellaneous-Features Language Translation Form (Page 2 of 4)

Page 3 of 4

LANGUAGE TRANSLATIONS

30.	English: You have adjunct messages
	Translation: *****
31.	English: Login Violation
	Translation: *****
32.	English: Barrier Code Violation
	Translation: *****
33.	English: DIRECTORY - PLEASE ENTER NAME
	Translation: *****
34.	English: DIRECTORY UNAVAILABLE - TRY LATER
	Translation: *****
35.	English: NO MATCH - TRY AGAIN
	Translation: *****

Screen 5-87. Miscellaneous-Features Language Translation Form (Page 3 of 4)

Page 4 of 4

LANGUAGE TRANSLATIONS

36.	English: NO NUMBER STORED
	Translation: *****
37.	English: TRY AGAIN
	Translation: *****
38.	English: Ext in EMRG Q
	Translation: *** *****
39.	English: HUNT GROUP NOT ADMINISTERED
	Translation: ***** *****
40.	English: Q-time calls
	Translation: ***** *****

Screen 5-88. Miscellaneous-Features Language Translation Form (Page 4 of 4)

LANGUAGE TRANSLATIONS

1. English: CHECK IN - Ext:
Translation: *****;
2. English: CHECK IN: ROOM ALREADY OCCUPIED
Translation: *****
3. English: CHECK IN COMPLETE
Translation: *****
4. English: CHECK IN FAILED
Translation: *****

Screen 5-89. Property-Management Language Translation Form (Page 1 of 3)

LANGUAGE TRANSLATIONS

5. English: CHECK OUT - Ext:
Translation: *****;
6. English: CHECK OUT: ROOM ALREADY VACANT
Translation: *****
7. English: CHECK OUT FAILED
Translation: *****
8. English: MESSAGE NOTIFICATION FAILED
Translation: *****
9. English: MESSAGE NOTIFICATION ON - Ext:
Translation: *****;
10. English: MESSAGE NOTIFICATION OFF - Ext:
Translation: *****;

Screen 5-90. Property-Management Language Translation Form (Page 2 of 3)

Page 3 of 3

LANGUAGE TRANSLATIONS

11.	English: CHECK OUT COMPLETE: MESSAGE LAMP OFF
	Translation: *****
12.	English: CHECK OUT COMPLETE: MESSAGE LAMP ON
	Translation: *****
13.	English: MESSAGE LAMP ON
	Translation: *****
14.	English: MESSAGE LAMP OFF
	Translation: *****

Screen 5-91. Property-Management Language Translation Form (Page 3 of 3)

Page 1 of 1

LANGUAGE TRANSLATIONS

1.	English: ENTER ACTIVATION ROUTE PLAN, DAY & TIME
	Translation: *****
2.	English: ENTER DEACTIVATION DAY AND TIME
	Translation: *****
3.	English: OLD ROUTE PLAN: ENTER NEW PLAN:
	Translation: *****; *****;
4.	English: OLD ROUTE PLAN: NEW PLAN:
	Translation: *****; *****;
5.	English: ROUTE PLAN: FOR ACT-TIME:
	Translation: *****; *** *****;
6.	English: ROUTE PLAN: FOR DEACT-TIME:
	Translation: *****; *** *****;

Screen 5-92. Time-Of-Day-Routing Language Translation Form (Page 1 of 1)

Listed Directory Numbers

Allows Direct Inward Dialing (DID) numbers to be treated as public Listed Directory Numbers (LDNs). When one of these numbers is direct inward dialed, the calling party is routed to the attendant. The attendant display indicates a Listed Directory Number call and the name associated with the dialed extension. Refer to the “Multiple Listed Directory Numbers” feature in *DEFINITY Communications System Genetic 3 V2 Feature Description*, 555-230-204, for additional information.

Administration Commands

The following administration commands can be used to access the Listed Directory Numbers form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	listed-directory-numbers	—
display	listed-directory-numbers	['print' or 'schedule']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

- **Ext** — Enter a valid unassigned extension number (1 to 5 digits).
- **Name** — Enter a name used to identify the Listed Directory Number. Up to 15 alphanumeric characters may be used.
- **Night Destination** — Enter the valid assigned extension number (may be a night service extension, a recorded announcement extension, a Vector Directory Number, an individual attendant extension, or an AUDIX hunt group extension) that will receive calls to these listed numbers when the System is in the Night Service mode. Enter 1 to 5 digits.

Page 1 of 1

LISTED DIRECTORY NUMBERS			
Ext	Name	Ext	Name
1: _____	_____	5: _____	_____
2: _____	_____	6: _____	_____
3: _____	_____	7: _____	_____
4: _____	_____	8: _____	_____
Night Destination: _____			

Screen 5-93. Listed Directory Numbers Form (Page 1 of 1)

Implementation Note:

The number of Listed Directory Numbers that can be assigned varies depending on System configuration. Refer to the Capacity Table in Appendix C for maximum values.

Loudspeaker Paging and Code Calling Access

This form is used to implement Loudspeaker Paging, Loudspeaker Paging - Deluxe and Code Calling Access. The Loudspeaker Paging Access form contains the fields required to assign zone (speaker location) information for the Loudspeaker Paging, Loudspeaker Paging - Deluxe, and Code Calling Access features.

The Code Calling IDs form is used to assign extension numbers to code calling identification numbers. As many as 125 three-digit chime codes can be provided. Only one extension number can be assigned to each chime code. The System translates the ID number associated with a code calling extension to a chime code and then plays the code over a zone loudspeaker as assigned on the Loudspeaker Paging form.

Administration Commands

The following administration commands can be used to access the Loudspeaker Paging Access form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	paging loudspeaker	
display	paging loudspeaker	['print' or 'schedule']
change	paging code-calling-ids	—
display	paging code-calling-ids	['print' or 'schedule']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

Page 1 of the Loudspeaker Paging Access Form

- **CDR** — Enter "y" to indicate if you want CDR data collection on the paging ports. Default is "y".
- **Voice Paging Timeout (sec)** — Enter from 10 to 600 seconds. This is the length of time the user can be connected to the paging equipment. After the time has elapsed, the call is disconnected. Analyze the typical messages you expect to broadcast; time them; then add another 4 to 5 seconds.

- **Code Calling Playing Cycles** — Enter a number from 1 to 3 to indicate the number of times the code calling identification will play. Analyze who your code calling users are and whether they are likely to hear the code chime the first time.

- **Port** — Enter seven characters.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 32

**NOTE:**

When using the Administration Without Hardware feature, place an "X" in this field to indicate that there is no hardware associated with this port assignment.

Each assigned paging zone requires a port on a TN763 Auxiliary Line circuit pack.

If a port is not assigned to a zone, then the CDR, Voice Paging Timeout, and Code Calling Playing Cycles will be set to the System default values when the System is administered.

- **Voice Paging — TAC** — Enter a 1- to 4-digit Trunk Access Code (TAC) that corresponds with the Dial Plan Record. One TAC must be assigned for each zone. This is the code you will dial to access the zone (the physical location of the loudspeakers). The TAC for the field labeled **ALL** activates all speakers in the nine zones when that access code is dialed. These codes can be assigned to Abbreviated Dialing feature buttons on user stations or to the DTGS buttons on the attendant consoles for easy activation by attendants. A different TAC must be assigned for each paging zone.
- **Voice Paging — COR** — Enter the desired number from 0 through 95. Each TAC must be assigned a class of restriction (COR) that reflects the desired restriction for Loudspeaker Paging.
- **Code Calling — TAC** — Enter a 1- to 4-digit TAC that corresponds with the Dial Plan Record. These codes can be assigned to Abbreviated Dialing feature buttons on user stations or to the DTGS buttons on the attendant console for direct access to the zone by the attendant. A different TAC must be assigned for each paging zone.
- **Code Calling — COR** — Enter the desired number from 0 through 95. Each TAC must be assigned a class of restriction (COR) that reflects the desired restriction for Code Calling.

- **Location** — Enter the location where the loudspeakers are installed (such as conference room A, warehouse, storeroom). Default is "PAGING".

Pages 1 and 2 of the Code Calling IDs Form

Make assignments as required for the following fields on each page of the form:

- **Ext** — Enter an assigned or unassigned extension number (may not be a VDN extension). The extension number, when dialed using the Code Calling Access feature, will cause an associated chime signal to be broadcast via an associated zone loudspeaker. Leave this field blank if you do not want to assign a code.

Page 1 of 1

LOUDSPEAKER PAGING ACCESS
 CDR? y
 Voice Paging Timeout (sec): ____
 Code Calling Playing Cycles: _

PAGING PORT ASSIGNMENTS

Zone Port	Voice TAC	Paging COR	Code TAC	Calling COR	Location
1: ____	____	____	____	____	PAGING ____
2: ____	____	____	____	____	PAGING ____
3: ____	____	____	____	____	PAGING ____
4: ____	____	____	____	____	PAGING ____
5: ____	____	____	____	____	PAGING ____
6: ____	____	____	____	____	PAGING ____
7: ____	____	____	____	____	PAGING ____
8: ____	____	____	____	____	PAGING ____
9: ____	____	____	____	____	PAGING ____
ALL:		____	____	____	

Screen 5-94. Loudspeaker Paging Access Form (Page 1 of 1)

Page 1 of 2

ID ASSIGNMENTS		CODE CALLING IDs									
Id	Ext	Id	Ext	Id	Ext	Id	Ext	Id	Ext	Id	Ext
111:	_____	141:	_____	221:	_____	251:	_____	331:	_____		
112:	_____	142:	_____	222:	_____	252:	_____	332:	_____		
113:	_____	143:	_____	223:	_____	253:	_____	333:	_____		
114:	_____	144:	_____	224:	_____	254:	_____	334:	_____		
115:	_____	145:	_____	225:	_____	255:	_____	335:	_____		
121:	_____	151:	_____	231:	_____	311:	_____	341:	_____		
122:	_____	152:	_____	232:	_____	312:	_____	342:	_____		
123:	_____	153:	_____	233:	_____	313:	_____	343:	_____		
124:	_____	154:	_____	234:	_____	314:	_____	344:	_____		
125:	_____	155:	_____	235:	_____	315:	_____	345:	_____		
131:	_____	211:	_____	241:	_____	321:	_____	351:	_____		
132:	_____	212:	_____	242:	_____	322:	_____	352:	_____		
133:	_____	213:	_____	243:	_____	323:	_____	353:	_____		
134:	_____	214:	_____	244:	_____	324:	_____	354:	_____		
135:	_____	215:	_____	245:	_____	325:	_____	355:	_____		

Screen 5-95. Code Calling IDs Form (Page 1 of 2)

To reduce repetition, Page 2 of the Code Calling IDs form is not shown.

Malicious Call Trace

This form assigns the Malicious Call Trace (MCT) feature to specific extensions.

Administration Commands

The following administration command can be used to access the Malicious Call Trace form. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier
change	mct-group-extensions	—

Form Instructions

Make assignments as required for the following fields on the form:

- **1-100** — Assign an extension assigned to an extension or attendant that will have an MCT-Control Button.

Page 1 of 1

Extensions Administered to have an MCT-Control Button:

1: _____	16: _____	31: _____	46: _____	61: _____	76: _____	91: _____
2: _____	17: _____	32: _____	47: _____	62: _____	77: _____	92: _____
3: _____	18: _____	33: _____	48: _____	63: _____	78: _____	93: _____
4: _____	19: _____	34: _____	49: _____	64: _____	79: _____	94: _____
5: _____	20: _____	35: _____	50: _____	65: _____	80: _____	95: _____
6: _____	21: _____	36: _____	51: _____	66: _____	81: _____	96: _____
7: _____	22: _____	37: _____	52: _____	67: _____	82: _____	97: _____
8: _____	23: _____	38: _____	53: _____	68: _____	83: _____	98: _____
9: _____	24: _____	39: _____	54: _____	69: _____	84: _____	99: _____
10: _____	25: _____	40: _____	55: _____	70: _____	85: _____	100: _____
11: _____	26: _____	41: _____	56: _____	71: _____	86: _____	
12: _____	27: _____	42: _____	57: _____	72: _____	87: _____	
13: _____	28: _____	43: _____	58: _____	73: _____	88: _____	
14: _____	29: _____	44: _____	59: _____	74: _____	89: _____	
15: _____	30: _____	45: _____	60: _____	75: _____	90: _____	

Screen 5-96. Malicious Call Trace Form (Page 1 of 1)

Modem Pool Group

There are two types of conversion resources for Modem Pooling. The first type, an *integrated conversion resource*, is a circuit pack that emulates a Trunk Data Module connected to a 212A-type modem. Two conversion resources are on each circuit pack.

The second type, a *combined conversion resource*, is a separate Trunk Data Module and modem administered as a unit. The Trunk Data Module component of the conversion resource may be either a Modular Trunk Data Module (MTDM) or 7400A Data Module and connects to a digital port using Digital Communications Protocol (DCP); the modem connects to an analog port.

Administration Commands

The following administration commands can be used to access the Modem Pool Group form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	modem-pool num	[1-MAX]
change	modem-pool num	[1-MAX]
display	modem-pool num	[1-MAX] ['print' or 'schedule']
list	modem-pool num	['pnnt' or 'remove']
remove	modem-pool num	[1-MAX]

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions:

Make assignments as required for the following fields on the form:

- **Group Number** — Enter a group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Group Type** — Enter "integrated" or "combined".
- **Receiver Responds to Remote Loop** — Enter "y" to allow far-end modem to put conversion resource into loop back mode. Default is "n". (This field is displayed only when Group Type is "integrated".)
- **Hold Time (min)** — Enter the maximum number of minutes (1 through 99) that a conversion resource in the group may be held while a call waits in a queue or reserved after Data Call Preindication. Default is "5".

- **Send Space Disconnect** — Enter “y” to allow the conversion resource to send 4 seconds of space before disconnecting. Default is “y”. (This field is displayed only when Group Type is “integrated”.)
- **Receive Space Disconnect** — Enter “y” to allow the conversion resource to disconnect after receiving 1.6 seconds of space. Default is “y”. (This field is displayed only when Group Type is “integrated”.)
- **CF-CB Common** — Enter “y” to indicate that the CF and CB leads on the conversion resource are logically connected. Default is “y”. (This field is displayed only when Group Type is “integrated”.)
- **Loss of Carrier Disconnect** — Enter “y” to permit conversion resource to disconnect if it detects a dropped carrier. Default is “y”. (This field is displayed only when Group Type is “integrated”.)
- **Modem Name** — Enter a 1- to 6-alphanumeric character string to indicate the name of the modem pool. (This field is displayed only when Group Type is “combined”.)
- **Time Delay** — Enter the time delay in seconds (0 through 255) to insert between sending the ringing to the modem and the off-hook alert to the data module. Default is “0”. (This field is displayed only when Group Type is “combined”.)
- **Direction** — Enter the direction (incoming, outgoing or two way) of the call for which modem pool will operate. Default is “two-way”. (This field is displayed only when Group Type is “combined”.)

The following fields (Speed, Duplex, and Synchronization) cannot be filled out for the “integrated” pooled modem forms but can be assigned on the “combined” pooled modem form. The integrated conversion resource will automatically adjust its speed and synchronization to the endpoint it is connected to. In synchronous mode, the integrated modem pool can operate at 1200 baud. In asynchronous mode, it can operate at 300 or 1200 baud. Full-duplex operation is always used.

- **Speed** — Enter the communication speed in bits per second (LOW — 0 to 300 blind sampled, 300, 1200, 2400, 4600, 9600, or 19200) of the conversion resources in the group. Enter one to three speeds separated by slashes (for example, 300/1200/2400) to indicate a maximum of three running speeds. Default is “LOW/300/1200”.
- **Duplex** — Enter “full” or “half” to indicate the duplex mode of the conversion resources in the group. Default is “full”.
- **Synchronization** — Enter “sync” or “async” to indicate the synchronization mode of the conversion resources in the group. Default is “async”.

CIRCUIT PACK ASSIGNMENTS are optional on “integrated” conversion resource forms only.

- **Circuit Pack Location** — Enter the port associated with the conversion resource on the integrated modem pool board. Enter seven characters.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 32

PORT PAIR ASSIGNMENTS are optional on “combined” pooled modem forms only.

- **Analog Digital** — Enter the port numbers of the modem/TDM pair in a conversion resource. Enter seven characters.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 32



NOTE:

Two port entries are required.

Page 1 of 1

MODEM POOL GROUP

Group Number: 1 Group Type: integrated

Receiver Responds to Remote Loop? n Hold Time (rein): 5

Send Space Disconnect? y Receive Space Disconnect? y

CF-CB Common? y Loss of Carrier Disconnect? y

Speed: LOW/300/1200 Duplex: full Synchronization: a/sync

CIRCUIT PACK ASSIGNMENTS

Circuit Pack Location	Circuit Pack Location
1: ____	9: ____
2: ____	10: ____
3: ____	11: ____
4: ____	12: ____
5: ____	13: ____
6: ____	14: ____
7: ____	15: ____
8: ____	16: ____

Screen 5-97. Integrated Modem Pool Group Form (Page 1 of 1)**Implementation Note:**

This is Page 1 when the Group Type field is "integrated".

Page 1 of 1

MODEM POOL GROUP

Group Number: _ Group Type: combined

Modem Name: _____ Hold Time (rein): 5_

Time Delay: 0 _____ Direction: two-way

Speed: LOW/300/1200 _____ Duplex: full Synchronization: async

PORT PAIR ASSIGNMENTS

Analog	Digital	Analog	Digital	Analog	Digital	Analog	Digital
1: ____	____	9: ____	____	17: ____	____	25: ____	____
2: ____	____	10: ____	____	18: ____	____	26: ____	____
3: ____	____	11: ____	____	19: ____	____	27: ____	____
4: ____	____	12: ____	____	20: ____	____	28: ____	____
5: ____	____	13: ____	____	21: ____	____	29: ____	____
6: ____	____	14: ____	____	22: ____	____	30: ____	____
7: ____	____	15: ____	____	23: ____	____	31: ____	____
8: ____	____	16: ____	____	24: ____	____	32: ____	____

Screen 5-98. Combined Modem Pool Group Form (Page 1 of 1)**Implementation Note:**

This is Page 1 when the GroupTypefield is "combined".

Multifrequency Signaling System Parameters

This form is used to set the system parameters associated with R2 multifrequency compelled (MFC) signaling.

Administration Commands

The following administration commands can be used to access the System Parameter Multifrequency Signaling form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	system-parameters multifrequency-signaling	
display	system-parameters multifrequency-signaling	['print' or 'schedule']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Additional information on the parameters listed below can be found in the “R2-MFC Signaling” section in Chapter 3. Also, refer to Appendix B, *Application Notes*, for information required to complete the fields on this form.

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form.

- **Incoming Call Type** — Enter “group-ii-mfc” (default) or “non-group-ii-mfc”. This field defines the signal type that a CO uses to place an incoming call to the PBX.

If the value of the Incoming Call Type field is “group-ii-mfc”, the second page of the form will display entries for all group-I, group-II, group-A, and group-B signal types with a set of default values (see page 2 of form). If the value is “non-group-ii-mfc”, the second page displays only group-I and group-A signal types.
- **Outgoing Call Type** — Enter “group-ii-mfc” or “none” (default). This field defines the signal type that the PBX uses to place an outgoing call into a CO.

If the contents of the Outgoing Call Type field is “group-ii-mfc”, the third page of the form is displayed. On the third page appear entries for all group-I, group-II group-A, and group-B signal types with a set of default values. If the contents of the Outgoing Call Type field is “none”, the third page is not displayed. In addition, Outgoing Forward Signal Present

Timer, Outgoing Forward Signal Absent Timer, ANI Prefix, and ANI for PBX fields will not be displayed on page 1 of the form.

- **Maintenance Call Type** — Enter “1”, “2”, or “none” (default) to indicate which maintenance test is indicated when the CO sends an MFC maintenance tone. Currently, “1” indicates the Belgium maintenance sequence, and “2” indicates the Saudi Arabian sequence.
- **Test Call Extension** — Enter an unassigned extension to specify the destination of a call between the CO and the PBX that tests R2-MFC signaling. A test call extension is used when the call type is “1”. Default is blank.
- **Incoming Interdigit Timer (sec)** — Enter a number between 1 and 255 to specify the maximum number of seconds the switch will wait for the first forward signal (digit) to arrive, and for subsequent expected digits to arrive. Intercept is returned to the calling party if this timer expires. Default is 10.
- **Outgoing Forward Signal Present Timer (sec)** — Enter a number between 1 and 255 to specify the maximum number of seconds to elapse between signals on a call. This timer runs when MFC tones are being sent or received on an outgoing call. The timer starts (and restarts) timing when the PBX begins sending a forward signal, and stops timing when the PBX receives the corresponding backward signal. This field is only displayed when the value of the Outgoing Call Type field is “group-ii-mfc”. Default is 15.
- **Outgoing Forward Signal Absent Timer (sec)** — Enter a number between 11 and 255 to indicate the maximum number of seconds to elapse between forward signals on outgoing calls. The timer starts (and restarts) when a forward tone is taken off the link and it stops when the next forward tone is applied to the link. This field is only displayed when the contents of the Outgoing Call Type field is “group-ii-mfc”. Default is 30.
- **Multifrequency Signaling DID Intercept Treatment** — Enter “y” or “n” (default) to indicate whether a group B “intercept” message is sent to the CO. If the value of this field is “n”, then the normal DID/TIE/ISDN intercept treatment is applied. If the value is “y”, then the group B signal for the intercept is sent to the CO, and the intercept tone is played on the trunk.
- **Received Signal Gain (-Loss) (dB)** — Enter a number between -15 and 3 to specify the loss/gain when the MFC port listens to the trunk port. Default is 0.
- **Transmitted Signal Gain (-Loss) (dB)** — Enter a number between -15 and 3 to specify the loss/gain when the trunk port listens to the MFC port. Default is -3.
- **ANI Prefix** — Enter between 1 and 6 digits to define the prefix to apply to an extension number when ANI is sent to the CO. This field is only displayed when the contents of the Outgoing Call Type field is “group-ii-mfc”. Default is blank.

- **ANI for PBX** — Enter 2 to 15 digits to define the PBX identification number that is sent to the CO when ANI is requested (by the CO) on a particular call but is not available, such as tandem tie trunk calls. This field is only displayed when the value of the Outgoing Call Type field is "group-ii-mfc". Default is blank.

Page 2 of the Form

The fields shown on Page 2 define the meaning of MFC tones for calls originated at the CO.

When the form initially appears, either of two sets of default values is possible. One set is for the group II call type; the other set is for non-group II call type. In each set, the default value for each field is set to the most common value.

- **Tones from CO on Incoming Forward Calls— Group I** — Message codes 11 to 15 are displayed. (Numbers 1 through 10 are assigned to the digits of the destination telephone number.) Assign a meaning to each code. If the Incoming Call Type is "group-ii-mfc", acceptable meanings are "drop", "end-of-dial", "ignored", "maint-call", and "send-congest". If the Incoming Call Type is "non-group-ii-mfc", acceptable meanings are "drop" and "ignored".
- **Tones from CO on Incoming Forward Calls— Group II** — Message codes 1 to 15 are displayed. Assign a meaning to each code. Acceptable meanings are "attendant", "busy-rt-attd", "data-call", "drop", "maint-call", "normal", and "send-intercept".
- **Tones to CO on Incoming Backward Calls— Group A** — Enter numbers between 1 and 15 to identify the message codes. Then assign a meaning to each code. If the Incoming Call Type is "group-ii-mfc", acceptable meanings are "end-of-dial", "congestion", and "next-digit". If the Incoming Call Type is "non-group-ii-mfc", acceptable meanings are "next-digit" and "setup-sppath".
- **Tones to CO on Incoming Backward Calls — Group B** — Enter numbers between 1 and 15 to identify the message codes. Then assign a meaning to each code. Acceptable meanings are "busy", "congestion", "free", and "intercept".

Page 3 of the Form

This page only appears if the Outgoing Call Type is "group-ii-mfc". The fields shown on this page define the meaning of MFC tones for calls originated at the PBX.

- **Tones to CO on Outgoing Forward Calls— Group I** — Enter numbers between 11 and 15 to identify the message codes. (Numbers 1 through 10 are assigned to the digits of the destination telephone number.) Then assign a meaning to each code. Acceptable meanings are "end-of-digits", "end-of-ani", and "ani-not-avail".

- **Tones to CO on Outgoing Forward Calls — Group II** — Enter numbers between 1 and 15 to identify the message codes. Then assign a meaning to each code. Acceptable meanings are “attendant”, “data-call”, and “normal”. Each of these can only appear once in the group II column.
- **Tones from CO on Outgoing Backward Calls — Group A** — Message codes between 1 and 15 are displayed. Assign a meaning to each code. Acceptable meanings are “call-info-ani”, “congestion”, “drop”, “end-of-dial”, “last-2-digits”, “last-3-digits”, “last-digit”, “next-digit”, “restart”, and “setup-sppath”.
- **Tones from CO on Outgoing Backward Calls — Group B** — Message codes between 1 and 15 are displayed. Then assign a meaning to each code. Acceptable meanings are “busy”, “congestion”, “free”, and “intercept”.

Page 1 of 3

MULTIFREQUENCY-SIGNALING-RELATED SYSTEM PARAMETERS

```

Incoming Call Type: group-ii-mfc
Outgoing Call Type: group-ii-mfc
Maintenance Call Type: none
Test Call Extension: _____
Incoming Interdigit Timer (sec): 10
Outgoing Forward Signal Present Timer (sec): 15
Outgoing Forward Signal Absent Timer (sec): 30
Multi frequency Signaling DID Intercept Treatment? n
Received Signal Gain (-Loss) (dB): 0
Transmitted Signal Gain (-Loss) (dB): -3
ANI Prefix: _____
ANI for PBX: _____

```

Screen 5-99. Multifrequency Signaling System Parameters (Page 1 of 3)

Implementation Notes:

The Outgoing Forward Signal Present Timer field appears only when the Outgoing Call Type field is equal to “group-ii-mfc”.

The Outgoing Forward Signal Absent Timer field appears only when the Outgoing Call Type field is equal to “group-ii-mfc”.

The ANI Prefix and ANI for PBX fields appear only when the Outgoing Call Type field is equal to “group-ii-mfc”.

MULTIFREQUENCY-SIGNALING-RELATED SYSTEM PARAMETERS

INCOMING FORWARD SIGNAL TYPES
(Tones from CO)INCOMING BACKWARD SIGNAL TYPES
(Tones to CO)

Group-I	Group-II	Group-A	Group-B
11: ignored	1: normal	1: next-digit	1: free
12: ignored	2: normal	3: end-of-dial	2: busy
13: ignored	3: normal	_: _____	4: congestion
14: ignored	4: normal	_: _____	7: intercept
15: ignored	5: normal	_: _____	_: _____
	6: normal	_: _____	_: _____
	7: normal	_: _____	_: _____
	8: normal	_: _____	_: _____
	9: normal	_: _____	_: _____
	10: normal	_: _____	_: _____
	11: normal	_: _____	_: _____
	12: normal	_: _____	_: _____
	13: normal	_: _____	_: _____
	14: normal	_: _____	_: _____
	15: normal	_: _____	_: _____

Screen 5-100. Multifrequency Signaling System Parameters (Page 2 of 3)

Implementation Note:

The above defaults are shown when the incoming Call Type is "group-ii-mfc". A variation of the above appears if the Incoming Call Type is equal to "non-group-ii-mfc". In addition, when the Incoming Call Type is "non-group-ii-mfc", group II and group B columns are not displayed.

MULTIFREQUENCY-SIGNALING-RELATED SYSTEM PARAMETERS

OUTGOING FORWARD SIGNAL TYPES
(Tones to CO)OUTGOING BACKWARD SIGNAL TYPES
(Tones from CO)

Group-I	Group-II	Group-A	Group-B
__: _____	2: normal	1: next-digit	1: free
__: _____	5: attendant	2: congestion	2: busy
__: _____	6: data-call	3: end-of-dial	3: congestion
__: _____	__: _____	4: congestion	4: congestion
__: _____	__: _____	5: call-info-ani	5: congestion
	__: _____	6: congestion	6: free
	__: _____	7: last-2-digits	7: intercept
	__: _____	8: last-3-digits	8: congestion
	__: _____	9: congestion	9: congestion
	__: _____	10: congestion	10: congestion
	__: _____	11: congestion	11: congestion
	__: _____	12: congestion	12: congestion
	__: _____	13: congestion	13: congestion
	__: _____	14: congestion	14: congestion
	__: _____	15: congestion	15: congestion

Screen 5-101. Multifrequency Signaling System Parameters (Page 3 of 3)

Implementation Note:

The above page is displayed only if the Outgoing Call Type is "group-ii-mfc".

Pickup Groups

This form is used to implement call pickup groups with up to 50 extensions per group. A pickup group is a group of users authorized to answer calls to a voice terminal extension within that group of users. A voice terminal extension number can only belong to one pickup group.

Administration Commands

The following administration commands can be used to access the Pickup Group form. In some cases, just the most commonly used commands are shown.

Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

	Action	Object	Qualifier*
Without Hospitality Parameter Reduction Feature	add	pickup-group	1-MAX (or 'next')
	change	pickup-group	1-MAX
	display	pickup-group	1-MAX ['print' or 'schedule']
	list	intercom-group	[1-MAX]['number' x]['to-number' x]['count' n] ['print' or 'schedule']
With Hospitality Parameter Reduction Feature	remove	pickup-group	1-MAX
	add	pickup-group	1-5 (or 'next')
	change	pickup-group	1-5
	display	pickup-group	1-5 ['print' or 'schedule']
	list	intercom-group	[1-5]['number' x]['to-numbet x']['count' n] ['print' or 'schedule']
	remove	pickup-group	1-5

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Pages 1 and 2 of the Form

- **Group Number** — Enter a Pickup Group number when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*. If the Hospitality Parameters Reduction option is enabled on the System-Parameters Customer-Options form, only five (maximum) group numbers may be assigned.

**NOTE:**

Hospitality Parameter Reduction is not supported by the G3s V2 ABP configuration.

- **Ext** — Enter the extension number of each user in the group. A VDN cannot be assigned to a Call Pickup group.
- **Name** — Make no entry. The name is assigned to the above extension number when the users and their associated extensions were administered.

Page 1 of 2

PICKUP GROUP
Group Number: __

GROUP MEMBER ASSIGNMENTS					
	Ext	Name		Ext	Name
1:	_____		14:	_____	
2:	_____		15:	_____	
3:	_____		16:	_____	
4:	_____		17:	_____	
5:	_____		18:	_____	
6:	_____		19:	_____	
7:	_____		20:	_____	
8:	_____		21:	_____	
9:	_____		22:	_____	
10:	_____		23:	_____	
11:	_____		24:	_____	
12:	_____		25:	_____	
13:	_____				

Screen 5-102. Pickup Group Form (Page 1 of 2)

To reduce repetition, Page 2 of the Pickup Group form is not shown.

PRI Endpoints

This form is used to administer PRI Endpoints for the Wideband Switching feature.

**NOTE:**

A PRI Endpoint with a width greater than one may be administered only if the Wideband Switching feature has been enabled on the System-Parameters Customer-Options form.

A PRI Endpoint (PE) is an endpoint application connected to line-side ISDN-PRI facilities and has standard ISDN-PRI signaling interfaces to the System. For information on endpoint applications connected to line-side non-ISDN T1 or E1 facilities, refer to "Access Endpoints" in this chapter.

A PRI Endpoint is defined as 1 to 31 adjacent DS0s/B-channels, addressable via a single extension, and signaled via a D-channel (Signaling Group) over a standard T1 or E1 ISDN-PRI interface.

Administration Commands

The following administration commands can be used to access the PRI Endpoint form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	pri-endpoint	extension or 'next'
change	pri-endpoint	extension
display	pri-endpoint	extension ['print' or 'schedule']
list	pri-endpoint	extension ['count' X]['print' or 'schedule']
remove	pri-endpoint	extension

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

- **Extension** — Display-only field when the form is accessed using an administration command such as *change* or *display*. This is the extension number used to access the PRI endpoint. Enter a valid unassigned extension number when completing a paper form. Default is blank.
- **Name** — Enter up to 15 alphanumeric characters to identify the endpoint. Default is blank.

- **(Starting) Port** — Enter the seven-character starting port of the PRI Endpoint.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 through 02 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 31 (DS1 Interface ports)

- **Width** — Enter the number of adjacent DS0 ports (1 to 31), beginning with the specified Starting Port, that make up the PE. A width of “6” defines a PE that can support data rates up to 384 kbps. This field cannot be blank.
- **Originating Auto Restoration** — Enter “y” to automatically restore calls originating from this PRI Endpoint (while maintaining endpoint call status) in the case of network failure if the call is over SDDN network facilities. Default is “n”.
- **Signaling Group** — Enter the D-channel or D-channel pair that will provide the signaling information for the set of B-channels that makeup the PE.

Valid entries are: 1 to 166 (G3r V2), 1 to 8 (G3i V2), and 1 to 4 (G3s V2). Default is blank.
- **COR** — Enter the appropriate class of restriction (COR) number in the range from 0-95, to determine calling and called party privileges. Default is “1”.
- **COS** — Enter the appropriate COS number in the range from 0 to 15. The COS is administered (see COS form instructions) to determine a certain class of features that can be activated by, or on behalf of, the endpoint. Default is “1”.
- **Maintenance Tests** — Enter “y” to run hourly maintenance tests on this PE. Entering “n” disables the hourly maintenance tests for this PE. Default is “y”.
- **Simultaneous Calls** — Enter “y” to specify that multiple simultaneous calls can be placed to/from the PRI Endpoint. Default is “n”.
- **H0** — Enter “y” to specify the ISDN information transfer rate for 384 kbps data, which is comprised of six B-channels. When a PE is administered to support H0, the hunt algorithm to satisfy a call requiring 384 kbps of bandwidth uses a fixed allocation scheme. Default is “n”.
- **H11** — Enter “y” to specify the ISDN information transfer rate for 1536 kbps data, which is comprised of 24 B-channels. When a PE is administered to support H11, the hunt algorithm to satisfy a call requiring 1536 kbps bandwidth uses a fixed allocation scheme. Default is “n”.

- **H12** — Enter “y” to specify the ISDN information transfer rate for 1920 kbps data, which is comprised of 30 B-channels. When a PE is administered to support H12, the hunt algorithm to satisfy a call requiring 1920 kbps bandwidth uses a fixed allocation scheme. Default is “n”.
- **N x DS0** — Enter “y” to specify the NxDS0 multirate service. Default is “n”.
- **Contiguous?** — Specifies whether to hunt contiguous NxDS0 channels. This field only appears if “y” is entered in the NxDS0 field.

The hunt algorithm to satisfy an NxDS0 call is as follows:

- ▶ Enter “y” to specify the “floating” scheme. NxDS0 calls are placed on a contiguous group of B-channels large enough to satisfy the requested bandwidth without constraint on the starting channel (no fixed starting point trunk).



NOTE:

H0 and NxDS0 “floating” scheme cannot both be set to “y”.

- ▶ Enter “n” to specify the “flexible” scheme. NxDS0 calls are placed on any set of B-channels on the same facility as long as the requested bandwidth is satisfied. There are no constraints such as contiguity of B-channels or fixed starting points.

Page 1 of 1

PRI ENDPOINT

Extension: _____	Name: _____
(Starting) Port: _____	Width: _____
Originating Auto Restoration? _	Signaling Group: _____
COR: _____	COS: _____
Maintenance Tests? _	Simultaneous Calls ? n

WIDEBAND SUPPORT OPTIONS

H0? n	
H11? n	
H12? n	
N x DS0? y	Contiguous? n

Screen 5-103. PRI Endpoint Form

Implementation Note:

The Contiguous field is only displayed if NxDS0 is “y”.

Recorded Announcements

This form is used to assign analog or integrated announcements, or any desired combination of both. Integrated announcements are assigned and recorded on the TN750 Announcement circuit pack. The analog announcements are assigned on the TN742, TN746B, or TN769 Analog Line circuit pack that is connected to external recording or playback equipment. External announcement equipment can also be connected via an auxiliary trunk (TN763).

NOTE:

Refer to Appendix B, *Application Notes*, for circuit pack requirements outside the United States of America.

Each announcement is accessed by dialing an extension number that is assigned to each announcement.

Integrated announcements on the TN750B circuit pack may be recorded at 16 kbps (for 8 minutes and 32 seconds of announcement time), or 32 kbps (for 4 minutes and 16 seconds of announcement time) depending on administration. A different recording speed may be used for each integrated announcement. These capacities will be different if a combination of different recording speeds is used.

Administration Commands

The following administration commands can be used to access the Recorded Announcements form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	announcements	—
display	announcements	['print' or 'schedule']
restore	announcements	—
save	announcements	—

* Brackets [] indicate the qualifier is optional.

Form Instructions

Make assignments as required for the following fields on each page of the form:

Pages 1 through 8 of the Form

- **Ext** — Enter a 1- to 5-digit unassigned extension number that agrees with the dial plan. References to a particular announcement "Ext" may be from the following forms: Hunt Group, Call Coverage Paths, Trunk Group (Incoming Destination), Call Vector, and Feature-Related System Parameters (DID/Tie/ISDN Intercept Treatment, Controlled Restriction fields).

- **Type** — Enter the type of announcement you want to assign to this extension number. Valid entries are "integrated", "analog", or "aux-trunk".

If "integrated" is entered, the Protect and Rate fields must be completed. If "analog" or "aux-trunk" is entered, the Queue Length and Port fields must be completed. The Queue Length field only applies if "y" is entered in the Queue field.

Integrated announcement circuit packs have pm-set queue lengths of 300.

- **COR** — Enter the desired class of restriction (COR) number from 0 through 95. Default is "1".
- **Name** — Enter up to 15 alphanumeric characters to describe the announcement message.
- **Queue** — Enter "y" to queue calls for the announcement. Default is "n".

Page 1 of the Form Only

- **Queue Length** — Applicable if the Queue field is "y" and the Type field is "analog" or "aux-trunk". Enter the number of calls that can be queued for this analog announcement. The sum of the queue entries for all analog announcements cannot exceed the maximum number allowed for your system configuration. Default is "0". When the Type field entry is "integrated", "N/A" will be displayed in this field.
- **Protect** — Enter "y" to protect the integrated announcement from being deleted or changed by any user. Enter "n" to allow only users with a console permission COS to change or delete an announcement. Default is "n". When the Type field is "analog" or "aux-trunk", "N/A" will be displayed in this field.
- **Rate** — Used to specify the recording speed (in 1000 bits/second) when recording announcements on the TN750B Integrated circuit pack. Valid entries are "16" or "32". Default is "32". When the Type field is "analog" or "aux-trunk", "N/A" will be displayed in this field.
- **Port** — Enter seven characters.

The entry breaks down as follows:

Character	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 32

When the Type field is "integrated", "N/A" will be displayed in this field.

Page 1 of X

ANNOUNCEMENTS									
	Ext.	Type	COR	Name	Queue	Q-Len	Protect?	Rate	Port
1:	1701	analog	1	busy	y	10	N/A	N/A	1B0404
2:	1702	analog	1	out of service	n	N/A	N/A	N/A	1B1701
3:	1703	integrated	1	please dial	n	N/A	n	32	N/A
4:	1704	aux-trunk	1	call-back	y	20	N/A	N/A	2C0902
5:			1		n				
6:			1		n				
7:			1		n				
8:			1		n				
9:			1		n				
10:			1		n				
11:			1		n				
12:			1		n				
13:			1		n				
14:			1		n				
15:			1		n				
16:			1		n				

Screen 5-104. Recorded Announcements Form (Page 1 of X)

To reduce repetition, the remaining pages of the Recorded Announcements form are not shown.

Implementation Notes:

Announcements 1 and 3 show the fields that are assigned to the analog and integrated announcement, respectively.

The Queue Length field is only displayed when the Type field is "analog" or "aux-trunk" and the Queue field is "y".

The Port field is only displayed when the Type field is "analog" or "aux-trunk".

The Protect field is only displayed when the Type field is "integrated".

Remote Access



NOTE:

AT&T has designed the Remote Access feature incorporated in this product that, when properly administered by the customer, will enable the customer to minimize the ability of unauthorized persons to gain access to the network. It is the customer's responsibility to take the appropriate steps to properly implement the features, evaluate and administer the various restriction levels, protect access codes and distribute them only to individuals who have been advised of the sensitive nature of the access information. Each authorized user should be instructed concerning the proper use and handling of access codes.

In rare instances, unauthorized individuals make connections to the telecommunications network through use of remote access features. In such an event, applicable tariffs require that the customer pay all network charges for traffic. AT&T cannot be responsible for such charges, and will not make any allowance or give any credit for charges that result from unauthorized access.

This form is used to implement the Remote Access feature. Remote Access permits a caller located outside the System to access the System through the public or private network and then use the features and services of the System.

Remote Access users can dial into the System using Central Office, Foreign Exchange, WATS, and ISDN-PRI trunks. In addition, a dedicated Remote Access Direct Inward Dialing number can be provided.

To maximize the security of the System, the following should be considered:

1. All remote access facilities should be unlisted directory telephone numbers.
2. Users should be required to enter a Barrier Code of seven random digits **AND** an Authorization Code of at least seven random digits to make network calls.
3. Authorization Codes should be nonconsecutive (random) and changed at least quarterly.
4. Deactivate Authorization Codes immediately if the user leaves the company or changes assignments.
5. Each Authorization Code should have assigned the minimum level of calling permissions required.
6. When possible, block off-hours and weekend remote access calling. Use Alternative Facility Restriction Levels, if available.
7. Use a voice recording, warble tone, or no tone and avoid use of a dial tone as a prompt when the remote access unit answers.
8. Assign the lowest possible FRL to only allow internal PBX calls.

As an additional step to ensure System security, if the Remote Access feature is not going to be utilized, and there is no anticipated future need for the feature, Remote Access may be “permanently” disabled in such away that it will require Services intervention to activate the feature again.

**CAUTION:**

This change will be lost if the switch is rebooted without saving translations. Therefore, a “save translation” command should be executed after permanently disabling the Remote Access feature.

Refer to the “Remote Access Flowchart” figure at the end of this section. The chart depicts the sequence of events associated with Remote Access call processing.

Administration Commands

The following administration commands can be used to access the Remote Access form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	remote access	—
display	remote access	['print' or 'schedule']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

- **Remote Access Extension** — Enter an extension number (may not be a VDN extension) for Remote Access. This extension is associated with each trunk that supports the Remote Access feature. May only be blank if no barrier codes are assigned. Default is blank. The extension is used as if it was a DID extension. Only one DID extension may be assigned as the Remote Access Extension. Calls to that number are treated the same as calls on the Remote Access trunk.

When a trunk group is dedicated to Remote Access, the Remote Access extension number is administered on the trunk group's Incoming Destination field. Typically, Remote Access is used for after business hours to administer the Incoming Destination field on the trunk group as the attendant group access code and administer the Remote Access extension as the Night Service extension. Incoming calls mute to attendant until the Night Service button is pressed on console.

- **Barrier Code Length** — Enter the desired barrier code length (4 to 7 digits) or leave blank (indicates no barrier code is required). All Barrier Codes assigned in the system must be the same length. Default is blank.



NOTE:

For System security reasons, it is recommended that a seven digit Barrier Code be assigned.

- **Authorization Code Required** — Enter “y” if an Authorization Code must be dialed by remote access users to access the System’s facilities. Default is “n”.



NOTE:

For System security reasons, it is recommended that Authorization Codes be required.

- **Remote Access Dial Tone** — This field is only displayed when the Authorization Code Required field is “y”. Enter “y” if recall dial tone is to be returned to a remote access caller after having dialed a barrier code but before dialing an authorization code (if both are required). Default is “n”.



NOTE:

For System security reasons, it is recommended that Remote Access Dial Tone be disabled.

- **Barrier Code** — Enter any desired Barrier Codes. All codes must be a 4- to 7-digit number and conform to the desired length selected above. The code can be any combination of the digits 0 through 9. If the Barrier Code Length field is blank, the first Barrier Code field must be specified as “none”. Duplicate entries are not allowed. Default is blank.



NOTE:

For System security reasons, it is recommended that random seven digit Barrier Codes be assigned.

- **COR** — Enter the class of restriction (COR) number (0 through 95) associated with the Barrier Code that defines the call restriction features. Default is “1”.
- **COS** — Enter a class of service (COS) number (0 through 15) associated with the Barrier Code that defines access permissions for call processing features. Default is “1”.
- **Permanently Disable** — Only administrable if the Remote Access Extension field has not been administered. Enter “y” to permanently disable the Remote Access feature, thereby providing additional System security. This will take effect after you logoff from the switch.

This change will be lost if the switch is rebooted without saving translations. Therefore, a *save translation* command should be executed after permanently disabling the Remote Access feature.

Once in effect, it will require Services intervention to re-activate this feature. Default is "n".

**NOTE:**

Only set this field to "y" if there is no current, or anticipated, need for this feature.

Page 1 of 1

REMOTE ACCESS

Remote Access Extension: ____
Barrier Code Length: ____
Authorization Code Required? y
Remote Access Dial Tone? ____

BARRIER CODE ASSIGNMENTS (Enter up to 10)

	Barrier Code	COR	COS		Barrier Code	COR	COS
1:	_____	1_	_1_	6:	_____	1_	_1_
2:	_____	1_	_1_	7:	_____	1_	_1_
3:	_____	1_	_1_	8:	_____	1_	_1_
4:	_____	1_	_1_	9:	_____	1_	_1_
5:	_____	1_	_1_	10:	_____	1_	_1_

Permanently Disable? n

(NOTE: You must logoff to effect disabling Remote Access)

Screen 5-105. Remote Access Form (Page 1 of 1)**Implementation Notes:**

The Remote Access Dial Tone field is only displayed if Authorization Code Required is "y". The Permanently Disable field is only administrable if no entry has been made in the Remote Access Extension field.

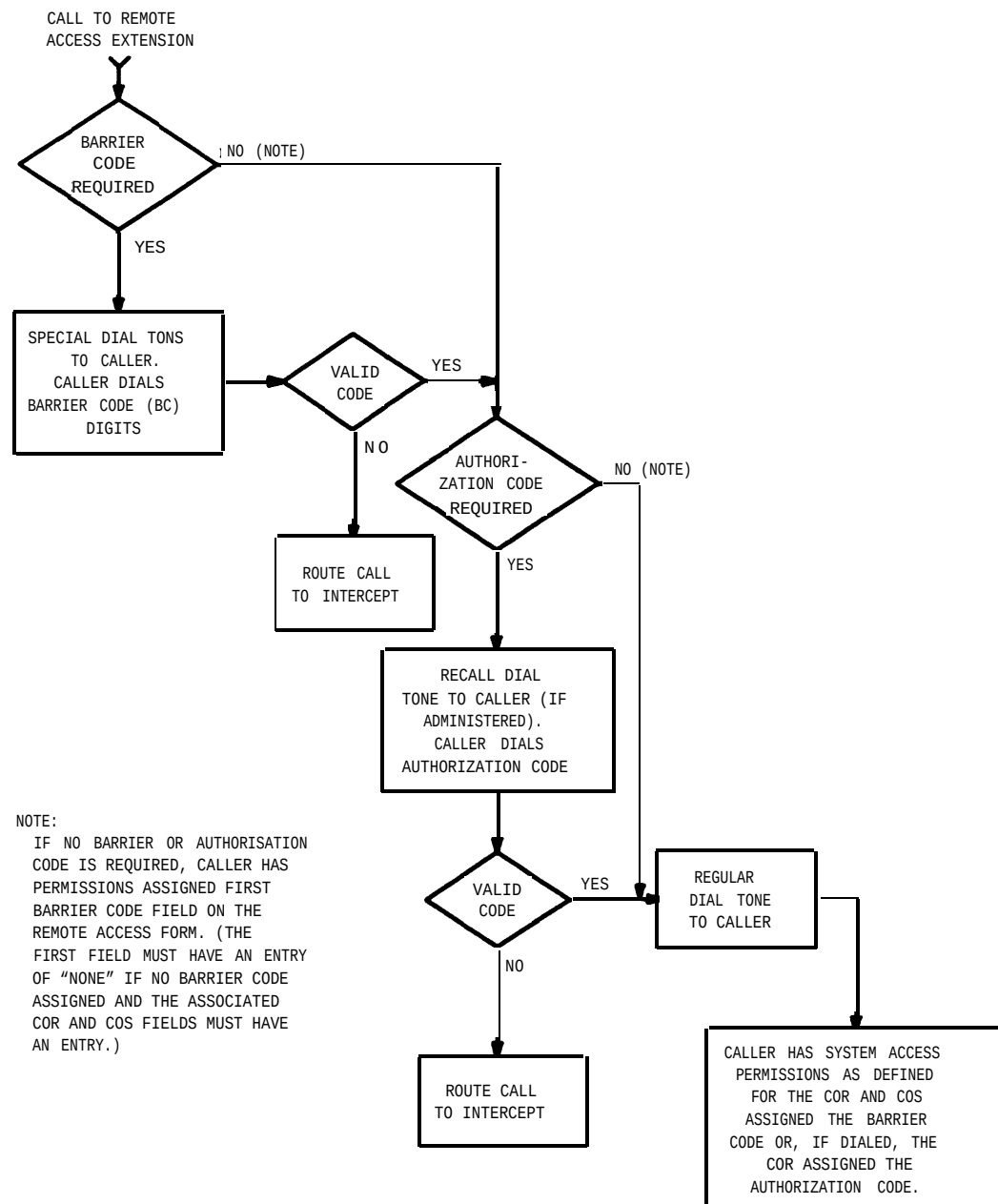


Figure 5-11. Remote Access Flowchart

Special Information Tones

This form is used to provide the capability of specifying the treatment of Special Information Tones (SITs) used for Outbound Call Management type calls. The TN744 Call Classifier circuit pack ports are used to detect SITs. The TN744 is capable of detecting the following six SITs:

- SIT Ineffective Other
- SIT Intercept
- SIT No Circuit
- SIT Reorder
- SIT Vacant Code
- SIT Unknown

The CPN/BN option must be enabled on the System-Parameters Customer-Options form before associated forms or fields on forms can be administered.

Administration Commands

The following administration commands can be used to access the SIT Treatment For Call Classification form. In some oases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	sit-treatment	—
display	sit-treatment	['print' or 'schedule']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for each field on the form as follows: In the field following each type of SIT, enter "answered" to specify that the call is classified as answered, and is therefore sent to an agent; or enter "dropped" to specify that the call is classified as not answered, and is therefore not sent to an agent.

- **SIT Ineffective Other** — Sample announcement following this SIT — "You are not required to dial a "1" when calling this number". Valid entries are "answered" and "dropped". Default is "dropped".
- **SIT Intercept** — Sample announcement following this SIT — "XXX-XXXX has been changed to YYY-YYYY, please make a note of it". Valid entries are "answered" and "dropped". Default is "answered".

- **SIT No Circuit** — Sample announcement following this SIT — “All circuits are busy, please try to call again later”. Valid entries are “answered” and “dropped”. Default is “dropped”.
- **SIT Reorder** — Sample announcement following this SIT — “Your call did not go through, please hang up and dial again”. Valid entries are “answered” and “dropped”. Default is “dropped”.
- **SIT Vacant Code** — Sample announcement following this SIT — “Your call cannot be completed as dialed, please check the number and dial again”. Valid entries are “answered” and “dropped”. Default is “dropped”.
- **SIT Unknown** — A situation or condition that is unknown to the network is encountered. Valid entries are “answered” and “dropped”. Default is “dropped”.

SIT TREATMENT FOR CALL CLASSIFICATION	
SIT Ineffective Other:	dropped
SIT Intercept:	answered
SIT No Circuit:	dropped
SIT Reorder:	dropped
SIT Vacant Code:	dropped
SIT Unknown:	dropped

Screen 5-106. SIT Treatment For Call Classification Form

System Parameters Country-Options

This form is used to implement parameters associated with certain international (including North American) call characteristics.

Administration Commands

The following administration commands can be used to access the Country Options System Parameters form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
change	system-parameters country-options	—
display	system-parameters country-options	['print' or 'schedule']

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Additional information on the parameters listed below can be found within feature descriptions of the same name by referring to *DEFINITY Communications System Genetic 3 V2 Feature Description*, 555-230-204.

NOTE:

Refer to the “Country Code Assignments” table in Appendix B for a complete list of Country codes and other international information.

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Commanding Mode** — Enter “A-law” or “Mu-law” to identify the commanding algorithm to be used by system hardware. Default is “Mu-law”.
- **Base Tone Generation Set** — Enter a country code (1 through 17) to identify the base tone generation set to be used. This field is meaningful only if the system tone detector is a TN780, vintage 4 or greater. Default is “1” (U.S.).

NOTE:

A TN780 vintage 5 or greater is required if Belgian Tones (Country code 8) are specified.

Although defined, country codes 12 (France) and 13 (Germany) are not supported and, if entered, will cause an error message.

- **440Hz PBX-dial Tone** — Enter “y” or “n” (default) to specify whether or not the PBX (primary) dial tone will be changed to a continuous 440Hz/-17 tone. Entering “n” implies the tone will either be administered on a later page of this form or, if no individual definition is administered, as defined in the Base Tone Generation Set.
- **440Hz Secondary-dial Tone** — Enter “y” or “n” (default) to specify whether or not the Secondary (CO) dial tone will be changed to a continuous 440Hz/-17 tone. Entering “n” implies the tone will either be administered on a later page of this form or, if no individual definition is administered, as defined in the Base Tone Generation Set.
- **Digital Loss Plan** — Enter a country code (1 through 17) to identify the digital loss plan to be used by the system. Default is “1” (U.S.).



NOTE:

Although defined, country codes 12 (France) and 13 (Germany) are not supported and, if entered, will cause an error message to be displayed.

- **Version of Digital Loss Plan** — Appears when the Digital Loss Plan field is country code 10 (United Kingdom). Enter “A” or “B” to identify the version of a country’s digital loss plan to be used. Default is “B”.
- **Analog Ringing Cadence** — Enter a country code (1 through 17) to identify the ringing cadence to be used by analog phones in the system. Default is “1” (U.S.).



NOTE:

Although defined, country codes 12 (France) and 13 (Germany) are not supported and, if entered, will cause an error message to be displayed.

The next three fields control tone detection on the system:

- **Tone Detection Mode** — Enter a code (1 through 5) to specify the type of tone detection used on a TN420B (or later) tone-detection circuit pack. Default is “1”.

The codes have the following connotations:

1. Precise Italian tone detection algorithm
2. Precise Australian tone detection algorithm
3. Precise UK tone detection algorithm
4. Imprecise normal broadband filter algorithm (valid with TN420C or later Tone Detector circuit pack)
5. Imprecise wideband fitter algorithm (valid with TN420C or later Tone Detector circuit pack)

- **Dial Tone Validation Timer** — Enter the number of milliseconds (0 through 6375 in increments of 25) that the dial tone validation routine will use to sample transmissions. This field appears only when the Tone Detection Mode field is equal to 4 or 5. (Valid with TN420C or later Tone Detector circuit pack.) Default is “600”.
- **Interdigit Pause** — Enter “short” (5 to 30ms) or “long” (20 to 40ms) to specify the maximum length of the inter-digit pause. Breaks lasting less than this range will be bridged or ignored. (Valid with TN420C or later Tone Detector circuit pack.) Default is “short”.

Pages 2 through 7 of the Form

- **Tone Name** — Enter one of the keywords below to indicate which of the individually administrable tones this screen modifies. This field (with its associated Tone (Frequency/Level), Duration, and Step fields) is meaningful only if the system tone detector is a TN780, vintage 4 or greater. If this field is blank, all entries in the corresponding Frequency and Duration fields are ignored. Default is blank.

Acceptable keywords are:

- 1-call-wait
 - 2-call-wait
 - 3-call-wait
 - busy
 - call-wait-ringback
 - conference
 - confirmation
 - disable-dial
 - hold
 - intercept
 - intrusion
 - PBX-dial
 - recall-dial
 - reorder
 - rep-cofirmation
 - ringback
 - secondary-dial
- **Cadence Step** — This is a display-only field that identifies the number (1 through 15) of each tone cadence step.

- **Tone (Frequency/Level)** — Enter “silence”, “goto”, or a set of values to specify the frequency and level of the tone. An entry of “silence” means no tone; an entry of “goto” means to repeat all or part of the sequence, beginning at the specified cadence step. A final step of “silence” with an infinite duration will be added internally to any tone sequence that does not end in a “goto”. Default is blank.

In addition to “silence” and “goto”, the following is a list of acceptable numeric value sets for the tone field:

- 350/-17.25
- 350+425/-4.0
- 350+440/-13.75
- 375+425/-15.0
- 404/-11.0
- 404/-16.0
- 404+425/-11.0
- 404+45W-11.0
- 425/-4.0
- 425/-11.0
- 425/-17.25
- 440/-17.25
- 440+480/-19.0
- 480/-17.25
- 480+620/-24.0
- 525/-11.0
- 620/-17.25
- 697/-8.5
- 770/-8.5
- 852/-8.5
- 941/-8.5
- 1000/0.0
- 1000/+3.0
- 1004/0.0
- 1004/-16.0
- 1209/-7.5
- 1336/-7.5

- 1400/-11.0
- 1477/-7.5
- 1633/-7.5
- 2025/-12.1
- 2100/-12.1
- 2225/-12.1
- 2804/-16.0
- goto
- silence

- **Duration (msec)** — Enter blanks or a value between 50 through 12750, in increments of 50, to describe the duration of each administered tone. There is one dynamic Duration field associated with each of the 15 Tone (Frequency/Level) fields on each screen page. Initially, when the Tone field is blank, the Duration field does not appear. However, when a non-blank value other than “goto” is entered in a Tone field, the associated Duration field will appear, and must be used to specify the duration (in milliseconds) of the specified tone. Default is blank.
- **Step** — Enter blanks or a Cadence Step (1 through 14) beginning the repeated sequence for a “goto” entry. There is one dynamic Step field associated with each of the 15 Tone (Frequency/Level) fields shown on a screen page. Initially, when the Tone field is blank, the Step field does not appear. However, when “goto” is entered in a Tone field, the associated Step field will appear, and must be used to specify the cadence step to begin repeating from. Default is blank.

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SYSTEM PARAMETERS COUNTRY-OPTIONS

Commanding Mode: Mu-law	Base Tone Generation Set: 1
440Hz PBX-dial Tone? n	440Hz Secondary-dial Tone? n
Digital Loss Plan: 10	Version of Digital Loss Plan: B
Analog Ringing Cadence: 1	

TONE DETECTION PARAMETERS

Tone Detection Mode: 5	Dial Tone Validation Timer: 600
Interdigit Pause: short	

Screen 5-107. Country-Options System Parameters Form (Page 1 of 7)

SYSTEM PARAMETERS COUNTRY-OPTIONS

Tone Name	Cadence Step	Tone (Frequency/Level)	
busy_____	1:	440/-17.25__	Duration (msec): 200__
	2:	silence_____	Duration (msec): 200__
	3:	440/-17.25__	Duration (msec): 200__
	4:	silence_____	Duration (msec): 200__
	5:	440/-17.25__	Duration (msec): 200__
	6:	goto_____	step: 3_
	7:	_____	
	8:	_____	
	9:	_____	
	10:	_____	
	11:	_____	
	12:	_____	
	13:	_____	
	14:	_____	
	15:	_____	

Screen 5-108. Country-Options System Parameters Form (Page 2 of 7)

To reduce repetition, Pages 3 through 7 of the System Parameters Country Options form are not shown.

Terminating Extension Group

This form is used to define Terminating Extension Groups (TEGs). Any voice terminal can be assigned as a TEG member however, only a multi-appearance voice terminal can be assigned a TEG button with associated status lamp. The TEG button allows the terminal user to select a TEG call appearance for answering or for bridging onto an existing call.

The TEG members are assigned on an extension number basis. Call reception restrictions applicable to the group are specified by the group class of restriction (COR). The group COR takes precedence over an individual member's COR. The members could all be termination restricted but still receive calls if the group is not restricted.

The System allows for as many as 32 TEGs with up to four members each. An extension number can be assigned to more than one TEG but can have only one appearance of each group.

Administration Commands

The following administration commands can be used to access the Terminating Extension Group form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	term-ext-group	1-32 (or 'next')
change	term-ext-group	1-32
display	term-ad-group	1-32 ['print' or 'schedule']
list	term-ext-group	[1-32]['numbef x']['to-number' x]['name' x]['ext' x] ['to-ext' x]['count' n]['print' or 'schedule']
remove	term-ad-group	1-32

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Form Instructions

Make assignments as required for the following fields on the form:

- **Group Number** — Enter a group number from 1 through 32 when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*.
- **Group Extension** — Enter an unused extension number (may not be a VDN extension) consisting of two to five digits (do not leave blank).
- **Group Name** — Enter up to 16 characters to identify the group.

- **Coverage Path** — Enter a number for the call coverage path for this group. (A TEG cannot serve as a coverage point; however, calls to a TEG can redirect to coverage).
- **Security code** — Enter a 4-digit security code or leave blank. This code is used for the Demand Print feature.
- **COR** — Enter the desired class of restriction (COR) number (0 through 95) that reflects the desired restrictions. Default is "1".
- **ISDN Caller Display** — Enter "grp-name" or "mbr-name" to specify whether the TEG group name or member name (member of TEG where call terminated) will be sent to the originating user. This field is required if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form. If ISDN-PRI is not enabled, leave blank.
- **LWC Reception** — Defines the source for Leave Word Calling (LWC) messages. Enter "audix", "msa-spe", or "none".
- **AUDIX Name** — Only displayed for a G3r V2 configuration. Name of the AUDIX machine as it appears in the Adjunct Names form.
- **Messaging Server Name** — Only displayed for a G3r V2 configuration. Name of the server as it appears in the Adjunct Names form.
- **Group Member Assignments — Ext** — Enter the extension number (may not be a VDN extension) for the members of this group.
- **Group Member Assignments — Name** — Make no entry. The name is assigned to the preceding extension number when the TEG members voice terminal is administered.

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TERMINATING EXTENSION GROUP

Group Number: ____	Group Extension: ____
Group Name: _____	Coverage Path: ____
Security Code: _____	COR: 1_
ISDN Caller Display: _____	LWC Reception: none
AUDIX Name: _____	Messaging Server Name: _____

GROUP MEMBER ASSIGNMENTS	Ext	Name
	1: ____	3: ____
	2: ____	4: ____

Screen 5-109. Terminating Extension Group Form (Page 1 of 1)

Implementation Note:

The AUDIX Name and Messaging Server Name fields are only displayed on G3r V2 configurations.

Vector Directory Number

This form is used to define Vector Directory Numbers (VDNs) for the Call Vector feature. A VDN is an extension number used to access a call vector. Each VDN is mapped to one call vector.

VDNs are software extension numbers (that is, not assigned to physical equipment). A VDN is accessed via direct dial CO trunks mapped to the VDN (incoming destination or night service extension), DID trunks, and LDN calls. The VDN may be Night Destination for LDN.

For more information, refer to "Call Vectoring" in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, or *DEFINITY Communications System Genetic 3 Call Vectoring Guide*, 555-230-520.

NOTE:

The Vectoring (Basic) or Vectoring (Prompting) options must be enabled on the System-Parameters Customer-Options form before the VDN Form can be administered.

Administration Commands

The following administration commands can be used to access the Vector Directory Number form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	vdn	xxxxx (extension number of VDN to be added) or 'next'
change	vdn	xxxxx (extension number of VDN to be changed)
display	vdn	xxxxx (extension number of VDN to be displayed) ['print' or 'schedule']
list	vdn	xxxxx (extension number of VDN to be listed) ('count' 1-MAX) ['print' or 'schedule']
remove	vdn	xxxxx (extension number of VDN to be removed)

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Make assignment as required for the following fields on the form:

- **Extension:** — Enter the extension associated with the VDN when completing a paper form. The extension is a 1- to 5-digit number that starts with a valid first digit and length as defined by the System's dial plan. This is a display-only field when using an administration command such as *add* or *change* to access the form.

- **Name:** — Enter up to a 15-character alphanumeric name that is used to identify the VDN. This is an optional field that need not contain any data.
- **Allow VDN Override?** — This entry affects the operation of an agent's display when a call is routed through several VDNs. If it is set to "n", the name of this VDN appears on the agent's display and the VDN's AUDIX mailbox is accessed. If any subsequent VDNs are used to process this call, their names will not appear on the terminating display and the AUDIX mailbox for the original VDN is accessed. If the field is set to "y", the name of the VDN appearing on the terminating display will depend on the administration and chaining of the subsequent VDNs and the AUDIX mailbox for the last VDN is accessed. Default is "n".

For Expert Agent Selection (EAS), if this field is "y" on the original VDN, the Skills of the new VDN will be used. If this field is "n" on the original VDN, the Skills of the original VDN will be used.
- **Class of Restriction:** — Enter a 1- to 2-digit number that specifies the class of restriction (COR) to be assigned the VDN. The default value is "1". The field cannot be blank and must have an entry in the range from 0 through 95.
- **Vector Number:** — Enter a 1- to 3-digit vector number that specifies a particular call vector that is accessed through the VDN. Valid entries are in the range from 1 through the maximum number allowed in your system configuration. The field cannot be blank.
- **AUDIX Name** — Only displayed for a G3r V2 configuration. If this VDN is associated with the AUDIX vector, enter the name of the AUDIX machine as it appears in the Adjunct Names form.
- **Messaging Server Name** — Only displayed for a G3r V2 configuration. If this VDN is associated with MSA, enter the name of the server as it appears in the Adjunct names form.
- **Measured** — Used to collect measurement data for this VDN. Valid entries are "internal", "external", "both", or "none". Data may be collected for reporting by BCMS or CMS. Default is "none".

**NOTE:**

The BCMS feature must be enabled on the System-Parameters Customer-Options form for the Measured field to be set to "internal" or "both". In addition, the appropriate CMS release must be administered on the Feature-Related System Parameters form if the field is being changed to "external" or "both".

- **BCMS Acceptable Service Level (sec)** — Only displayed when the BCMS Acceptable Service Level option is enabled on the System-Parameters Customer-Options form and the Measured field is "internal" or "both". Enter the number of seconds within which calls to this VDN should be answered. This will allow BCMS to print out a percentage of calls that were answered within the specified time. Valid entries are 0 through 9999 seconds. Default is blank.

- **1st/2nd/3rd Skill** — Only displayed when Expert Agent Selection is enabled on the System-Parameters Customer-Options form. Enter the desired Skill numbers (or leave blank) in each field.

The figure that follows the sample screen form shows three typical examples of how VDNs are used. An outside call to a VDN is processed based on the various elements that are entered on the VDN form. Handling of the call is based on the commands associated with the vector. Displayed information is dependent on the setting of the Allow VDN Override field entry. As shown in the third example, the Allow VDN Override field set to “N” for VDN 4501 determines the name displayed on the terminating extension 7000.

VECTOR DIRECTORY NUMBER

Extension: XXXXX

Name: _____

Allow VDN Override? n

COR: 1_

Vector Number: 1_

AUDIX Name: _____

Messaging Server Name: _____

Measured: internal

BCMS Acceptable Service Level (sec): _____

1st Skill: _____

2nd Skill: _____

3rd Skill: _____

Screen 5-110. Vector Directory Number Form

Implementation Notes:

AUDIX Name and Messaging Server Name are only displayed for a G3r V2 configuration.

The BCMS feature must have been optioned if the Measured field is set to “internal” or “both”. In addition, the appropriate CMS release must be administered on the Feature-Related System Parameters form if the field is being changed to “external” or “both”.

The 1st/2nd/3rd Skill fields are only displayed when Expert Agent Selection is enabled on the System-Parameters Customer-options form.

The BCMS Acceptable Service Level (sec) field is only displayed if the BCMS Acceptable Service Level option is enabled on the System-Parameters Customer-Options form and the Measured field is “internal” or “both”.

Vector Directory Number

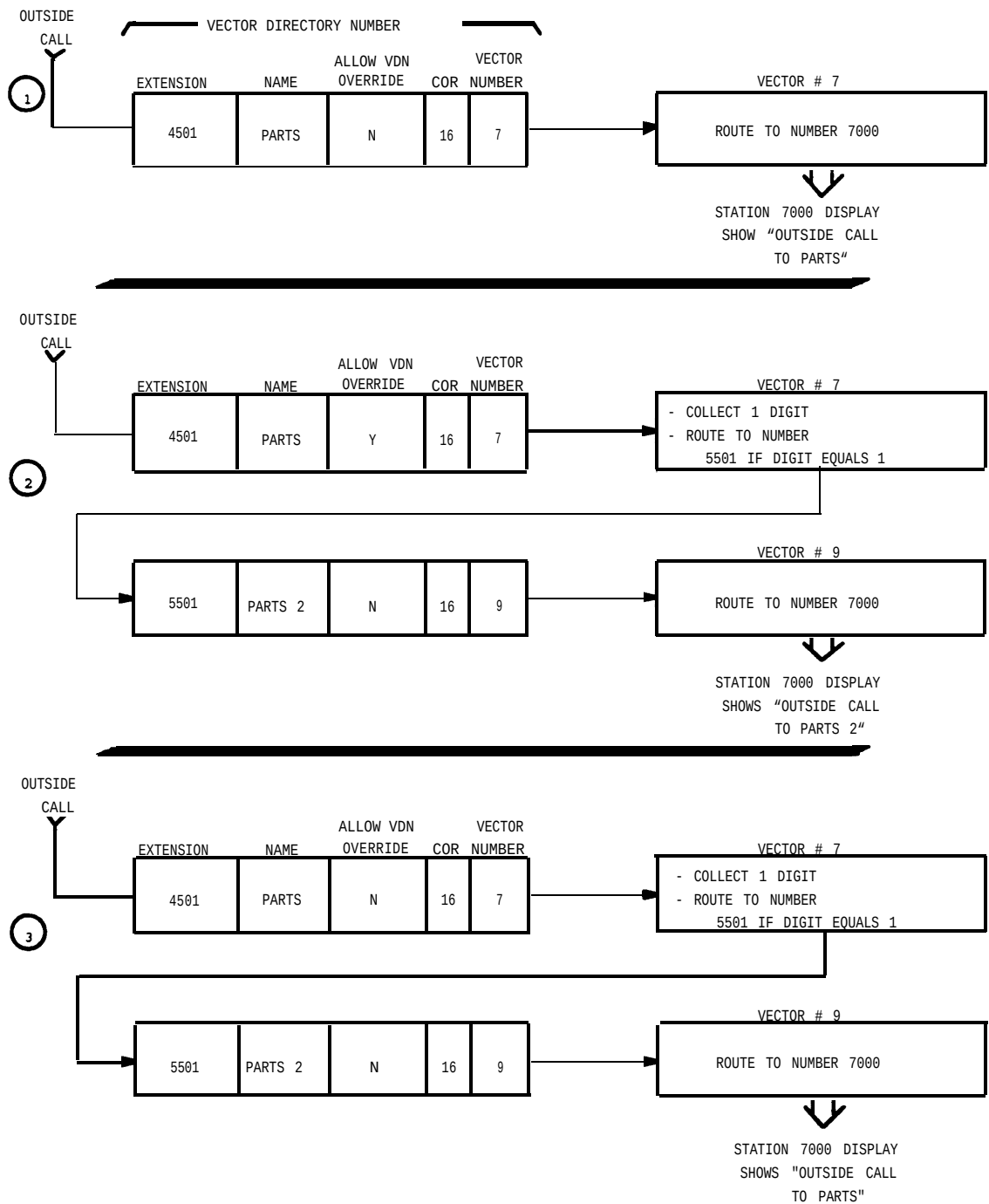
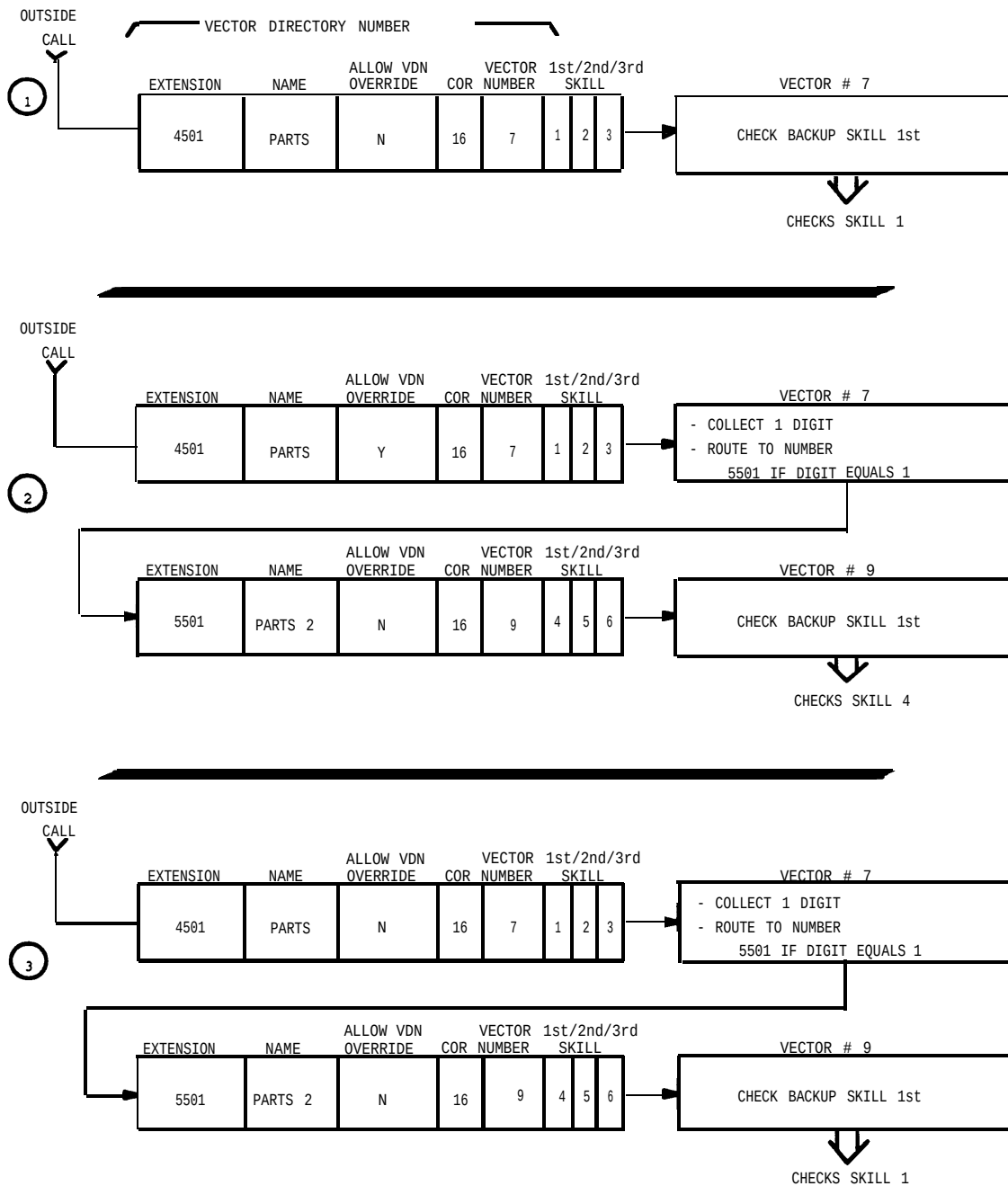


Figure 5-12. Typical VDN Call Processing Examples

**Figure 5-13. Typical VDN Call Processing Examples for Determining Skill Numbers**

Voice Terminals — General

Voice terminals combine the capabilities of both a telephone and computer and have a variety of controlling and monitoring capabilities. While providing basic telephone service (placing and answering calls), voice terminals can also be used to activate or deactivate the advanced features of the System. Both single-line and multi-appearance voice terminals are supported. A single-line voice terminal can have only one incoming call appearing at the terminal at a time. Multi-appearance voice terminals can have up to ten calls appearing at the terminal at the same time. Several of the terminals have associated alphanumeric display capabilities for display of call progress and related status information.

Each voice terminal to be assigned in the System must be administered using System forms. Unique forms are provided for the terminals which are administered by their voice terminal type. Certain terminals that do not have their own forms can be administered using an existing form. Terminals not accounted for may be administered using the Enhanced Terminal Administration (ETA) feature and its associated Alias Station form. Refer to the ETA feature description in Chapter 3 for additional information. Refer to the voice terminal information provided later in this chapter for specific implementation instructions for each terminal type.

System Voice Terminals

The “System Voice Terminals” table that follows lists the voice terminals that are administrable in the system. In addition, administration is supported for Personal Computer — 6300 and 7300 PBX Connections.

Voice Terminal Feature Button Descriptions

The “Voice Terminal Feature Button Descriptions” table in this section provides descriptions of the feature buttons that can be administered on multi-appearance voice terminals. The administrable software names and recommended button label names are shown.

Voice Terminal Feature Button Characteristics

The “Voice Terminal Feature Button Characteristics” table provides a listing of voice terminal feature button characteristics. The features or functions that have associated feature buttons are listed alphabetically on the table. Recommended button labels and administration names that must be entered on System forms are listed for each button type. Certain buttons are administered so that their associated status lamps can be used to provide visual status indications of a related feature or function. In some cases, the button itself is not functional. These buttons are noted as “[status lamp]” in the Feature or Function column on the table.



NOTE:

When assigning one of these buttons the button must have an associated status lamp.

Buttons noted as “[display button]” are used to support voice terminals equipped with alphanumeric displays. These buttons are only functional if the terminal has a display.



NOTE:

Depending on the voice terminal type (such as MET, analog, digital), certain feature buttons may or may not be administrable on the voice terminal. Coverage for each voice terminal type (where appropriate) includes a listing of the feature buttons that can be administered on the terminal.

Table 5-10. System Voice Terminals

Terminal Type	Model	Administered As
Single-Line Analog	500	500
	2500	2500
	2500 With Message Waiting Adjunct	2500
	7101A	7101A
	7102A	7101A
	7103A Programmable and Original	7103A
	7104A	7104A
	8110	8110
	DS1FD	DS1FD
Multi-Appearance Hybrid	7302H	7303S
	7303H	7303S
	7303S	7303S, 7313H
	7305H01B or 7305H02B	7305S
	7305H03B	7305S
	7305H04B	7305S
	7305S*	7305S, 7316H, 7317H (with optional display)
	7309H	7309H, 7313H
	7313H	7313H
	7314H	7314H
	7315H	7315H
	7316H	7316H
	7317H	7317H
Multi-Appearance Digital	7401D	7401D
	7401+	7401+
	7403D	7403D
	7404D	7404D
	7405D	7405D
	7406D	7406D
	7406+	7406+
	7407D	7407D
	7407+	7407+
	7410D	7410D
	7410+	7410+
	7434D	7434D
	7444D	7444D
	602A1 "CALLMASTER" Terminal	602A1
	IDT1	7403D
	IDT2	7406D
Multi-Button Electronic Telephone (MET) Sets	10 Button (5 administrable)	10MET
	10 Button With Built-In Speakerphone	10MET
	20 Button (15 administrable)	20MET
	30 Button (25 administrable)	30MET

Table 5-10. System Voice Terminals (continued)

Terminal Type	Model	Administered As
Terminals	510D 515BCT	510 515
ISDN-BRI Station	—	asai**
ISDN-BRI Station	7505D 7506D 7507D 8503D 8510D 8520D	7505D 7506D 7507D 8503D 8510D 8520D
PC/PBX	6300/7300	PC
Test Line	ATMS	105TL***
Key Phone System Interface	—	K2500****

* If administered as 7316H (with speakerphone or handset) Internal Automatic Answer (IAA) will work.

** “asai” is administered as the ISDN-BRI set type in support of an Adjunct Switch Applications Interface (ASAI) link. This interface supports use of CallVisor ASAI and an associated adjunct such as CONVERSANT speech processor used with Inbound Call Management feature. Refer to ASAI Link form (this chapter) and CallVisor Adjunct/Switch Applications Interface feature description in Chapter 3 for additional information.

*** Available without the Automatic Transmission and Measurement System (ATMS) feature package. Refer to *DEFINITY Communications System Generic 3 V2 Maintenance*, 555-230-105, and *DEFINITY Communications System Generic 3 V2 System Reports*, 555-230-511, for more information on ATMS.

**** The K2500 has the same administration form as the 2500 except that it supports rotary or DTMF sets.

NOTE:

When administering a system that will be comprised of a large number of digital voice terminals, 20- and 30-MET sets, or hybrid sets equipped with feature buttons, administer the voice terminals in the following order:

1. Digital voice terminals
2. 20-, 30-MET sets
3. Hybrid sets equipped with feature buttons
4. All others (that is, analog, hybrids, 10-MET, and so on).

The 8500 ISDN-BRI Data Module is administered as “8500”.

Table 5-11. Voice Terminal Feature Button Descriptions

ADMINISTRATION NAME	BUTTON LABEL	DESCRIPTION
abr-prog	AbtvDial Program	Abbreviated Dialing Program Mode: allows the user to program or reprogram abbreviated dialing buttons or to store or change a number in a personal list associated with the station. (One per-station maximum.)
abr-spchar	AbrvDial (char)	Abbreviated Dialing Special Character: allows the user to enter an associated special character [m (mark), p (pause), s (suppress), or w (wait)] when programming an abbreviated dialing list entry. [One each (m, p, s, w) per station.]
abrdg-appr	(extension)	Bridged Call Appearance of an Analog Station: allows the user to have an appearance of a single-line voice terminal's extension number. (Can only be assigned to a 2-lamp button. Refer to specific terminal information for maximums.)
abrv-dial	AD	Abbreviated Dialing: used to access an associated abbreviated dialing list entry and causes the associated stored number it to be dialed. (One per AD list per dial code; otherwise, no per-station maximum.)
ac-alarm	AC Alarm	Administered connection Alarm Notification: associated status lamp lights when the number of failures for at least one administered connection has equaled the specified threshold. (One per-station maximum.)
aca-call	Auto-Ckt Assure	Automatic Circuit Assurance (display button): allows users of display-equipped voice terminals to identify trunk malfunctions. The System automatically initiates a referral call to the terminal when a possible failure occurs. The button is used to activate/deactivate referral calls. (One per-system maximum.)
after-call*	After Call Work	After Call Work Mode: used to remove an agent from ACD call distribution in order for the agent to complete ACD-related activities such as forms completion. (One per split group; otherwise, no per-station maximum.)
alt-frl	Alt FRL	Alternate FRL: used to activate or deactivate the Alternate Facility Restriction Level (AFRL) feature. (One per system maximum.)
assist*	Assist	Supervisory Assistance: used by an ACD agent to place a call to a split supervisor. (One per split group; otherwise, no per-station maximum.)
atd-qcalls ‡	AQC	Attendant Queue Calls (<i>display button</i>): used to track the number of calls in the attendant group's queue and obtain a display of the queue status. (One per-station maximum.)
atd-qtime ‡	AQT	Attendant Queue Time (<i>display button</i>): used to track the calls in the attendant group's queue with regards to the oldest time a call has been queued, and obtain a display of the queue status. (One per-station maximum.)

* The Automatic Call Distribution feature must be enabled on the System-Parameters Customer-Options form before the feature button can be administered.

‡ The voice terminal must be equipped with a display before the feature button can be administered.

Table 5-11. Voice Terminal Feature Button Descriptions (continued)

ADMINISTRATION NAME	BUTTON LABEL	DESCRIPTION
aut-msg-wt	Message (name or ext #)	Automatic Message Waiting: associated status lamp automatically lights when an LWC message has been stored in the System for the associated extension (can be a VDN). (One per aut-msg-ext; otherwise, no per-station maximum.)
auto-cback	Auto CallBack	Automatic Call Back: when activated, allows inside user who placed a call to a busy or unanswered voice terminal to be called back automatically when the called voice terminal becomes available to receive a call. (One per-station maximum.)
auto-icom	Auto (name or ext #)	Automatic Intercom: used to place a call to the station associated with the button. The called user receives a unique alerting signal, and a status lamp associated with a Dial or Automatic Intercom button, if provided, flashes. (One per group per dial code; otherwise, no per-station maximum.)
auto-in*	Auto In	Auto-In Mode: allows the user to become automatically available for new ACD calls upon completion of an ACD call. (One per split group; otherwise, no per-station maximum.)
auto-wkup** ‡	Auto Wakeup	Automatic Wakeup (<i>display button</i>): allows attendants, front-desk users, and guests to request a wakeup call to be placed automatically to a certain extension number (may not be a VDN extension) at a later time. (One per-station maximum.)
aux-work*	Auxiliary Work	Auxiliary Work Mode: removes agent from ACD call distribution in order to complete non-ACD-related activities. (One per split group and one per-station maximum.)
brdg-appr	(extension)	Bridged Call Appearance of a Multi-Appearance Station: provides an appearance of a voice terminal's primary extension number at the terminal assigned the brdg-appr button. The button tracks and may be used like a call appearance on the tracked station. (Can only be assigned to a 2-lamp button. Refer to specific terminal information for maximums.) A VDN cannot be assigned to a bridged appearance button.
busy-ind	Busy (trunk or ext #)	Station Busy Indication: (see Facility Busy Indication feature) provides user with a visual indication of the busy or idle status of an extension (can be a VDN extension), trunk group, hunt group (DDC or UCD), or paging zone. User can use button for direct access to associated facility. (One per TAC/Ext; otherwise, no per-station maximum.)

* The Automatic Call Distribution feature must be enabled on the System-Parameters Customer-Options form before the feature button can be administered.

** The Hospitality feature must be enabled on the System-Parameters Customer-Options form before the feature button can be administered.

‡ The voice terminal must be equipped with a display before the feature button can be administered.

Table 5-11. Voice Terminal Feature Button Descriptions (continued)

ADMINISTRATION NAME	BUTTON LABEL	DESCRIPTION
call-appr	(extension)	Call Appearance: used to originate or receive calls. (Refer to specific voice terminal information for maximums allowed.)
call-disp ‡	Return Call	Call Displayed Number (<i>display button</i>): automatically initiates a call to the currently displayed number, which may be a part of a leave word calling message or a number retrieved using the integrated directory feature. (One per-station maximum.)
call-fwd	Call Forwarding	Call Forwarding: used to activate/deactivate the Call Forwarding All Calls feature. Calls that would normally terminate at the station are redirected (forwarded) to another extension (may not be a VDN extension). (One per-station maximum.)
call-park	Call Park	Call Park: used to place a current call in the call park state and later used to retrieve the call. Note that a call cannot be parked on a VDN extension. (One per-station maximum.)
call-pkup	Call Pickup	Call Pickup: used to pickup a call that is ringing in the users pickup group. (One per-station maximum.)
callr-info	Caller Info	Caller Information (<i>display button</i>): used with the Call Prompting feature to allow the user to display information (i.e., digits) collected from the originator. (One per-station maximum.)
cas-backup	CAS Backup	Centralized Attendant Service Backup Mode: used to redirect all CAS calls to a backup extension in the local branch if all RLTs are out-of-service or maintenance busy. The associated status lamp indicates if CAS is in the backup mode. (One per-station maximum.)
cdr1-alarm	CDR 1 Failure	CDR Alarm: associated status lamp is used to indicate that a failure in the interface to the primary CDR output device has occurred (1 per-station maximum.)
cdr2-alarm	CDR 2 Failure	CDR Alarm: associated status lamp is used to indicate that a failure in the interface to the secondary CDR output device has occurred (1 per-station maximum.)
check-in** ‡	Check In	Check In (<i>display button</i>): used to change the state of the associated guest room to "occupied" and turn off the outward calling restriction for the guest room's station. (One per-station maximum.)
check-out** ‡	Check Out	Check Out (<i>display button</i>): used to change the state of the associated guest room to "vacant" and turn on the outward calling restriction for the guest room's station. Also clears (removes) any wake-up request for the station, (One per-station maximum.)
clk-overid ‡	Clocked Override	Clocked Manual Override (<i>display button</i>): used in association with the Time of Day Routing feature to override the muting plan in effect for the activating user's partitioned group number. The muting plan is overridden for a specified period of time. (One per-station maximum.)

** The Hospitality feature must be enabled on the System-Parameters Customer-Options form before the feature button can be administered.

‡ The voice terminal must be equipped with a display before the feature button can be administered.

Table 5-11. Voice Terminal Feature Button Descriptions (continued)

ADMINISTRATION NAME	BUTTON LABEL	DESCRIPTION
consult	Consult	Consult: used by a coveting party, after answering a coverage call, to call the principal (called party) for private consultation. This places the calling party on hold. (One per-station maximum.)
cov-cback	Coverage Callback	coverage Callback used by a covering party to leave a message for the principal (called Party) to call the calling party. (One per-station maximum.)
cov-msg-rt ‡	Covr Meg Retrieve	Coverage Message Retrieval (<i>display button</i>): used to place a covering station into the message retrieval mode for the purposes of retrieving messages for the group. (One per-station maximum.)
data-ext	Data (data ext #)	Data Extension; used to setup a data call. May be used to pre-indicate a data call or to disconnect a data call. (One per data extension group otherwise, no per-station maximum.) May not be a VDN or ISDN-BRI extension. Not allowed on a ISDN-BRI station.
date-time ‡	Date Time	Date Time Display (<i>display button</i>): used to display the current date and time. (One per-station maximum.)
delete-msg ‡	Delete Message	Delete Message (<i>display button</i>): used to delete a stored message that is currently on the station's display. (One per-station maximum.)
dial-icom	Dial loom	Dial Intercom: used to access the intercom group assigned to the button, (One per group; otherwise, no per-station maximum.)
directory ‡	Integrtd Directory	Directory (<i>display button</i>): used to place the station's display in the integrated directory mode allowing the user to search for any system user. (One per-station maximum.)

** The Hospitality feature must be enabled on the System-Parameters Customer-Options form before the feature button can be administered.

‡ The voice terminal must be equipped with a display before the feature button can be administered.

Table 5-11. Voice Terminal Feature Button Descriptions (continued)

ADMINISTRATION NAME	BUTTON LABEL	DESCRIPTION
disp-norm ‡	Local/Normal	Local/Normal (<i>display button</i>); 7315H and 7317H stations only. User can toggle between LOCAL display mode (displays time and date) and NORMAL mode (displays call-related data). Status LED off = LOCAL mode, Status LED on = NORMAL mode. (One per station maximum.)
dn-dst**	Do Not Disturb	Do Not Disturb: used to place the user in the do not disturb mode. (One per-station maximum.)
ds1-alarm	DS1 (facility)	DS1 Alarm: associated status lamp lights if an off-circuit pack major, minor, or warning alarm is active on a DS1 circuit pack. Off-board alarms (e.g., loss of signal, slips, misframes) relate to problems on the facility side of the DS1 interface.
exclusion	Exclusion	Exclusion: used to prevent any other user from bridging onto the current call. (One per-station maximum.)
ext-dn-dst** ‡	Do Not Disturb Ext	Extinguish Do Not Disturb (<i>display button</i>): used to remove the user from the do not disturb mode. (One per-station maximum.)
flash	Flash	Flash; used for two types of calls: 1) allows a station on a trunk call with Trunk Flash enabled to send a Trunk Flash signal to the far end (e.g., Central Office); 2) allows a station on a CAS main call to send a Trunk Flash signal over the connected RLT trunk back to the branch to conference/transfer the call on the branch. (One per station maximum.)
goto-cover	Go To Cover	Go To coverage: used to send a call directly to coverage instead of waiting for the called inside user to answer. (One per-station maximum.)
grp-dn-dst** ‡	Do Not Disturb Grp	Group Do Not Disturb (<i>display button</i>): used to remove a group of users from the do not disturb mode. (One per-station maximum.)
hunt-ns *	Hunt Group	Hunt-Group Night Service: used to place a hunt-group into night service. (Three per hunt group maximum.)
in-call-id	Coverage (group #, type, name, or ext #)	Incoming Call Identification: used to identify the hunt or coverage answer group associated with the current incoming call. (One per group type per group; otherwise, no per-station maximum.)
inspect ‡	Inspect Mode	Inspect (<i>display button</i>): used to display the extension number of the current ringing call, or the extension behind a subsequently pressed call appearance button. (One per-station maximum.)
int-aut-an	IntAutoAns	Internal Auto Answer; used to condition a type 731xH type station to automatically answer incoming internal calls. May also be administered on 730xH type stations administered as 731xH type stations. (One per station maximum.)

* The Automatic Call Distribution feature must be enabled on the System-Parameters Customer-Options form before the feature button can be administered.

** The Hospitality feature must be enabled on the System-Parameters Customer-Options form before the feature button can be administered.

‡ The voice terminal must be equipped with a display before the feature button can be administered.

Table 5-11. Voice Terminal Feature Button Descriptions (continued)

ADMINISTRATION NAME	BUTTON LABEL	DESCRIPTION
last-numb	LastNumb Dialed	Last Number Dialed: used to originate a call to the number last dialed by the station user. (One per-station maximum.)
link-alarm	Link Failure (link #)	Link Alarm: associated status lamp is used to indicate that a failure has occurred on one of the Processor Interface circuit pack data links. (One to eight per-station maximum.)
lsvn-call	Login SVN	Login Security Violation Notification: used to activate/deactivate call referral when a login security violation has been detected by the system. See "Security Violation Notification" for more information. (One per-system maximum.)
lwc-cancel	Cancel LWC	Leave Word Calling Cancel: used to cancel the last leave word calling message originated by the user. (One per-station maximum.)
lwc-lock	Lock LWC	Leave Word Calling Lock: used to lock the message retrieval capability of the display module on the station. (One per-station maximum.)
lwc-store	LWC	Leave Word Calling Store: used to leave a message for the user associated with the fast number dialed to return the call to the originator. (One per-station maximum.)
major-alm	Major Hdwe Failure	Major Alarm: associated status lamp is used to indicate that a vital system hardware component(s) has failed. This type of alarm represents a disruption of overall System performance. (One per-station maximum.)
man-msg-wt	Msg Wait (name or ext #)	Manual Message Waiting: used to turn on a message waiting lamp on the station associated with the button. Note that the Manual Message Waiting button may not point to a VDN. (No per-station maximum.)
man-overid ‡	Immediate Override	Immediate Manual Override (<i>display button</i>): used in association with the Time of Day Routing feature to temporarily override the routing plan in effect for the activating user's partitioned group number. The routing plan is overridden upon activation. (One per-station maximum.)
manual-in *	Manual In	Manual-in Mode: used to prevent the user from becoming available for new ACD calls upon completion of an ACD call by automatically placing the agent in the after call work mode. (One per split group; otherwise, no per-station maximum.)
mct-act	MCT Activation	Malicious Call Trace Activation: used to send a message to MCT controller consoles to indicate that someone want to trace a malicious call.
mct-contr	MCT Control	Malicious Call Trace Control: used to allow the console to take control of malicious call trace requests. (This button must be administered with the change-mct-group-extensions command.)
mj/mn-alm	Major/Minor Hdwe Failure	Minor Alarm: associated status lamp is used to indicate that a System hardware component has failed that will disrupt service on a limited scale. (One per-station maximum.)

* The Automatic Call Distribution feature must be enabled on the System-Parameters Customer-Options form before the feature button can be administered.

‡ The voice terminal must be equipped with a display before the feature button can be administered.

Table 5-11. Voice Terminal Feature Button Descriptions (continued)

ADMINISTRATION NAME	BUTTON LABEL	DESCRIPTION
msg-retr ‡	Message Retrieve	Message Retrieval (<i>display button</i>): used to place the station's display into the message retrieval mode. (One per-station maximum.)
mwn-act**	Message Waiting Act.	Message Waiting Activation (supports PMS feature): used to turn on a message waiting lamp on an associated station. (One per-station maximum.)
mwn-deact**	Message Waiting Deact	Message Waiting Deactivation (supports PMS feature): used to turn off a message waiting lamp on an associated station. (One per-station maximum.)
next ‡	Next	Next Message (<i>display button</i>): used to step to the next message when the station's display is in message retrieval mode. (One per-station maximum.)
night-serv	Night Serv	Night Service Activation: used to place the System into or out of the night service mode. (One per-system maximum.)
noans-alrt	RONA	Redirection on No Answer Alert: indicates a Redirection on No Answer timeout has occurred for the split. Administered on a per split/skill basis. (One per-split maximum.)
normal ‡	Normal Mode	Normal (<i>display button</i>): used to place the station's display into the normal call identification mode. (One per-station maximum.)
per-COline	CO Line (line #)	Personal CO Line: allows the user to receive calls directly via a specific trunk [One per group; otherwise, no per-station maximum.]
pms-alarm	PMS Failure	PMS Alarm: associated status lamp is used to indicate that a failure in the PMS has occurred. A major or minor alarm condition will raise the alarm. (One per-station maximum.)
pr-awu-alm	Auto Wakeup Aim	Automatic Wakeup Printer Alarm: associated status lamp is used to indicate that an automatic wakeup printer interface failure has occurred. (One per-station maximum.)
pr-pms-alm	PMS Ptr Alarm	PMS Printer Alarm: associated status lamp is used to indicate that a PMS printer interface failure has occurred. (One per-station maximum.)
pr-sys-alm	Sys Ptr Alarm	System Printer Alarm: associated status lamp is used to indicate that a System Printer (dedicated to Report Scheduler feature) interface failure has occurred. [One per-station maximum.]
print-msgs	Print Msgs	Print Messages: allows the user to print messages for any extension by pressing the button and then entering the extension number and a security code (if one assigned). (One per-station maximum.)

* The Automatic Call Distribution feature must be enabled on the System-Parameters Customer-Options form before the feature button can be administered.

** The Hospitality feature must be enabled on the System-Parameters Customer-Options form before the feature button can be administered.

‡ The voice terminal must be equipped with a display before the feature button can be administered.

Table 5-11. Voice Terminal Feature Button Descriptions (continued)

ADMINISTRATION NAME	BUTTON LABEL	DESCRIPTION
priority	Priority call	Priority Calling: allows the user to place a priority call by pressing the button and then dialing an extension, or change an existing call to a priority call by pressing the button after the extension has been dialed. (One per-station maximum.)
q-calls*	NQC	Queue Calls: associated status lamp flashes if a call warning threshold has been reached. (One per hunt group per-station maximum.)
q-time*	OQT	Queue Time: associated status lamp flashes if a time warning threshold has been reached. (One per hunt group per-station maximum.)
release	Release	Release: used to release an agent from an ACD call. (One per station)
ringer-off	Ringer Cutoff	Ringer-off used to silence the alerting ringer on the station. (One per-station maximum.)
rs-alert	System Reset Alert	System Reset Alert: the associated status lamp will light if the System has a problem that escalates beyond a warm start (One per-station maximum.)
rsvn-call	Remote SVN	Remote Access Barrier Code Security violation Notification Call: used to activate/deactivate call referral when a Remote Access Barrier Code security violation has been detected by the system. See "Security Violation Notification" for more information. (One per-system maximum.)
scroll ‡	Scroll	Scroll (<i>display button</i>); administrable on 7315H and 7317H stations. Button used to select one of two lines (alternates with each press) of the 16-character LCD display. Only one line can be displayed at a time. (One per station maximum.)
sd-stroke*	ACD SD Stroke Count	Automatic Call Distribution Single Digit Stroke Count: used to send a message to CMS to increment a stroke count number. The auxiliary field contains the stroke count number (0-9) to be incremented. (One per-station maximum.)
send-calls	Send All Calls	Send All Calls: used to send all calls to coverage as soon as they terminate at the station. (One per-station maximum.)
send-term	Send All Calls-TEG	Send All Calls For Terminating Extension Group: allows the user to forward all calls directed to a terminating extension group. (One per group; otherwise, no per-station maximum.)

* The Automatic Call Distribution feature must be enabled on the System-Parameters Customer-Options form before the feature button can be administered.

Table 5-11. Voice Terminal Feature Button Descriptions (continued)

ADMINISTRATION NAME	BUTTON LABEL	DESCRIPTION
serv-obsrv*	Service Observing	Service Observing: activates the Service Observing feature. Used to toggle between a listen-only and a listen-talk mode. Deactivate by hanging up or pressing another call-appearance button. (One per-station maximum.)
signal	Signal (name or ext #)	Signal: allows the user to manually signal (via ringing) a station associated with the button. Note that the button cannot point to a VDN. (One per signal extension maximum; otherwise, no per-station maximum.)
stored-num ‡	Stored Number	Stored Number (<i>display button</i>): used to place the station's display into the stored number mode. This allows the user to query button translations and display associated stored numbers. (One per-station maximum.)
term-x-gr	Term Grp (name or ext #)	Terminating Extension Group: used to provide one or more extensions (may not be a VDN extension) for a station. Calls may be received but not originated with this button. (One per group; otherwise, no per-station maximum.)
timer ‡	Timer	Timer (<i>display button</i>): used to start a dock on the station to display elapsed time. (One per-station maximum.)
trk-ac-alm	FTC Alarm	Facility Test Call Alarm: associated status lights when a successful Facility Test Call (FTC) has occurred. Pressing an FTC button (up to ten may be administered) when its status lamp is lighted will turn off all FTC status lamps whether or not the FTC is still in progress or has completed. FTC access is controlled via COR assignment. The status lamp provides an indication that a FTC has occurred.
trk-id ‡	Trunk ID	Trunk Identification (<i>display button</i>): used to identify the tac (trunk access code) and bunk member number associated with a call. (One per-station maximum.)
trunk-name ‡	Trunk Name	Trunk Name (<i>display button</i>): used to display the name of the trunk as administered on the CAS Main or on a switch without CAS. (One per-station maximum.)
trunk-ns*	Trunk Grp	Trunk-Group Night Service: used to place a trunk-group into night service. (One per trunk-group maximum.)
verify	Verify	Busy Verification: allows the user to make test calls and check the condition of a station, stations in a hunt group, or a trunk and quickly identify faulty equipment. (One per-station maximum.)
work-code*	Work Code	Call Work Code: allows an ACD agent after pressing "work-code" to send up to 16 digits (using the dial pad) to CMS. The data is associated with a current ACD call, and may represent account codes, social security numbers, or telephone numbers, for example. (One per-station maximum.)

* The Automatic Call Distribution feature must be enabled on the System-Parameters Customer-Options form before the feature button can be administered.

‡ The voice terminal must be equipped with a display before the feature button can be administered.

Table 5-12. Voice Terminal Feature Button Characteristics

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
Abbreviated Dialing	AD	abrv-dial (list ____ DC: ____)	1 per list/DC	1
	AbrvDial Mark	abr-spchar (Char: m)	1	
	AbrvDial Pause	abr-spchar (Char: p)	1	
	AbrvDial Program	abr-prog	1	
	AbrvDial Suppress	abr-spchar (Char: s)	1	
	AbrvDial Wait	abr-spchar (Char: w)	1	
Abbreviated Dialing [display button]	Stored Number	stored-num	1	2
Administered Connection [status lamp]	AC Alarm	at-alarm	1	
Alternate Facility Restriction Level	Alt-FRL	alt-frl	1 per system	
Automatic Call Distribution	After Call Work	after-call (Grp. ____)	1 per split group	3
	Assist	assist (Grp. ____)	1 per split group	3
	Auto In	auto-in (Grp. ____)	1 per split group	3
	Auxiliary Work	aux-work (Grp. ____)	1 per split group	3
	Manual-In	manual-in (Grp. ____)	1 per split group	3
	Release	release	1	
	Work Code	work-code	1	
	Stroke_	stroke-cnt (Code: _)	10 per terminal	17

* Refer to the previous table ("Voice Terminal Feature Button Descriptions") for feature button descriptions and notes.

** See Notes at end of table.

Table 5-12. Voice Terminal Feature Button Characteristics (continued)

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
Automatic Callback	Auto Callback	auto-cback	1	
Automatic Circuit Assurance	Auto-ckt Assure	aca-call	1	
Auto Wakeup [display button]	Auto Wakeup	auto-wkup	1 per split group	2
Bridged Call Appearance	<i>Extension</i>	brdg-appr	N	
	<i>Extension</i>	abrdg-appr	N	
Busy Verification	Verify	verify	1	
Call Appearance	<i>Extension</i>	call-appr	‡	
Call Coverage	Consult	consult	1	
	Coverage Callback	cov-cback	1	
	Send All Calls-TEG	send-term (Grp: __)	1 per Grp.	
	Go to Cover	goto-cover	1	
	Send All Calls	send-calls	1	
Call Coverage [display button]	Covr Msg Retrieve	cov-msg-rt	1	2
Call Forwarding	Call Forwarding	call-fwd	1	
Call Park	Call Park	call-park	1	
Call Pickup	Call Pickup	call-pkup	1	
Call Prompting [display button]	Caller Info	talk-info	1	
Centralized Attendant Service	CAS-Backup	cas-backup	1	
	Flash	flash	1	18
Data Call Setup	Data (data extension #)	data-ext (Ext: __)	1 per Ext.	
Date and Time [display-button]	Date Time	date-time	1	2
Demand Print	Print Msgs	print-msgs	1	
Display-Normal	local-norm	disp-norm	1	20
Do Not Disturb	Do Not Disturb	dn-dst	1	
Do Not Disturb [display buttons]	Do Not Disturb Ext	ext-dn-dst	1	2
	Do Not Disturb Grp	grp-dn-dst	1	2

* N = any number of buttons on the voice terminal can be assigned to this feature. Refer to the previous table ("Voice Terminal Feature Button Descriptions") for feature button descriptions and notes.

** See Notes at end of table.

‡ Refer to specific voice terminal information provided later in this chapter for maximum allowed.

Table 5-12. Voice Terminal Feature Button Characteristics (continued)

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
Elapsed Time [display button]	Timer	timer	1	2
Facility Busy Indication [status lamp]	Busy (trunk or extension #)	busy-ind (TAC/Ext:___)	1 per TAC/Ext.	4
Facility Test Calls [status lamp]	FTC Alarm	trk-ac-alm	10 per system	
Hardware Failure [status lamps]	Major Hdwe Failure	major-alm	10 per system	
	Major/Minor Hdwe Failure	mj/mn-alm	10 per system	
	DS1 (facility)	ds1-alarm	10 per system	
	PMS Failure	pms-alarm	1	
	PMS Ptr Alm	pr-pms-alm	1	
	CDR 1 Failure	cdr1-alm	1	
	CDR 2 Failure	cdr2-alm	1	
	Auto Wakeup Alm	pr-awu-alm	1	
	Sys Ptr Alm	pr-sys-alm	1	
Inspect [display button]	Inspect Mode	inspect	1	2
Integrated Directory [display button]	Integrtd Directory	directory	1	2
Intercom- Automatic	Autolcom (name or extension #)	auto-icom Grp:___ DC:___)	1 per Grp/DC	5
Intercom-Dial	Diallcom	dial-icom (Gp:___)	1 per Grp.	6
Internal Automatic Answer	Int AutoAns	int-aut-an	1	
Last Number Dialed	LastNumb Dialed	last-numb	1	

* Refer to the previous table ("Voice Terminal Feature Button Descriptions") for feature button descriptions and notes.

** See Notes at end of table.

Table 5-12. Voice Terminal Feature Button Characteristics (continued)

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
Leave Word Calling	LWC	lwc-store	1	
		lwc-cancel	1	
	Lock LWC	lwc-lock	1	
Leave Word Calling (Remote Message Waiting) [status lamp]	Message (name or extension #)	aut-msg-wt (Ext:___)	1 per Ext.	7
Leave Word Calling [display buttons]	Return Call	call-disp	1	2
	Message Retrieve	msg-retr	1	2
	Next	next	1	2
	Delete Message	delete-msg	1	2
Link Failure [status lamp]	Link Failure (Link No. __)	link-alarm (Link # __)	1 per Link #	8
Manual Signaling	Signal (name or extension #)	signal (Ext:___)	1 per Ext.	16
Manual Message Waiting	Msg Wait (name or extension #)	man-msg-wt (Ext:___)	1 per Ext.	9
Night Service	Night Serv	night-serv	1	
	Hunt Group	hunt-ns (Grp. __)	3 per Grp.	10
	Trunk Grp.	trunk-ns (Grp. __)	1 per Grp.	11
Normal Mode [display button]	Normal Mode	normal	1	2

* N = any number of buttons on the voice terminal can be assigned to this feature. Refer to the previous table ("Voice Terminal Feature Button Descriptions") for feature button descriptions and notes.

** See Notes at end of table.

Table 5-12. Voice Terminal Feature Button Characteristics (continued)

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
Personal Central Office Line	CO Line (telephone #)	per-COLine (Grp: __)	1 per Grp.	12
PMS Interface [display button]	Check-in	check-in	1	2
	Check-Out	check-out	1	2
	Message Waiting Act.	mwn-act	1	2
	Message Waiting Deact.	mwn-deact	1	2
Priority Calling	Priority Call	priority	1	
Privacy-Manual Exclusion	Exclusn	exclusion	1	
Queue Status Indications [status lamps]	NQC	q-calls (Grp: _)	1 per hunt group	13
	OQT	q-time (Gnp:)	1 per hunt group	13
Queue Status Indications [display buttons]	AQC	atd-qcalls	1	
	AQT	atd-qtime	1	19
Redirect On No Answer	RONA	noans-ahrt	1 per split	
Ringer Cutoff	Ringer Cutoff	ringer-off	1	
Scroll [display button]	Scroll	scroll	1	20
Service Observing ‡	Service Observing	serv-obsrv	1	
System Reset Alert	System Reset Alert [status lamp]	rs-alert	1	
Terminating Extension Group	Term Grp (name or extension #)	term-x-gr (Grp: __)	1 per Grp.	14

* Refer to the previous table ("Voice Terminal Feature Button Descriptions") for feature button descriptions and notes.

** See Notes at end of table.

‡ The use of service observing features may be subject to federal, state, or local laws, rules or regulations or require the consent of one or both of the parties to the conversation. Customers should familiarize themselves with and comply with all applicable laws, rules and regulations before using these features.

Table 5-12. Voice Terminal Feature Button Characteristics (continued)

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
Time of Day Routing [display buttons]	Immediate Override	man-overid	1	2
	Clocked Override	clk-overid	1	2
Trunk Identification [display button]	Trunk-ID	trk-id	1	2
Trunk Group Name [display button]	Trunk-Name	trunk-name	1	2
UCD/DDC	Auxiliary Work	aux-work (Grp: __)	1 per Grp.	
UCD/DDC/Intraflow Call Coverage (Answer Group)	Coverage (group number, type or name or ext #)	in-call-id (Type: __ Grp: __)	1 per Type/Grp.	15

* Refer to the previous table ("Voice Terminal Feature Button Descriptions") for feature button descriptions and notes.

** See the following Notes.

Notes:

1. List: List number 1 to 3 where the destination number is stored.
DC: Dial codes of destination number.
2. — Display-type buttons may be administered if the voice terminal is equipped with the optional Digital Display or alphanumeric display.
3. Grp: The split group number for ACD.
4. TAC/Ext: Trunk or extension number of voice terminal to be monitored.
5. Grp: Dial Icom group number. This extension and destination extension number must be in the same group.
6. Grp: Dial Icom group number.
7. Ext: Extension number of principal. (May be a VDN extension.)
8. Link Link number—1 to 8 for multi-carrier cabinets or 1 to 4 for single-carrier cabinets.
9. Ext: The destination extension. (May be a VDN extension.)
10. Grp: Hunt group number.
11. Grp: Trunk group number.
12. Grp: CO line group number.
13. Grp: Group number of hunt group.
14. Grp: TEG Number.
15. Type: A "c" for coverage answer group, "h" for a uniform call distribution, or direct department calling group.
Grp: The number of the group.
16. - The extension may not be a VDN extension.
17. Code: Stroke count number (0 through 9).
18. Flash: Not administrable on Attendant Consoles.
19. atd-qcalls: Zero-seeking attendant calls reported.
20. Scroll, Administrable on 7315H and 7317H stations equipped with display.
Local/Norm Scroll button enables user to toggle between two lines and thus see both lines of the display.

Station Forms — Field Descriptions

The following provides descriptions of the fields that are displayed on the various pages of the station forms. Some of the fields are only used for specific voice terminal types; others are used for all terminals. Fields and/or pages of the form that require unique consideration are covered where appropriate with the respective voice terminal coverage. The descriptions are organized by form page number and listed alphabetically within each grouping for easy access.

Page 1 of the Form

- **Adjunct Supervision** — Enter “y” (default) if an analog disconnect signal will be automatically sent to the port after a call is terminated. This signal is used by analog devices such as answering machines and speakerphones to turn the devices off after a call has terminated. In a hunt group environment, however, this signal blocks the reception of zip tone and incoming call notification by an auto answer station when a call is queued for the station. In these environments, set this field to “n” so that hunt group agents will be alerted to an incoming call.
- **Att. Call Waiting Indication** — Enter “y” (default) to assign the Attendant Call Waiting feature to the voice terminal. This allows attendant originated and extended calls to a busy single-line voice terminal to wait and send a distinctive two-burst call waiting tone to the single-line user. Use of the feature is denied if the Data Restriction field is “y” or the Switchhook Flash field is “n”, or if via the voice terminal’s COS assignment, the Data Privacy feature is active.
- **Audible Message Waiting** — Enter “y” to have the voice terminal user receive a “stutter” dial tone when initiating a call. The tone indicates that the user has a message waiting. This field only appears if the Audible Message Waiting feature has been activated at the System-Parameters Customer-Options form. This field does not control the activity of the Message Waiting Lamp.
- **AUDIX Name** — Name of AUDIX machine as it appears in the User-Defined Adjunct Names form. Only displayed for the G3r V2 configuration.
- **Messaging Server Name** — Name of the server as it appears in the User-Defined Adjunct Names form. Only displayed for the G3r V2 configuration.
- **Auto Answer** — Entering “all” allows all calls (ACD and non-ACD) terminated to an idle station to be cut through immediately. Entering “acd” allows only ACD split/skill calls and direct agent calls to auto answer. Non-ACD calls terminated to a station with Auto Answer set to “acd” will ring audibly. Entering “none” causes all calls terminated to this station to receive some sort of audible ringing treatment. Default is “none”.



NOTE:

For analog stations, if Auto Answer is set to “acd” and the station is off-hook and idle, only ACD split/skill calls and direct agent calls will auto answer while non-ACD calls will get busy treatment. If the

station is active on an ACD call and a non-ACD call arrives, the Agent will get call waiting tone.

- **BCC** — Displayed when the ISDN-PRI option is enabled on the System-Parameters Customer-Options form. Display-only field set to “0” (default) for stations (that is, indicates voice or voice-grade data).

**NOTE:**

Refer to the Generalized Route Selection feature description in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls. The BCC value is used to determine compatibility when non-ISDN-PRI facilities are connected to ISDN facilities (ISDN-PRI Interworking feature).

- **Bridged Call Alerting** — Enter “y” to allow incoming calls on bridged appearances of another terminal’s primary extension number, TEG calls, or PCOL calls; otherwise, enter “n” (default).
- **Call Waiting Indication** — Enter “y” (default) to activate the Call Waiting Termination feature for the voice terminal. This allows other voice terminal, attendant-originated, and outside calls to busy single-line voice terminals to wait and sends a distinctive call waiting tone to the single-line user. Use of the feature is denied if the Data Restriction field is “y” or the Switchhook Flash field is “n”, or if via the voice terminal’s COS assignment, the Data Privacy feature is active.
- **CDR Privacy** — An administrable option that allows digits in the called number field of an outgoing call to be blanked, on a per-station basis. The number of blocked digits is administered systemwide in the “Privacy - Digits to Hide” field on the Feature-Related System Parameters form. Enter “y” to enable the call privacy feature for each station. Default is “n”.
- **COR** — Enter a class of restriction (COR) number (0 through 95) that reflects the desired restriction; default is “1”.
- **COS** — Enter the desired class of service (COS) number (0 through 15) to designate allowed features; default is “1”.
- **Coverage Msg Retrieval** — Applies if the voice terminal is marked for LWC Reception. Enter a “y” (default) to allow a user in the voice terminal’s Coverage Path to retrieve Leave Word Calling (LWC) messages for this voice terminal.
- **Coverage Module** — Enter “y” to indicate the presence of a coverage module connected to the station. Default is “n”. It adds an additional page containing the button assignment configuration for the module.
- **Coverage Path** — Enter a coverage path number (1 through 600) from a previously administered Call Coverage Path form. Leave blank if no coverage is desired.
- **CRV Length** — Displayed for ASAI stations. Enter “1” (default) or “2” to indicate the length of CRV for each interface.

- **Data Module** — Indicates if a data module is to be administered with the voice terminal. Enter “y” or “n” (default). If a “y” is entered, then Page X of the Form is displayed (see below).
- **Data Restriction** — Enter “y” to prevent tones, such as Call Waiting Tones, from interrupting this user’s calls. Data restriction provides permanent protection and cannot be changed by the voice terminal user. Default is “n”. This field should not be assigned if Auto Answer is “all” or “acd”.
- **Display Language** — Displayed when Display Module is “y”. Enter “english” (default), “french”, “italian”, “spanish”, or “user-defined”.
- **Display Cartridge** — An entry of “y” indicates there is a display cartridge associated with the station (voice terminal 7404D only). Default is “n”. It generates an additional page containing button assignment configurations for display buttons.
- **Distinctive Audible Alert** — Enter “y” (default) so the voice terminal can receive the three different types of ringing patterns that identify the type of incoming calls. Features that provide distinctive ringing might function improperly toward an off-premises voice terminal.
- **Endpt Init** — Displayed if the MIM Support field entry is “y”. Indicates terminal’s endpoint initialization capability. The endpoint initialization procedure, required for multipoint operation, associates the User Service Order Profile (USOP) translation belonging to the extension with the physical endpoint on the ISDN-BRI interface. This association is made via the Service Profile Identifier (SPID) that has been administered on the System and entered into the ISDN-BRI terminal. This implies that, for a ISDN-BRI terminal to become operational in the multipoint configuration, both the administered SPID and the SPID programmed into the ISDN-BRI terminal must be the same. Therefore, the SPID of a new or reused terminal must be programmed to match the administered SPID value. For information on SPID installation, see “Appendix A”. Valid entries are “y” (default) or “n”.
- **Extension** — When completing a blank paper form, enter a valid extension number (1 to 5 digits) that agrees with the dial plan. When implementing the form, “Extension” is part of the input command used to access the form and is a display-only field.
- **Feature Module** — Enter “y” to indicate the station has a feature module connected. Default is “n”. It adds an additional page containing the button assignment configuration for the module.
- **Fixed TEI** — Appears for an ISDN-BRI data module. Indicates if the endpoint has a fixed Terminal Endpoint Identifier (TEI). This field only appears for ISDN-BRI data modules. The TEI identifies a unique access point within a service. For terminals with the automatic TEI capability, the system dynamically assigns the TEL. Therefore, for the fixed TEI terminals, TEIs must be administered. Valid entries are “y” or “n” (default). If a “y” is entered, then the TEI field is displayed.

- **Idle Appearance Preference** — Enter “y” or “n” (default) to indicate which call appearance is selected when the user lifts the handset and there is an incoming call. If “y” is entered, the Idle Appearance Preference is set and the user is connected to an idle call appearance instead of the ringing call. If “n” is entered, Alerting Appearance Preference is set and the user is connected to the ringing call appearance.
- **LWC Activation** — Enter “y” (default) to allow internal voice terminal users to leave short LWC messages for this terminal. If the system has the hospitality features, enter “y” for voice terminals in the guest rooms if the terminal designated to receive failed wakeup messages is to receive LWC messages indicating incomplete wakeup calls. Enter “y” if “audix” was entered for LWC Reception.
- **LWC Reception** — Enter “msa-spe” (default) if LWC messages are stored in the system or on the Messaging Server Adjunct - Switch Processor or enter “audix” if the messages are stored on the Audio Information Exchange System; otherwise, enter “none”.
- **Lock Messages** — Enter “y” to restrict other users from reading or canceling the voice terminal messages or retrieving messages via Voice Message Retrieval; otherwise, enter “n” (default).
- **Message Waiting Indicator** — Appears for ISDN-BRI data modules and applies to 500, 2500, and 7104A voice terminals. Enter “led” if the message waiting indicator is a light-emitting diode (LED) or “neon” if the indicator is a neon indicator.
- **MIM Mtce/Mgt** — Displayed if the MIM Support field entry is “y”. Used to indicate if the terminal supports MIM Maintenance and Management capabilities other than endpoint initialization. Valid entries are “y” (default) or “n”.
- **MIM Support** (Management Information Message Support) — Appears for ISDN-BRI data modules. Used to support MIM endpoint initialization (SPID support) and other Maintenance/Management capabilities. Valid entries are “y” (default) or “n”. If “y” is entered, the following dependent fields appear: Endpt Init and MIM Mtce/Mgt.
- **Name** — Enter up to a 15-character name for the person associated with this voice terminal. This field can be shared with a Room number. The name assigned to a voice terminal remains with that voice terminal until it is changed.

The Integrated Directory feature lists the names as they should be entered on the forms. Names can be entered in all uppercase letters, all lowercase letters, or a mixture of uppercase and lowercase letters. Also, the first or last name can be entered first and a middle name or initial can be used. Spaces or commas can be used between names. For systems using a 3B2 Messaging Server Adjunct, the last name must be the first entry.

Periods, hyphens, apostrophes, or other special characters, if used, are discarded by the system when the name is entered into the database. The following examples show formats that are required for the name to be

retrieved by the Integrated Directory feature. Note also that this field can be any printable character string or can be left blank.

- Bill J Doe
- Doe, Bill J
- Bill Doe

- **Off Premise Station** — Enter “y” if this voice terminal is not located in the same building with the system. Enter “n” (default) if the voice terminal is located in the same building with the system. If “y” is entered, the R Balance Network field must be completed.
- **PCOL/TEG Call Alerting** — Enter “y” to alert the station for Personal CO Line/Terminating Extension Group calls. Default is “n”.
- **Personalized Ringing Pattern** — Enter a Personalized Ringing Pattern (1 through 8) as follows (default is “1”):

Ring Pattern	Tone Sequence
1	MMM (standard ringing)
2	HHH
3	LLL
4	LHH
5	HHL
6	HLL
7	HLH
8	LHL

L = 530 Hz, M = 750 Hz, and H = 1060 Hz

- **Port** — Enter seven characters.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 32

NOTE:

A 1-character entry of “X” in the Port field can be used to indicate that there is no hardware associated with the port assignment (Administration Without Hardware feature). These stations are referred to as “phantom stations”.

For DCP sets, the port may only be assigned once. ISDN-BRI provides multipoint configuration capability that allows a previously assigned port to be specified more than once as follows: 2 stand-alone voice endpoints, 2 stand-alone data endpoints, or 1 integrated voice and data endpoint.

- **R Balance Network** — Enter “y” to select the R Balance Capacitor network, or “n” to select the standard resistor capacitor network. This field must be completed if “y” was entered in the Off-Premise Station field. Enter “n” (default) when the station port circuit is connected to terminal equipment (such as SLC carriers or impedance compensators) optioned for 600 ohm input impedance and the distance to the terminal equipment from the system is less than 3,000 feet. Enter “y” in all other cases.
- **Redirect Notification** — Enter “y” (default) to give a half ring at this voice terminal when calls to this terminal are redirected (via Call Forwarding or Call Coverage). Enter “y” if audix was entered for LWC Reception.
- **Restrict Last Appearance** — Enter “y” (default) to restrict the last idle call appearance for incoming priority calls and outgoing call originations only.
- **Security Code** — Enter a 4-digit security code required by users to retrieve messages via Demand Print or Voice Message Retrieval.
- **SPID** — (Service Profile identifier) Displayed when MIM Support is “y”. Enter a variable length parameter (up to 10 digits). SPID is a numeric string, which means that the value of “00” is different from “000”. The SPID must be different for all terminals on the BRI and from the Service SPID. The SPID should always be assigned. If the SPID is not assigned for the first BRI on a port, any other BRI assignment to that port will be blocked. Default is the station extension.

**NOTE:**

If using the Administration Without Hardware feature for an ISDN-BRI extension (an “X” in the Port field) and Terminal Translation Initialization (TTI) is intended to be used to assign the port, then the SPID number must equal the station number.

- **Switchhook Flash** — Enter “y” (default) to allow users to use the switchhook flash function to activate the Conference/Transfer/Hold and Call Waiting features; otherwise, enter “n”. An “n” entered in this field disables the flash function, and when the switchhook is pressed while active on a call, the call will be dropped. If this field is set to “n”, the Call Waiting Indication field must be set to “n”.
- **TEI** — Displayed when the Fixed TEI field is “y”. Enter a 1- or 2-digit number in the range of 0 through 63; default is blank.
- **Tests** — Enter “y” (default) to enable port maintenance tests. If terminal equipment (dictaphone) connected to the port does not support these tests, “n” must be entered in the field.
- **Type** — Enter the voice terminal type.
- **XID** — Appears for an ISDN-BRI data module or an ASAI link. Used to identify layer 2 XID testing capability. Valid entries are “y” (default) or “n”.

Page 2 of the Form

- **Abbreviated Dialing List1:, List2:, List3:** — Enter “p” (personal), “s” (system), “g” (group), or “e” (enhanced). Up to three AD lists can be accessed by the voice terminal. If “p” or “g” is entered, a personal list number or a group number, respectively, is also required.
- **Building** — Enter up to seven characters to identify the voice terminal's building location.
- **Button Assignments** — The feature buttons that can be assigned to voice terminals are listed with each terminal's coverage. Depending on the button type, additional auxiliary information may be required when administering buttons.
- **Cable** — Enter up to five characters to identify the cable number that connects the voice terminal jack to the system. This field may be left blank. This information can also be entered in the Blank column on the Port Assignment Record.
- **Cord Length** — Enter a number from 0 to 99 to specify the length (in feet) of the cord attached to the receiver; default is 0.
- **Floor** — Enter up to seven characters to identify the voice terminal's floor location.
- **Headset** — Enter “y” if this terminal has a headset; otherwise, enter “n” (default).
- **HOT LINE DESTINATION** — Abbreviated Dialing List Number (From above) — Enter “1”, “2”, “3”, or blank. Default is blank. This field identifies the abbreviated dialing list to access when originating a call. It refers to the abbreviated dialing lists associated with the station.
- **HOT LINE DESTINATION** — Dial Code — Enter a number from 0 to 999 or blank. Default is blank. This field is the index for the Abbreviated Dialing List that contains the digits to be dialed during origination.
- **Jack** — Enter up to five characters that are used to identify the jack location where the voice terminal is connected. This field may be left blank.
- **Room** — Enter up to ten characters to identify the voice terminal's location. This field may be blank.

If this station is one of several to be assigned a guest room and the Hospitality-Related System Parameters form has “y” entered in the “Display Room Information in Call Display” field, enter up to five characters in the Room field to identify the guest room number.
- **Set Color** — Enter up to 6 characters to describe the set color.
- **Speaker Phone** — Enter “y” to indicate a speakerphone will be attached to the voice terminal; default is “n”.

Page X of the Form — Data Module

- **Abbreviated Dialing List1:** — Enter “p” (personal), “s” (system), “g” (group), or “e” (enhanced). If “g” or “p” is entered, a group number or personal list number respectively is also required. The entry in this field and the HOT LINE DESTINATION field support the Data Hot Line feature.
- **Assigned Member — Ext** — Make no entry. The extension number is automatically assigned when the system is administered. This is the extension number of the user who has an associated Data Extension button and will share the module.
- **Assigned Member — Name** — Display-only field. Contains the name assigned to the Assigned Member - Ext number.
- **BCC** — Displayed when ISDN-PRI is enabled on the System-Parameters Customer-Options form (display-only field).



NOTE:

Refer to Generalized Route Selection in *DEFINITY Communications System Generic 3 V2 Feature Description*, 555-230-204, for a detailed description of Bearer Capability Classes (BCCs) and their use to provide specialized routing for various types of voice and data calls. The BCC value is used to determine compatibility when non-ISDN-PRI facilities are connected to ISDN facilities (ISDN-PRI Interworking feature).

- **COR** — Enter the desired Class of Restriction (COR) number (0 through 95) that reflects the desired restriction; default is “1”.
- **COS** — Enter the desired Class of Service (COS) number (0 through 15) to designate allowed features; default is “1”. Refer to Class of Service form for additional information on the allowed features.
- **Data Extension** — Enter the extension number assigned to the data module. A data extension can be a 1- to 5-digit number and must agree with the System’s Dial Plan.
- **Default Dialing Abbreviated Dialing Dial Code** — Displayed when the Special Dialing Option field is “default”. Enter a list number (0 through 999) associated with the above AD List. The associated AD number will be dialed when the user goes off-hook and enters a carriage return following the “DIAL” prompt. The data call originator can also perform data terminal dialing by specifying a dial string that may or may not contain alphanumeric names.
- **HOT LINE DESTINATION — Abbreviated Dialing Dial Code (From above list)** — Displayed when Special Dialing Option is “hot-line”. Enter a list number (associated with the above AD List) from 0 to 999. The associated AD number will be dialed when the user goes off-hook on a Data Hot Line call.

- **ITC (Information Transfer Capability)** — The field is not available for voice-only stations or BRI stations. Valid entries are “restricted” (default) and “unrestricted”. This field is used to determine the type of transmission facilities to be used for ISDN calls originated from this endpoint.

When “unrestricted”, only unrestricted transmission facilities will be used to complete the call. An unrestricted facility is a transmission facility that does not enforce 1’s density digital transmission (that is, digital information is sent exactly as is).

When “restricted”, either restricted or unrestricted transmission facilities will be used to complete the call. A restricted facility is a transmission facility that enforces 1’s density digital transmission (that is, a sequence of eight digital zeros will be converted to a sequence of seven zeros and a digital one).

- **Name** — Enter the name of the user associated with the data module. The name is optional, it can be left blank.
- **Special Dialing Option** — Enter one of three dialing options that are available. This identifies the type of dialing for calls when this data module originates calls. Valid entries are “hot-line”, “default”, or leave blank for regular (normal) keyboard dialing.
- **Circuit Switched Data Attributes** — The following field only appears on the ISDN-BRI Data Module Form:
 - **Default Duplex** — Used to identify the duplex mode. Valid entries are “full” (default) or “half”.
 - **Default Mode** — Used to identify the data mode. Valid entries are “sync” or “async” (default).
 - **Default Speed** — Used to identify the data rate. Valid entries are “1200” (default), “2400”, “4800”, and “19200”.
- **Data Module Capabilities** — The following fields only appear on the ISDN-BRI Data Module Form:
 - **Origination Default Data Applications** — Used to identify mode to be used for originating data calls when the mode is not specified with the calling parameters. This mode will also be used for terminating trunk calls that do not have bearer capability specified or administered connections. Possible mode values are M0 (mode 0), M1 (mode 1), M2 (mode 2), and M3/2 (mode 3/2 adaptable), or blank. Valid entries are “M0”, “M1”, “M2_A” (default), “M2_S”, or “M3/2”.

10-MET, 20-MET, and 30-MET Voice Terminals

This form is used to implement 10-, 20-, and 30-MET voice terminals.

Administration Commands

The following administration commands can be used to access the Voice Terminal form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	station	xxxxx (extension number) or ('next')
change	station	xxxxx (extension number)
display	station	xxxxx (extension number)
duplicate	station	
list	station	[x (extension)]['ext' x]['to-ext' x]['port' x]['type' x] ['count' n]['print' or 'schedule']
remove	station	[xxxxx] (extension number)

- * Brackets [] indicate the qualifier is optional. Single quotes (') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Please review the “Voice Terminals — General” information at least once before completing the form. General information, including feature button descriptions and characteristics is covered. In addition, descriptions of the administrable fields appearing on Pages 1 and 2 of the form are provided in the “Voice Terminals — General” section. Instructions are provided below for fields and/or pages of the form that require additional consideration because of the terminal type.

Page 1 of the Form

- **Type** — Enter “10MET”, “20MET”, or “30MET” as appropriate.

Page 2 of the Form

■ BUTTON ASSIGNMENTS

The feature buttons that can be assigned to the 10/20/30 MET sets are listed below. The abbreviated software name (that is, administration name) as shown on the following list must be entered on the form. Depending on the button type, additional auxiliary information may be required when administering buttons.

■ abr-prog	■ consult	■ per-COline
■ abr-spchar	■ cov-cback	■ pros-alarm
■ abrdg-appr	■ data-ext	■ pr-awu-alm
■ abrv-dial	■ dial-icom	■ pr-pms-alm
■ at-alarm	■ dn-dst	■ pr-sys-alm
■ aca-call	■ ds1-alarm	■ print-msgs
■ after-call	■ exclusion	■ priority
■ alt-frl	■ flash	■ q-calls
■ assist	■ goto-cover	■ q-time
■ atd-qcalls	■ hunt-ns	■ release
■ atd-qtime	■ in-call-id	■ ringer-off
■ aut-msg-wt	■ int-aut-an	■ rs-alert
■ auto-cback	■ last-numb	■ rsvn-call
■ auto-icom	■ link-alarm	■ send-calls
■ auto-in	■ lsvn-call	■ send-term
■ aux-work	■ lwc-cancel	■ serv-obsrv
■ brdg-appr	■ lwc-store	■ signal
■ busy-ind	■ major-alm	■ stroke-cnt
■ call-appr	■ man-msg-wt	■ term-x-gr
■ call-fwd	■ manual-in	■ trk-ac-alm
■ call-park	■ mct-act	■ trunk-ns
■ call-pkup	■ mct-contr	■ verify
■ cas-backup	■ mj/mn alm	■ work-code†
■ cdr1-alm	■ night-ser	
■ cdr2-alm	■ noans-alrt	

† Stations administered with displays only.

The figures entitled “10-MET Voice Terminal”, “20-MET Voice Terminal”, and “30-MET Voice Terminal”, respectively, which appear at the end of this section dealing with MET Voice Terminals, show the voice terminal button number assignments in relation to the button numbers on the associated Voice Terminal Forms. The first three buttons are defaulted as call appearance.

Page 3 of the Form (20- and 30-MET Only)

■ FEATURE BUTTON ASSIGNMENTS

The feature buttons that can be assigned to the 20/30 MET sets Page 3 of

3 are the same as those listed for BUTTON ASSIGNMENTS above.

The figures entitled "20-MET Voice Terminal" and "30-MET Voice Terminal", respectively, which appear at the end of this section dealing with MET Voice Terminals, show the voice terminal button number assignments in relation to the button numbers on the associated Voice Terminal Forms.

Page 1 of X		
STATION		
Extension: ____	BCC: 0	
Type: ____	Lock Messages: n	COR: 1
Port: ____	Security Code: ____	COS: 1
Name: ____	Coverage Path: ____	
FEATURE OPTIONS		
LWC Reception? msa-spe	Coverage Msg Retrieval? y	
LWC Activation? y	Auto Answer: none	
CDR Privacy? n	Data Restriction? n	
Redirect Notification? y	Idle Appearance Preference? n	
Bridged Call Alerting? n	Restrict Last Appearance? y	
AUDIX Name: ____	Audible Message Waiting? y	
Messaging Server Name: ____		

Screen 5-111. 10 MET, 20 MET, and 30 MET Form (Page 1 of X)

Implementation Notes:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

The AUDIX Name and Messaging Server Name fields are only displayed on G3r V2 configurations.

		Page 2 of X
STATION		
SITE DATA		
Room: _____		Headset? n
Jack: _____		Speaker? n
Cable: _____		Mounting? d
Floor: _____		Cord Length: 0_
Building: _____		Set Color: _____
ABBREVIATED DIALING		
List1: _____	List2: _____	List3: _____
BUTTON ASSIGNMENTS		
1: call-appr_		
2: call-appr_		
3: call-appr_		
4: _____		
5: _____		

Screen 5-112. 10 MET, 20 MET, and 30 MET Form (Page 2 of X)

Implementation Note:

The first three button assignments are defaulted as call-appr (call appearance).

		Page 3 of 3
STATION		
FEATURE BUTTON ASSIGNMENTS		
1: _____	11: _____	
2: _____	12: _____	
3: _____	13: _____	
4: _____	14: _____	
5: _____	15: _____	
6: _____	16: _____	
7: _____	17: _____	
8: _____	18: _____	
9: _____	19: _____	
10: _____	20: _____	

Screen 5-113. 20 MET and 30 MET Form (Page 3 of 3)

Implementation Notes:

Buttons 1-5 may only be assigned "call-appr", "abrd-appr", or "brdg-appr".

Buttons 11-20 are only displayed for the 30-MET set.

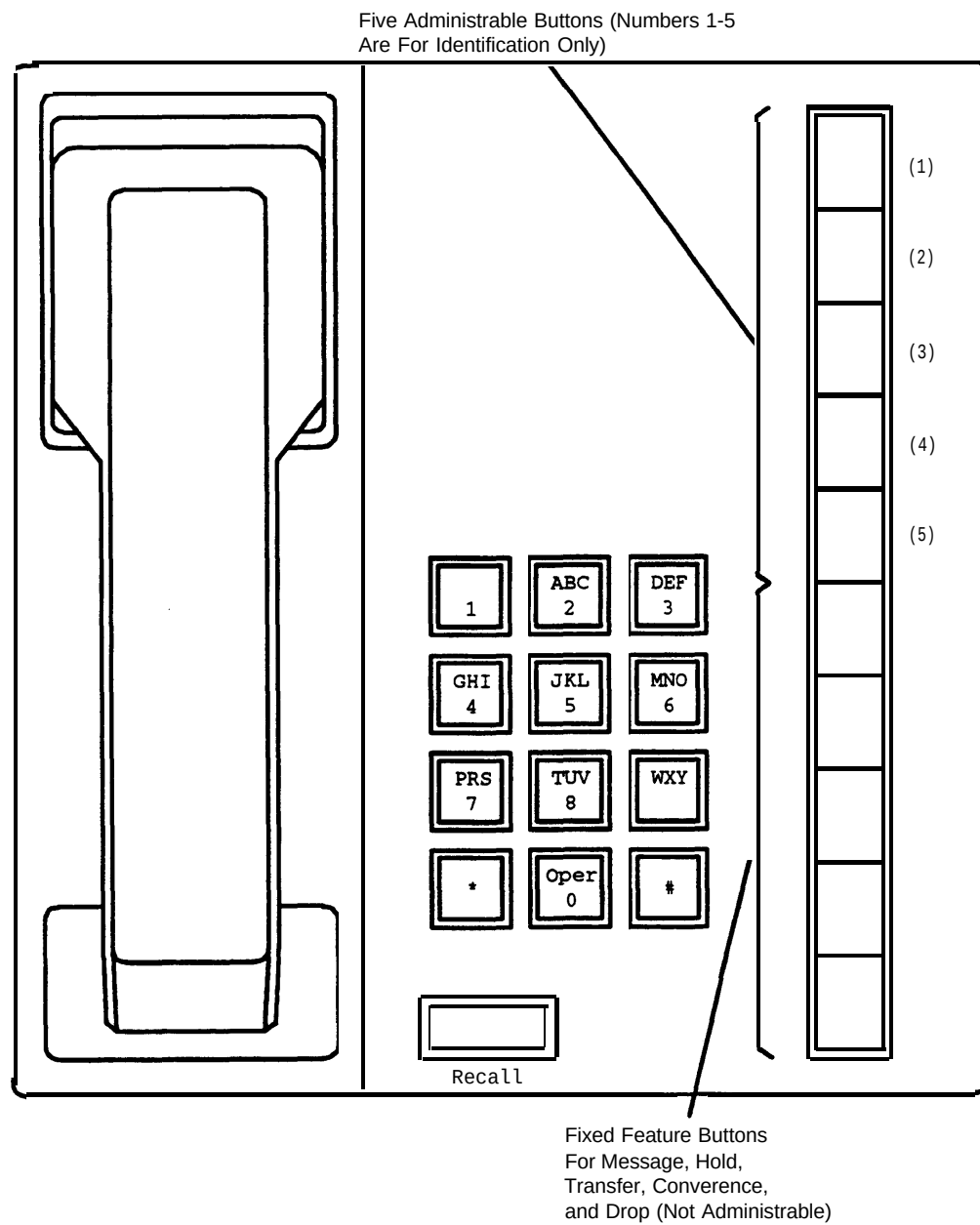


Figure 5-14. 10-MET Voice Terminal

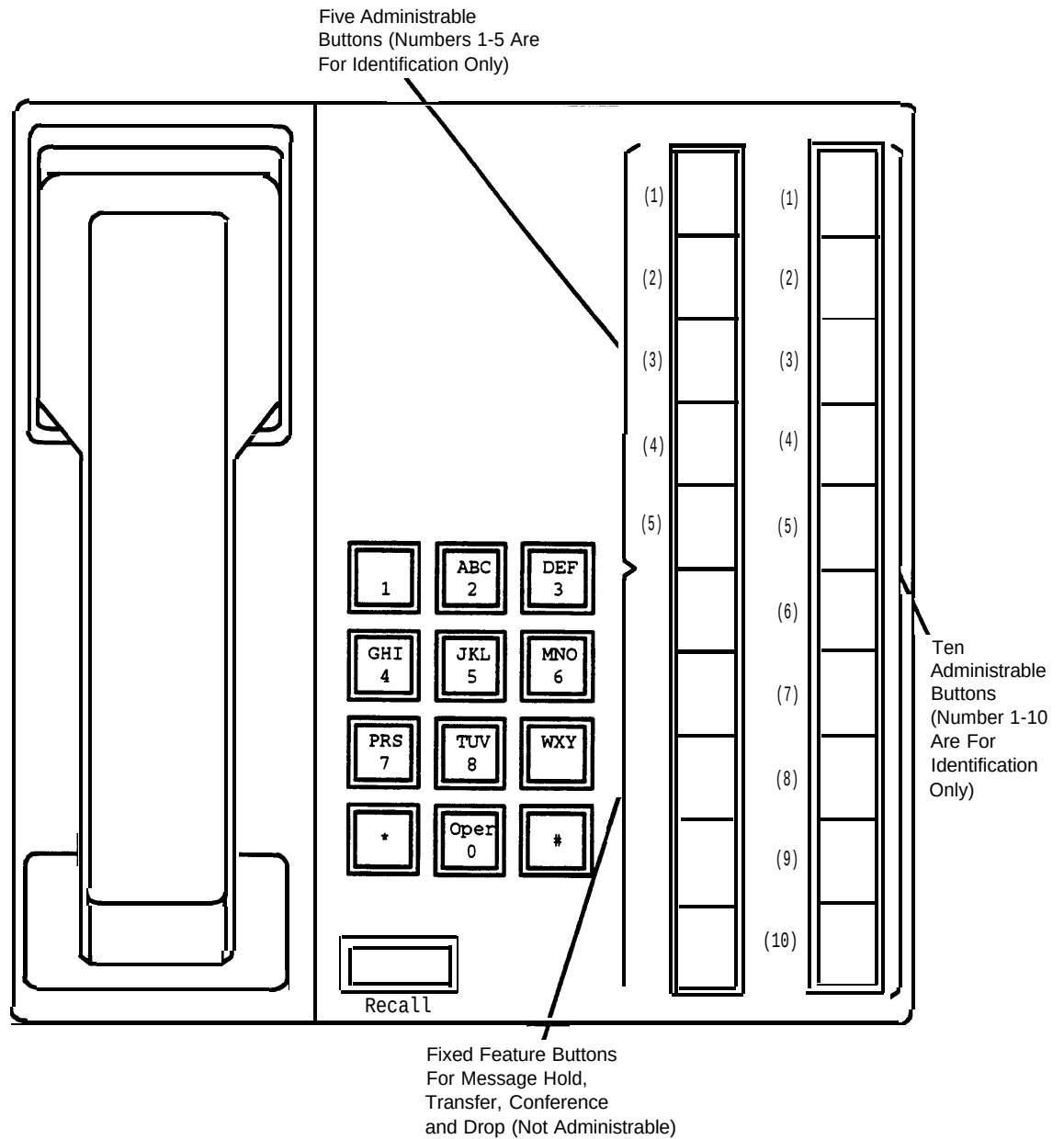


Figure 5-15. 20-MET Voice Terminal

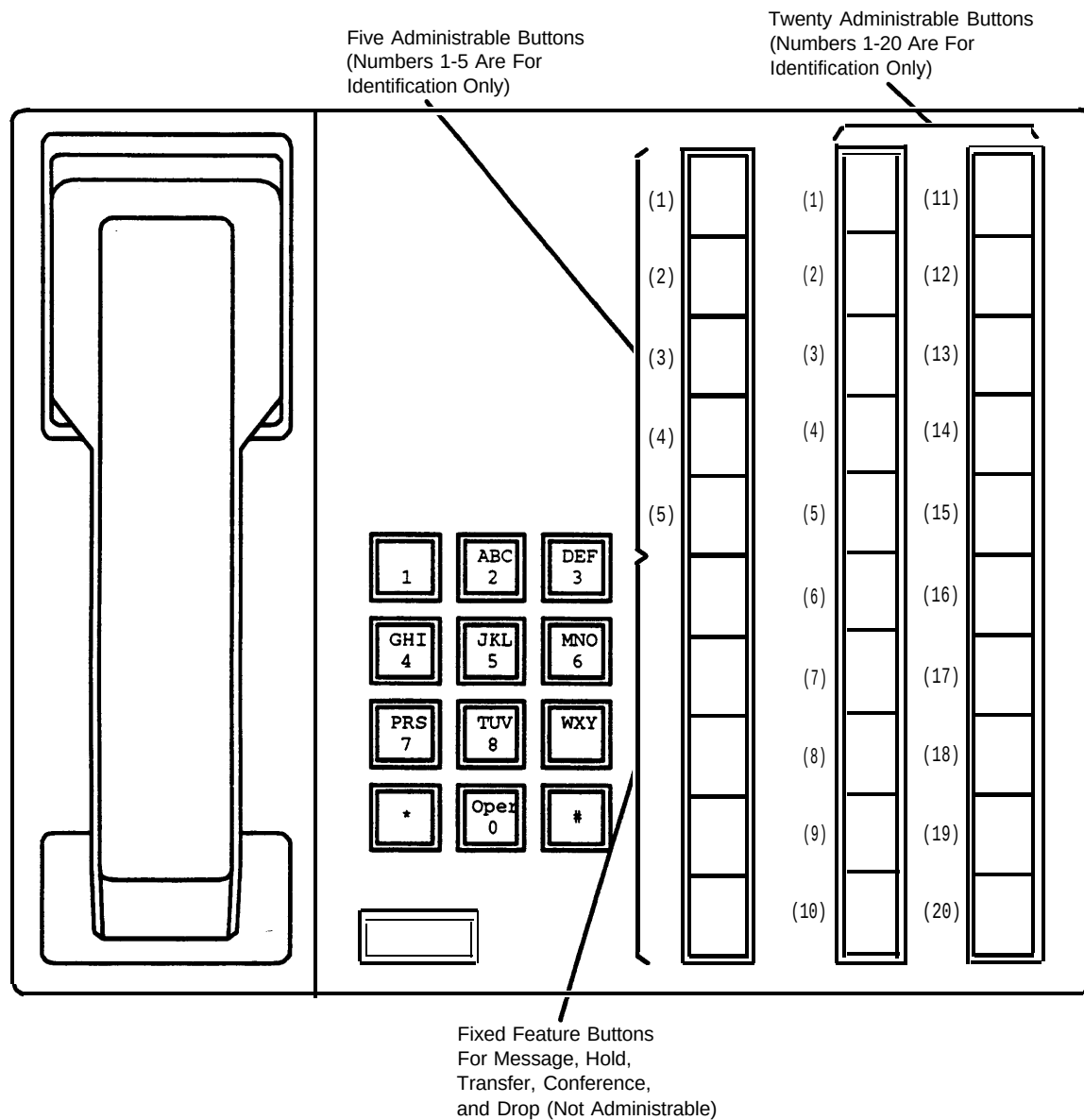


Figure 5-16. 30-MET Voice Terminal

500, 2500, K2500, 7101A, 7102A, 7103A, 7104A, 8110 and DS1FD Voice Terminals

This form is used to implement a 500, 2500, 7101A, 7102A, 7103A, 7104A, 8110, or DS1FD single-line voice terminal. The terminals are shown in the figures immediately following the sample station forms in this section.

This form is also used to implement the K2500 Key Phone System Interface. This has the same administration as the 2500 voice terminal, but has the ability to accept either rotary or DTMF digits.



NOTE:

The K2500 may not be administered to ports on a TN2135 Analog Line circuit pack.

Administration Commands

The following administration commands can be used to access the Voice Terminal form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	station	xxxxx (extension number) or ('next')
change	station	xxxxx (extension number)
display	station	xxxxx (extension number)
duplicate	station	
list	station	[x (extension)][['ext' x]][['to-ext' x]][['port' x]][['type' x]][['count' n]][['print' or 'schedule']]
remove	station	xxxxx (extension number)

- * Brackets [] indicate the qualifier is optional. Single quotes (') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Please review the "Voice Terminals — General" information at least once before completing the form. General information, including feature button descriptions and characteristics is covered. In addition, descriptions of the administrable fields appearing on Pages 1 and 2 of the form are provided in the "Voice Terminals — General" section. Instructions are provided below for fields and/or pages of the form that require additional consideration because of the terminal type.

Page 1 of the Form

- **Type** — Enter “500”, “2500” (see note), “k2500”, “7101A”, “7103A”, “7104A”, “8110”, or “ds1fd” as appropriate.



NOTE:

For a 7102A Voice Terminal, enter “7101A” in the Type field.

For a 2500 DMGC voice terminal, enter “7101A” in the Type field.
This enables the Recall button and switchhook flash functions.

The “ds1fd” designation was designed to allow a voice response unit to communicate with a DS1 board on the switch. At the far end, the voice response unit typically uses a DS0 on a channel bank. At the PBX, the DS0 enters the switch on the DS1 trunk to which the channel bank is connected.

- **Tests** — Enter “y” to enable port maintenance tests. Enter “n” when the voice terminal is connected through a peripheral unit, such as a dictating machine, that will cause the tests to fail. Default is “y”.

Page 2 of the Form

- **Abbreviated Dialing List1:, List2:, List3:** — Up to three AD lists may be accessed by the voice terminal. Enter “p” for personal, “s” for system, “g” for group, or “e” enhanced. If “p” or “g” is entered, a personal list number (1 through 3) or a group number (1 through 100), respectively, is also required. If the set type is a 7103A, then enter “7103A” as a List type.

Page 1 of 2

STATION		
Extension: _____	BCC: 0	
Type: _____	Lock Messages: n	COR: 1
Port: _____	Security Code: _____	COS: 1
Name: _____	Coverage Path: _____	Tests? y

FEATURE OPTIONS

LWC Reception? msa-spe	Coverage Msg Retrieval? y
LWC Activation? y	Auto Answer: none
CDR Privacy? y	Data Restriction? n
Redirect Notification? y	Call Waiting Indication? y
Off Premise Station? y	Att. Call Waiting Indication? y
R Balance Network? n	Distinctive Audible Alert? y
Switchhook Flash? y	Message Waiting Indicator? _
	Adjunct Supervision? y

AUDIX Name? _____	
Messaging Server Name? _____	Audible Message Waiting? y

Screen 5-114. Single-Line Station Form (Page 1 of 2)**Implementation Notes:**

The BCC field is only displayed if the ISDN-PRI Option is enabled on the System-Parameters Customer-Options form.

The R Balance Network field is only displayed when the Off-Premise Station field is "y".

The Message Waiting Indicator field is only displayed when the Type field is "500", "2500", "k2500", "7104A", or "8110".

The Adjunct Supervision field is only displayed when the Type field is "500", "2500", "k2500", or "8110".

The AUDIX Name and Messaging Server Name fields are only displayed on G3r V2 configurations.

		Page 2 of 2
STATION		
SITE DATA		
Room: _____	Headset? n	
Jack: _____	Speaker? n	
Cable: _____	Mounting? d	
Floor: _____	Cord Length: 0_	
Building: _____	Set Color? _____	
ABBREVIATED DIALING		
List1: _____	List2: _____	List3: _____
HOT LINE DESTINATION		
Abbreviated Dialing List Number (From above 1, 2 or 3): _		
Dial Code: __		

Screen 5-115. Single-Line Station Form (Page 2 of 2)

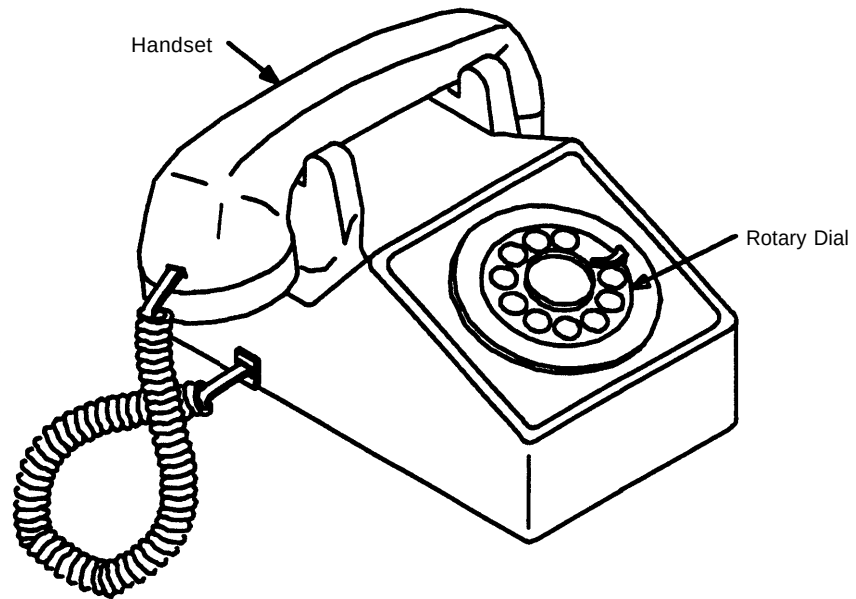


Figure 5-17. 500 Voice Terminal

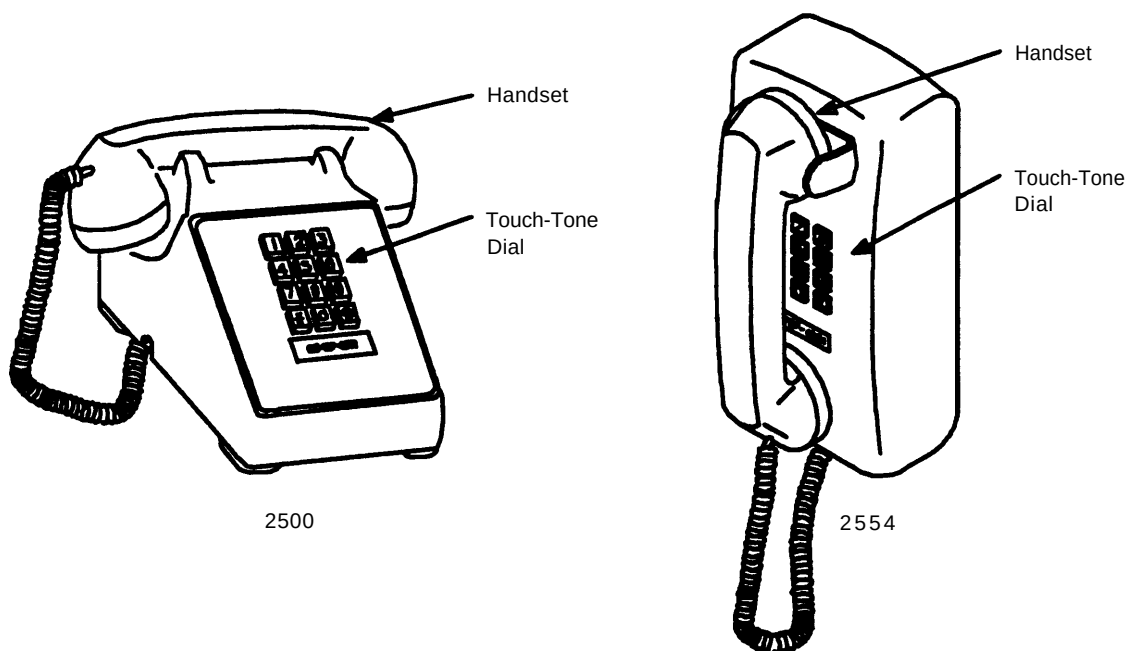


Figure 5-18. 2500 and 2554 Voice Terminals

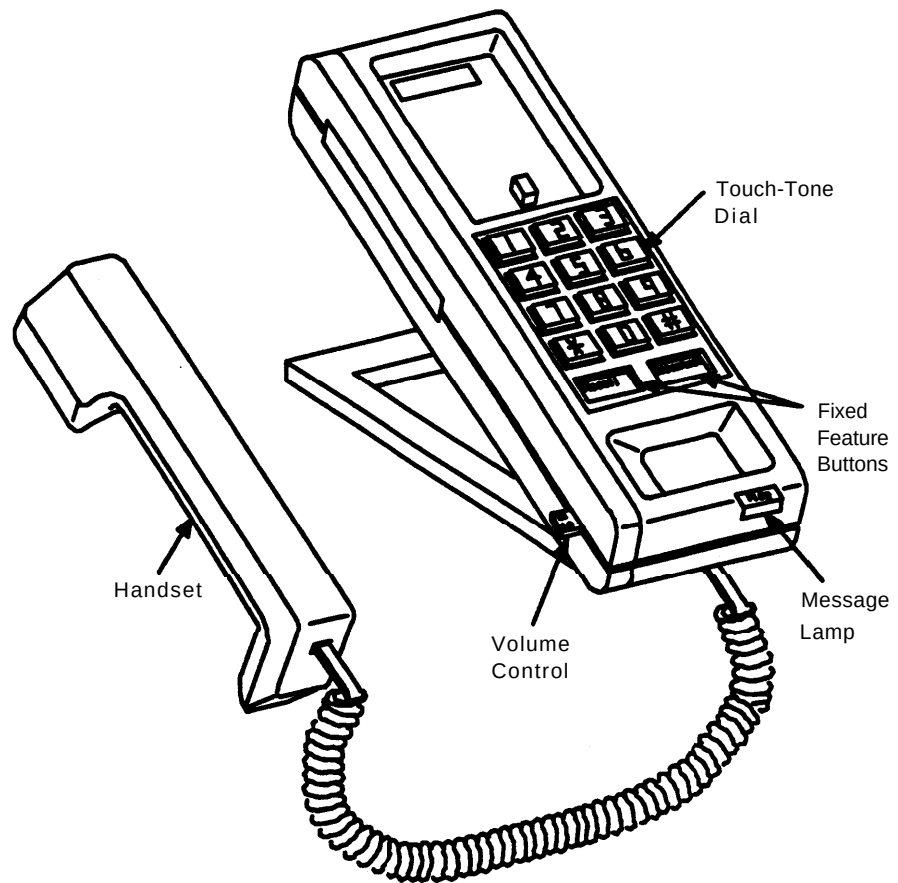


Figure 5-19. 7101A Voice Terminal

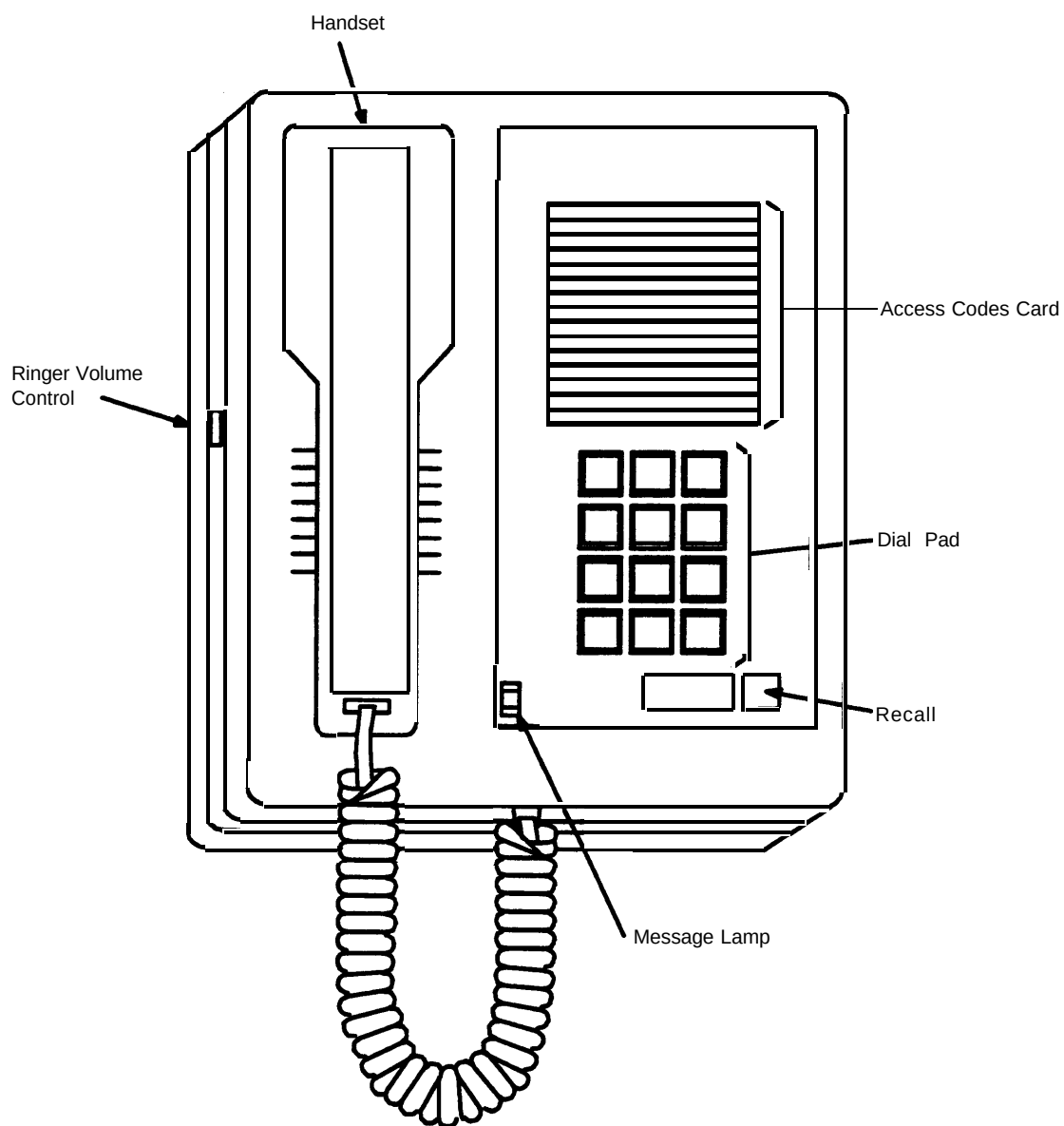


Figure 5-20. 7102A Voice Terminal

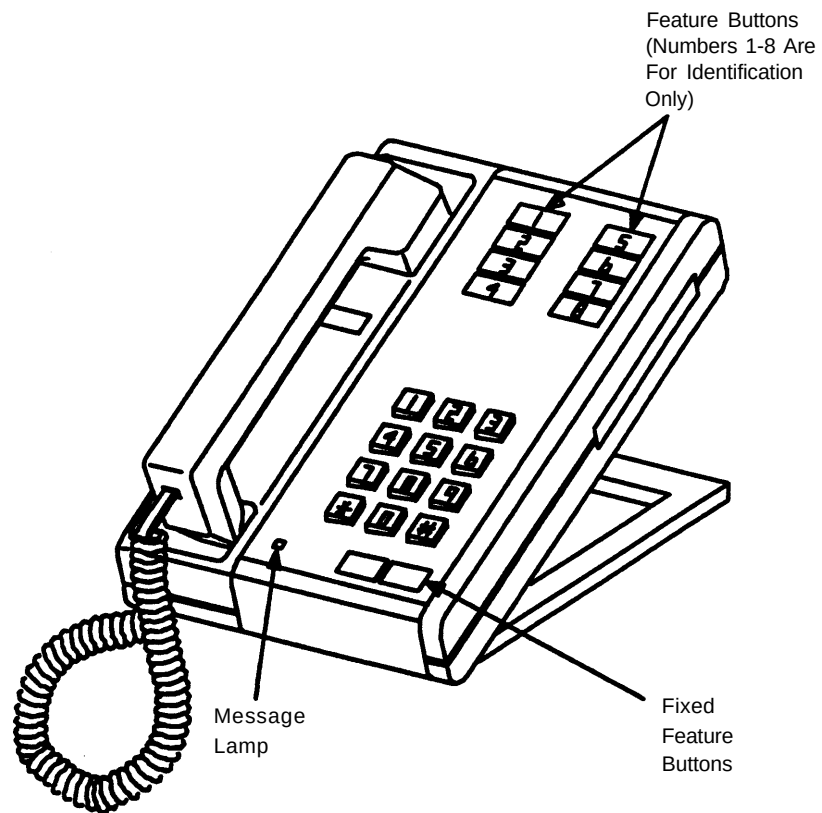


Figure 5-21. 7103A Voice Terminal

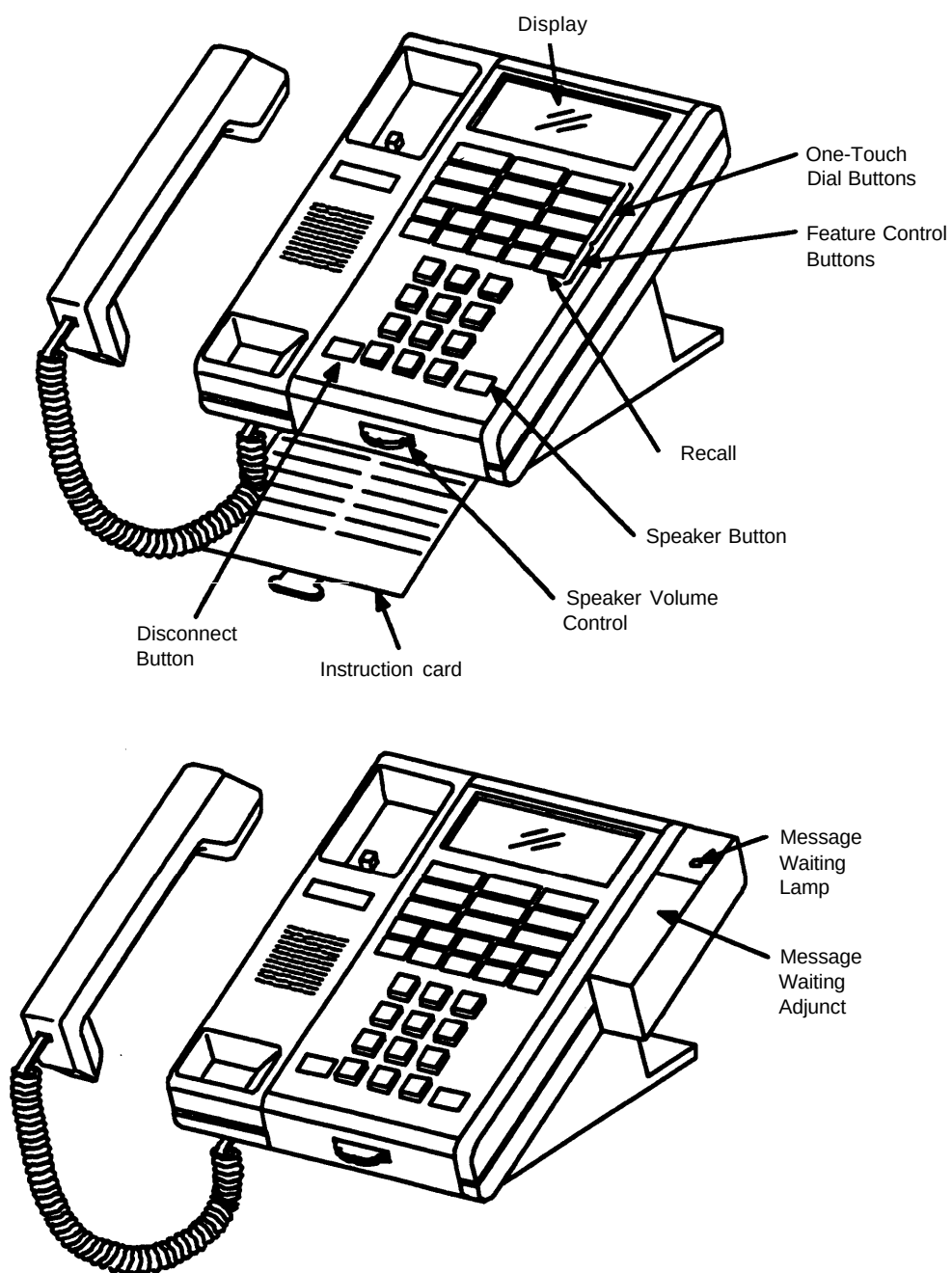


Figure 5-22. 7104A Voice Terminal

510D Personal Terminal and 515 Business Communications Terminal

This form is used to implement an AT&T 510D Personal Terminal or an AT&T 515 Business Communications Terminal (BCT).

Administration Commands

The following administration commands can be used to access the form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	station	xxxxx (extension number) or ('next')
change	station	xxxxx (extension number)
display	station	xxxxx (extension number)
duplicate	station	
list	station	[x (extension)][['ext' x]][['to-ext' x]][['port x]][['type' x]] ['count' n]][['print' or 'schedule']
remove	station	xxxxx (extension number)

* Brackets [] indicate the qualifier is optional. Single quotes (') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Please review the "Voice Terminals — General" information at least once before completing the form. General information, including feature button descriptions and characteristics is covered. In addition, descriptions of the administrable fields appearing on Pages 1 and 2 of the form are provided in the "Voice Terminals — General" section. Instructions are provided below for fields and/or pages of the form that require additional consideration because of the terminal type.

Page 1 of the Form

- **PCOL/TEG Call Alerting** — (510D only) Enter "y" if the user will be alerted of a PCOL/TEG call. Default is "n".
- **Bridged Call Alerting** — (515 BCT only) Enter "y" to allow incoming calls on bridged appearances of another terminals primary extension number or TEG or PCOL calls to alert at this terminal. Default is "n".
- **Active Station Ringing** — Only displayed when the G3V2 option is enabled on the System-Parameters Customer-Options form. Define how a call will ring at an off-hook station. Default is "single".

Enter "continuous" to cause all calls terminated to this station to ring continuously.

Enter “single” to cause a call terminated to an off-hook and active or off-hook and idle station to receive one ring cycle and then ring silently.

Enter “if-busy-single” to cause a call terminated to an off-hook and idle station to ring continuously and a call terminated to an off-hook and active station to receive one ring cycle and then ring silently.

Enter “silent” to cause a call terminated to an off-hook and active or off-hook and idle station to receive no audible ring and just ring silently.

- **Data Module** — Display-only field. Restricted to “y”.
- **Display Module** — Display-only field. Restricted to “y”.
- **Disp Client Redir** — This field is only administrable if the Hospitality feature has been enabled on the System-Parameters Customer-Options form. This field affects the station’s display on calls that originated from a station with Client Room Class of Service. When the field is “n” (default), then for all calls originating from a Client Room (even redirected calls) that terminate to this station, this station’s display will not show the redirection information. Only the client name and extension (or room, depending on what is administered on the System-Parameters Hospitality form) will be displayed. When the field is set to “y”, the redirection information for a call originating from a Client Room and terminating to this station will be displayed.

**NOTE:**

For stations with an “audix” station type, AUDIX Voice Power ports, or ports for any other type of messaging that needs display information, this field must be “y”.

Page 2 of the Form**■ Button Assignments**

The feature buttons that can be assigned to the 510 Personal Terminal (PT) and 515 BCT are listed below. The abbreviated software name (that is, administration name) as shown on the following list must be entered on the form. Depending on the button type, additional auxiliary information may be required when administering buttons.

■ abr-prog	■ cov-msg-rt *	■ mwn-deact *
■ abr-spchar	■ data-ext	■ next *
■ abrdg-appr	■ date-time *	■ night-serv
■ abrv-dial	■ delete-msg *	■ noans-alrt
■ at-alarm	■ dial-icom	■ normal *
■ aca-call	■ directory *	■ per-COLine
■ after-call	■ disp-norm	■ pms-alarm

■ alt-fri	■ dn-dst	■ pr-awu-alm
■ assist	■ ds1-alarm	■ pr-pms-alm
■ atd-qcalls *	■ exclusion	■ pr-sys-alm
■ atd-qtime *	■ ext-dn-dst *	■ print-msgs
■ aut-msg-wt	■ flash	■ priority
■ auto-cback	■ goto-cover	■ q-calls
■ auto-icom	■ grp-dn-dst *	■ q-time
■ auto-in	■ hunt-ns	■ release
■ auto-wkup *	■ in-call-id	■ ringer-off
■ aux-work	■ inspect *	■ rs-alert
■ brdg-appr	■ int-aut-an	■ rsvn-call
■ busy-ind	■ last-numb	■ scroll
■ call-appr	■ link-alarm	■ send-calls
■ call-disp *	■ lsvn-call	■ send-term
■ call-fwd	■ lwc-cancel	■ serv-obsrv
■ call-park	■ lwc-lock	■ signal
■ call-pkup	■ lwc-store	■ stored-num *
■ callr-info*	■ major-alm	■ stroke-cnt
■ cas-backup	■ man-msg-wt	■ term-x-gr
■ cdr1-alm	■ man-overid *	■ timer *
■ cdr2-alm	■ manual-in	■ trk-ac-alm
■ check-in *	■ mct-act	■ trk-id
■ check-out *	■ mct-contr	■ trunk-name *
■ clk-overid *	■ mj/mn alm	■ trunk-ns
■ consult	■ msg-retr *	■ verify
■ cov-cback	■ mwn-act *	■ work-code†

† Stations administered with displays only.

* Display-type buttons.

The 510D and 515 button number assignments in relation to the button numbers on the form are shown in the figures entitled "510D Personal Terminal Administrable Screen Button Assignments" and "515 Business Communications Terminal (BCT)" located at the end of this section dealing with the 510D and 515D terminals.

Page 3 of the Form (510D Only)

■ Feature Button Assignments

The features and functions that can be assigned to the 510 Personal Terminal (PT) Page 3 of X are the same as those listed for BUTTON ASSIGNMENTS above.

The 510D button number assignments in relation to the button numbers on the form are shown in the figure entitled "510D Personal Terminal Administrable Screen Button Assignments" located at the end of this section dealing with the 510D and 515D terminals.

Page X of the Form

■ (Display Button Assignments)

The administrable display-type buttons that can be assigned are shown on the above list (see BUTTON ASSIGNMENTS) and are noted as [display buttons].

Page X of the Form

■ Data Module

Refer to the "Station Forms — Field Descriptions" section of this chapter for associated field descriptions.

Page 1 of X

STATION		
Extension: ____	BCC: 0	
Type: ____	Lock Messages: n	COR: 1
Port: ____	Security Code: ____	COS : 1
Name: ____	Coverage Path: ____	
FEATURE OPTIONS		
LWC Reception? msa-spe	Coverage Msg Retrieval? y	
LWC Activation? y	Auto Answer: none	
CDR Privacy? n	Data Restriction? n	
Redirect Notification? y	Idle Appearance Preference? n	
PCOL/TEG Call Alerting? n		
Bridged Call Alerting? n		
Active Station Ringing: single	Restrict Last Appearance? y	
Data Module? y		
Display Module? y		
AUDIX Name: ____		
Messaging Server Name: ____	Audible Message Waiting? y	
Display Language: English	Disp Client Redir? n	

Screen 5-116. 510D and 515 BCT Form (Page 1 of X)

Implementation Notes:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

PCOL/TEG Call Alerting appears on the 510 form.

Bridged Call Alerting appears on the 515 form.

The Active Station Ringing field is only displayed if the G3V2 option is enabled on the System-Parameters Customer-Options form.

The AUDIX Name and Messaging Server Name fields are only displayed on G3r V2 configurations.

STATION		Page 2 of X
SITE DATA		
Room: _____		Headset ? n
Jack: _____		Speaker? n
Cable: _____		Mounting? d
Floor: _____		Cord Length: 0_
Building: _____		Set Color: _____
ABBREVIATED DIALING		
List1: _____	List2: _____	List3: _____
BUTTON ASSIGNMENTS		
1: call-appr	6: _____	
2: call-appr	7: _____	
3: call-appr	8: _____	
4: call-appr	9: _____	
5: _____	10: _____	

Screen 5-117. 510D and 515 BCT Form (Page 2 of X)

Implementation Notes:

Button Assignments 5: through 10: are only displayed on the 515 BCT form.

The first three button assignments default to call-appr (call appearance) for the 515 BCT. The first four button assignments must be assigned to call-appr (call appearance).

Page 3 of X

STATION

FEATURE BUTTON ASSIGNMENTS

Column 1:

1: _____

2: _____

3: _____

Column 2:

4: _____

5: _____

6: _____

Column 3:

7: _____

8: _____

9: _____

Screen 5-118. 510D Personal Terminal Form (Page 3 of X)

Page Y of X

STATION

DISPLAY BUTTON ASSIGNMENTS

1: _____

2: _____

3: _____

4: _____

5: _____

6: _____

7: _____

Screen 5-119. 510D and 515 BCT Display Button Assignments Form (Page Y of X)

			Page Y of X
		STATION	
DATA MODULE			
Data Extension: ____		BCC: 2	ITC: restricted
Name: _____		COR: 1_	COS: 1_
ABBREVIATED DIALING			
List1: _____			
SPECIAL DIALING OPTION: ____			
HOT LINE DESTINATION			
DEFAULT DIALING			
Abbreviated Dialing Dial Code (From above list): _			
ASSIGNED MEMBER (Station with a data extension button for this data module)			
Ext		Name	
1:			

Screen 5-120. 510D and 515 BCT Data Module Form**Implementation Notes:**

This page is only displayed if the Data Module field on Page 1 is "y".

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

Hot Line Destination only displayed when the Special Dialing Option field is "hot-line".

Default Dialing only displayed when the Special Dialing Option field is "default".

Abbreviated Dialing Dial Code only displayed when SPECIAL DIALING OPTION is "hot-line" or "default".

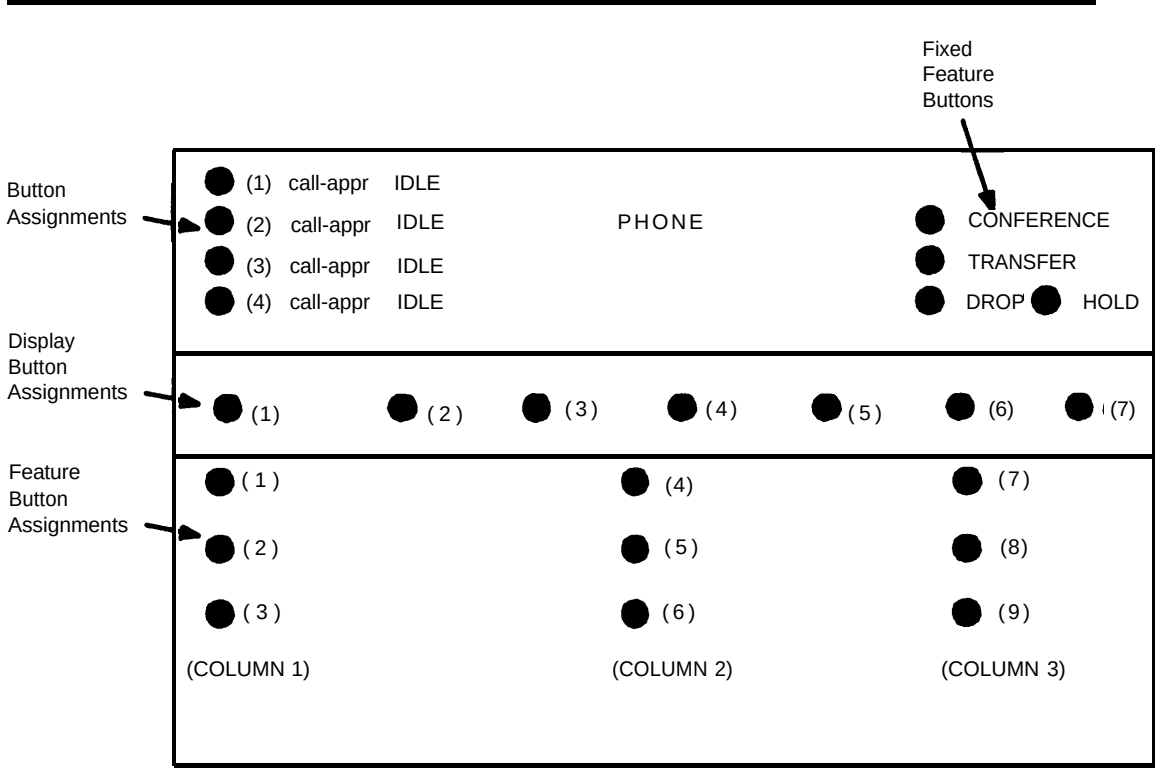


Figure 5-23. 510D Personal Terminal Administrable Screen Button Assignments

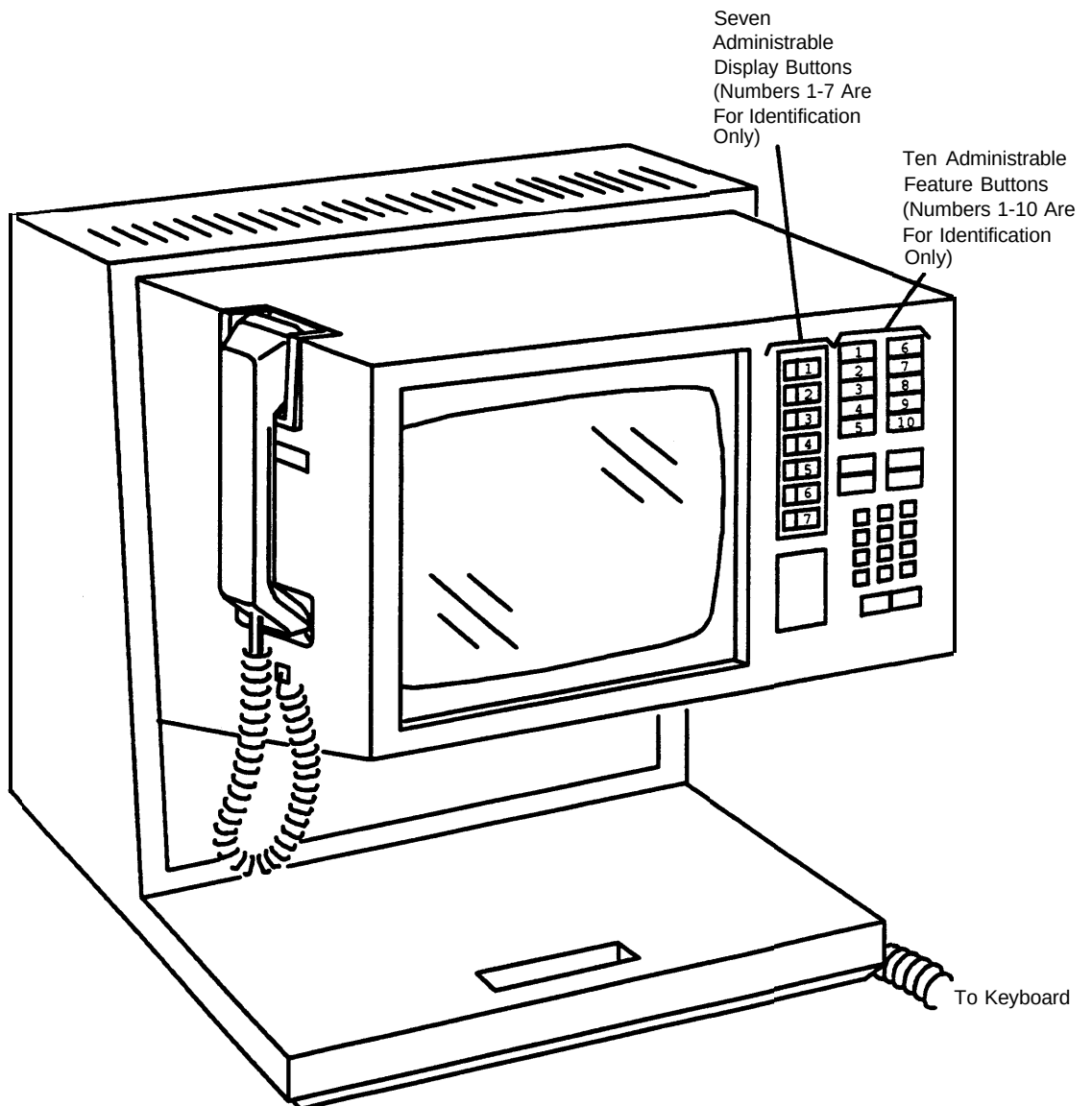


Figure 5-24. 515 Business Communications Terminal (BCT)

7302H, 7303H, and 7305H Voice Terminals

The following provides instructions associated with the implementation of 7302H (small), 7303H (medium), and 7305H (large) MERLIN communications system voice terminals.

Administration Commands

The following administration commands can be used to access the Voice Terminal form. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	station	xxxxx (extension number) or ('next')
change	station	xxxxx (extension number)
display	station	xxxxx (extension number)
duplicate	station	
list	station	[x (extension)]['ext' x]['to-ext' x]['port x']['type' x] ['count' n]['print' or 'schedule']
remove	station	xxxxx (extension number)

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

■ 7302H Voice Terminal (5-Button)

Administer using a 7303S Voice Terminal form.

■ 7303H Voice Terminal (10-Button)

Administer using a 7305S Voice Terminal form.



NOTE:

Only the first 12 feature function buttons on Page 2 of the form apply. Of these 12 buttons, eight have two lamps and four have no lamps. However, the System will treat the eight double lamp buttons as though they have a single (green) lamp. Administer the four buttons with no lamps with features not requiring status indications, such as Abbreviated Dialing and Last Number Redial.

■ **7305H Voice Terminal (34-Button)**

Administer using a 7305S Voice Terminal form. The system will treat the set's 24 feature function buttons (two lamps each) as single (green) lamp function buttons.

7303S, 7305S, and 7309H Voice Terminals

This form is used to implement a 7303S, 7305S, and a 7309H multi-appearance voice terminal.

Administration Commands

The following administration commands can be used to access the Voice Terminal form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	station	xxxxx (extension number) or ('next')
change	station	xxxxx (extension number)
display	station	xxxxx (extension number)
duplicate	station	
list	station	[x (extension)]['ext' x]['to-ext' x]['pott' x]['type' x] ['count' n]['print' or 'schedule']
remove	station	xxxxx (extension number)

- * Brackets [] indicate the qualifier is optional. Single quotes (') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Please review the “Voice Terminals — General” information at least once before completing the form. General information, including feature button descriptions and characteristics is covered. In addition, descriptions of the administrable fields appearing on Pages 1 and 2 of the form are provided. Instructions are provided below for fields and/or pages of the form that require additional consideration because of the terminal type.

Page 1 of the Form

- **Type** — Enter “7303S”, “7305S”, or “7309H” as appropriate.
- **Active Station Ringing** — Only displayed when the G3V2 option is enabled on the System-Parameters Customer-Options form. Define how a call will ring at an off-hook station. Default is “single”.

Enter “continuous” to cause all calls terminated to this station to ring continuously.

Enter “single” to cause a call terminated to an off-hook and active or off-hook and idle station to receive one ring cycle and then ring silently.

Enter “if-busy-single” to cause a call terminated to an off-hook and idle

station to ring continuously and a call terminated to an off-hook and active station to receive one ring cycle and then ring silently.

Enter "silent" to cause a call terminated to an off-hook and active or off-hook and idle station to receive no audible ring and just ring silently.

Page 2 of the Form

■ **BUTTON ASSIGNMENTS**

The feature buttons that can be assigned to the 7303S, 7305S, and 7309H voice terminals are listed below. The abbreviated software name (that is, administration name) as shown on the following list must be entered on the form. Depending on the button type, additional auxiliary information may be required when administering buttons. This information is provided in the "Voice Terminals — General" section.

Administrable feature buttons:

■ abr-prog	■ consult	■ per-COLine
■ abr-spchar	■ cov-cback	■ pms-alarm
■ abrdg-appr	■ data-ext	■ pr-awu-alm
■ abrv-dial	■ dial-icom	■ pr-pms-alm
■ ac-alarm	■ dn-dst	■ pr-sys-alm
■ aca-call	■ ds1-alarm	■ print-msgs
■ after-call	■ exclusion	■ priority
■ alt-fri	■ flash	■ q-calls
■ assist	■ goto-cover	■ q-time
■ atd-qcalls	■ hunt-ns	■ release
■ atd-qtime	■ in-call-id	■ ringer-off
■ aut-msg-wt	■ int-aut-an	■ rs-alert
■ auto-cback	■ last-numb	■ rsvn-call
■ auto-icom	■ link-alarm	■ send-calls
■ auto-in	■ lsvn-call	■ send-term
■ aux-work	■ lwc-cancel	■ serv-obsrv
■ brdg-appr	■ lwc-store	■ signal
■ busy-ind	■ major-alm	■ stroke-cnt
■ call-appr	■ man-msg-wt	■ term-x-gr
■ call-fwd	■ manual-in	■ trk-ac-alm
■ call-park	■ mct-act	■ trunk-ns

■ call-pkup	■ mct-contr	■ verify
■ cas-backup	■ mj/mn alm	■ work-code†
■ cdr1-alm	■ night-ser	
■ cdr2-alm	■ noans-alm	

† Stations administered with displays only.

The figures entitled “7303S Voice Terminal”, “7305S Voice Terminal”, and “7309H Voice Terminal” at the end of this section show the 7303S, 7305S, and 7309H voice terminal button number assignments in relation to the button numbers on the Voice Terminal Form. The first three buttons are defaulted as call appearance. **Page 3 of the Form (7305S only)**

■ **FEATURE BUTTON ASSIGNMENTS**

The features and functions that can be assigned to the 7305S on Page 3 of 3 are the same as those listed for BUTTON ASSIGNMENTS above.

The figure entitled “7305S Voice Terminal” shows the 7305S voice terminal button number assignments in relation to the button numbers on the Voice Terminal Form. The first three buttons are defaulted as call appearance.

Page 1 of X

STATION		
Extension: _____	BCC: 0	
Type: _____	Lock Messages: n	COR: 1
Port: _____	Security Code: _____	COS: 1
Name: _____	coverage Path: _____	

FEATURE OPTIONS	
LWC Reception? msa-spe	Coverage Msg Retrieval? y
LWC Activation? y	Auto Answer: none
CDR Privacy? n	Data Restriction? n
Redirect Notification? y	Idle Appearance Preference? n
Bridged Call Alerting? n	Personalized Ringing Pattern: _
Active Station Ringing: single	Restrict Last Appearance? y

AUDIX Name: _____	
Messaging Server Name: _____	Audible Message Alerting? y

Screen 5-121. 7303S, 7305S, and 7309H Station Form — (Page 1 of X)**Implementation Notes:**

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

For 7303S and 7309H voice terminals, this is a two-page form.

For 7305S voice terminal, this is Page 1 of a three-page form.

The Active Station Ringing field is only displayed if the G3V2 option is enabled on the System-Parameters Customer-Options form.

The AUDIX Name and Messaging Server Name fields are only displayed for G3r V2 configurations.

Page 2 of X

STATION

SITE DATA

Room: _____

Jack: _____

Cable: _____

Floor: _____

Building: _____

ABBREVIATED DIALING

List1: _____

BUTTON ASSIGNMENTS

1: call-appr_

2: call-appr_

3: call-appr_

4: _____

5: _____

Headset? n

Speaker? n

Mounting? d

Cord Length: 0_

Set Color: _____

List2: _____

List3: _____

6: _____

7: _____

8: _____

9: _____

10: _____

Screen 5-122. 7303S, 7305S, and 7309H Station Form — (Page 2 of X)

Implementation Note:

The first three Button Assignments fields may only be assigned as call-appr (call appearance).

Page 3 of 3

STATION

FEATURE BUTTON ASSIGNMENTS

1: _____

2: _____

3: _____

4: _____

5: _____

6: _____

7: _____

8: _____

9: _____

10: _____

11: _____

12: _____

13: _____

14: _____

15: _____

16: _____

17: _____

18: _____

19: _____

20: _____

21: _____

22: _____

23: _____

24: _____

Screen 5-123. 7305S Voice Terminal Form — (Page 3 of 3)

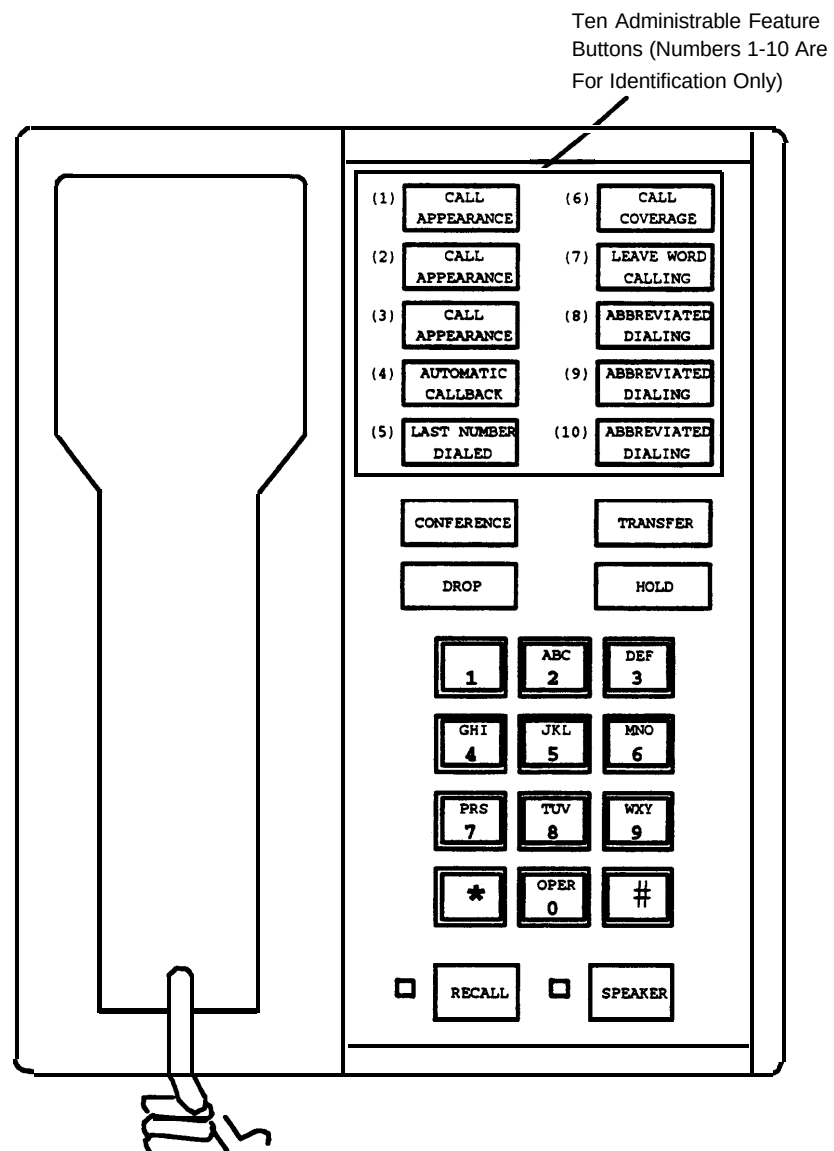


Figure 5-25. 7303S Voice Terminal

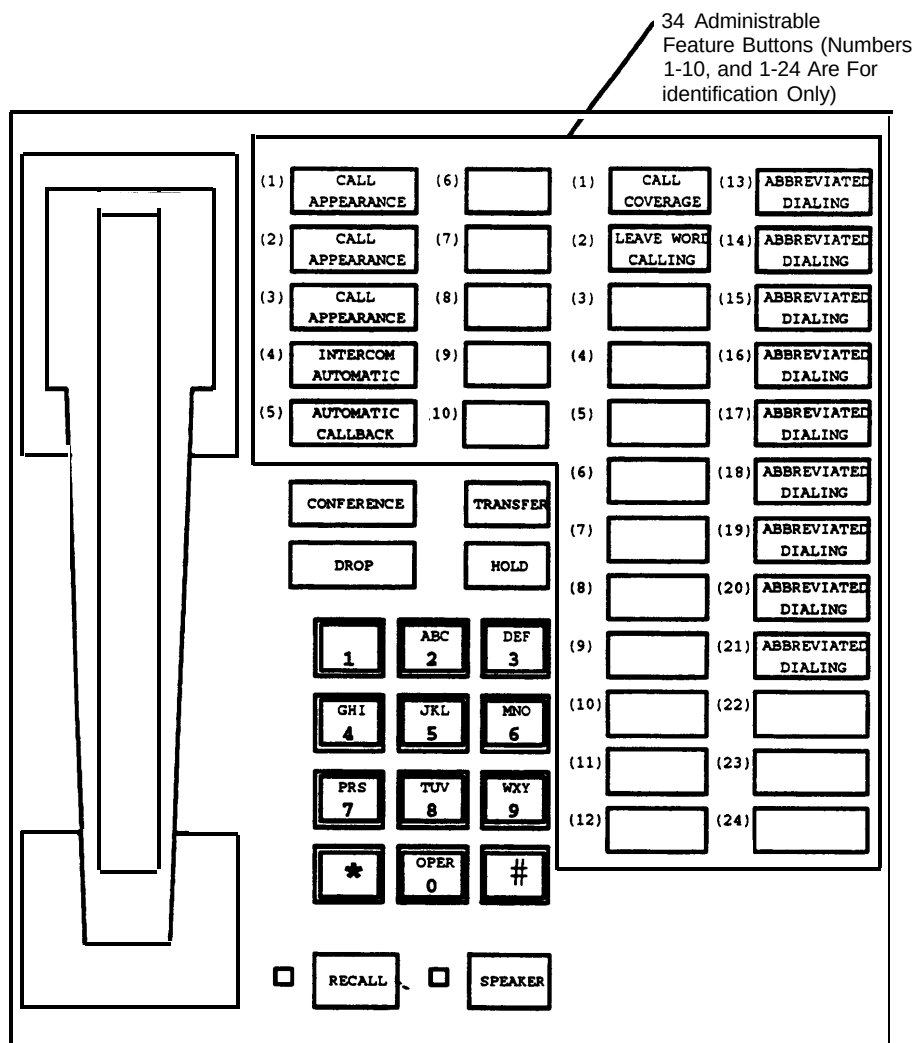


Figure 5-26. 7305S Voice Terminal

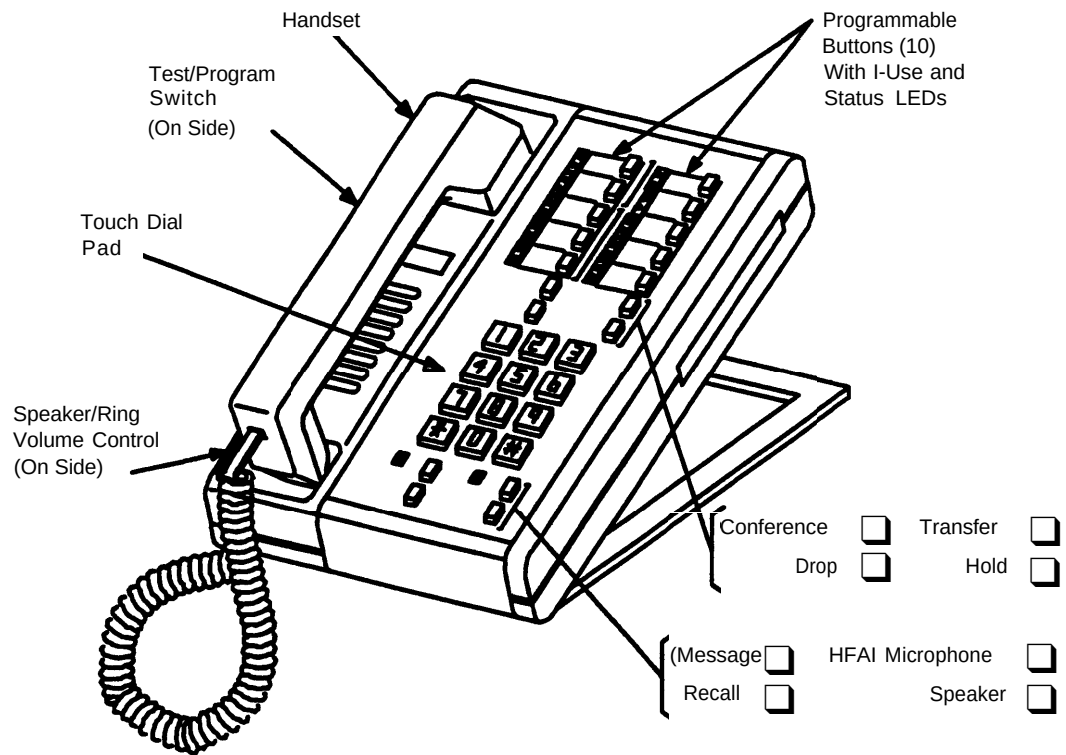


Figure 5-27. 7309H Voice Terminal

7313H, 7314H, 7315H, 7316H, and 7317H Voice Terminals

The following forms are used to implement the 7313H, 7314H, 7315H, 7316H, and 7317H multi-appearance voice terminals.

NOTE:

Be aware of the following feature differences and restrictions when using hybrid voice terminals in the System:

- Hybrid voice terminals equipped with display may not be used as ACD agents.
- The following feature buttons will not operate on Hybrid terminals: STOP, PAUSE, RECALL, MESSAGE, HFAI, and HFAI/MIC.

The replacement for Hands Free Automatic Answer on Intercom (HFAI) is the Internal Automatic Answer (IAA) feature.

- When administering the IAA feature on a 731xH series voice terminal, it is recommended that a feature button with a lamp be assigned so the lamp status of IAA can be observed (that is, activated or deactivated).

Administration Commands

The following administration commands can be used to access the Voice Terminal form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	station	xxxxx (extension number) or ('next')
change	station	xxxxx (extension number)
display	station	xxxxx (extension number)
duplicate	station	
list	station	[x (extension)][['ext' x]][['to-ext' x]][['port' x]][['type' x] ['count' n]][['print' or 'schedule']
remove	station	xxxxx (extension number)

- * Brackets [] indicate the qualifier is optional.
Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.
MAX is the maximum number available in your system configuration.
Refer to the Capacity Table in Appendix C.

Form Instructions

Please review the "Voice Terminals — General" information at least once before completing the form. General information including feature button descriptions and characteristics are covered. In addition, descriptions of the administrable fields appearing on Pages 1 and 2 of the form are provided. Instructions are provided below for fields and/or pages of the form that require additional consideration because of the terminal type.

Page 1 of the Form

- **Type** — Enter "7313H", "7314H", "7315H", "7316H", or "7317H" as appropriate.
- **Active Station Ringing** — Only displayed when the G3V2 option is enabled on the System-Parameters Customer-Options form. Define how a call will ring at an off-hook station. Default is "single".

Enter "continuous" to cause all calls terminated to this station to ring continuously.

Enter "single" to cause a call terminated to an off-hook and active or off-hook and idle station to receive one ring cycle and then ring silently.

Enter "if-busy-single" to cause a call terminated to an off-hook and idle station to ring continuously and a call terminated to an off-hook and active station to receive one ring cycle and then ring silently.

Enter "silent" to cause a call terminated to an off-hook and active or off-hook and idle station to receive no audible ring and just ring silently.

Page 2 of the Form

■ BUTTON ASSIGNMENTS

The feature buttons that can be assigned to the 7313H, 7314H, 7315H, 7316H, and 7317H voice terminals are listed below. The abbreviated software name (that is, administration name) as shown on the following list must be entered on the form. Depending on the button type, additional auxiliary information may be required when administering buttons. This information is provided in the "Voice Terminals — General" section.

Administrable feature buttons:

■ abr-prog	■ call-park	■ lsvn-call	■ priority
■ abr-spchar	■ call-pkup	■ lwc-cancel	■ q-calls
■ abrdg-appr	■ cas-backup	■ lwc-store	■ q-time
■ abrv-dial	■ cdr1-alm	■ major-alm	■ release
■ aca-call	■ cdr2-alm	■ man-msg-wt	■ ringer-off
■ after-call	■ consult		■ rs-alert

■ alt-frl	■ cov-cback	■ manual-in	■ rsvn-call
■ assist	■ data-ext	■ mct-act	■ scroll †
■ atd-qcalls	■ dial-icom	■ mct-contr	■ send-calls
■ atd-qtime	■ disp-norm†	■ mj/mn alm	■ send-term
■ aut-msg-wt	■ dn-dst	■ night-ser	■ serv-obsrv
■ auto-cback	■ exclusion	■ noans-alrt	■ signal
■ auto-icom	■ flash	■ per-COline	■ term-x-gr
■ auto-in	■ goto-cover	■ pms-alarm	■ trk-ac-alm
■ aux-work	■ hunt-ns	■ pr-awu-alm	■ trunk-ns
■ brdg-appr	■ int-aut-an ‡	■ pr-pms-alm	■ verify
■ busy-ind	■ in-call-id	■ pr-sys-alm	■ work-code*
■ call-appr	■ last-numb	■ print-msgs	
■ call-fwd	■ link-alarm		

† Administrable on 7315H and 7317H stations only.

‡ Administrable on 731xH and 730xH stations administered as 731xH stations.

* Stations administered with displays only.

Page 3 of the Form (7314H, 7315H, 7316H, and 7317H only)

■ FEATURE BUTTON ASSIGNMENTS

The features and functions that can be assigned to the 7314H, 7315H, 7316H, and 7317H on Page 3 of 3 are the same as those listed for BUTTON ASSIGNMENTS above.

The figures entitled "731xH Voice Terminal" show the 7314H, 7315H, 7316H, and 7317H voice terminal button number assignments in relation to the button numbers on the Voice Terminal Form.

Page 1 of X		
STATION		
Extension: ____	BCC: 0	
Type: ____	Lock Messages: n	COR: 1
Name: _____	Coverage Path: ____	COS: 1
 FEATURE OPTIONS		
LWC Reception? msa-spe	Coverage Msg Retrieval? y	
LWC Activation? y	Auto Answer: none	
CDR Privacy? n	Data Restriction? n	
Redirect Notification? y	Idle Appearance Preference? n	
Bridged Call Alerting? n	Personalized Ringing Pattern: 1	
Active Station Ringing: single	Restrict Last Appearance? y	
Display Module? y		
AUDIX Name: _____		
Messaging Server Name: _____	Audible Message Waiting? n	

Screen 5-124. 7313H, 7314H, 7315H, 7316H, and 7317H Station Form (Page 1 of X)**Implementation Notes:**

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

For 7313H voice terminals, this is a two-page form.

For 7314H, 7315H, 7316H, and 7317H voice terminals, this is a three-page form.

The Active Station Ringing field is only displayed if the G3V2 option is enabled on the System-Parameters Customer-Options form.

The Display Module field is only displayed if the Type field entry is 7315H or 7317H.

The AUDIX Name and Messaging Server Name fields are only displayed for G3r V2 configurations.

		Page 2 of X
STATION		
SITE DATA		
Room: _____		Headset? n
Jack: _____		Speaker? n
Cable: _____		Mounting? d
Floor: _____		Cord Length: 0_
Building: _____		Set Color: _____
ABBREVIATED DIALING		
List1: _____	List2: _____	List3: _____
BUTTON ASSIGNMENTS		
1: call-appr_	6: _____	
2: call-appr_	7: _____	
3: call-appr_	8: _____	
4: _____	9: _____	
5: _____	10: _____	

Screen 5-125. 7313H, 7314H, 7315H, 7316H, and 7317H Station Form (Page 2 of X)**Implementation Notes:**

The first three Button Assignments fields may only be assigned as call-appr (call appearance).

Button Assignment 1 through 10 correspond to the first and second columns of buttons on the voice terminal.

The "abrdg-appr", "brdg-appr" and "call-appr" buttons can only be assigned to button numbers 1 through 10 on this page of the form.

		STATION	
FEATURE	BUTTON	ASSIGNMENTS	
1:	_____	13:	_____
2:	_____	14:	_____
3:	_____	15:	_____
4:	_____	16:	_____
5:	_____	17:	_____
6:	_____	18:	_____
7:	_____	19:	_____
8:	_____	20:	_____
9:	_____	21:	_____
10:	_____	22:	_____
11:	_____	23:	_____
12:	_____	24:	_____

Screen 5-126. 7313H, 7314H, 7315H, 7316H, and 7317H Station Form (Page 3 of 3)

Implementation Notes:

For the 7314H and 7315H, only buttons 1 through 12 are displayed and correspond to the third column of buttons on the voice terminal.

For the 7316H and 7317H, buttons 1 through 24 correspond to the third and fourth columns of buttons on the voice terminals.

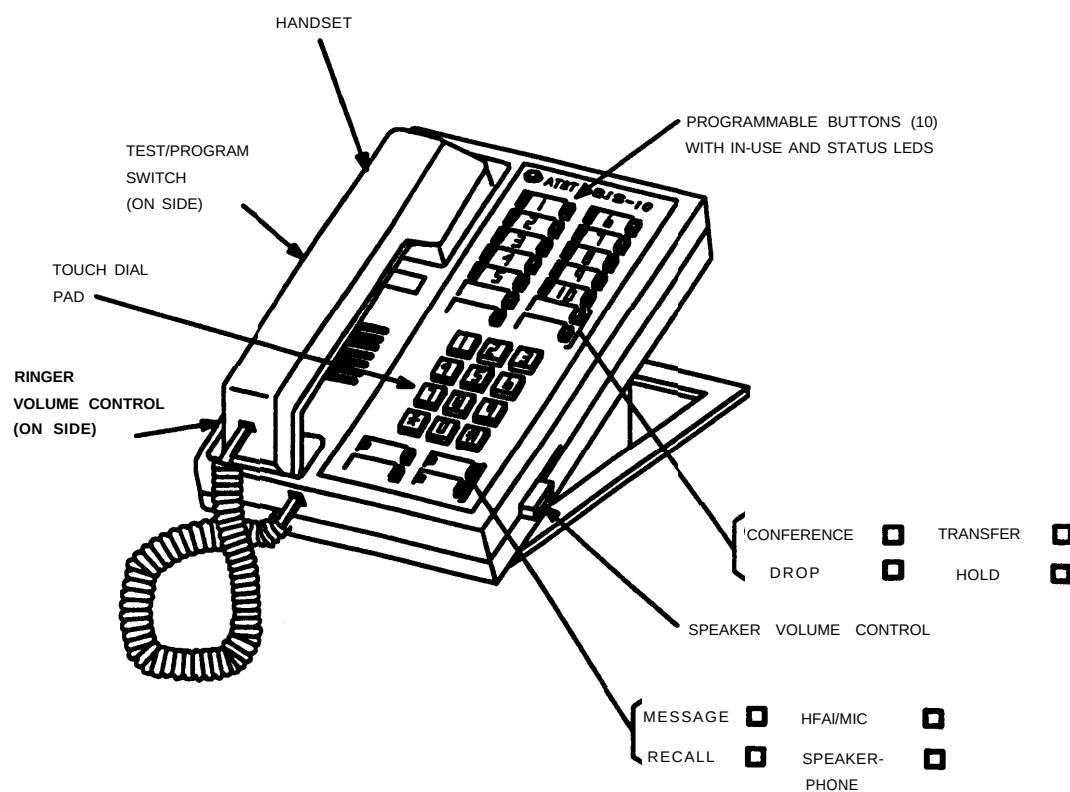


Figure 5-28. 7313H Voice Terminal (BIS 10)

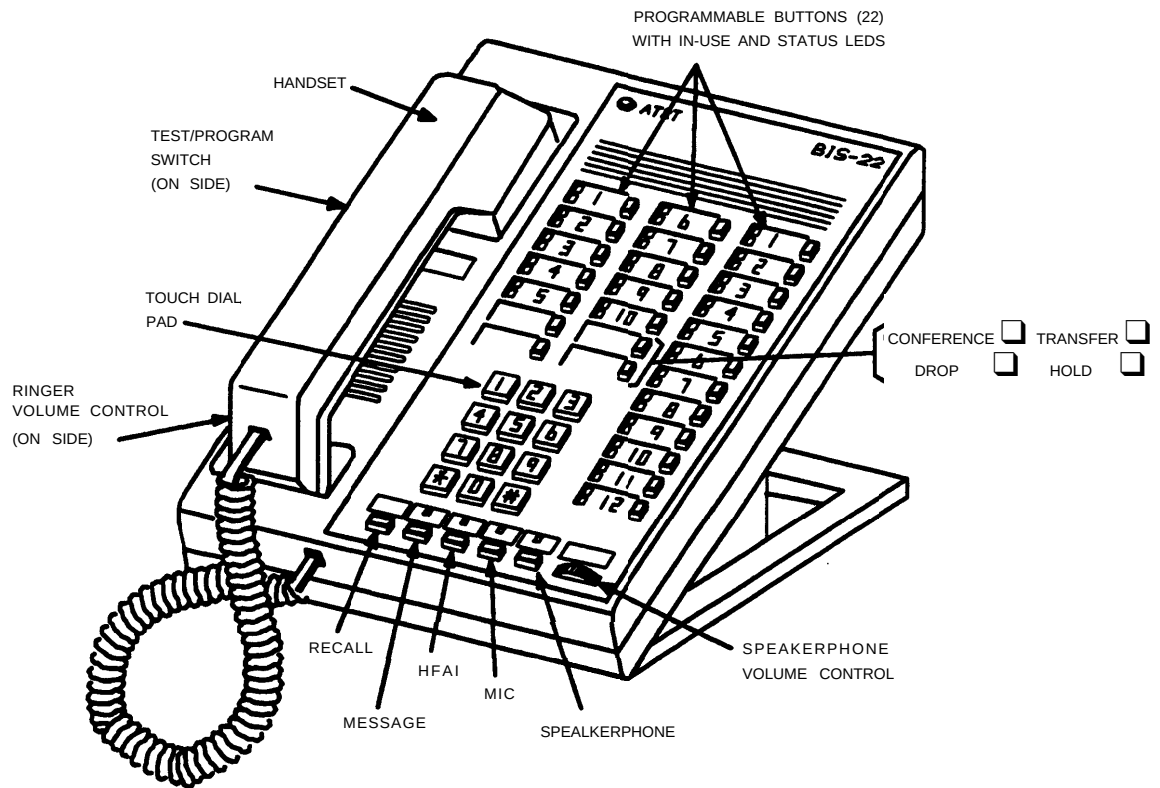


Figure 5-29. 7314H Voice Terminal (BIS 22)

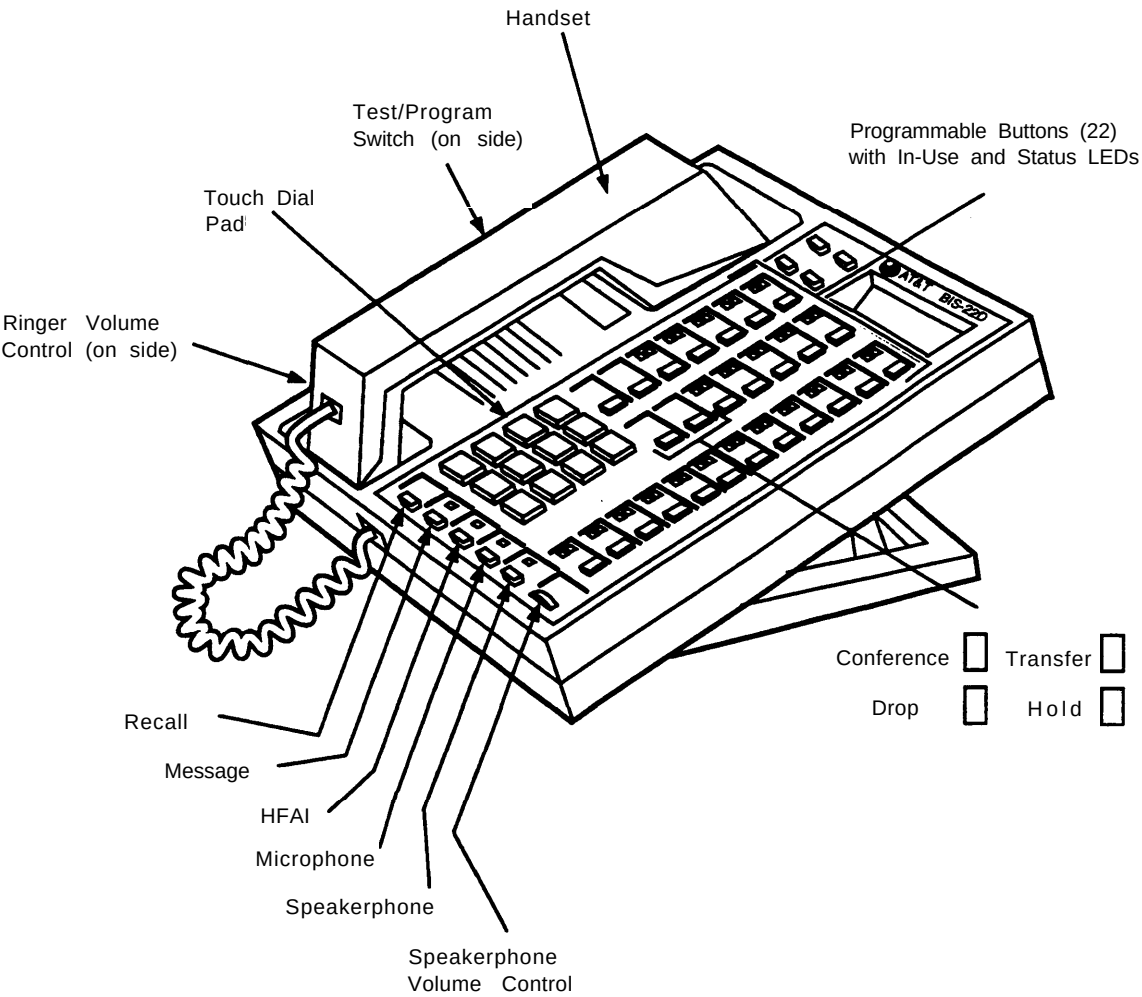


Figure 5-30. 7315H Voice Terminal (BIS 22D)

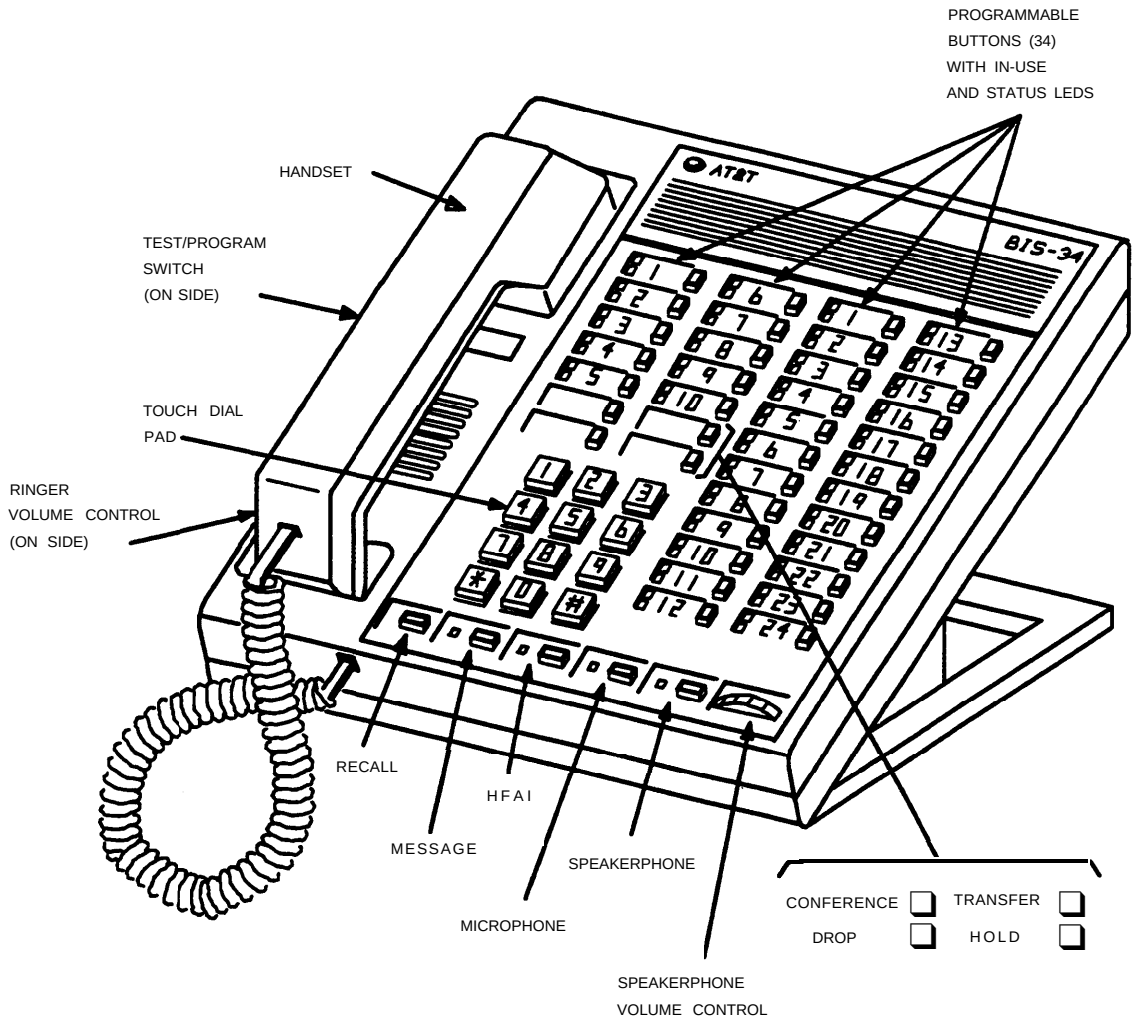


Figure 5-31. 7316H Voice Terminal (BIS 34)

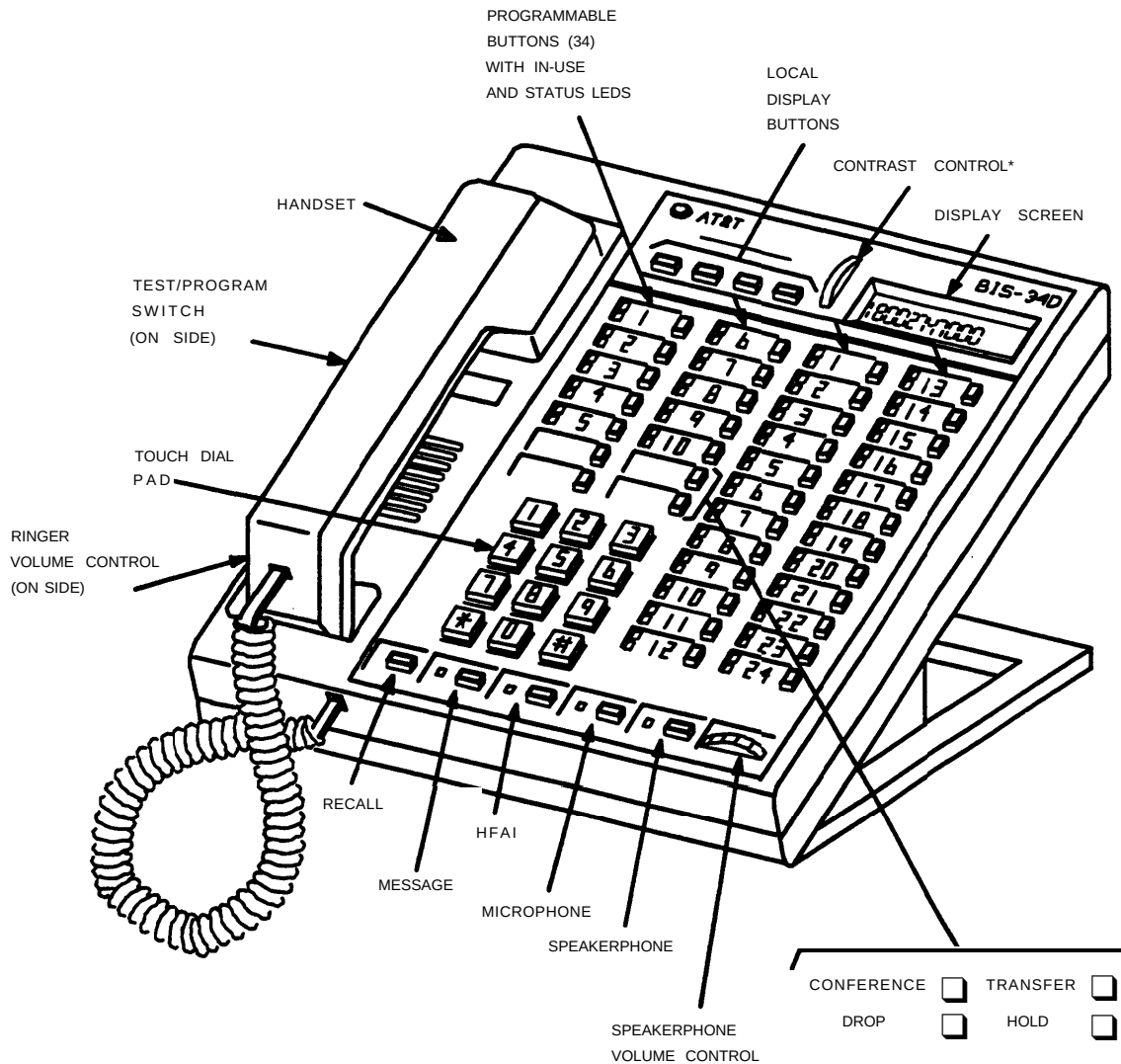


Figure 5-32. 7317H Voice Terminal (BIS 34D)

* The contrast control is not available on some models

7401D, 7401+, 7403D, 7404D, 7410D, and 7410+ Voice Terminals

These forms are used to implement 7401D, 7401+, 7403D, 7404D, 7410D, and 7410+ voice terminals.

Administration Commands

The following administration commands can be used to access the Voice Terminal forms. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	station	xxxxx (extension number) or ('next')
change	station	xxxxx (extension number)
display	station	xxxxx (extension number)
duplicate	station	
list	station	[x (extension)]['ext' x]['to-ext' x]['port' x]['type' x] ['count' n]['print' or 'schedule']
remove	station	xxxxx (extension number)

- * Brackets [] indicate the qualifier is optional. Single quotes (') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Please review the “Voice Terminals — General” information at least once before completing the form. General information, including feature button descriptions and characteristic is covered. Instructions are provided below for fields and/or pages of the form that require additional consideration because of the terminal type.

Page 1 of the Form

- **Type** — Enter “7401D”, “7401+”, “7403D”, “7404D”, “7410D”, or “7410+” as appropriate.
- **PCOL/TEG Call Alerting** — (For 7401D or 7410+ Voice Terminals only) — Enter “y” to allow incoming calls on PCOLs/TEGs to audibly alert at this voice terminal. Default is “n”.
- **Bridged Call Alerting** — (For 7403D, 7404D, 7410D, and 7410+ Voice Terminals only) — Enter “y” to allow incoming calls on bridged appearances at another voice terminal’s primary extension, TEG, or PCOL calls to alert at this voice terminal. Default is “n”.

- **Personalized Ringing Pattern** — (For 7401D, 7401+, and 7404D Voice Terminals only) — Enter a Personalized Ringing Pattern (1 through 8) as follows:

Ring Pattern	Tone Sequence
1	MMM (standard ringing)
2	HHH
3	LLL
4	LHH
5	HHL
6	HLL
7	HLH
8	LHL

L = 530 Hz, M = 750 Hz, and H = 1060 HZ

- **Active Station Ringing** — Only displayed when the G3V2 option is enabled on the System-Parameters Customer-Options form. Define how a call will ring at an off-hook station. Default is "single".

Enter "continuous" to cause all calls terminated to this station to ring continuously.

Enter "single" to cause a call terminated to an off-hook and active or off-hook and idle station to receive one ring cycle and then ring silently.

Enter "if-busy-single" to cause a call terminated to an off-hook and idle station to ring continuously and a call terminated to an off-hook and active station to receive one ring cycle and then ring silently.

Enter "silent" to cause a call terminated to an off-hook and active or off-hook and idle station to receive no audible ring and just ring silently.
- **Data Module** — For the 7401D, 7401+, 7410D, and 7410+, enter "y" if this terminal is to be connected to a data terminal via a 7400B Data Module. For the 7403D, enter "y" if this terminal is to be connected to a data terminal via optional Digital Terminal Data Module (DTDM) or 7400B Data Module; otherwise, enter "n". For the 7404D — this is a display-only field set to "y". If "y" is entered, the Data Module form must be completed. Valid entries are "y" or "n". Default is "n".
- **Display Cartridge (7404D Only)** — Enter "y" if this terminal is to have a display via an associated data terminal.
- **Display Module** — Enter "y" if the 7404D voice terminal is to have a display via a 7400B Data Module and associated data terminal or an optional Messaging Cartridge (7404D only) and an associated data terminal. Default is "n". If "y" is entered, the Display Language field and the Display Button Assignments form must be completed.
- **Disp Client Redir** — This field is only administrable if the Hospitality feature has been enabled on the System-Parameters Customer-Options form. This field affects the station's display on calls that originated from a station with Client Room Class of Service. When the field is "n" (default), then for all calls originating from a Client Room (even redirected calls) that

terminate to this station, this station's display will not show the redirection information. Only the client name and extension (or room, depending on what is administered on the System-Parameters Hospitality form) will be displayed. When the field is set to "y", the redirection information for a call originating from a Client Room and terminating to this station will be displayed.

**NOTE:**

For stations with an "audix" station type, AUDIX Voice Power ports, or ports for any other type of messaging that needs display information, this field must be "y".

Page 2 of the Form

- **Headset** — For a 7401D or 7404D, enter "n", these sets cannot have a headset. For a 7403D, enter "y" if the terminal is to have a headset. Default is "n".

- **BUTTON ASSIGNMENTS**

The feature buttons that can be assigned to the 7401D, 7401+, 7403D, 7404D, 7410D, or 7410+ voice terminals are listed below. The abbreviated software name (that is, administration name) as shown on the following list must be entered on the form. Depending on the button type, additional auxiliary information may be required when administering buttons. This information is provided in the "Voice Terminals — General" section.

■ abr-prog	■ consult	■ noans-alrt
■ abr-spchar	■ cov-cback	■ per-COLine
■ abrdg-appr **	■ data-ext	■ pros-alarm
■ abrv-dial	■ dial-icom	■ pr-awu-alm
■ ac-alarm	■ dn-dst	■ pr-pms-alm
■ aca-call	■ ds1-alarm	■ pr-sys-alm
■ after-call	■ exclusion	■ print-msgs
■ alt-frl	■ flash	■ priority
■ assist	■ goto-cover	■ q-calls
■ atd-qcalls	■ hunt-ns	■ q-time
■ atd-qtime	■ in-call-id	■ release
■ aut-msg-wl	■ int-aut-an	■ ringer-off
■ auto-cback	■ last-numb	■ rs-alert
■ auto-icom	■ link-alarm	■ rsvn-call

■ auto-in	■ lsvn-call	■ send-calls
■ aux-work	■ lwc-cancel	■ send-term
■ brdg-appr **	■ lwc-store	■ serv-obsrv
■ busy-ind	■ major-alm	■ signal
■ call-appr **	■ man-msg-wt	■ stroke-cnt
■ call-fwd	■ manual-in	■ term-x-gr
■ call-park	■ mct-act	■ trk-ac-alm
■ call-pkup	■ mct-contr	■ trunk-ns
■ cas-backup	■ mj/mn alm	■ verify
■ cdr1-alm	■ night-ser	■ work code
■ cdr2-alm		

** Not administrable on the 7401D or 7401 + voice terminal.

For the 7401D and 7401+ voice terminals, BUTTON ASSIGNMENTS 3 through 9 are used to assign features to dial pad keys 1 through 7 (BUTTON ASSIGNMENT 3 corresponds to dial pad key 1, BUTTON ASSIGNMENT 4 corresponds to dial pad key 2, and soon). The call-appr buttons defaulted in BUTTON ASSIGNMENTS 1 and 2 are not administrable (display-only).

On the 7403D, 7404D, 7410D, and 7410+ voice terminals, the first three buttons are defaulted as call appearance buttons.

Page X of the Form (DISPLAY BUTTON ASSIGNMENTS)

- Only displayed if the Display field on Page 1 is "y". Administer display buttons per the Implementation Note associated with the screen form. The display function is obtained via an optional Messaging Cartridge and an associated data terminal (also requires administering the following Data Module form).

Page X of the Form (DATA MODULE)

- Only displayed if the Data Module field on Page 1 is "y". Refer to the "Station Forms — Field Descriptions" section in this chapter for associated field descriptions.

Page 1 of x

STATION	
Extension: 300	BCC: 0
Type: 7401D	Lock Messages? n
Port: _____	Security Code: _____
Name: _____	COR: 1_
	COS: 1_
	Coverage Path: _____

FEATURE OPTIONS	
LWC Reception: spe _____	Coverage Msg Retrieval? y
LWC Activation? y	Auto Answer: none
CDR Privacy? n	Data Restriction? n
Redirect Notification? y	Idle Appearance Preference? n
PCOL/TEG Call Alerting? n	Personalized Ringing Pattern: 1
Active Station Ringing: single	Restrict Last Appearance? y
Data Module? y	
AUDIX Name: _____	
Messaging Server Name: _____	Audible Message Waiting? y

Screen 5-127. 7401D and 7401+ Station Form (Page 1 of X)**Implementation Notes:**

BCC is displayed when the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

The Active Station Ringing field is only displayed if the G3V2 option is enabled on the System-Parameters Customer-Options form.

The AUDIX Name and Messaging Server Name fields are only displayed on G3r V2 configurations.

		Page 1 of x	
STATION			
Extension: 300	BCC: 0		
Type: _____		Lock Messages? n	COR: 1
Port: _____		Security Code: _____	COS: 1_
Name: _____		Coverage Path: _____	
FEATURE OPTIONS			
LWC Reception: spe_____		Coverage Msg Retrieval? y	
LWC Activation? y		Auto Answer: none	
CDR Privacy? n		Data Restriction? n	
Redirect Notification? y		Idle Appearance Preference? n	
Bridged Call Alerting? n			
Active Station Ringing: single		Restrict Last Appearance? y	
Display Module? y			
AUDIX Name: _____			
Messaging Server Name: _____		Audible Message Waiting? y	

Screen 5-128. 7403D, 7410D, and 7410+ Station Form (Page 1 of X)**Implementation Notes:**

BCC is displayed when the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

The Active Station Ringing field is only displayed if the G3V2 option is enabled on the System-Parameters Customer-Options form.

The AUDIX Name and Messaging Server Name fields are only displayed on G3r V2 configurations.

Page 1 of x

		STATION	
Extension: 300	BCC: 0	Lock Messages? n	COR: 1_
Type: 7404D		Security Code: ____	COS: 1_
Port: _____		Coverage Path: ____	
Name: _____			

FEATURE OPTIONS	
LWC Reception: msa-spe	Coverage Msg Retrieval? y
LWC Activation? y	Auto Answer: none
CDR Privacy? n	Data Restriction? n
Redirect Notification? y	Idle Appearance Preference? n
Bridged Call Alerting? n	Personalized Ringing Pattern: 1
Active Station Ringing: single	Restrict Last Appearance? y
Data Module? y	Display Cartridge? n
Display Module? y	

AUDIX Name: _____	
Messaging Server Name: _____	Audible Message Waiting? y
Display Language: english	Disp Client Redir? n

Screen 5-129. 7404D Station Form (Page 1 of X)**Implementation Notes:**

BCC is displayed when the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

The Active Station Ringing field is only displayed if the G3V2 option is enabled on the System-Parameters Customer-Options form.

The AUDIX Name and Messaging Server Name fields are only displayed on G3r V2 configurations.

The Display Language field is only displayed when the Display Module field is "y".

		Page 2 of x	
STATION			
SITE DATA			
Room: _____		Headset? n	
Jack: _____		Speaker? n	
Cable: _____		Mounting? d	
Floor: _____		Cord Length: 0_	
Building: _____		Set Color: _____	
ABBREVIATED DIALING			
List1: _____	List2: _____	List3: _____	
BUTTON ASSIGNMENTS			
1: call-appr_	6: _____		
2: call-appr_	7: _____		
3: _____	8: _____		
4: _____	9: _____		
5: _____			

Screen 5-130. 7401D and 7401+ Station Form (Page 2 of X)

Implementation Note:

BUTTON ASSIGNMENTS for 7401D and 7401+:

- 1 through 9 only displayed. Buttons 1 and 2 not administrable (assigned as "call-appr"). Button 3 may be assigned as required.

Page 2 of x

STATION

SITE DATA

Room: _____ Headset? n

Jack: _____ Speaker? n

Cable: _____ Mounting? d

Floor: _____ Cord Length: 0_

Building: _____ Set Color: _____

ABBREVIATED DIALING

List1: _____ List2: _____ List3: _____

BUTTON ASSIGNMENTS

1: call-appr_	6: _____
2: call-appr_	7: _____
3: call-appr_	8: _____
4: _____	9: _____
5: _____	10: _____

Screen 5-131. 7403D, 7410D and 7410+ Station Form (Page 2 of X)

Implementation Note:

The first three buttons are defaulted as call appearance buttons.

Page 2 of x

STATION

SITE DATA

Room: _____ Headset? n

Jack: _____ Speaker? n

Cable: _____ Mounting? d

Floor: _____ Cord Length: 0_

Building: _____ Set Color: _____

ABBREVIATED DIALING

List1: _____ List2: _____ List3: _____

BUTTON ASSIGNMENTS

1: call-appr_	4: _____
2: call-appr_	5: _____
3: call-appr_	6: _____

Screen 5-132. 7404D Station Form (Page 2 of X)

Implementation Note:

Buttons 1 through 3 must be assigned as "call-appr".

DISPLAY BUTTON ASSIGNMENTS		Page Y of X
1:	_____	
2:	_____	
3:	_____	
4:	_____	
5:	_____	
6:	_____	
7:	_____	

Screen 5-133. 7404D Station Form (Page Y of X)

Implementation Notes:

Displayed when Display Module or Display Cartridge on Page 1 is "y". Buttons 1 through 7, when administered, relate to function buttons (F1-F7) on the associated data terminal.

For a 7404D equipped with an optional Messaging Cartridge without Integrated Directory, display buttons must be administered as shown on the form.

For a 7404D equipped with an optional Messaging Cartridge with Integrated Directory, display buttons must be administered as shown on the form with the exception of the date/time (button 7) which must be administered as "directory".

STATION		Page Y of X	
DATA MODULE			
Data Extension: _____	BCC: 2	ITC: restricted	
Name: _____	COR: 1_	COS: 1_	
ABBREVIATED DIALING			
List1: _____			
SPECIAL DIALING OPTION: _____			
HOT LINE DESTINATION			
DEFAULT DIALING			
Abbreviated Dialing Dial Code (From above list]: _			
ASSIGNED MEMBER (Station with a data extension button for this data module)			
Ext	Name		
1: _____	_____		

Screen 5-134. 7401D, 7401+, 7403D, 7404D Data Module Form (Page Y of X)**Implementation Notes:**

This page is displayed when Data Module on Page 1 is "y".

BCC is displayed when the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

HOT LINE DESTINATION is displayed when SPECIAL DIALING OPTION is "hot-line".

DEFAULT DIALING is displayed when SPECIAL DIALING OPTION is "default".

Abbreviated Dialing Dial Code is displayed when SPECIAL DIALING OPTION is "hot-line" or "default".

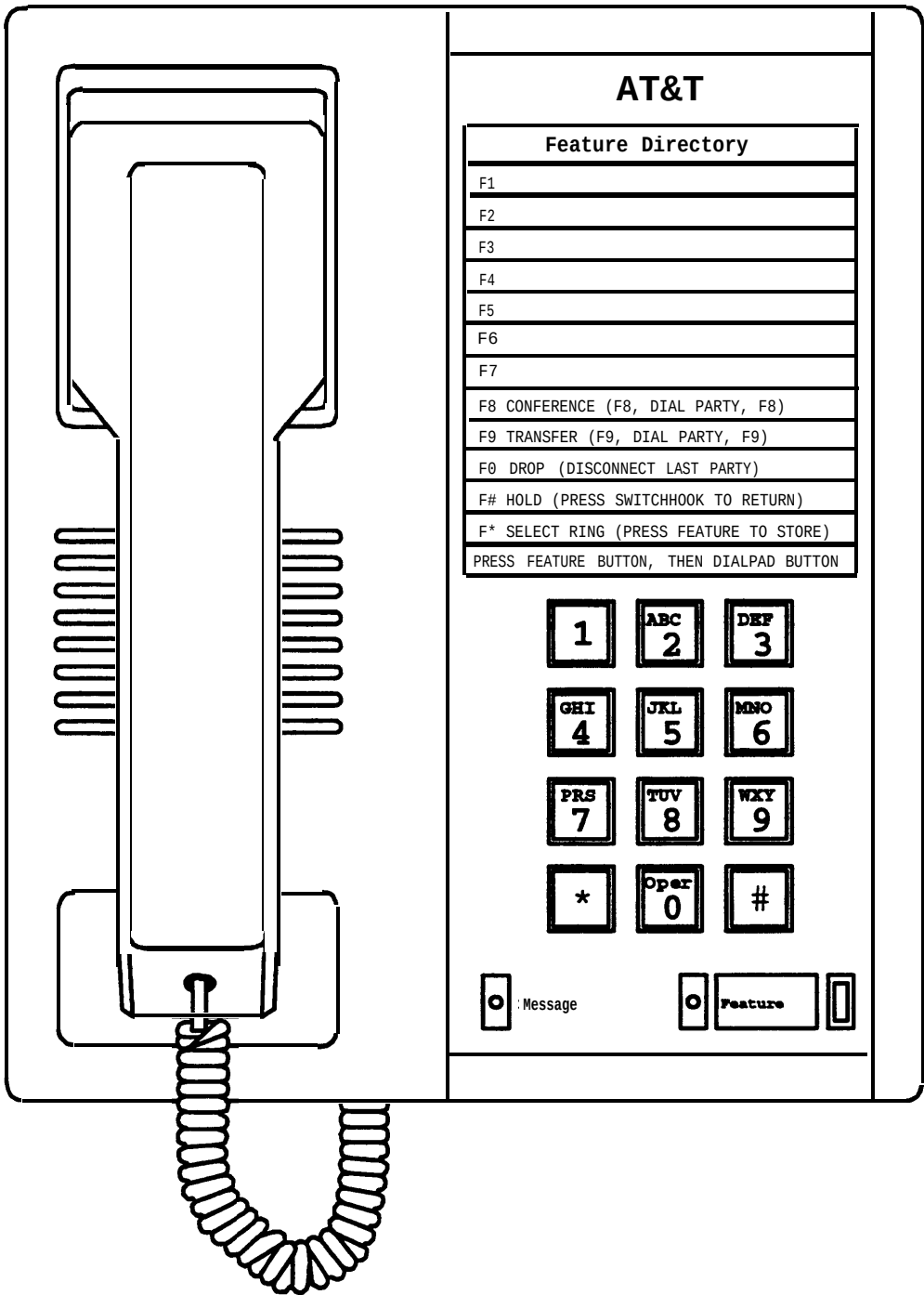


Figure 5-33. 7401D Voice Terminal

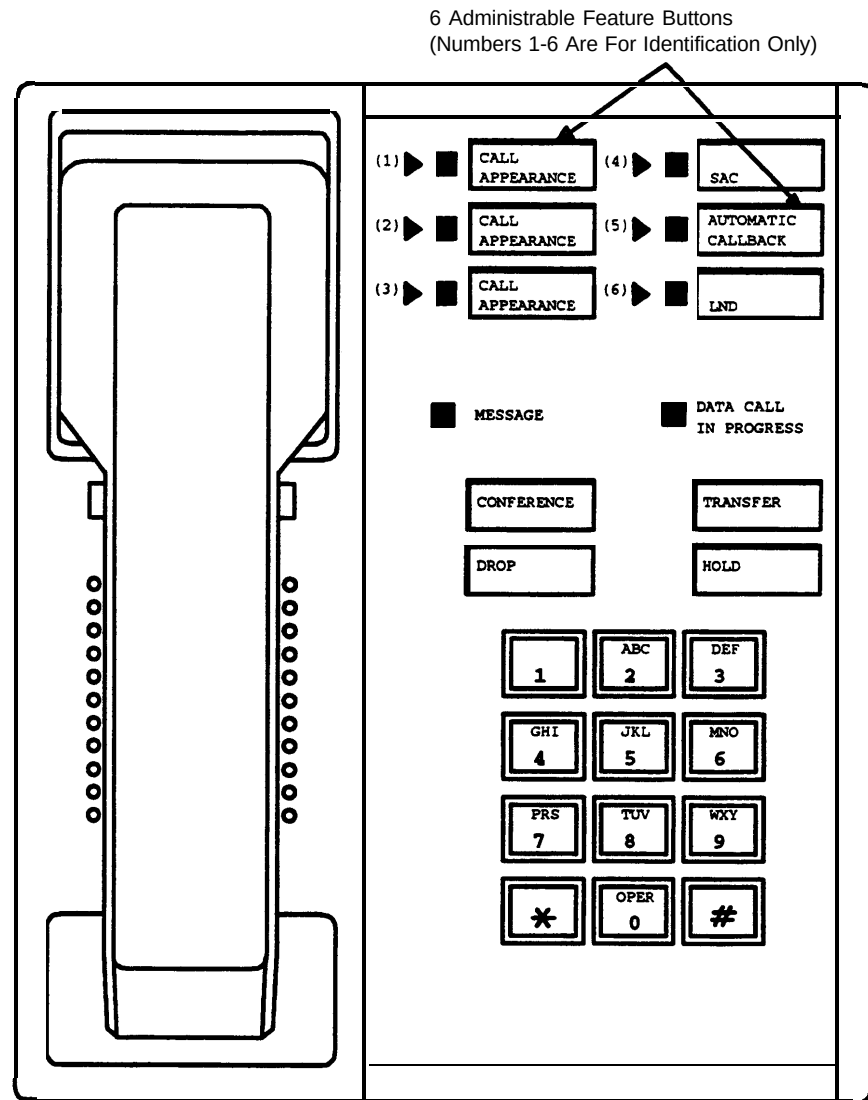


Figure 5-34. 7404D Voice Terminal

7405D Voice Terminal

This form is used to implement a 7405D multi-appearance voice terminal.

Administration Commands

The following administration commands can be used to access the Voice Terminal form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	station	xxxxx (extension number) or ('next')
change	station	xxxxx (extension number)
display	station	xxxxx (extension number)
duplicate	station	
list	station	[x (extension)][['ext' x]][['to-ext' x]][['pof't' x]][['type' x] ['count' n]][['print' or 'schedule']
remove	station	xxxxx (extension number)

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Please review the “Voice Terminals — General” information at least once before completing the form. General information, including feature button descriptions and characteristics is covered. In addition, descriptions of the administrable fields appearing on Pages 1 and 2 of the form are provided. Instructions are provided below for fields and/or pages of the form that require additional consideration because of the terminal type.

Page 1 of the Form

- **Type** — Enter “7405D”.
- **Active Station Ringing** — Only displayed when the G3V2 option is enabled on the System-Parameters Customer-Options form. Define how a call will ring at an off-hook station. Default is “single”.

Enter “continuous” to cause all calls terminated to this station to ring continuously.

Enter “single” to cause a call terminated to an off-hook and active or off-hook and idle station to receive one ring cycle and then ring silently.

Enter “if-busy-single” to cause a call terminated to an off-hook and idle station to ring continuously and a call terminated to an off-hook and active station to receive one ring cycle and then ring silently.

Enter "silent" to cause a call terminated to an off-hook and active or off-hook and idle station to receive no audible ring and just ring silently.

- **Data Module** — Enter "y" if this terminal is connected to an optional Digital Terminal Data Module (DTDM). If a "y" is entered, the Data Module form (Page 2) must be completed. Default is "n".
- **Feature Module** — Enter "y" if the voice terminal is to be connected to an optional Feature Module. If "y" is entered, the Feature Module form must also be completed. Enter "n" if a Feature Module is not desired. Default is "y".
- **Display Module** — Enter "y" if the voice terminal is to have a display by an optional Digital Display Module. If "y" is entered, the Display Button assignments form must be completed. Default is "n".
- **Coverage Module** — Enter "y" if the voice terminal is to be connected to an optional Call Coverage Module. If "y" is entered, the Coverage Module form must be completed. The voice terminal cannot have an optional Coverage Module and optional Digital Display Module at the same time. Default is "n".
- **Disp Client Redir** — This field is only administrable if the Hospitality feature has been enabled on the System-Parameters Customer-Options form. This field affects the station's display on calls that originated from a station with Client Room Class of Service. When the field is "n" (default), then for all calls originating from a Client Room (even redirected calls) that terminate to this station, this station's display will not show the redirection information. Only the client name and extension (or room, depending on what is administered on the System-Parameters Hospitality form) will be displayed. When the field is set to "y", the redirection information for a call originating from a Client Room and terminating to this station will be displayed.

 NOTE:

For stations with an "audix" station type, AUDIX Voice Power ports, or ports for any other type of messaging that needs display information, this field must be "y".

Page 2 of the Form

■ **BUTTON ASSIGNMENTS**

The feature buttons that can be assigned to the 7405D voice terminal are listed below. The abbreviated software name (that is, administration name) as shown on the following list must be entered on the form. Depending on the button type, additional auxiliary information may be required when administering buttons. This information is provided in the "Voice Terminals — General" section.

■ abr-prog	■ cov-msg-rt *	■ next *
■ abr-spchar	■ data-ext	■ night-serv
■ abrdg-appr	■ date-time *	■ noans-alm
■ abrv-dial	■ delete-msg *	■ normal *
■ at-alarm	■ dial-icom	■ per-COline
■ aca-call	■ directory *	■ pms-alarm
■ after-call	■ disp-norm	■ pr-awu-alm
■ alt-frl	■ dn-dst	■ pr-pms-alm
■ assist	■ ds1-alarm	■ pr-sys-alm
■ atd-qcalls *	■ exclusion	■ print-msgs
■ atd-qtime *	■ ext-dn-dst *	■ priority
■ aut-msg-wt	■ flash	■ q-calls
■ auto-cback	■ goto-cover	■ q-time
■ auto-icom	■ grp-dn-dst *	■ release
■ auto-in	■ hunt-ns	■ ringer-off
■ auto-wkup *	■ in-call-id	■ rs-alert
■ aux-work	■ inspect *	■ rsvn-call
■ brdg-appr **	■ int-aut-an	■ scroll
■ busy-ind	■ last-numb	■ send-calls
■ call-appr **	■ link-alarm	■ send-term
■ call-disp *	■ lsvn-call	■ serv-obsrv
■ call-fwd	■ lwc-cancel	■ signal
■ call-park	■ lwc-store	■ stored-num *
■ call-pkup	■ major-alm	■ stroke-cnt
■ callr-info *	■ man-msg-wt	■ term-x-gr
■ cas-backup	■ man-overid *	■ timer *
■ cdr1-alm	■ manual-m	■ trk-ac-alm
■ cdr2-alm	■ mct-act	■ trk-id
■ check-in *	■ mct-contr	■ trunk-name *
■ check-out *	■ mj/mn alm	■ trunk-ns
■ clk-overid *	■ msg-retr *	■ verify
■ consult	■ mwn-act *	■ work-code
■ cov-cback	■ mwn-deact *	

* Display-type button (not administrable on Coverage Module form).

** Not administrable on Feature Module form.

On the 7405D voice terminal button number assignments, the first three buttons are defaulted as call appearances. At least two Button Assignments must be administered as call-appr (call appearance.) As shown in the figures at the end of this section, the 7405D Voice Terminal can have an optional Function Key Module (administered as a Feature Module), Digital Display Module, and Coverage Module, respectively. **Page 3 of the Form**

■ FEATURE BUTTON ASSIGNMENTS

The features buttons that can be assigned to the 7405D Page 3 form are the same as those listed for the preceding BUTTON ASSIGNMENTS. Display-type feature buttons may only be assigned if the Display field on Page 1 is "y".

The figure entitled "7405D Voice Terminal" at the end of this section depicts the 7405D voice terminal button number assignments in relation to the button numbers on the Voice Terminal form.

Page X of the Form (FEATURE MODULE BUTTON ASSIGNMENTS)

- Only displayed if the Feature Module field on Page 1 is "y". The features buttons that can be assigned are the same as those listed for BUTTON ASSIGNMENTS above. (Call appearance and bridged call appearance buttons cannot be administered on this form.) Refer to the figure entitled "7405D Voice Terminal" for the button assignments locations (1 through 24) on the Function Key Module.

Page X of the Form (COVERAGE MODULE BUTTON ASSIGNMENTS)

- Only displayed if the Coverage Module field on Page 1 is "y".

The features buttons that can be assigned are the same as those listed for the preceding BUTTON ASSIGNMENTS (display-type buttons cannot be administered on this form). Refer to the figure entitled "7405D Voice Terminal" for the Coverage Module button locations.

Up to ten call appearance, ten abrdg-appr, and ten brdg-appr buttons can be distributed between a Coverage Module and the associated administrable buttons on the 7405D Voice Terminal.

Page X of the Form (DISPLAY BUTTON ASSIGNMENTS)

- Only displayed if the Display field on Page 1 is "y". The display-type buttons that can be assigned are noted with an asterisk on the above list.

Page X of the Form (DATA MODULE)

- Only displayed if the Data Module field on Page 1 is "y". Refer to the "Station Forms — Field Descriptions" section in this chapter for associated field descriptions.

			Page 1 of X
STATION			
Extension: _____	BCC: 0		
Type: 7405D	Lock Messages: n	COR: 1	
Port: _____	Security Code: _____	COS: 1	
Name: _____	Coverage Path: _____		
FEATURE OPTIONS			
LWC Reception? msa-spe	Coverage Msg Retrieval? y		
LWC Activation? y	Auto Answer: none		
CDR Privacy? n	Data Restriction? n		
Redirect Notification? y	Idle Appearance Preference? n		
Bridged Call Alerting? n			
Active Station Ringing: single	Restrict Last Appearance? y		
Data Module? n	Feature Module? n		
Display Module? y	Coverage Module? n		
AUDIX Name: _____			
Messaging Server Name: _____	Audible Message Waiting? y		
Display Language: English	Disp Client Redir? n		

Screen 5-135. 7405D Station Form (Page 1 of X)**Implementation Notes:**

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

The Active Station Ringing field is only displayed if the G3V2 option is enabled on the System-Parameters Customer-Options form.

The Display Language field is only displayed when Display Module is "y".

The AUDIX Name and Messaging Server Name fields are only displayed on G3r V2 configurations.

STATION		Page 2 of X
SITE DATA		
Room: _____		Headset? n
Jack: _____		Speaker? n
Cable: _____		Mounting? d
Floor: _____		Cord Length: 0_
Building: _____		Set Color: _____
ABBREVIATED DIALING		
List1: _____	List2: _____	List3: _____
BUTTON ASSIGNMENTS		
1: call-appr_	6: _____	
2: call-appr_	7: _____	
3: call-appr_	8: _____	
4: _____	9: _____	
5: _____	10: _____	

Screen 5-136. 7405D Station Form (Page 2 of X)

Implementation Note:

At least two Button Assignments must be assigned as call-appr (call appearance.)

FEATURE		STATION
BUTTON	ASSIGNMENTS	
1:	_____	2: _____
		3: _____
		4: _____
5:	_____	12: _____
6:	_____	13: _____
7:	_____	14: _____
8:	_____	15: _____
9:	_____	16: _____
10:	_____	17: _____
11:	_____	18: _____

Screen 5-137. 7405D Station Form (Page 3 of X)

FEATURE		STATION
MODULE	BUTTON ASSIGNMENTS	
1:	_____	13: _____
2:	_____	14: _____
3:	_____	15: _____
4:	_____	16: _____
5:	_____	17: _____
b:	_____	18: _____
7:	_____	19: _____
8:	_____	20: _____
9:	_____	21: _____
10:	_____	22: _____
11:	_____	23: _____
12:	_____	24: _____

Screen 5-138. 7405D Feature Module Form**Implementation Note:**

Only displayed if the Feature Module field on Page 1 is "y".

This form is used to assign features to the 24 administrable buttons on the 7405D voice terminal (does not include Bridged Call Appearance buttons). Feature buttons to be assigned to the optional Function Key Module (administered as Feature Module) or Coverage Module, when used, must be assigned on their respective form(s) (covered later in this section).

		STATION		Page Y of X
COVERAGE	MODULE	BUTTON	ASSIGNMENTS	
1:	_____			11: _____
2:	_____			12: _____
3:	_____			13: _____
4:	_____			14: _____
5:	_____			15: _____
6:	_____			16: _____
7:	_____			17: _____
8:	_____			18: _____
9:	_____			19: _____
10:	_____			20: _____

Screen 5-139. 7405D Coverage Module Form (Page Y of X)

Implementation Note:

Only displayed if the Coverage Module field on Page 1 is "y".

		STATION		Page Y of X
DISPLAY	BUTTON	ASSIGNMENTS		
1:	_____			
2:	_____			
3:	_____			
4:	_____			
5:	_____			
6:	_____			
7:	_____			

Screen 5-140. 7405D Display Form (Page Y of X)

Implementation Note:

Only displayed if the Display field on Page 1 is "y". Button locations (1 through 7) are associated with buttons 1 through 7 on the optional Digital Display Module.

		Page Y of X	
STATION			
DATA MODULE			
Data Extension: _____	BCC: 2	ITC: restricted	
Name: _____	COR: 1_	COS: 1_	
ABBREVIATED DIALING			
List1: _____			
SPECIAL DIALING OPTION: _____			
HOT LINE DESTINATION			
DEFAULT DIALING			
Abbreviated Dialing Dial Code (From above list): _			
ASSIGNED MEMBER (Station with a data extension button for this data module)			
Ext	Name		
1:			

Screen 5-141. 7M5D Data Module Form (Page Y of X)**Implementation Notes:**

This page is only displayed if the Data Module field on Page 1 is "y".

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

HOT LINE DESTINATION only displayed when the SPECIAL DIALING OPTION field is "hot-line".

DEFAULT DIALING only displayed when the SPECIAL DIALING OPTION field is "default".

Abbreviated Dialing Dial Code only displayed when SPECIAL DIALING OPTION is "hot-line" or "default".

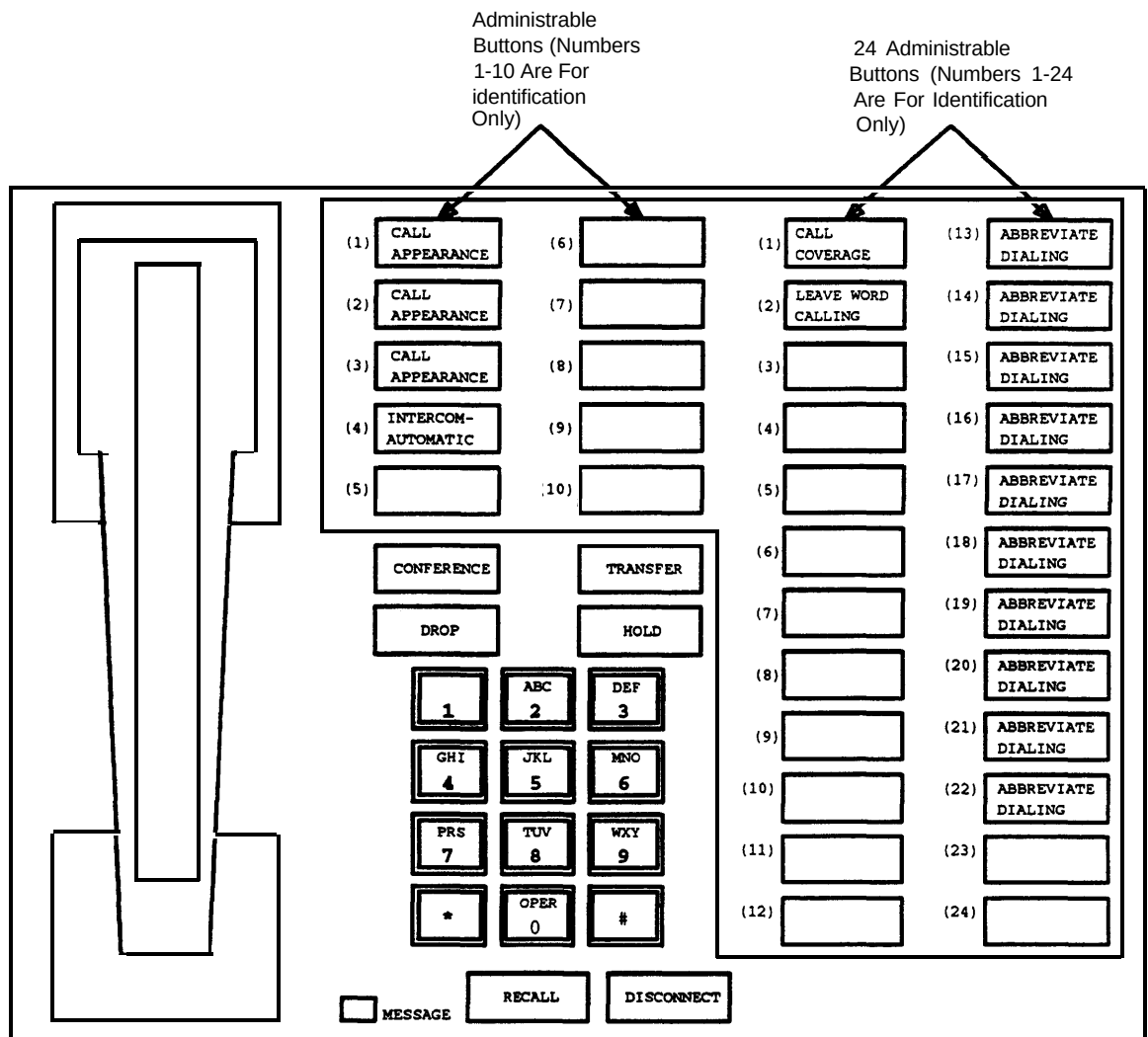


Figure 5-35. 7405D Voice Terminal

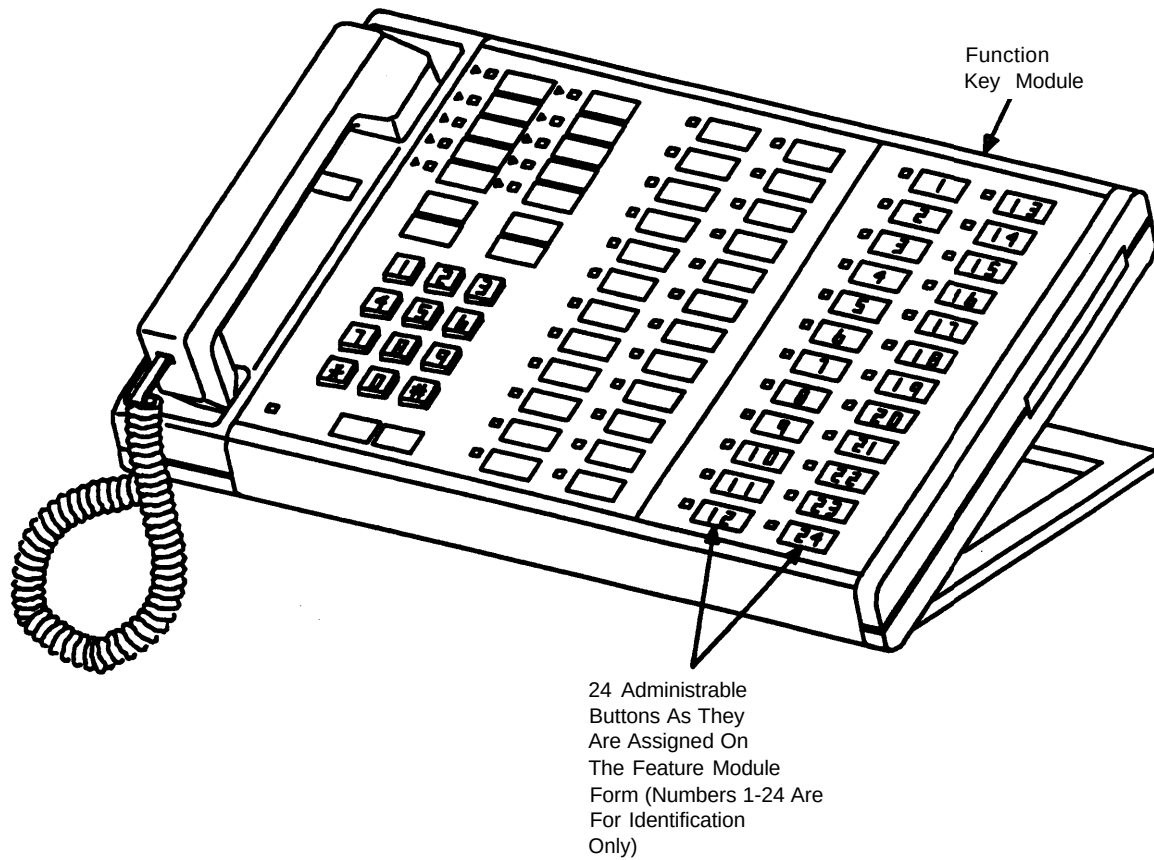


Figure 5-36. 7405D Voice Terminal With Optional Function Key Module

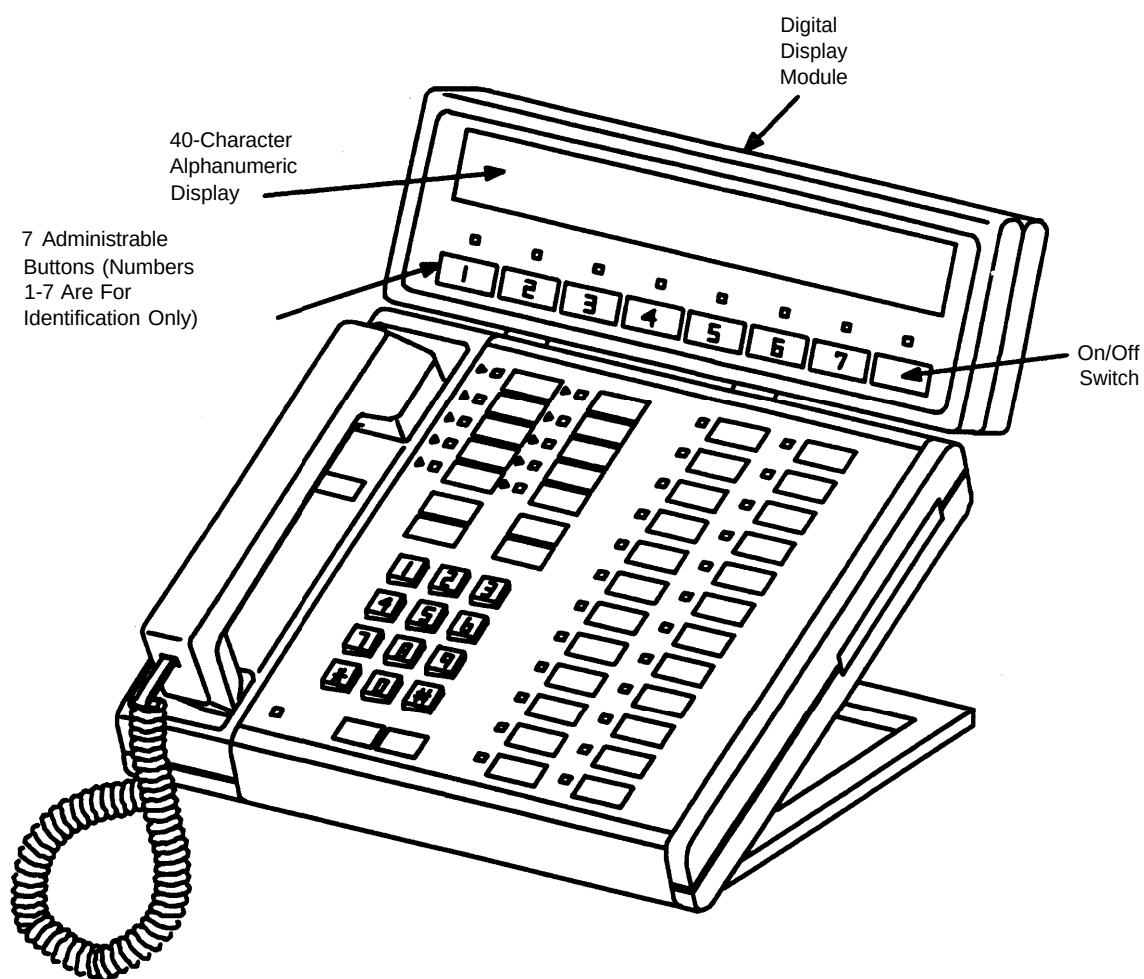


Figure 5-37. 7405D Voice Terminal With Optional Digital Display Module

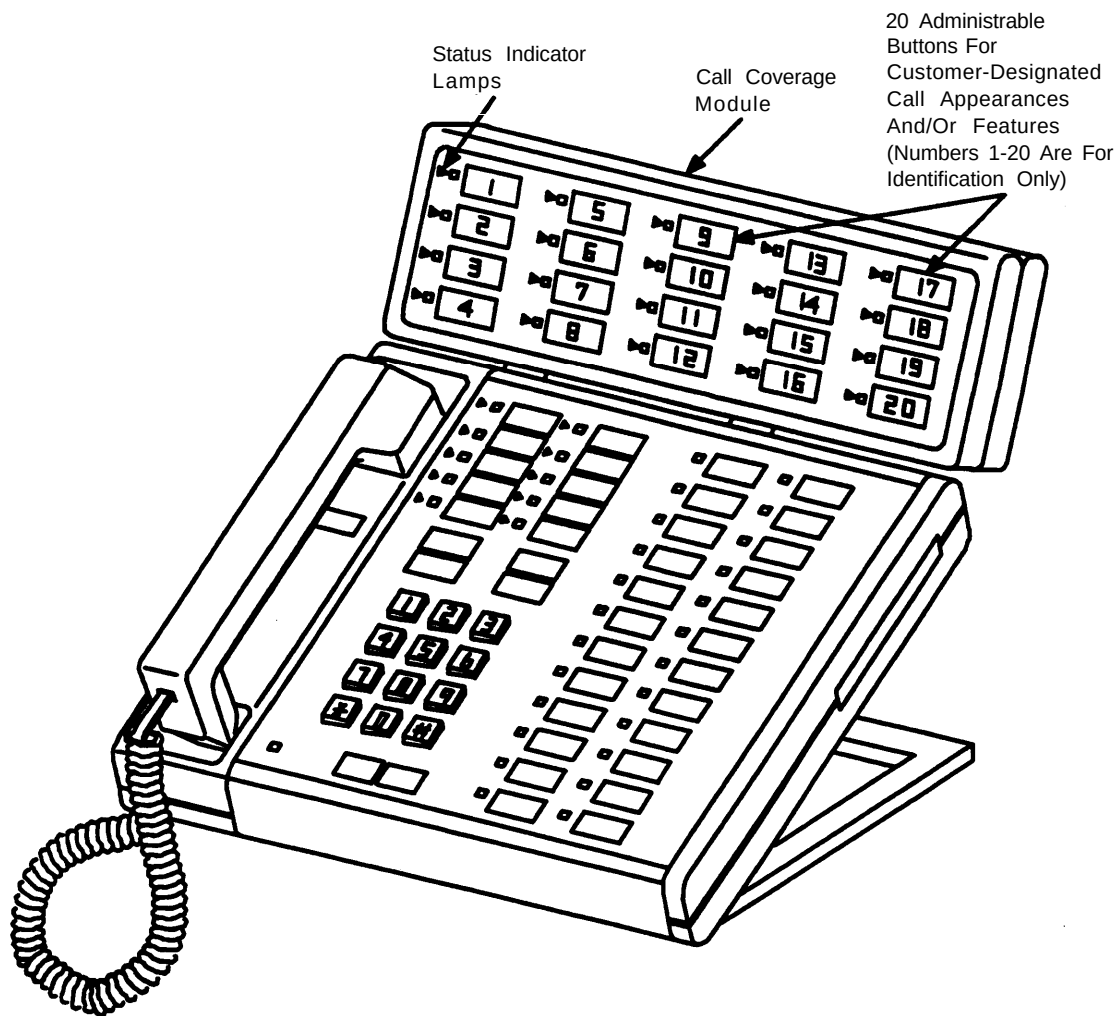


Figure 5-38. 7405D Voice Terminal With Optional Call Coverage Module

7406D, 7406+, 7407D, and 7407+ Voice Terminals

This form is used to implement a 7406D, 7406+, 7407D, and 7407+ voice terminal.

Administration Commands

The following administration commands can be used to access the Voice Terminal forms. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	station	xxxxx (extension number) or ('next')
change	station	xxxxx (extension number)
display	station	xxxxx (extension number)
duplicate	station	
list	station	[x (extension)]['ext' x][['to-ext' x][['port' x][['type' x] ['count' n][['print' or 'schedule']
remove	station	xxxxx (extension number)

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Please review the “Voice Terminals — General” information at least once before completing the form. General information, including feature button descriptions and characteristics is covered. In addition, descriptions of the administrable fields appearing on Pages 1 and 2 of the form are provided. Instructions are provided below for fields and/or pages of the form that require additional consideration because of the terminal type.

Page 1 of the Form

- **Type** — Enter “7406D”, “7406+”, “7407D”, or “7407+” as appropriate.
- **Active Station Ringing** — Only displayed when the G3V2 option is enabled on the System-Parameters Customer-Options form. Define how a call will ring at an off-hook station. Default is “single”.

Enter “continuous” to cause all calls terminated to this station to ring continuously.

Enter “single” to cause a call terminated to an off-hook and active or off-hook and idle station to receive one ring cycle and then ring silently.

Enter "if-busy-single" to cause a call terminated to an off-hook and idle station to ring continuously and a call terminated to an off-hook and active station to receive one ring cycle and then ring silently.

Enter "silent" to cause a call terminated to an off-hook and active or off-hook and idle station to receive no audible ring and just ring silently.

- **Data Module** — Enter "y" if this voice terminal is equipped with an optional 703A Data Stand (7406D or 7406+), a 702AL1-DSU (7407D or 7407+), or 7400B Data Module (7406D, 7406+, 7407D, or 7407+) and connected to an associated data terminal; otherwise, enter "n". If "y" is entered, the Data Module form must be completed. Default is "y".
- **Display Module** — Display-only field (set to "y") for the 7407D and 7407+. For the 7406D and 7406+, enter "y" if the voice terminal is equipped with an optional digital display.

For the 7407D and 7407+ form, the Display Button Assignments form must be completed. Default is "n".

- **Disp Client Redir** — This field is only administrable if the Hospitality feature has been enabled on the System-Parameters Customer-Options form. This field affects the station's display on calls that originated from a station with Client Room Class of Service. When the field is "n" (default), then for all calls originating from a Client Room (even redirected calls) that terminate to this station, this station's display will not show the redirection information. Only the client name and extension (or room, depending on what is administered on the System-Parameters Hospitality form) will be displayed. When the field is set to "y", the redirection information for a call originating from a Client Room and terminating to this station will be displayed.



NOTE:

For stations with an "audix" station type, AUDIX Voice Power ports, or ports for any other type of messaging that needs display information, this field must be "y".

Page 2 of the Form

- **Headset** — For the 7406D and 7406+, enter "y" if a headset is to be used. The 7407D and 7407+ cannot have a headset. Default is "n".

- **BUTTON ASSIGNMENTS**

The feature buttons that can be assigned to the 7406D, 7406+, 7407D, or 7407+ voice terminals are listed below. The abbreviated software name (that is, administration name) as shown on the following list must be entered on the form. Depending on the button type, additional auxiliary information may be required when administering buttons. This information is provided in the "Voice Terminals — General" section.

■ abr-prog	■ cov-msg-rt *	■ next *
■ abr-spchar	■ data-ext	■ night-serv
■ abrdg-appr	■ date-time *	■ noans-alrt
■ abrv-dial	■ delete-msg *	■ normal *
■ at-alarm	■ dial-icom	■ per-COLine
■ aca-call	■ directory *	■ pms-alarm
■ after-call	■ disp-norm	■ pr-awu-alm
■ alt-frl	■ dn-dst	■ pr-pms-alm
■ assist	■ ds1-alarm	■ pr-sys-alm
■ atd qcalls *	■ exclusion	■ print-msgs
■ atd-qtime *	■ ext-dn-dst *	■ priority
■ aut-msg-wt	■ flash	■ q-calls
■ auto-cback	■ goto-cover	■ q-time
■ auto-icom	■ grp-dn-dst *	■ release
■ auto-in	■ hunt-ns	■ ringer-off
■ auto-wkup *	■ in-call-id	■ rs-alert
■ aux-work	■ inspect *	■ rsvn-call
■ brdg-appr	■ int-aut-an	■ scroll
■ busy-ind	■ last-numb	■ send-calls
■ call-appr	■ link-alarm	■ send-term
■ call-disp *	■ lsvn-call	■ serv-obsrv
■ call-fwd	■ lwc-cancel	■ signal
■ call-park	■ lwc-store	■ stored-num *
■ call-pkup	■ major-alm	■ stroke-cnt
■ callr-info *	■ man-msg-wt	■ term-x-gr
■ cas-backup	■ man-overid *	■ timer *
■ cdr1-alm	■ manual-in	■ trk-ac-alm
■ cdr2-alm	■ mct-act	■ trk-id
■ check-in *	■ mct-contr	■ trunk-name *
■ check-out *	■ mj/mn alm	■ trunk-ns
■ clk-overid *	■ msg-retr *	■ verify
■ consult	■ mwn-act *	■ work-code
■ cov-cback	■ mwn-deact *	

* Display-type button.

The figures entitled “7406D Voice Terminal” and “7407D Voice Terminal” at the end of this section show the 7406D and 7407D voice terminal button number assignments in relation to the button numbers on the voice terminal form. The first three buttons are defaulted as call appearance.

Page 3 of the Form

■ **FEATURE BUTTON ASSIGNMENTS**

The features and functions that can be assigned to the 7406D, 7406+, 7407D, or 7407+ voice terminal administrable buttons are the same as those listed for BUTTON ASSIGNMENTS above.

Page X of the Form (DISPLAY BUTTON ASSIGNMENTS)

- Only displayed if the “Display Module” field on Page 1 (7406D and 7406+ form) is “y” or the Type field on Page 1 is “7407D”, or “7407+”. The display buttons that can be administered are noted with asterisks on the above list (see BUTTON ASSIGNMENTS). The abbreviated names as shown on the list must be entered on the form.

Page X of the Form (DATA MODULE)

- Only displayed if the Data Module field on Page 1 is “y”. Refer to “Station Forms — Field Descriptions” section in this chapter for associated field descriptions.

Page 1 of X

STATION		
Extension: _____	BCC : 0	
Type: 7406D	Lock Messages: n	COR: 1
Port: _____	Security Code: _____	COS: 1
Name: _____	Coverage Path: _____	
FEATURE OPTIONS		
LWC Reception? msa-spe	Coverage Msg Retrieval? y	
LWC Activation? y	Auto Answer: none	
CDR Privacy? n	Data Restriction? n	
Redirect Notification? y	Idle Appearance Preference? n	
Bridged Call Alerting? n	Personalized Ringing Pattern: 1	
Active Station Ringing: single	Restrict Last Appearance? y	
Data Module? n		
Display Module? y		
AUDIX Name: _____		
Messaging Server Name: _____	Audible Message Waiting? y	
Display Language: English	Disp Client Redir? n	

Screen 5-142. 7406D and 7406+ Station Form (Page 1 of X)**Implementation Notes:**

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

The Active Station Ringing field is only displayed if the G3V2 option is enabled on the System-Parameters Customer-Options form.

The Display Language field is only displayed if Display Module is "y".

The AUDIX Name and Messaging Server Name fields are only displayed for G3r V2 configurations.

Page 2 of X

STATION

SITE DATA

Room: _____ Headset? n

Jack: _____ Speaker? n

Cable: _____ Mounting? d

Floor: _____ Cord Length: 0_

Building: _____ Set Color: _____

ABBREVIATED DIALING

List1: _____ List2: _____ List3: _____

BUTTON ASSIGNMENTS

1: call-appr_ 4: _____

2: call-appr_ 5: _____

3: call-appr_

Screen 5-143. 7406D and 7406+ Station Form (Page 2 of X)

Page 3 of X

STATION

FEATURE BUTTON ASSIGNMENTS

1: _____ 2: _____

3: _____

4: _____

5: _____ 12: _____

6: _____ 13: _____

7: _____ 14: _____

8: _____ 15: _____

9: _____ 16: _____

10: _____ 17: _____

11: _____ 18: _____

Screen 5-144. 7406D and 7406+ Station Form (Page 3 of X)

Implementation Notes:

Buttons 5 through 11 are dual function buttons. An associated Shift button on the voice terminal is used to enable either buttons 5 through 11 or enable associated buttons 12 through 18.

Only buttons 1 through 4 have status lamps. It is recommended that feature button assignments requiring status lamp indications not be administered to buttons 5 through 18.

Feature buttons #2 and #3 will not work, even if administered, for set versions 7406D05A and 7406D06A. They are pre-assigned.

Page 1 of X

STATION	
Extension: _____	BCC : 0
Type: 7407D	Lock Messages: n
Port: _____	Security Code: _____
Name: _____	Coverage Path: _____
FEATURE OPTIONS	
LWC Reception? msa-spe	Coverage Msg Retrieval? y
LWC Activation? y	Auto Answer: none
CDR Privacy? n	Data Restriction? n
Redirect Notification? y	Idle Appearance Preference? n
Bridged Call Alerting? n	personalized Ringing Pattern: _
Active Station Ringing: single	Restrict Last Appearance? y
Data Module? n	
Display Module? y	
AUDIX Name: _____	
Messaging Server Name: _____	Audible Message Waiting? y
Display Language: English	Disp Client Redir? n

Screen 5-145. 7407D and 7407+ Station Form (Page 1 of X)

Implementation Notes:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

The Active Station Ringing field is only displayed if the G3V2 option is enabled on the System-Parameters Customer-Options form.

The Display Language field is only displayed if Display Module is "y".

The AUDIX Name and Messaging Server Name fields are only displayed for G3r V2 configurations.

Page 2 of X

STATION

SITE DATA

Room: _____

Jack: _____

Cable: _____

Floor: _____

Building: _____

ABBREVIATED DIALING

List1: _____

Button Assignments

1: call-appr_

2: call-appr_

3: call-appr_

4: _____

5: _____

Headset? n

Speaker? n

Mounting? d

Cord Length: 0_

Set Color: _____

List2: _____

List3: _____

6: _____

7: _____

8: _____

9: _____

10: _____

Screen 5-146. 7407D and 7407+ Voice Terminal Form (Page 2 of X)

Page 3 of X

STATION

Feature Button Assignments

1: _____

2: _____

3: _____

4: _____

5: _____

6: _____

7: _____

8: _____

9: _____

10: _____

11: _____

12: _____

13: _____

14: _____

15: _____

16: _____

17: _____

18: _____

19: _____

20: _____

21: _____

22: _____

23: _____

24: _____

Screen 5-147. 7407D and 7407+ Voice Terminal Form (Page 3 of X)

Implementation Note:

Only buttons 1 and 2 have status lamps. It is recommended that feature button assignments requiring status lamp indications not be administered to buttons 3 through 24.

			Page Y of X
			STATION
DISPLAY	BUTTON	ASSIGNMENTS	
1:	_____		
2:	_____		
3:	_____		
4:	_____		
5:	_____		
6:	_____		
7:	_____		

Screen 5-148. 7406D, 7406+, 7407D, and 7407+ Station Form (Page Y of X)

Implementation Note:

This page is only displayed when the Type field on Page 1 is "7407D" or "7407+".

			Page Y of X		
			STATION		
DATA MODULE					
Data Extension: ____		BCC: 2		ITC: restricted	
Name: _____		COR: 1_		COS: 1_	
ABBREVIATED DIALING					
List1: _____					
SPECIAL DIALING OPTION: ____					
HOT LINE DESTINATION					
DEFAULT DIALING					
Abbreviated Dialing Dial Code (From above list): _					
ASSIGNED MEMBER (Station with a data extension button for this data module)					
Ext		Name			
1:					

Screen 5-149. 7406D, 7406+, 7407D, and 7407+ Data Module Form (Page Y of X)**Implementation Notes:**

This page is only displayed if the Data Module field on Page 1 is "y".

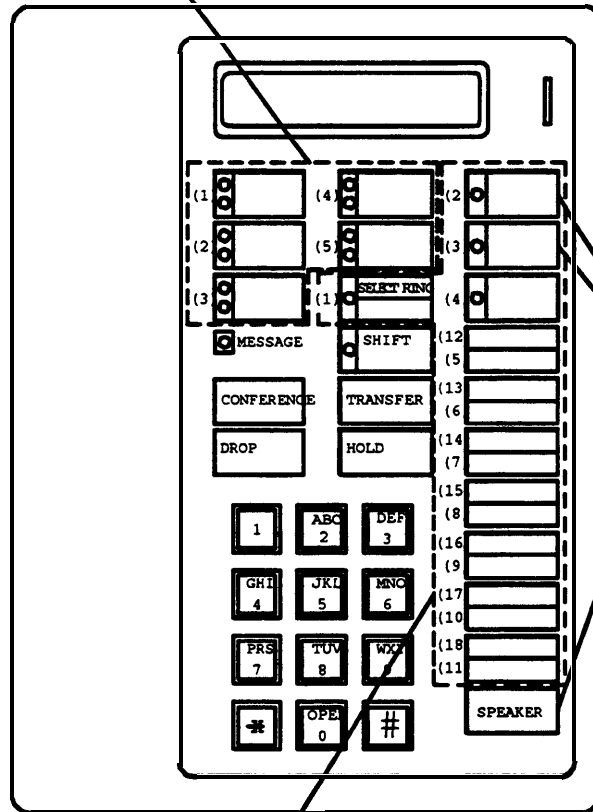
The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

HOT LINE DESTINATION only displayed when the SPECIAL DIALING OPTION field is "hot-line".

DEFAULT DIALING only displayed when the SPECIAL DIALING OPTION field is "default".

Abbreviated Dialing Dial Code only displayed when SPECIAL DIALING OPTION is "hot-line" or "default".

Administrable Call Appearance/Feature Buttons (Numbers Correspond To Button Assignments On Voice Terminal Screen Form, Page 2)



On 7406D05A And 7406D06A Only, Button (2) Is The Speakerphone On/Off Button, Button (3) Is The Speakerphone Mute Button, And The Button Shown As "SPEAKER" Is The Speaker Volume Button.

Administrable Feature-Only Buttons (Numbers Correspond To Feature Button Assignments On Voice Terminal Screen Form, Page 3)

Figure 5-39. 7406D Voice Terminal

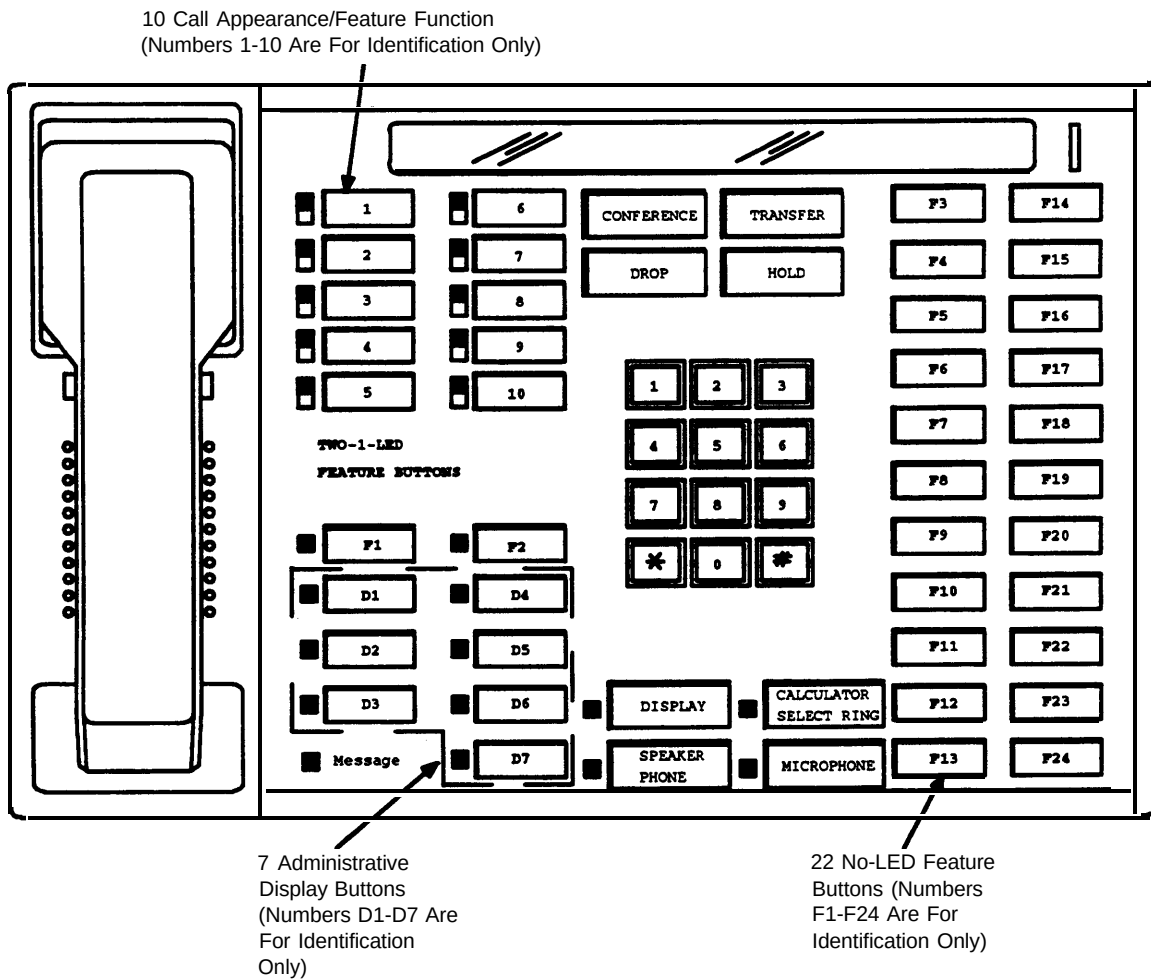


Figure 5-40. 7407D Voice Terminal

7434D and 7444D Voice Terminal

This form is used to implement a 7434D and 7444D multi-appearance voice terminal.

Administration Commands

The following administration commands can be used to access the Voice Terminal form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	station	xxxxx (extension number) or ('next')
change	station	xxxxx (extension number)
display	station	xxxxx (extension number)
duplicate	station	
list	station	[x (extension)][['ext' x]][['to-ext' x]][['port' x]][['type' x]] ['count' n]][['print' or 'schedule']
remove	station	xxxxx (extension number)

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Please review the “Voice Terminals — General” information at least once before completing the form. General information, including feature button descriptions and characteristics is covered. In addition, descriptions of the administrable fields appearing on Pages 1 and 2 of the form are provided. Instructions are provided below for fields and/or pages of the form that require additional consideration because of the terminal type.

Page 1 of the Form

- **Type** — Enter “7434D”, or “7444D”.
- **Active Station Ringing** — Only displayed when the G3V2 option is enabled on the System-Parameters Customer-Options form. Define how a call will ring at an off-hook station. Default is “single”.

Enter “continuous” to cause all calls terminated to this station to ring continuously.

Enter “single” to cause a call terminated to an off-hook and active or off-hook and idle station to receive one ring cycle and then ring silently.

Enter “if-busy-single” to cause a call terminated to an off-hook and idle station to ring continuously and a call terminated to an off-hook and active

station to receive one ring cycle and then ring silently.

Enter "silent" to cause a call terminated to an off-hook and active or off-hook and idle station to receive no audible ring and just ring silently.

- **Data Module** — Enter "y" if this terminal is connected to an optional 7400B Data Module. If a "y" is entered, the Data Module form (page x) must be completed. Default is "n".
- **Display Module** — Enter "y" if the voice terminal is to have a display by an optional Digital Display Module. If "y" is entered, the Display Button assignments form must be completed. Default is "n".
- **Coverage Module** — Only appears if "7434D" was entered in the Type field. Enter "y" if the voice terminal is to be connected to an optional Call Coverage Module. If "y" is entered, the Coverage Module form must be completed. The voice terminal cannot have an optional Coverage Module and optional Digital Display Module at the same time. Default is "n".
- **Disp Client Redir** — This field is only administrable if the Hospitality feature has been enabled on the System-Parameters Customer-Options form. This field affects the station's display on calls that originated from a station with Client Room Class of Service. When the field is "n" (default), then for all calls originating from a Client Room (even redirected calls) that terminate to this station, this station's display will not show the redirection information. Only the client name and extension (or room, depending on what is administered on the System-Parameters Hospitality form) will be displayed. When the field is set to "y", the redirection information for a call originating from a Client Room and terminating to this station will be displayed.

**NOTE:**

For stations with an "audix" station type, AUDIX Voice Power ports, or ports for any other type of messaging that needs display information, this field must be "y".

Page 2 of the Form**■ BUTTON ASSIGNMENTS**

The feature buttons that can be assigned to the 7434D voice terminal are listed below. The abbreviated software name (that is, administration name) as shown on the following list must be entered on the form. Depending on the button type, additional auxiliary information may be required when administering buttons. This information is provided in the "Voice Terminals — General" section.

■ abr-prog	■ cov-msg-rt *	■ next *
■ abr-spchar	■ data-ext	■ night-serv
■ abrdg-appr	■ date-time *	■ noans-alrt

■ abrv-dial	■ delete-msg *	■ normal *
■ ac-alarm	■ dial-icom	■ per-COLine
■ aca-call	■ directory *	■ pms-alarm
■ after-call	■ disp-norm	■ pr-awu-alm
■ alt-frl	■ dn-dst	■ pr-pms-alm
■ assist	■ ds1-alarm	■ pr-sys-alm
■ atd-qcalls *	■ exclusion	■ print-msgs
■ atd-qtime *	■ ext-dn-dst *	■ priority
■ aut-msg-wt	■ flash	■ q-calls
■ auto-cback	■ goto-cover	■ q-time
■ auto-icom	■ grp-dn-dst *	■ release
■ auto-in	■ hunt-ns	■ ringer-off
■ auto-wkup *	■ in-call-id	■ rs-alert
■ aux-work	■ inspect *	■ rsvn-call
■ brdg-appr	■ int-aut-an	■ scroll
■ busy-ind	■ last-numb	■ send-calls
■ call-appr	■ link-alarm	■ send-term
■ call-disp *	■ lsvn-call	■ serv-obsrv
■ call-fwd	■ lwc-cancel	■ signal
■ call-park	■ lwc-store	■ stored-num *
■ call-pkup	■ major-alm	■ stroke-cnt
■ callr-info *	■ man-msg-wt	■ term-x-gr
■ cas-backup	■ man-overid *	■ timer *
■ cdr1-alm	■ manual-in	■ trk-ac-alm
■ cdr2-alm	■ mct-act	■ trk-id
■ check-in *	■ mct-contr	■ trunk-name *
■ check-out *	■ mj/mn alm	■ trunk-ns
■ clk-overid *	■ msg-retr *	■ verify
■ consult	■ mwn-act *	■ work-code
■ cov-cback	■ mwn-deact *	

* Display-type button.

The figure entitled "7434D Voice Terminal" at the end of this section shows the 7434D voice terminal button number assignments in relation to the button numbers on the Voice Terminal form. The first three buttons are defaulted as call appearance. To see drawings of the 7434D with an optional Coverage Module and Display Module, respectively, refer to the last two figures in this section.

Page 3 of the Form

■ FEATURE BUTTON ASSIGNMENTS

The features buttons that can be assigned are the same as those listed for BUTTON ASSIGNMENTS above. The abbreviated name as shown on the list must be entered on the form.

The figure entitled "7434D Voice Terminal" shows the 7434D voice terminal button number assignments in relation to the button numbers on the Voice Terminal form.

Page X of the Form (COVERAGE MODULE BUTTON ASSIGNMENTS)

- Only displayed if the Coverage Module field on Page 1 is "y". The features buttons that can be assigned are the same as those listed for BUTTON ASSIGNMENTS above except that display-type buttons cannot be assigned. The abbreviated name as shown on the list must be entered on the form.

A minimum of two or a maximum often call appearance buttons can be administered. When two call appearance buttons are administered, the maximum number of Bridged Appearance buttons that can be administered is 52 or 32 with or without a Coverage Module, respectively.

Page X of the Form (DISPLAY BUTTON ASSIGNMENTS)

- Only displayed if the Display field on Page 1 is "y". The display-type buttons that can be assigned are shown on the preceding BUTTON ASSIGNMENTS list. Display-type buttons are noted with an asterisk. The abbreviated name as shown on the list must be entered on the button field on the form.

Page X of the Form (DATA MODULE)

- Only displayed if the Data Module field on Page 1 is "y". Refer to the "Station Forms — Field Descriptions" section in this chapter for associated field descriptions.

Page 1 of X

STATION		
Extension: _____	BCC: 0	
Type: 7434D	Lock Messages: n	COR: 1
Port: _____	Security Code: _____	COS: 1
Name: _____	Coverage Path: _____	
FEATURE OPTIONS		
LWC Reception? msa-spe	Coverage Msg Retrieval? y	
LWC Activation? y	Auto Answer: none	
CDR Privacy? n	Data Restriction? n	
Redirect Notification? y	Idle Appearance Preference? n	
Bridged Call Alerting? n	Personalized Ringing Pattern: 1	
Active Station Ringing: single	Restrict Last Appearance? y	
Data Module? n		
Display Module? y	Coverage Module? n	
AUDIX Name: _____		
Messaging Server Name: _____	Audible Message Waiting? y	
Display Language: English	Disp Client Redir? n	

Screen 5-150. 7434D and 7444D Station Form (Page 1 of X)**Implementation Notes:**

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters-Customer-Options form.

The Active Station Ringing field is only displayed if the G3V2 option is enabled on the System-Parameters Customer-Options form.

The Display Language field is only displayed if Display Module is "y".

The Coverage Module field is not displayed for the 7444D voice terminal.

The AUDIX Name and Messaging Server Name fields are only displayed for G3r V2 configurations.

		Page 2 of X
STATION		
SITE DATA		
Room: _____	Headset? n	
Jack: _____	Speaker? n	
Cable: _____	Mounting? d	
Floor: _____	Cord Length: 0_	
Building: _____	Set Color: _____	
ABBREVIATED DIALING		
List1: _____	List2: _____	List3: _____
BUTTON ASSIGNMENTS		
1: call-appr_	6: _____	
2: call-appr_	7: _____	
3: call-appr_	8: _____	
4: _____	9: _____	
5: _____	10: _____	

Screen 5-151. 7434D and 7444D Station Form (Page 2 of X)

		Page 3 of X
STATION		
BUTTON ASSIGNMENTS		
11: _____	23: _____	
12: _____	24: _____	
13: _____	25: _____	
14: _____	26: _____	
15: _____	27: _____	
16: _____	28: _____	
17: _____	29: _____	
18: _____	30: _____	
19: _____	31: _____	
20: _____	32: _____	
21: _____	33: _____	
22: _____	34: _____	

Screen 5-152. 7434D and 7444D Station Form (Page 3 of X)

Implementation Note:

This form is used to assign features to the 24 administrable buttons on the 7434D voice terminal (may include call appearance and bridged call appearance buttons). Feature buttons-to be assigned to the optional Coverage Module, when used, must be assigned on its respective form (see next page).

STATION		Page Y of X
COVERAGE	MODULE	BUTTON ASSIGNMENTS
1:	_____	11: _____
2:	_____	12: _____
3:	_____	13: _____
4:	_____	14: _____
5:	_____	15: _____
6:	_____	16: _____
7:	_____	17: _____
8:	_____	18: _____
9:	_____	19: _____
10:	_____	20: _____

Screen 5-153. 7434D Coverage Module Form**Implementation Notes:**

Only displayed if the Coverage Module field on Page 1 is "y".

This page is not displayed for the 7444D voice terminal.

Do not administer display-type buttons (for example, inspect, normal) on this form.

STATION		Page Y of X
DISPLAY	BUTTON	ASSIGNMENTS
1:	_____	
2:	_____	
3:	_____	
4:	_____	
5:	_____	
6:	_____	
7:	_____	

Screen 5-154. 7434D and 7444D Display Form**Implementation Note:**

Only displayed if the Display field on Page 1 is "y". Button locations (1 through 7) are associated with buttons 1 through 7 on the optional Digital Display Module.

		Page Y of X	
STATION			
DATA MODULE			
Data Extension: _____		BCC: 2	ITC: restricted
Name: _____		COR: 1_	COS: 1_
ABBREVIATED DIALING			
List1: _____			
SPECIAL DIALING OPTION: _____			
HOT LINE DESTINATION			
DEFAULT DIALING			
Abbreviated Dialing Dial Code (From above list): _			
ASSIGNED MEMBER (Station with a data extension button for this data module)			
Ext		Name	
1:			

Screen 5-155. 7434D and 7444D Data Module Form (Page Y of X)**Implementation Notes:**

This page is only displayed if the Data Module field on Page 1 is "y".

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

HOT LINE DESTINATION only displayed when the SPECIAL DIALING OPTION field is "hot-line".

DEFAULT DIALING only displayed when the SPECIAL DIALING OPTION field is "default".

Abbreviated Dialing Dial Code only displayed when SPECIAL DIALING OPTION is "hot-line" or "default".

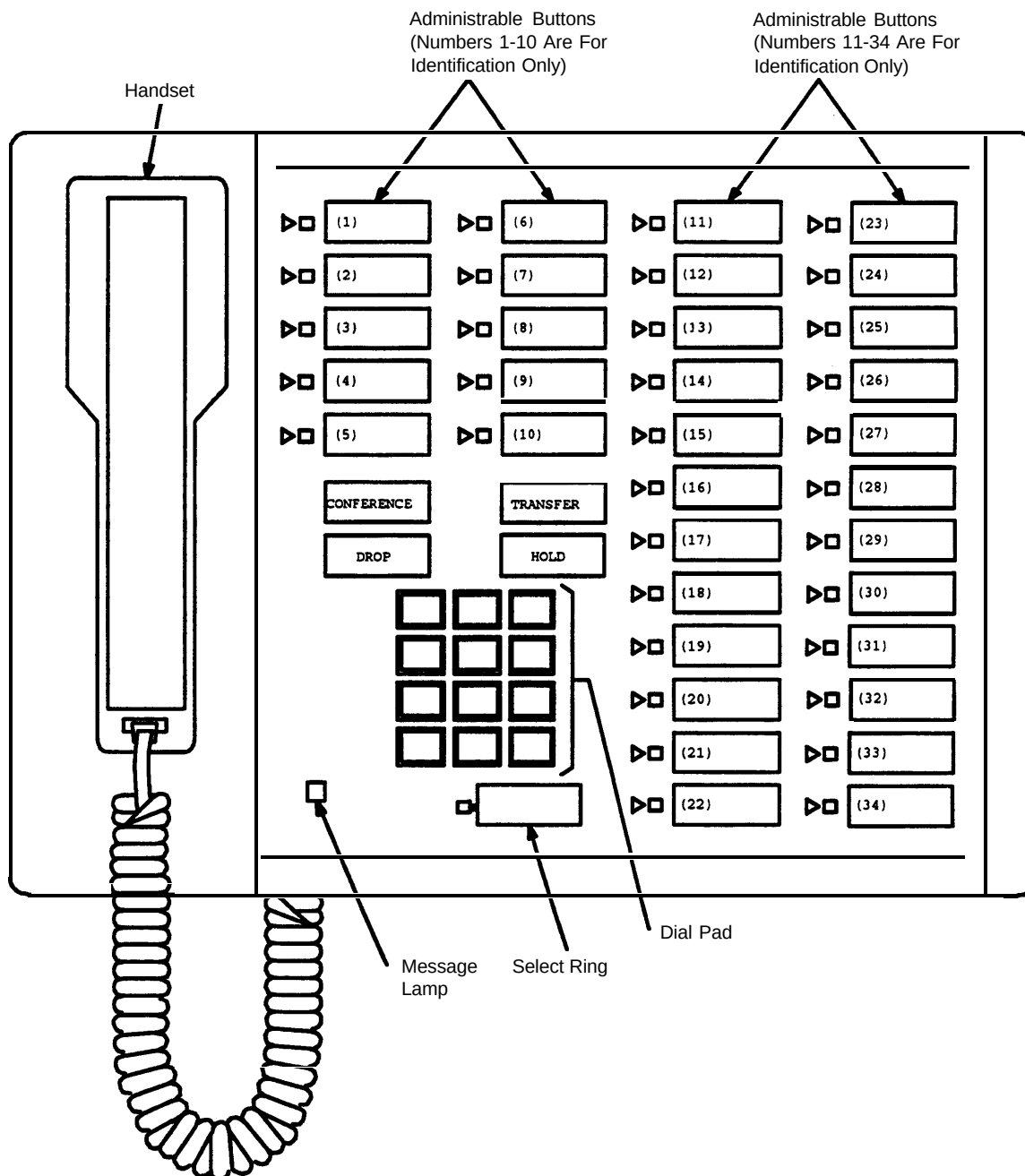


Figure 5-41. 7434D Voice Terminal

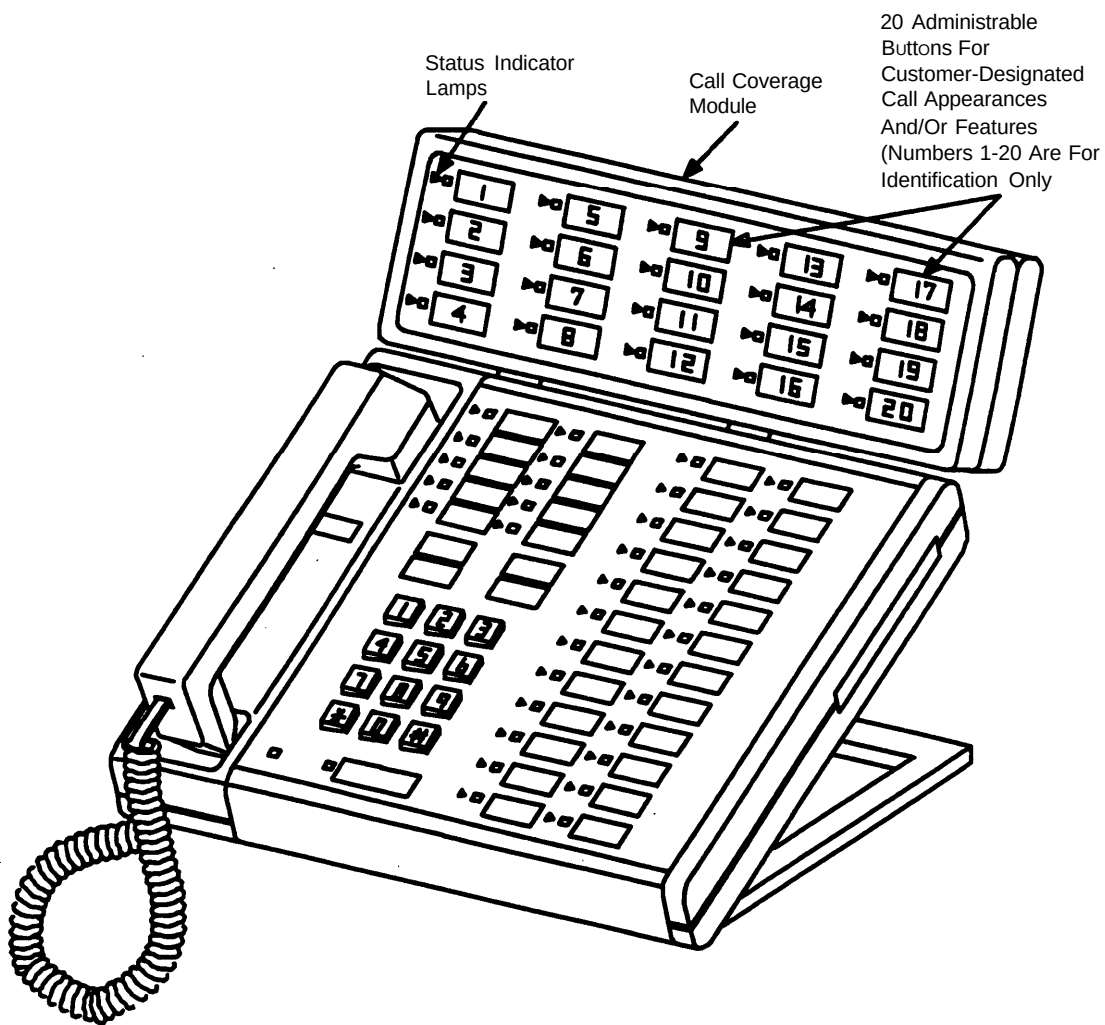


Figure 5-42. 7434D Voice Terminal With Optional Call Coverage Module

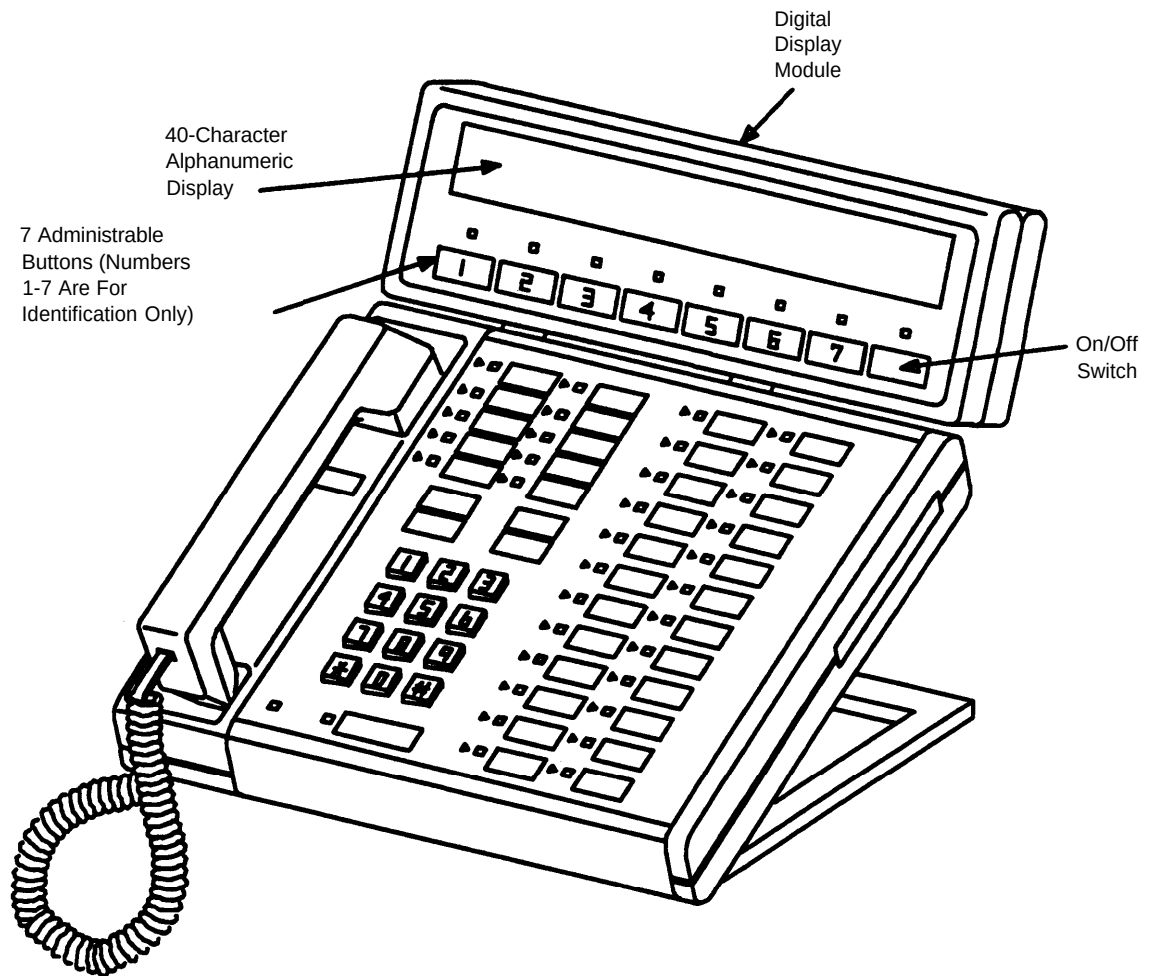


Figure 5-43. 7434D Voice Terminal With Optional Digital Display Module

7505D, 7506D, 7507D, 8503D, 8510D, and 8520D Voice Terminals

These forms are used to implement the 7505D, 7506D, 7507D, 8503D, 8510D, and 8520D ISDN-BRI voice terminals.

Administration Commands

The following administration commands can be used to access the Voice Terminal forms. In some cases, just the most commonly used commands are shown. Refer to "Administration Commands" in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	station	xxxxx (extension number) or ('next')
change	station	xxxxx (extension number)
display	station	xxxxx (extension number) ['print']
duplicate	station	xxxxx (extension number) ['start' (start extension)] ['board' (board addr) or 'x'] ['count' (1-16)] ['one-ep']
list	station	[x (extension)]['ext' x]['to-ext' x]['port' x]['type' x] ['count' n]['print' or 'schedule']
remove	station	xxxxx (extension number)

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Please review the "Voice Terminals — General" information at least once before completing the form. General information, including feature button descriptions and characteristics is covered. In addition, descriptions of the administrable fields appearing on Pages 1 and 2 of the form are provided. Instructions are provided below for fields and/or pages of the form that require additional consideration because of the terminal type.

Page 1 of the Form



NOTE:

The "Data Module?" field is only displayed for the 7505D, 7506D, and 7507D ISDN-BRI voice terminals. This field does not appear for the 8503D, 8510D, and 8520D ISDN-BRI voice terminals.

- **Type** — Enter "7505D", "7506D", "7507D", "8503D", "8510D", or "8520D" as appropriate.

- **Port** — Enter seven characters.

The entry breaks down as follows:

Characters	Meaning	Value
1-2	Cabinet Number	01 through 22 (G3r V2) 01 through 03 (G3i V2) 01 (G3s V2)
3	Carrier	A through E
4-5	Slot Number	01 through 20
6-7	Circuit Number	01 through 32

 NOTE:

A 1-character entry of "X" in the Port field can be used to indicate that there is no hardware associated with the port assignment (Administration Without Hardware feature).

ISDN-BRI provides multipoint configuration capability that allows a previously assigned port to be specified more than once. However, for the following cases, the port is assumed to be fully assigned:

- Maximum number of users (currently 2) are assigned on the port.
 - One of the users on the port is a freed Terminal Identification (TEI) station.
 - One of the users on the port has B-channel voice and B-channel data capability.
 - One of the users on the port has no Service Profile Identifier (SPID) assigned, which includes terminals that have no SPID initialization capability.
- **XID** — Used to identify layer 2 XID testing capability. Valid entries are "y" or "n". Default is "y".
 - **Fixed TEI** — Used to indicate whether or not the station has Fixed Terminal Identification (TEI) capability. TEI is used to identify a unique access point within a service. For Fixed TEI stations, the TEI must be administered. For terminals with automatic TEI capability, the associated TEI is assigned by the System. Valid entries are "y" or "n". Default is "n".
 - **TEI** — Only displayed if the Fixed TEI field entry is "y". Enter a 1- to 2-digit number in the range of 0 through 63.
 - **MIM Support** (Management Information Message Support) — Used to support two types of capabilities; MIM endpoint initialization capability (SPID support), other Maintenance/Management capability. Valid entries are "y" or "n". Default is "y".
 - **Endpt Init** — Only displayed if the MIM Support field entry is "y". Used to indicate the station's endpoint initialization capability. Endpoint initialization is a procedure, required for multipoint operation, by which User Service Order Profile (USOP) is associated with an endpoint on the

ISDN-BRI. This association is made via the Service Profile Identifier (SPID), administered into the system and entered into the ISDN-BRI terminal. For a ISDN-BRI terminal to become operational in a multipoint configuration, both the administered SPID and the SPID programmed into the ISDN-BRI terminal must be the same. This means that the SPID of the new or reused terminals must be programmed to match the administered SPID value. For information on SPID installation, refer to Appendix A. Valid entries are “y” or “n”. Default is “y”.

- **SPID** — Only displayed if the Endpoint Initialization field entry is “y”. The Service Profile Identifier (SPID) is a variable parameter of up to ten digits. The SPID is a numeric string value, which means that a value of “00” is different from “000”. The SPID must be different for all terminals on the ISDN-BRI and from the Service SPID. The SPID should always be assigned; if the SPID is not assigned for the first ISDN-BRI on a port, any other ISDN-BRI assignment to that port will be blocked. Valid entries are numeric strings in the range of 0 through 9999999999. Default is the station’s extension number.
- **MIM Mtce/Mgt** — Only displayed if the MIM Support field entry is “y”. Used to indicate if the terminal supports MIM Maintenance and Management capabilities other than endpoint initialization. Valid entries are “y” or “n”. Default is “y”.
- **Disp Client Redir** — This field is only administrable if the Hospitality feature has been enabled on the System-Parameters Customer-Options form. This field affects the station’s display on calls that originated from a station with Client Room Class of Service. When the field is “n” (default), then for all calls originating from a Client Room (even redirected calls) that terminate to this station, this station’s display will not show the redirection information. Only the client name and extension (or room, depending on what is administered on the System-Parameters Hospitality form) will be displayed. When the field is set to “y”, the redirection information for a call originating from a Client Room and terminating to this station will be displayed.

**NOTE:**

For stations with an “audix” station type, AUDIX Voice Power ports, or ports for any other type of messaging that needs display information, this field must be “y”.

Page 2 of the Form**■ BUTTON ASSIGNMENTS**

The feature buttons that can be assigned to the 7505D, 7506D, 7507D, 8503D, 8510D, and 8520D voice terminals are listed below. Associated descriptions and characteristics of the buttons are provided in the “Voice Terminals — General” section. The abbreviated software name (that is, administration name) as shown on the following list must be entered on the form. Depending on the button type, additional auxiliary information may be required when administering buttons. This information is provided in the “Voice Terminals — General” section.

■ abr-prog	■ cov-msg-rt * **	■ next * **
■ abr-spchar	■ date-time * **	■ night-ser
■ abrdg-appr	■ delete-msg * **	■ noans-alrt
■ abrv-dial	■ dial-icom	■ normal **
■ ac-alarm	■ directory * **	■ per-COLine
■ aca-call	■ disp-norm * **	■ pms-alarm
■ after-call	■ dn-dst	■ pr-awu-alm
■ alt-frl	■ ds1-alarm	■ pr-pms-alm
■ assist	■ exclusion	■ pr-sys-alm
■ atd-qcalls *	■ ext-dn-dst * **	■ print-msgs
■ atd-qtime *	■ flash	■ priority
■ aut-msg-wt	■ goto-cover	■ q-calls
■ auto-cback	■ grp-dn-dst * **	■ q-time
■ auto-icom	■ hunt-ns	■ release
■ auto-in	■ in-call-id	■ ringer-off
■ auto-wkup * **	■ inspect * **	■ rs-alert
■ aux-work	■ int-aut-an	■ rsvn-call
■ brdg-appr	■ last-numb	■ scroll
■ busy-ind	■ link-alarm	■ send-calls
■ call-appr	■ lsvn-call	■ send-term
■ call-disp * **	■ lwc-cancel	■ serv-obsrv
■ call-fwd	■ lwc-lock * **	■ signal
■ call-park	■ lwc-store	■ stored-num * **
■ call-pkup	■ major-alm	■ stroke-cnt
■ callr-info * **	■ man-msg-wt	■ term-x-gr
■ cas-backup	■ man-overid * **	■ timer * **
■ cdr1-alm	■ manual-in	■ trk-ac-alm **
■ cdr2-alm	■ mct-act	■ trk-id
■ check-in * **	■ mct-contr	■ trunk-name * **
■ check-out * **	■ mj/mn alm	■ trunk-ns
■ clk-overid * **	■ msg-retr * **	■ verify
■ consult	■ mwn-act * **	■ work-code
■ cov-cback	■ mwn-deact * **	

* Display-type button.

** Not administrable on 7505D or 8503D.

Figures showing the 7505D, 7506D, 7507D, 8503D, 8510D, and 8520D voice terminal button number assignments in relation to the button numbers on the voice terminal form are located at the end of this section dealing with the 7500/8500 ISDN-BRI voice terminals. The first three buttons are defaulted as call appearance.

Page 3 of the Form

■ FEATURE BUTTON ASSIGNMENTS

The features and functions that can be assigned to the 7505D, 7506D, 7507D, 8503D, 8510D, and 8520D voice terminal administrable buttons are the same as those listed for BUTTON ASSIGNMENTS above.

Figures showing the 7505D, 7506D, 7507D, 8503D, 8510D, and 8520D voice terminal button number assignments in relation to the button numbers on the voice terminal form are located at the end of this section dealing with the 7500/8500 ISDN-BRI voice terminals.

Page X of the Form (DATA MODULE)

Applicable only to 7505D, 7506D, and 7507D Voice Terminals

- Only displayed if the Data Module field on Page 1 is "y". Instructions are provided below for fields that require additional consideration because of the terminal type. Otherwise; refer to "Station Forms — Field Descriptions" section in this chapter for associated field descriptions.

■ CIRCUIT SWITCHED DATA ATTRIBUTES



NOTE:

These fields represent defaults needed for modem pooling conversion resource insertion when the endpoint does not support data query capability. These fields have no significance for data modules providing data query [all AT&T-supported ISDN-BRI data modules (8500 and ADM)]. For AT&T ISDN-BRI data modules, the default settings should be used.

Applicable only to 7505D, 7508D, and 7507D Voice Terminals

- **Default Duplex** — Used to identify the duplex mode. Valid entries are "full" or "half". Default is "full".
- **Default Mode** — Used to identify the data mode. Valid entries are "sync" (synchronous) or "async" (asynchronous). Default is "async".
- **Default Speed** — Used to identify the data rate. Valid entries are "1200", "MAX", "4800", and "19200". Default is "1200".



NOTE:

When default mode is "sync", valid entries also include speeds of "56000" and "64000".

■ **DATA MODULE CAPABILITIES**

Applicable only to 7505D, 7506D, and 7507D Voice Terminals

- **Origination Default Data Applications** — Used to identify mode to be used for originating data calls when the mode is not specified with the calling parameters. This mode will also be used for terminating trunk calls which do not have bearer capability specified or administered connections. Possible mode values are M0 (mode 0), M1 (mode 1), M2 (mode 2), and M3/2 (mode 3/2 adaptable), or blank. Valid entries are "M0", "M1", "M2_A", "M2_S", or "M3/2". Default is "M2_A".

Page 1 of X

STATION

Extension: _____ BCC: 0
 Type: _____ Lock Messages: n COR: 1
 Port: _____ Security Code: _____ COS: 1
 Name: _____ Coverage Path: _____

FEATURE OPTIONS

LWC Reception? msa-spe Coverage Msg Retrieval? y
 LWC Activation? y Auto Answer: none
 CDR Privacy? n Data Restriction? n
 Redirect Notification? y Idle Appearance Preference? n
 Bridged Call Alerting? n Restrict Last Appearance? y
 Data Module? n

XID? y Fixed TEI? n TEI: _____
 MIM Support? y Endpt Init? y SPID: 300_____ MIM Mtce/Mgt? y
 AUDIX Name: _____
 Messaging Server Name: _____ Audible Message Waiting? y
 Display Language: english Disp Client Redir? n

Screen 5-156. 7505D, 7506D, 7507D, 8503D, 8510D, and 8520D Station Form (Page 1 of X)

Implementation Notes:

The BCC field is only displayed if the ISDN-PRI Option is enabled on the System-Parameters Customer-Options form.

The Data Module field is not displayed for the 8503D, 8510D, and 8520D voice terminals.

When adding an unsupported station using the Enhanced Terminal Administration feature, if the Fixed TEI field is set to "y", the TEI field will be displayed.

The Endpt Init and MIM Mtce/Mgt fields are only displayed if the MIM Support field entry is "y".

The SPID field is only displayed if the Endpt Init field entry is "y".

The Display Language field is shown for the 7506D, 7507D, 8510D, and 8520D terminals when the Display Module field is "y".

The AUDIX Name and Messaging Server Name fields are only displayed on G3r V2 configurations.

Page 2 of X

STATION

SITE DATA

Room: _____

Jack: _____

Cable: _____

Floor: _____

Building: _____

ABBREVIATED DIALING

List1: _____

BUTTON ASSIGNMENTS

1: call-appr_

2: call-appr_

3: call-appr_

4: _____

5: _____

Headset? n

Speaker? n

Mounting? d

cord Length: 0_

Set Color: _____

List2: _____

List3: _____

6: _____

7: _____

8: _____

9: _____

10: _____

Screen 5-157. 7505D, 7506D, 7507D, 8510D, and 8520D Station Form (Page 2 of X)

Implementation Note:

For a 7505D or 7506D voice terminal, button 7 can be administered as a call appearance button if an Asynchronous Data Module (ADM) is not attached to the station. When an ADM is attached, the button acts as a DATA button regardless of whether or not the data module has been administered. If the ADM has been administered, "DATA" will be displayed in the field and access to the field will also be restricted. If the station is aliased as a 7505D or 7506D via the Enhanced Terminal Administration feature, button 7 can be administered as a call appearance button whether or not an ADM is assigned. There is no "Data" button on 7507D, 8510D, and 8520D voice terminals.

Page 2 of X

STATION

SITE DATA

Room: _____

Jack: _____

Cable: _____

Floor: _____

Building: _____

Headset? n

Speaker? n

Mounting? d

Cord Length: 0_

Set Color: _____

ABBREVIATED DIALING

List1: _____

List2: _____

List3: _____

BUTTON ASSIGNMENTS

1: call-appr_

2: call-appr_

3: call-appr_

Screen 5-158. 8503D Station Form (Page 2 of X)

Page 3 of X

STATION

FEATURE BUTTON ASSIGNMENTS

1: _____

2: _____

3: _____

4: _____

5: _____

6: _____

7: _____

Screen 5-159. 7505D and 7506D Station Form (Page 3 of X)

BUTTON ASSIGNMENTS		STATION
11:	_____	20: _____
12:	_____	21: _____
13:	_____	22: _____
14:	_____	23: _____
15:	_____	24: _____
16:	_____	25: _____
17:	_____	26: _____
18:	_____	27: _____
19:	_____	28: _____
		29: _____
31:	-----	30: _____
32:	_____	
33:	_____	37: _____
34:	_____	38: _____
35:	_____	39: _____
36:	_____	40: _____

Screen 5-160. 7507D Station Form (Page 3 of X)

Implementation Note:

Button 31 can be administered as a feature button if an Asynchronous Data Module (ADM) is not attached to the station. When an ADM is attached, the button acts as a DATA button regardless of whether the data module has been administered. If the ADM has been administered, "DATA" will be displayed in the field and the button will be restricted. If the station is aliased as a 7507D via the Enhanced Terminal Administration feature, button 31 can be administered as a feature button whether or not an ADM is assigned.

		Page Y of X	
DATA MODULE		STATION	
Data Extension: _____			
Name: _____		COR: 1_	COS : 1_
ABBREVIATED DIALING			
List1: _____			
SPECIAL DIALING OPTION: hot-line			
HOT LINE DESTINATION			
DEFAULT DIALING			
Abbreviated Dialing Dial Code (From above list): _			
CIRCUIT SWITCHED DATA ATTRIBUTES			
Default Duplex: full Default Mode: async Default Speed: 1200			
DATA MODULE CAPABILITIES			
Default ITC: restricted Origination Default Data Application? M2_A			

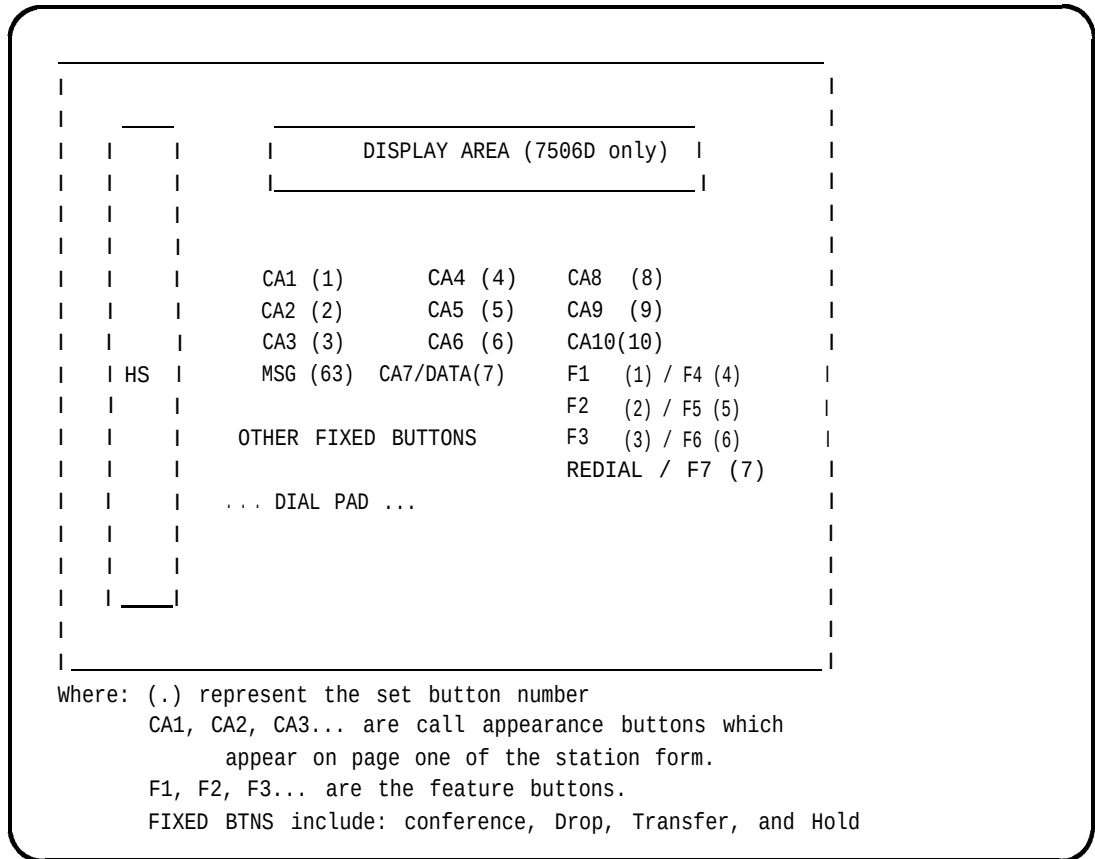
Screen 5-161. 7505D, 7506D, and 7507D ISDN-BRI Data Module Form (Page Y of X)**Implementation Notes:**

This page is only displayed if the Data Module field on Page 1 is "y".

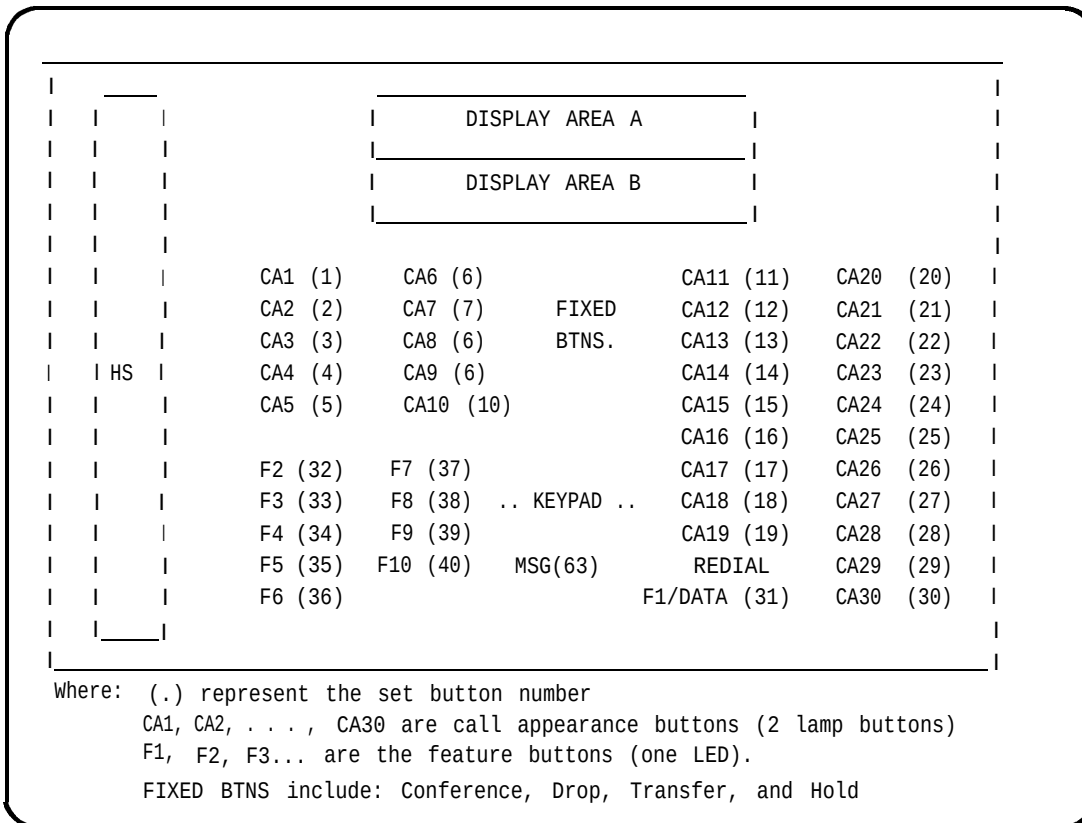
HOTLINE DESTINATION only displayed when "hot-line" is entered in the SPECIAL DIALING OPTION field.

DEFAULT DIALING only displayed when "default" is entered in the SPECIAL DIALING OPTION field.

Abbreviated Dialing Dial Code only displayed when SPECIAL DIALING OPTION is "hot-line" or "default".

**Screen 5-162. 7505D and 7506D Voice Terminal Feature Button Layout****Notes:**

- Buttons F4 through F6 are accessed by shifting buttons F1 through F3. Button F7 is accessed by shifting fixed REDIAL button.
- CA7/DATA button can be administered as a call appearance button. However, CA7 button should not be administered when ADM is attached to the set. When the ADM is attached, the button acts as a DATA button, regardless of administration. For 7505D and 7506D terminals, AT&T supported terminals, if ADM is administered, the phrase "DATA" will be displayed in the CA7 button type field. Furthermore, the button field will be restricted and the user will not be able to administer that button. If a set is aliased as 7505D or 7506D set via ETA feature, button CA7 will always be administrable as a call appearance button, whether or not the data module is administered.



Screen 5-163. 7507D Voice Terminal Feature Button Layout

Notes:

1. F1/DATA button can be administered as a feature button. However, F1 should not be administered if ADM is attached to the set. If the ADM is attached, F1 will act as a DATA button regardless of administration. For 7507D terminal, if ADM is administered, the phrase "DATA" will be displayed in the F1 button type field. Furthermore, the button field will be restricted and you will not be able to administer that button. If a set is aliased as 7507D via ETA feature, F1 button will always be administrable as a feature button whether or not the data module is administered.
2. The 7507D terminal supports 31 buttons with two LEDs; however, the software will only support administration of 30 of these as call appearance buttons (buttons CA1-CA30). The system maximum of 10 call appearance buttons still applies. Buttons CA1-CA30 not used as Call Appearance buttons may be administered as Bridged Appearance buttons.

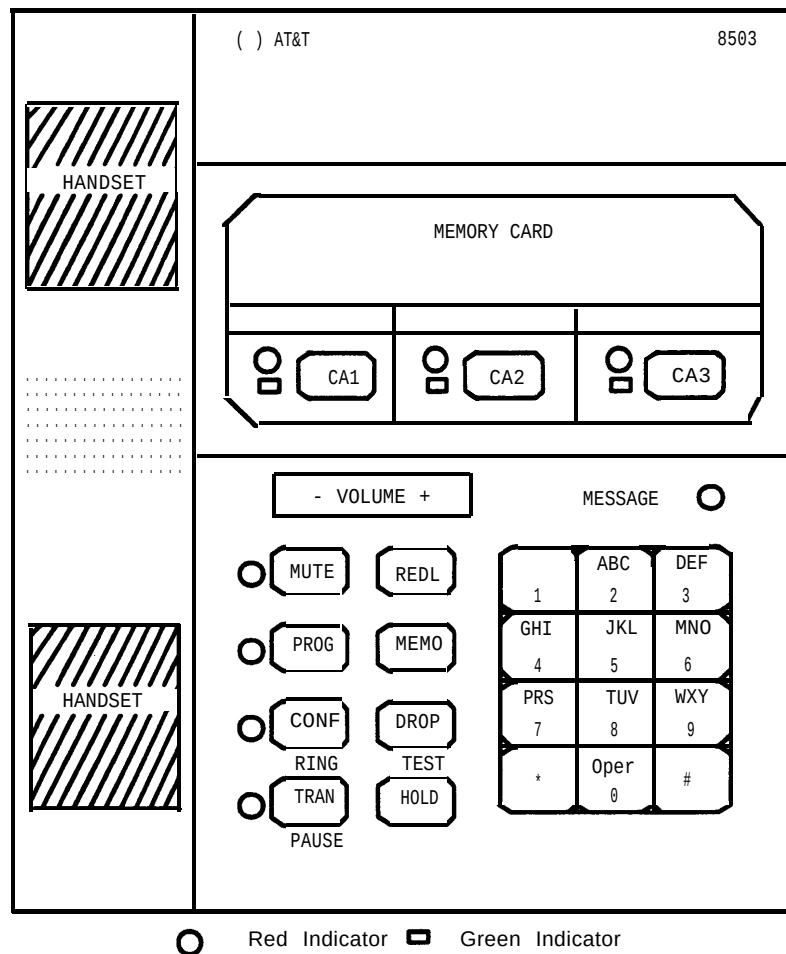


Figure 5-44. 8503D Voice Terminal Feature Button Layout

Note:

1. CA1, CA2, CA3 are call appearance buttons (2 lamp buttons) FIXED BTNS with 1 LED: PROG, MUTE, CONF, TRANS FIXED BTNS with no LED: REDIAL, DROP, HOLD, MEMORY.

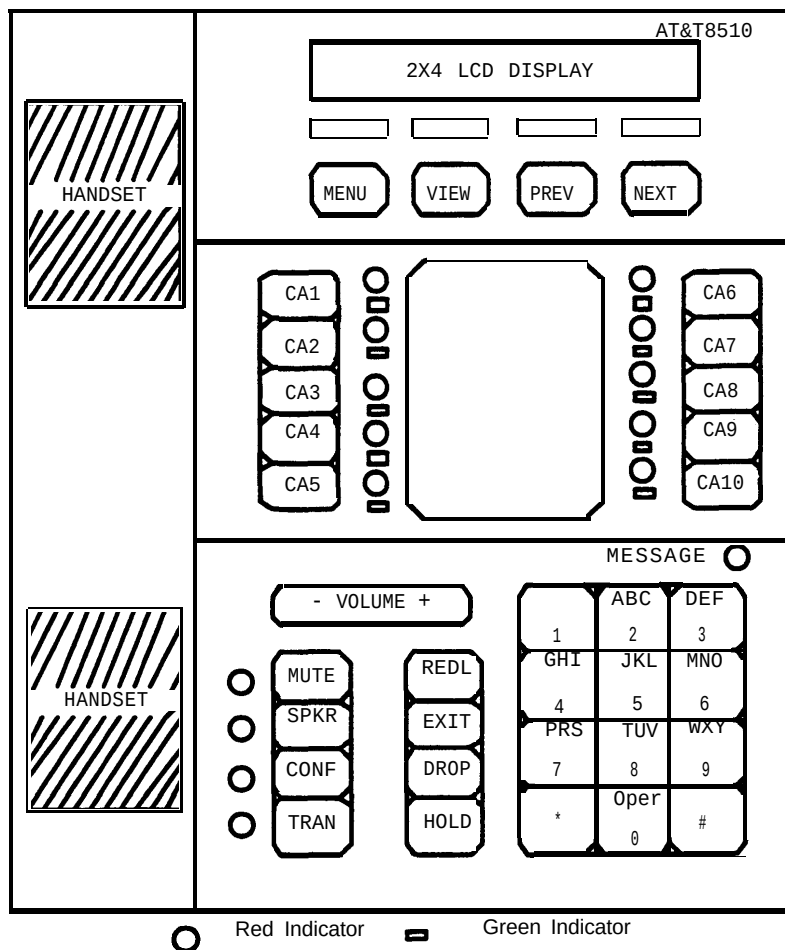


Figure 5-45. 8510D Voice Terminal Feature Button Layout

Notes:

1. CA1, CA2, . . . , CA10 are call appearance buttons (2 lamp buttons) FIXED BTNS with 1 LED: MUTE, SPKR, CONF, TRAN FIXED BTNS with no LED: REDIAL, EXIT, DROP, HOLD, VOLUME Display Control Keys with no LED: MENU, VIEW, NEXT, PREVIOUS.
2. The EXIT button is treated as a fixed "normal" button.

Page 3 of X

STATION

FEATURE BUTTON ASSIGNMENTS

11: normal

Screen 5-164. 8510D Station Form (Page 3 of X)

 **NOTE:**
Page 3 of the form shows that the 8510D voice terminal has only one fixed “normal” button with a display-only field.

Page 3 of X

STATION

BUTTON ASSIGNMENTS

11: _____

12: _____

13: _____

14: _____

15: _____

16: _____

17: _____

18: _____

19: _____

20: _____

21: normal

Screen 5-165. 8520D Station Form (Page 3 of X)

 **NOTE:**
Button 21 is a fixed “normal” button on the 8520D voice terminal.

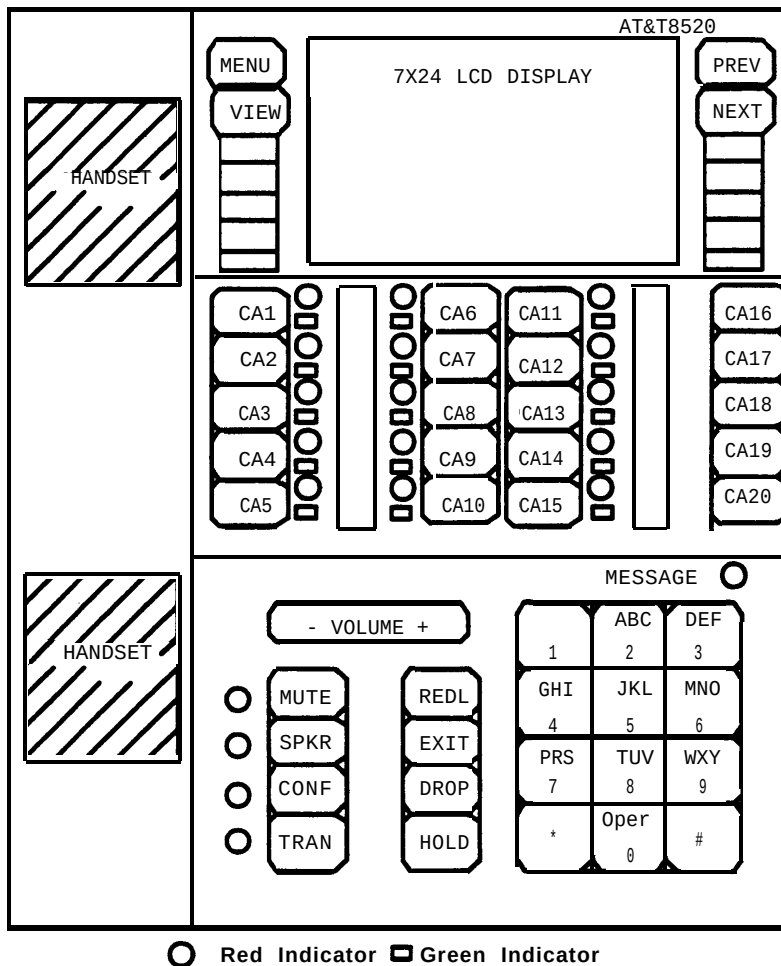


Figure 5-46. 8520D Station Set Layout

Notes:

1. CA1-CA20 are call appearance buttons (2 lamp buttons) FIXED BTNS with 1 LED: MUTE, SPKR, CONF, TRAN FIXED BTNS with no LED: REDIAL, EXIT, DROP, HOLD.
2. The 8520D terminal supports 20 call appearances. The system maximum of 10 call appearance buttons still applies. Buttons CA1-CA20 not used as Call Appearance buttons can be administered as Bridged Appearance buttons.
3. The 8520D has 7X24 LCD display. The top 2 lines are used to display switch-based information at all times, while the remaining 5 lines are associated with the 10 soft keys and related messages.

CALLMASTER Voice Terminal

This form is used to assign the CALLMASTER digital voice terminal. The terminal may also be used to support the ACD feature.

Administration Commands

The following administration commands can be used to access the Voice Terminal form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	station	xxxxx (extension number) or ('next')
change	station	xxxxx (extension number)
display	station	xxxxx (extension number)
duplicate	station	
list	station	[x (extension)][['ext' x]][['to-ext' x]][['port' x]][['type' x]][['count' n]][['print' or 'schedule']]
remove	station	xxxxx (extension number)

- * Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Please review the “Voice Terminals — General” information at least once before completing the form. General information, including feature button descriptions and characteristics is covered. In addition, descriptions of the administrable fields appearing on Pages 1 and 2 of the form are provided. Instructions are provided below for fields and/or pages of the form that require additional consideration because of the terminal type.

Page 1 of the Form

- **Type** — Enter “602A1”.
- **Idle/Active Ringing** — Define how a call will ring at a station. Default is “single”.

Enter “continuous” to cause all calls terminated to this station to ring continuously.

Enter “single” to cause all calls terminated to this station to receive one ring cycle and then ring silently.

Enter “if-busy-single” to cause calls terminated to an idle station to ring continuously, and calls terminated to a station active on another call to receive one ring cycle and then ring silently.

Enter "silent-if-busy" to cause calls terminated to a station active on another call to receive no audible ring and just ring silently, and calls terminated to an idle station to ring continuously.

- **Data Module** — Enter "y" if this terminal is connected to a data terminal via 7400B Data Module. If "y" is entered, the Data Module form must be completed. Valid entries are "y" or "n". Default is "n".
- **Display Module** — Display-only field; restricted to "y". Display-type buttons are administered on Page 3 of the form.
- **Disp Client Redir** — This field is only administrable if the Hospitality feature has been enabled on the System-Parameters Customer-Options form. This field affects the station's display on calls that originated from a station with Client Room Class of Service. When the field is "n" (default), then for all calls originating from a Client Room (even redirected calls) that terminate to this station, this station's display will not show the redirection information. Only the client name and extension (or room, depending on what is administered on the System-Parameters Hospitality form) will be displayed. When the field is set to "y", the redirection information for a call originating from a Client Room and terminating to this station will be displayed.

**NOTE:**

For stations with an "audix" station type, AUDIX Voice Power ports, or ports for any other type of messaging that needs display information, this field must be "y".

Page 2 of the Form**■ BUTTON ASSIGNMENTS**

The feature buttons that can be assigned to the CALLMASTER digital voice terminal are listed below. The abbreviated software name (that is, administration name) as shown on the following list must be entered on the form. Depending on the button type, additional auxiliary information may be required when administering buttons. This information is provided in the "Voice Terminals — General" section.

■ abr-prog	■ cov-msg-rt *	■ mwn-deact *
■ abr-spchar	■ data-ext	■ next *
■ abrdg-appr	■ date-time *	■ night-serv
■ abrv-dial	■ delete-msg *	■ noans-alrt
■ ac-alarm	■ dial-icom	■ normal *
■ aca-call	■ directory *	■ per-COLine
■ after-call	■ disp-norm	■ pms-alarm
■ alt-frl	■ dn-dst	■ pr-awu-alm

■ assist	■ ds1-alarm	■ pr-pms-alm
■ atd-qcalls *	■ exclusion	■ pr-sys-alm
■ atd-qtime *	■ ext-dn-dst *	■ print-msgs
■ aut-msg-wt	■ flash	■ priority
■ auto-cback	■ goto-cover	■ q-calls
■ auto-icom	■ grp-dn-dst *	■ q-time
■ auto-in	■ hunt-ns	■ release
■ auto-wkup *	■ in-call-id	■ ringer-off
■ aux-work	■ inspect *	■ rs-alert
■ brdg-appr	■ int-aut-an	■ rsvn-call
■ busy-ind	■ last-numb	■ scroll
■ call appr	■ link-alarm	■ send-calls
■ call-disp *	■ lsvn-call	■ send-term
■ call-fwd	■ lwc-cancel	■ serv-obsrv
■ call-park	■ lwc-lock	■ signal
■ call-pkup	■ lwc-store	■ stored-num *
■ callr-info *	■ major-alm	■ stroke-cnt
■ cas-backup	■ man-msg-wt	■ term-x-gr
■ cdr1-alm	■ man-overid *	■ timer *
■ cdr2-alm	■ manual-in	■ trk-ac-alm
■ check-in *	■ mct-act	■ trk-id
■ check-out *	■ mct-contr	■ trunk-name *
■ clk-overid *	■ mj/mn alm	■ trunk-ns
■ consult	■ msg-retr *	■ verify
■ cov-cback	■ mwn-act *	■ work-code

* Display-type button.

The figure entitled "CALLMASTER Digital Voice Terminal" at the end of this section shows the CALLMASTER digital voice terminal's button locations in relation to the button numbers on the forms.

Page X of the Form

■ FEATURE BUTTON ASSIGNMENTS

The features and functions that can be assigned to the terminal's administrable buttons are the same as those for BUTTON ASSIGNMENTS above. The abbreviated name as shown on the list must

be entered on the form. At least two buttons must be administered as call appearances.

Page X of the Form (DATA MODULE)

- Only displayed if the Data Module field on Page 1 is "y". Refer to "Station Forms — Field Descriptions" section in this chapter for associated field descriptions.

Page 1 of X

STATION		
Extension: _____	BCC: 0	
Type: 602A1	Lock Messages: n	COR: 1
Port: _____	Security Code: _____	COS: 1
Name: _____	Coverage Path: _____	
FEATURE OPTIONS		
LWC Reception? msa-spe	Coverage Msg Retrieval? y	
LWC Activation? y	Auto Answer: none	
CDR Privacy? n	Data Restriction? n	
Redirect Notification? y	Idle Appearance Preference? n	
Bridged Call Alerting? n	Personalized Ringing Pattern: _	
Idle/Active Ringing: single	Restrict Last Appearance? y	
Data Module? y		
Display Module? y		
AUDIX Name: _____		
Messaging Server Name: _____	Audible Message Waiting? y	
Display Language: English	Disp Client Redir? n	

Screen 5-166. 602A1 Station Form (Page 1 of X)**Implementation Notes:**

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

The AUDIX Name and Messaging Server Name fields are only displayed for G3r V2 configurations.

		Page 2 of X
STATION		
SITE DATA		
Room: _____		Headset? n
Jack: _____		Speaker? n
Cable: _____		Mounting? d
Floor: _____		Cord Length: 0_
Building: _____		Set Color: _____
ABBREVIATED DIALING		
List1: _____	List2: _____	List3: _____
BUTTON ASSIGNMENTS		
1: _call-appr	6: _____	
2: _call-appr	7: _____	
3: _call-appr	8: _____	
4: _____	9: _____	
5: _____	10: _____	

Screen 5-167. 602A1 Station Form (Page 2 of X)**Implementation Note:**

At least two BUTTON ASSIGNMENTS buttons must be assigned to call-appr (call appearance.)

FEATURE BUTTON ASSIGNMENTS		STATION
1st Column		2nd Column
1: _____		7: _____
2: _____		8: _____
3: _____		9: _____
4: _____		10: _____
5: _____		11: _____
6: mute		12: _____
3rd Column		
13: _____		
14: _____		
15: _____		
16: _____		
17: _____		
18: _____		

Screen 5-168. 602A1 Station Form (Page 3 of X)**Implementation Note:**

Feature button #6 is preassigned as a mute button (not administrable).

		Page Y of X	
DATA MODULE		STATION	
Data Extension: ____		BCC: 2	ITC: restricted
Name: _____		COR: 1_	COS: 1_
ABBREVIATED DIALING			
List1: _____			
SPECIAL DIALING OPTION: ____			
HOT LINE DESTINATION			
DEFAULT DIALING			
Abbreviated Dialing Dial Code (From above list): _			
ASSIGNED MEMBER (Station with a data extension button for this data module)			
Ext	Name		
1:			

Screen 5-169. 602A1 Data Module Form (Page Y of X)**Implementation Notes:**

This page is only displayed if the Data Module field on Page 1 is "y".

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

HOT LINE DESTINATION only displayed when the SPECIAL DIALING OPTION field is "hot-line".

DEFAULT DIALING only displayed when the SPECIAL DIALING OPTION field is "default".

Abbreviated Dialing Dial Code only displayed when SPECIAL DIALING OPTION is "hot-line" or "default".

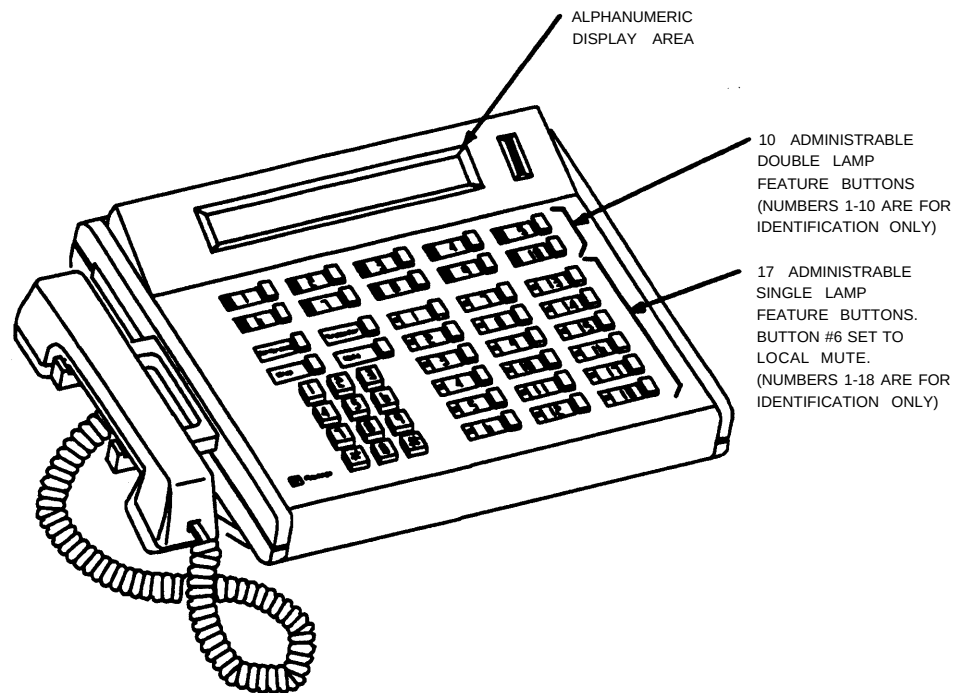


Figure 5-47. CALLMASTER Digital Voice Terminal

Personal Computer (PC) — 6300

PC/PBX Connection

This form is used to implement a PC/PBX Connection. The PC can be either an AT&T PC 6300 Personal Computer (or other compatible PC) that can be used with a 7400D series voice terminal to form a workstation arrangement. [Refer to “Personal Computer (PC) — 6300 PC/PBX Connection” in this chapter for additional information and typical connections.]

Administration Commands

The following administration commands can be used to access the form. In some cases, just the most commonly used commands are shown. Refer to “Administration Commands” in Chapter 2 for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

Action	Object	Qualifier*
add	station	xxxxx (extension number) or ('next')
change	station	xxxxx (extension number)
display	station	xxxxx (extension number)
duplicate	station	
list	station	[x (extension)]['ext' x]['to-ext' x]['port' x]['type' x] ['count' n]['print' or 'schedule']
remove	station	xxxxx (extension number)

* Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered. MAX is the maximum number available in your system configuration. Refer to the Capacity Table in Appendix C.

Form Instructions

Please review the “Voice Terminals — General” information at least once before completing the form. General information, including feature button descriptions and characteristics is covered. In addition, descriptions of the administrable fields appearing on Pages 1 and 2 of the form are provided. Instructions are provided below for fields and/or pages of the form that require additional consideration because of the terminal type.

Page 1 of the Form

- **Type** — Enter “pc”.
- **Set** — Enter the digital voice terminal type the PC is connected to. Valid entries are “7401D”, “7401+”, “7403D”, “7404D”, “7405D”, “7406D”, “7406+”, “7407D”, “7407+”, “7410D”, “7410+”, “7434D”, and “7444D”.
- **PCOL/TEG Call Alerting** — Enter “y” if the PC user will be alerted on an incoming PCOLG/TEG call. Default is “n”.

- **Active Station Ringing** — Only displayed when the G3V2 option is enabled on the System-Parameters Customer-Options form. Define how a call will ring at an off-hook station. Default is “single”.

Enter “continuous” to cause all calls terminated to this station to ring continuously.

Enter “single” to cause a call terminated to an off-hook and active or off-hook and idle station to receive one ring cycle and then ring silently.

Enter “if-busy-single” to cause a call terminated to an off-hook and idle station to ring continuously and a call terminated to an off-hook and active station to receive one ring cycle and then ring silently.

Enter “silent” to cause a call terminated to an off-hook and active or off-hook and idle station to receive no audible ring and just ring silently.

- **Data Module** — Display-only (set to “y”).
- **Display Module** — Display-only (set to “y”).
- **Disp Client Redir** — This field is only administrable if the Hospitality feature has been enabled on the System-Parameters Customer-Options form. This field affects the station’s display on calls that originated from a station with Client Room Class of Service. When the field is “n” (default), then for all calls originating from a Client Room (even redirected calls) that terminate to this station, this station’s display will not show the redirection information. Only the client name and extension (or room, depending on what is administered on the System-Parameters Hospitality form) will be displayed. When the field is set to “y”, the redirection information for a call originating from a Client Room and terminating to this station will be displayed.



NOTE:

For stations with an “audix” station type, AUDIX Voice Power ports, or ports for any other type of messaging that needs display information, this field must be “y”.

Page 2 of the Form

- **BUTTON ASSIGNMENTS**

The feature buttons that can be assigned to the associated voice terminal are listed below. The abbreviated software name (that is, administration name) as shown on the following list must be entered on the form.

Depending on the button type, additional auxiliary information may be required when administering buttons. This information is provided in the “Voice Terminals — General” section.

■ abr-prog	■ cov-msg-rt *	■ mwn-deact *
■ abr-spchar	■ data-ext	■ next *

■ abrdg-appr	■ date-time *	■ night-serv
■ abrv-dial	■ delete-msg *	■ noans-alm
■ ac-alarm	■ dial-icom	■ normal *
■ aca-call	■ directory *	■ per-COline
■ after-call	■ disp-norm	■ pms-alarm
■ alt-frl	■ dn-dst	■ pr-awu-alm
■ assist	■ ds1-alarm	■ pr-pms-alm
■ atd-qcalls *	■ exclusion	■ pr-sys-alm
■ atd-qtime *	■ ext-dn-dst *	■ print-msgs
■ aut-msg-wt	■ flash	■ priority
■ auto-cback	■ goto-cover	■ q-calls
■ auto-icom	■ grp-dn-dst *	■ q-time
■ auto-in	■ hunt-ns	■ release
■ auto-wkup *	■ in-call-id	■ ringer-off
■ aux-work	■ inspect *	■ rs-alert
■ brdg-appr	■ int-aut-an	■ rsvn-call
■ busy-ind	■ last-numb	■ scroll
■ call-appr	■ link-alarm	■ send-calls
■ call-disp *	■ lsvn-call	■ send-term
■ call-fwd	■ lwc-cancel	■ serv-obsrv
■ call-park	■ lwc-lock	■ signal
■ call-pkup	■ lwc-store	■ stored-num *
■ callr-info *	■ major-alm	■ stroke-cnt
■ cas-backup	■ man-msg-wt	■ term-x-gr
■ cdr1-alm	■ man-overid *	■ timer *
■ cdr2-alm	■ manual-in	■ trk-ac-alm
■ check-in *	■ mct-act	■ trk-id
■ check-out *	■ mct-contr	■ trunk-name *
■ clk-overid *	■ mj/mn alm	■ trunk-ns
■ consult	■ msg-retr *	■ verify
■ cov-cback	■ mwn-act *	■ work-code

* Display-type buttons.

Page 3 of the Form

■ **FEATURE BUTTON ASSIGNMENTS**

The feature buttons that can be administered are the same as those for BUTTON ASSIGNMENTS above. The abbreviated name as shown on the list must be entered on the form.

Page X of the Form (DISPLAY BUTTON ASSIGNMENTS)

Administer display-type buttons as required. Display-type buttons are noted with an asterisk on the above BUTTON ASSIGNMENTS list. The abbreviated name as shown on the list must be entered on the form.

Page X of the Form (DATA MODULE)

Complete the Data Module fields as required. Refer to "Station Forms — Field Descriptions" section in this chapter for associated field descriptions.

		Page 1 of X	
		STATION	
Extension: ____		BCC: 0	
Type: PC_ Set: 7404D		Lock Messages: n	COR: 1
Port: ____		Security Code: ____	COS: 1
Name: ____		Coverage Path: ____	
FEATURE OPTIONS			
LWC Reception? msa-spe		Coverage Msg Retrieval? y	
LWC Activation? y		Auto Answer: none	
CDR Privacy? n		Data Restriction? n	
Redirect Notification? y		Idle Appearance Preference? n	
PCOL/TEG Call Alerting? n			
Active Station Ringing: single		Restrict Last Appearance? y	
Data Module? y			
Display Module? y			
AUDIX Name: ____			
Messaging Server Name: ____		Audible Message Waiting? y	
Display Language: English		Disp Client Redir? n	

Screen 5-170. PC Station Form (Page 1 of X)**Implementation Notes:**

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

The Active Station Ringing field is only displayed if the G3V2 option is enabled on the System-Parameters Customer-Options form.

The AUDIX Name and Messaging Server Name fields are only displayed for G3r V2 configurations.

Page 2 of X

STATION

SITE DATA		
Room: _____		Headset? n
Jack: _____		Speaker? n
Cable: _____		Mounting? d
Floor: _____		Cord Length: 0_
Building: _____		Set Color: _____
ABBREVIATED DIALING		
List1: _____	List2: _____	List3: _____
BUTTON ASSIGNMENTS		
1: call-appr_ (F1)	6: _____ (AF3)	
2: call-appr_ (F3)	7: _____ (AF5)	
3: call-appr_ (F5)	8: _____ (AF7)	
4: call-appr_ (F7)	9: _____ (AF2)	
5: _____ (AF1)	10: _____ (AF4)	

Screen 5-171. PC Station Form (Page 2 of X)

Implementation Notes:

Characters in parenthesis (F1), (F2), and so on represent button locations on the PC.

Call appearance buttons (that is, "call-appr", "brdg-appr", "abrdg-appr") should only be administered in BUTTON ASSIGNMENTS fields 1 through 4.

Page 3 of X

STATION

FEATURE	BUTTON	ASSIGNMENTS
1:	_____	13: _____
2:	_____	14: _____
3:	_____	15: _____
4:	_____	16: _____
5:	_____	17: _____
6:	_____	18: _____
7:	_____	19: _____
8:	_____	20: _____
9:	_____	21: _____
10:	_____	22: _____
11:	_____	23: _____
12:	_____	24: _____

Screen 5-172. PC Station Form (Page 3 of X)

		Page Y of X
STATION		
DISPLAY	BUTTON	ASSIGNMENTS
1:	_____	(CF1)
2:	_____	(CF2)
3:	_____	(CF3)
4:	_____	(CF4)
5:	_____	(CF5)
6:	_____	(leave blank)
7:	_____	(leave blank)

Screen 5-173. PC Station Form (Page Y of X)

		Page Y of X
STATION		
DATA MODULE		
Data Extension:	_____	BCC: 2
Name:	_____	ITC: restricted
		COR: 1_
		COS: 1_
ABBREVIATED DIALING		
List1:	_____	
SPECIAL DIALING OPTION: _____		
HOT LINE DESTINATION		
DEFAULT DIALING		
Abbreviated Dialing Dial Code (From above list): _		
ASSIGNED MEMBER (Station with a data extension button for this data module)		
Ext	Name	
1:		

Screen 5-174. PC Data Module Form (Page Y of X)**Implementation Notes:**

This page is only displayed if the Data Module field on Page 1 is "y".

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

HOT LINE DESTINATION only displayed when the SPECIAL DIALING OPTION field is "hot-line".

DEFAULT DIALING only displayed when the SPECIAL DIALING OPTION field is "default".

Abbreviated Dialing Dial Code only displayed when SPECIAL DIALING OPTION is "hot-line" or "default".

Abbreviations and Acronyms

AA	Archangel
AAR	Automatic Alternate Routing
AC	Alternating Current
ACA	Automatic Circuit Assurance
ACB	Automatic Callback
ACD	Automatic Call Distribution
ACU	Automatic Call Unit
ACW	After Call Work
AD	Abbreviated Dialing
ADAP	AUDIX Data Acquisition Package
ADM	Asynchronous Data Module
ADU	Asynchronous Data Unit
AE	Access Endpoint
AIM	Asynchronous Interface Module
AIOD	Automatic Identification of Outward Dialing
ALM-ACK	Alarm Acknowledge
AMW	Automatic Message Waiting
AN	Analog
ANI	Automatic Number Identification
AOL	Attendant Offered Load
AP	Applications Processor
APLT	Advanced Private Line Termination
ARS	Automatic Route Selection
ASAI	Adjunct Switch Applications Interface
ASCII	American Standard Code for Information Interchange
ATB	All Trunks Busy
ATD	Attention Dial
AUDIX	Audio Information Exchange
AUX	Auxiliary
AVD	Alternate Voice/Data
AWOH	Administration Without Hardware
AWT	Average Work Time
BCC	Bearer Capability Class
BCMS	Basic Call Management System
BCT	Business Communications Terminal
BHCC	Busy Hour Call Completions
BLF	Busy Lamp Field
BN	Billing Number
BOS	Bit Oriented Signaling
BPN	Billed Party Number
BPS	Bits Per Second
BRI	Basic Rate Interface
BTU	British Thermal Unit
CA-TSC	Call-Associated Temporary Signaling Connection
CACR	Cancellation of Authorization Code Request
CAG	Coverage Answer Group
CAMA	Centralized Automatic Message Accounting
CARR-POW	Carrier Port and Power Unit for AC Powered Systems
CAS	Centralized Attendant Service, Call Accounting System
CBC	Call-By-Call and Coupled Bonding Conductor

Abbreviations and Acronyms

CC	Country Code
CCIS	Common Channel Interoffice Signaling
CCITT	Consultative Committee for International Telephone and Telegraph
CCMS	Common Channel Message Set
CCS	Centum (Hundred) Call Seconds
CCSA	Common Control Switching Arrangement
CDM	Channel Division Multiplexing
CDOS	Customer-Dialed and Operator Serviced
CDR	Call Detail Recording
CDRP	Call Detail Record Poller
CDRR	Call Detail Recording and Reporting
CDRU	Call Detail Recording Utilities
CEM	Channel Expansion Multiplexing
CEPT	European Conference of Postal and Telecommunications Rate 1
CI	Clock Input
CM	Connection Manager
CMDR	Centralized Message Detail Recording
CMS	Call Management System
CO	Central Office
COR	Class of Restriction
COS	Class of Service
CP	Circuit Pack
CPE	Customer Premises Equipment
CPN	Called-Party Number
CPN/BN	Calling Party Number/Billing Number
CPTR	Call Progress Tone Receiver
CRC	cyclical Redundancy Checking
CSA	Canadian Safety Association
CSCN	Center Stage Control Network
CSD	Customer Service Document
CSM	Centralized System Management
CSS	Center Stage Switch
CSSO	Customer Services Support Organization
CSU	Channel Service Unit
CTS	Clear to Send
CWC	Call Work Codes
DAC	Dial Access Code or Direct Agent Calling
DC	Direct Current
DCE	Data Communications Equipment
DCP	Digital Communications Protocol
DCS	Distributed Communications System
DDC	Direct Department Calling
DDD	Direct Distance Dialed
DID	Direct Inward Dialed
DIOD	Direct Inward and Outward Dialing
DIVA	Data In/Voice Answer
DLC	Data Line Circuit
DLDM	Data Line Data Module
DMI	Digital Multiplexed Interface
DND	Do Not Disturb
DNIS	Dialed Number Identification Service
DOD	Direct Outward Dialing
DOSS	Delivery Operations Support System

Abbreviations and Acronyms

DOT	Duplication Option Terminal
DPM	Dial Plan Manager
DPR	Dual Port RAM
DS1	Data Services Level 1
DS1C	Digital Signal Level-1 Converter
DSI	Digital Signal Interface
DSU	Data Service Unit
DTDM	Digital Terminal Data Module
DTE	Data Terminal Equipment
DTGS	Direct Trunk Group Select
DTMF	Dual-Tone Multifrequency
DTS	Disk Tape System
DXS	Direct Extension Selection
E&M	Ear and Mouth (receive and transmit)
EAA	Expansion Archangel
EAL	Expansion Archangel Link
EBCDIC	Extended Binary-Coded Decimal Interexchange Code
ECC	Error Correct Code
EFP	Electronic Power Feed
EI	Expansion Interface
EIA	Electronic Industries Association
EMI	Electro-Magnetic Interference
EPN	Expansion Port Network
EPROM	Erasable Programmable Read Only Memory
EPSCS	Enhanced Private Switched Communications Services
ESF	Extended Superframe Format
ETA	Extended Trunk Access
ETN	Electronic Tandem Network
ETSI	European Telecommunications Standards Institute
FAC	Feature Access Code
FAS	Facility-Associated Signaling
FAT	Facility Access Trunk
FAX	Facsimile
FCC	Federal Communications Commission
FEAC	Forced Entry of Account Codes
FEP	Front End Processor
FIC	Facility Interface Codes
FNPA	Foreign Numbering-Plan Area
FRL	Facilities Restriction Level
FX	Foreign Exchange
G3-MA	Generic 3 Management Applications
G3-MT	Generic 3 Management Terminal
G3r	Generic 3, RISC (Reduced Instruction Set Computer)
GM	Group Manager
GPTR	General-Purpose Tone Receiver
GRS	Generalized Route Selection
HNPA	Home Numbering Plan Area Code
Hz	Hertz
IAS	Inter-PBX Attendant Service
IC	Inter-Cabinet
ICC	Intercarrier Cable
ICD	Inbound Call Director
ICDOS	International Customer Dialed Operator Serviced

Abbreviations and Acronyms

ICHT	Incoming Call-Handling Table
ICI	Incoming Call Identifier
ICM	Inbound Call Management
IDDD	International Direct Distance Dialing
IDF	Intermediate Distribution Frame
IE	information Element
IMT	Intermachine Trunk
INADS	Initialization and Administration System
INS	ISDN Network Service
INWATS	Inward Wide Area Telephone Service
IO	Information Outlet
ISDN	Integrated Services Digital Network
ISN	Information Systems Network
ISO	International Standards Organization
ISV	Independent Software Vendor
ITP	Installation Test Procedures
IXC	Interexchange Carrier Code
LAP-D	Link Access Procedure on the D-channel
LAPD	Link Access Procedure Data
LATA	Local Access and Transport Area
LDN	Listed Directory Number
LDS	Long-Distance Service
LEC	Local Exchange Carrier
LED	Light-Emitting Diode
LINL	Local Indirect Neighbor Link
LSU	Local Storage Unit
LWC	Leave Word Calling
M-Bus	Memory Bus
MA-UUI	Message Associated User-to-User Signaling
MADU	Modular Asynchronous Data Unit
MAP	Maintenance Action Process
Mbps	Megabits Per Second
MCC	Multi-Carrier Cabinet
MCS	Message Center Service
MDF	Main Distribution Frame
MDM	Modular Data Module
MDR	Message Detail Record
MEM	Memory
MET	Multibutton Electronic Telephone
MHz	Megahertz
MIM	Management Information Message
MIS	Management Information System
MISCID	Miscellaneous Identification
MMS	Material Management Services
MOS	Message-Oriented Signaling
MPDM	Modular Processor Data Module
MS	Message Server
MS/T	Main Satellite/Tributary
MSA	Message Servicing Adjunct
MSG	Message Service
MSM	Modular System Management
MSS	Mass Storage System
MSSNET	Mass Storage/Network Control

Abbreviations and Acronyms

MT	Management Terminal
MTDM	Modular Trunk Data Module
MTP	Maintenance Tape Processor
MTT	Multi-Tasking Terminal
MWL	Message Waiting Lamp
Mbps	Megabits Per Second
Mbyte	Megabytes
NANP	North American Numbering Plan
NAU	Network Access Unit
NCA/TSC	Non-Call Associate/Temporary Signaling Connection
NCOSS	Network Control Operations Support Center
NCSO	National Customer Support Organization
NEC	National Engineering Center
NEMA	National Electrical Manufacturer's Association
NFAS	Non-Facility Associated Signaling
NID	Network Inward Dialing
NM	Network Management
NN	National Number
NPA	Numbering Plan Area
NPE	Network Processing Element
NQC	Number of Queued Calls
NSE	Night Service Extension
NSU	Network Sharing Unit
NXX	Public Network Office Code
OA	Operator Assisted
OCM	Outbound Call Management
ONS	On-Premises Station
OPS	Off-Premises Station
OQT	Oldest Queued Time
OSHA	Occupational Safety and Health Act
OSI	Open Systems Interconnect
OSS	Operations Support System
OSSI	Operations Support System Interface
OTQ	Outgoing Trunk Queuing
PACCON	Packet Control
PAD	Packet Assembly/Disassembly
PBX	Private Branch Exchange
PC	Personal Computer
PCM	Pulse Code Modulated
PCOL	Personal Central Office Line
PCOLG	Personal Central Office Line Group
PCS	Permanent Switched Calls
PDM	Processor Data Module
PDS	Premises Distribution System
PE	Processing Element
PEC	Price Element Codes
PEI	Processor Element Interchange
PGATE	Packet Gateway
PGN	Partitioned Group Number
PI	Processor Interface
PIB	Processor Interface Board
PIDB	Product Image Database
PKTINT	Packet Interface

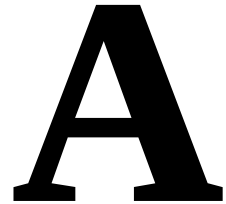
Abbreviations and Acronyms

PL	Private Line
PLS	Premises Lightwave System
PMS	Property Management System
PN	Port Network
PNA	Private Network Access
POP	Point Of Presence
PPN	Processor Port Network
PRI	Primary Rate Interface
PROCR	Processor
PSC	Premises Service Consultant
PSDN	Packet Switch Public Data Network
PT	Personal Terminal
PTC	Positive Temperature Coefficient
PTT	Postal Telephone and Telegraph
RAM	Random Access Memory
RBS	Robbed-Bit Signaling
RCL	Restricted Call List
RFP	Request For Proposal
RHNPA	Remote Home Numbering Plan Area
RINL	Remote Indirect Neighbor Link
RISC	Reduced Instruction Set Computer
RLT	Release Link Trunk
RMATS	Remote Maintenance, Administration, and Traffic System
RNX	Route Number Index (Private Network Office Code)
ROM	Read-only Memory
RPN	Routing Plan Number
RS232C	Recommended Standard 232C
RS449	Recommended Standard 449
RSC	Regional Support Center
SABM	Set Asynchronous Balance Mode
SAKI	Sanity and Control Interface
SAT	System Access Terminal
SCC	Single Carrier Cabinet
SCD	Switch-Control Driver
SCI	Switch Communications Interface
SCO	System Control Office
SCOTCH	Switch Conferencing for TOM Bus in Concentration Highway
SCSI	Small Computer System Interface
SDDN	Software Defined Data Network
SDI	Switched Digital International
SDLC	Synchronous Data Link Control
SDN	Software Defined Network
SID	Station Identification Number
SIT	Special Information Tones
SMDR	Station Message Detail Recording
SN	Switch Node
SNA	Systems Network Architecture
SNC	Switch Node Clock
SNI	Switch Node Interface
SPE	Switch Processing Element
SPID	Service Profile Identifier
SSI	Standard Serial Interface
SSM	Single Site Management

Abbreviations and Acronyms

SSV	Station Service
ST3	Stratum 3 Clock Board
STARLAN	Star-Based Local Area Network
SVN	Security Violation Notification
SXS	Step-by-Step
SYSAM	System Access and Administration
TAAS	Trunk Answer from Any Station
TAC	Trunk Access Code
TC	Technical Consultant
TCM	Traveling Class Mark
TDM	Time-Division Multiplex(ing)
TDR	Time of Day Routing
TEG	Terminating Extension Group
TEI	Terminal Endpoint Identifier
TOD	Time of Day
TOP	Task Oriented Protocol
TSC	Technical Service Center
ITR	Touch-Tone Receiver
TTT	Terminating Trunk Transmission
TTTN	Tandem Tie Trunk Network
TTY	Teletypewriter
UAP	Usage Allocation Plan
UART	Universal Asynchronous Transmitter
UCD	Uniform Call Distribution
UCL	Unrestricted Call List
UDP	Uniform Dial Plan
UL	Underwriter Laboratories
UM	User Manager
UNMA	Unified Network Management Architecture
UNP	Uniform Numbering Plan
UPS	Uninterruptible Power Supply
USOP	User Service Order Profile
UUCP	UNIX-to-UNIX Communications Protocol
UII	User-to-user information
VAR	Value Added Reseller
VDN	Vector Directory Number
VIS	Voice Information System
VLSI	Very Large Scale Integration
VM	Voltmeter
VNI	virtual Nodepoint Identifier
WATS	Wide Area Telecommunications Service
WCC	World Class Core
WSA	Waiting Session Accept
ZCS	Zero Code Suppression
cm	Centimeter
dB	Decibel
in	Inch
kHz	Kilohertz
kbps	Kilobits Per Second
kbyte	Kilobyte
kg	Kilogram
lb	Pound
ms	Millisecond

SPID Installation



All AT&T - interface terminals used with the AT&T 5ESS switch or the DEFINITY Communications System, Generic 1, Generic 2, or Generic 3 must have a unique Service Profile Identifier (SPID) number recorded within the terminal. A SPID is not required when the terminal is used with the 5E4 switch.

This number is entered into the terminal via the terminal's key pad. A terminal connected to the DEFINITY Communications System typically uses the terminal's 4-digit extension number plus two additional digits as its SPID. These two additional digits range from 00 to 15 and represent the terminal identifiers A through P, respectively. A terminal connected to the 5ESS typically uses the terminal's 10-digit telephone number as its SPID.

The 5ESS switch calculates the SPID automatically upon completion of the service order input process. Obtain the SPID from the System Administrator.



CAUTION:

The SPID number identifies your terminal to the network and should not be changed unless your System Administrator so indicates. Changing the value could result in loss of service.

Use the following procedure to enter the Service Profile Identifier (SPID) in the terminal and key telephone.

1. Press the **Shift/Select** or **Select** button.

Message lamp comes on.

2. Press the **Mute** button followed by key pad digits "1" and "D" ("4" and "3", respectively).

The present value of the SPID is shown on the display.

3. Enter digits from the key pad for the new SPID number.



NOTE:

To erase a SPID, enter "*".

To save a SPID, enter "#".

This appendix contains information concerning how Generic 3V2 should be hardware configured and administered for operation in each supported country.

Also included is information about how certain features (such as ARS) should be used and potential problems that might be encountered in particular countries.

Only administration and hardware items that must be changed from their default configuration for the switch to meet in-country type approval requirements and provide basic interworking with the Public Telephone Network are covered.

Only a limited set of applications are addressed by the configurations and administration values specified in this appendix. However, by following this appendix a system setup will result that allows basic analog and digital calls on CO, DID and Tie trunks and meets Type Approval requirements in each country. To fully implement the System, refer to the appropriate sections of this manual for in-depth information.

This appendix is organized into two parts:

- A general overview of hardware configurations and certain systemwide options (such as tone plan country codes) presented in Table format.
- Specific sections covering each of the countries supported by G3V2.

Each country specific section provides a brief background on key aspects of that country's Public Network (PN) such as major analog and digital standards, availability of PPM, dial-pulse ratios, and so on. This is followed by subsections dealing with the administration of the switch for connection to in-country analog and digital Public Network Trunks (PNTs), selection of proper PBX-provided call-progress tones, and private network connections.

Hardware Overview

This section provides a listing of the various circuit packs supported by G3V2 as well as the hardware administration of the Country Code assignments.

Circuit Pack Support

The following tables list the circuit packs (CPs) available in G3V2 installations. When referring to these tables, note that whenever a CP is listed without a specific vintage, any vintage may be used. Likewise, if a vintage or suffix is listed, a greater vintage or suffix may be used. Also, CPs listed in **BOLD** are intended to be provided in new systems. All other circuit packs (non-bold) are supported for upgrades only.

Table B-1 contains a summary of CPs that will be supported in each G3V2 country.

 NOTE:

The listing for the U.S. is unique in that not all CPs requiring support are shown. However, they are all listed in the main chapters of this manual.

Table B-1. G3V2 Circuit Pack Support Per Country

Country	A or μ Encoding	SERVICE CIRCUITS					Aux Trunk
		Tone Det	Tone Gen Clock	R2MFC Ckt	Speech Synth	Announcement	
U.S. & Canada	μ	TN748D	TN780	n/a	TN725B	TN750B	TN763D
Argentina						TN750B	TN768D
Australia	A	TN420C TN420B	TN780 TN419B	n/a	TN457	TN750B	TN763D TN417
Belgium	A	TN420C	TN780v.5	TN744 V.7	TN457	TN750B	TN762D
CIS	A	TN420C	TN780		TN457	TN750B	TN763D
Czechoslovakia	A	TN420C	TN780		TN457	TN750B	TN763D
Ecuador						TN750B	TN763D
Greece	μ^1	TN748D TN756	TN780 TN756	n/a	TN725B	TN750B TN750	TN763D TN763C
Hong Kong	μ^1	TN748D TN756	TN780 TN756	n/a	TN725B	TN750B TN750	TN763D TN763C
Hungary	μ^1	TN748D TN748C	TN780 TN756		TN725B	TN750B	TN763D
Italy	A	TN420C	TN780 TN419B	n/a	TN433	TN750B	TN417 TN763D
Japan	μ	TN748D TN756	TN780 TN756	n/a	TN725B	TN750B TN750	TN763D TN763C
Mexico	μ^1	TN748D TN756	TN780 TN756	TN744v.7	TN725B	TN750B TN750	TN763D TN763C
Netherlands		TN420C	TN780v.4	n/a	TN457	TN750B	TN763D
Poland	μ^1	TN748D TN748C	TN780 TN756	TN744v.7	TN725B	TN750B	TN763D
Saudi Arabia	μ^1	TN748D TN756	TN780 TN756	TN744v.7	TN725B	TN750B	TN763D TN763C
Singapore	μ^1	TN748D TN756	TN780 TN756	TN744v.7	TN725B	TN750B TN760	TN763D TN763C
Spain	A	TN420C ²	TN780	TN744v.7 ²	TN457	TN750B	TN763D
Taiwan	μ	TN748D TN756	TN780 TN756	n/a	TN725B	TN750B	TN763D TN763C
United Kingdom	A	TN420C TN420B	TN780 TN419B	n/a	TN457	TN750B	TN763D TN417
Venezuela	μ^1	TN748D TN756	TN780 TN756	TN744v.7	TN725B	TN750B TN750	TN763D TN763C

Notes:

1. National standards is A-Law.
2. These circuit packs will be enhanced to meet special Spanish PTN criteria. The circuit pack TN designations may be augmented with a vintage number or suffix.

Although the preceding table shows a speech synthesis CP for every G3V2 country, each such CP does not support all speech synthesis applications. The following table shows applications supported by each speech synthesis CP in G3V2.

Table B-2. Speech Synthesis CP Capabilities

Feature	TN725B	TN457	TN433
Automatic Wakeup Call (in Hotel/Motel Application)	Yes	No	No
Auto Circuit Assurance	Yes	Yes	Yes
Leave Word Calling	Yes	Yes	Yes
Visually-Impaired Attendant Service (VIAS)	No	Yes	Yes
A-law	No	Yes	Yes
μ -law	Yes	Yes	Yes

Tables B-3 and B-4 list the Trunk and Line circuit packs supported for each country by G3V2.

Table B-5 contains a summary of circuit pack functionality for all Trunk and Line CPs supported by G3V2.

Table B-6 lists the Processing and Environmental circuit packs supported by G3V2.

Table B-3. Trunk CPs Supported on G3V2

Country	Trunk Type								Encoding A/ μ
	Analog DID	Analog CO(no PPM)	Analog CO (w/PPM)	4W Tie	2W Tie	Digital Trunks			
						CO/DID	TIE	ISDN CO	
U.S. & Canada	TN753	TN747B ¹	n/a	TN760D	n/a	TN767 TN464D	TN767 TN722B TN464D	TN767 TN464D	μ
Argentina	n/a	TN747B	n/a	TN760D	n/a	TN464Dv.3	TN464D	TN464D	
Australia	TN436B TN436	TN2147	TN438B	TN437B TN437	TN439	n/a	TN464D TN464C	TN464D TN464C	A
Belgium	TN2146 ²	TN2147	TN465B	TN760Dv11 ⁴	n/a	TN464D ²	TN464D	TN464D	A
CIS	TN753v17	TN747Bv12	TN465	TN760Dv11		TN464Dv.3	TN464Dv.3	n/a	A
Czechoslovakia	TN753v17	TN747Bv12	TN465	TN760Dv11		TN464Dv.2	TN464Dv.2	n/a	A
Greece	TN753	TN747B ¹	TN465	TN760D		TN464Dv.3	TN464D TN464C	n/a	μ ³
Hong Kong	TN753	TN747B ¹ TN465	n/a	TN760D		n/a	TN464D TN464C	n/a	μ ³
Hungary	TN753	TN747B	TN465B	TN760D			TN464D	n/a	μ ³
Italy	TN2136	n/a	TN2138	TN2140	TN497	TN464D TN464C TN464B	TN464D TN464C TN464B	n/a	A
Japan	TN429	TN429 TN465	n/a	TN760D	TN439	TN464D ⁴ TN464D ⁴ TN767 ⁴	TN464D TN464D TN767	TN464D ⁴ TN464D ⁴	μ
Mexico	n/a	TN747B ¹	TN465B	TN760D		TN464D	TN464D TN464C	n/a	μ ³
Netherlands	TN2146	TN2147	TN465B	TN760Dv11 ⁴		TN464D	TN464D	TN464D	A
Poland	TN753 ²	TN747B		TN760D			TN464D	n/a	μ ³
Saudi Arabia	TN753 ²	TN747B ¹		TN760D		n/a	TN464D TN464C TN464B	n/a	μ ³
Singapore	TN753 ²	TN747B ²		TN760D			TN464D TN464C	TN464D TN464C	μ ³
Spain	n/a	TN2147	TN465B	n/a	n/a	TN464Dv.2 ⁸	n/a	TN464D	A
Taiwan	TN753	TN747B ¹		TN760D			TN464D TN464C TN767	n/a	μ
United Kingdom	TN459B TN459	TN2147	TN447	TN458		TN464D ⁵	TN464D TN464C	TN464D ⁷	A
Venezuela	TN753 ²	TN747B	TN465B	TN760D	TN439	n/a	TN464D TN464C	n/a	μ ³

Notes:

n/a Service is not provided by this country's PNT.

1. If polarity-reversal signaling is required for disconnect supervision, Vintage 12 or later must be used.

2. MFC Service Circuit needed.

3. National standard is A-Law.

4. A MUX will grant Japanese customers Fractional T1 service with CMI conversion already provided.

5. Only DID supported. U.K. DID is administered as a Tie circuit.

6. Needs an external converter for CEPT-L1: Prescom TS-X 1276.

7. The TN464C/D in the U.K. requires an external 3NET converter that converts the DEFINITY Communications System ETSI protocol to DASS-II/DPNSS.

8. MFE Service Circuit needed.

Table B-4. Line CPs Supported on G3V2

Country	8p An Line	16p An Line	Dig Line	Data Line	Encoding A/ μ
U.S. & Canada	TN742	TN746B	TN754B	TN726B	μ
Argentina			TN754B TN2136	TN726B	
Australia	TN467	TN468B TN468	TN754B TN413	TN726B	A
Belgium		TN2149	TN754B TN2136	TN726B	A
CIS		TN746B	TN754B TN2136	TN726B	A
Czechoslovakia		TN746B	TN754B TN2136	TN726B	A
Ecuador			TN754B TN2136	TN726B	A
Greece	TN742	TN746B	TN754	TN726B	μ^1
Hong Kong	TN742	TN746B	TN754B	TN726B	μ^1
Hungary	TN742	TN746B	TN754B TN2136	TN726B	μ^1
Italy		TN2135	TN754B TN2136 TN413	TN726B	A
Japan	TN742	TN746B TN479	TN754B	TN726B	μ
Mexico	TN742	TN746B	TN754B	TN726B	μ^1
Netherlands		TN2144	TN754B TN2136	TN726B	A
Poland	TN742	TN746B	TN754B TN2136	TN726B	μ^1
Saudi Arabia	TN742	TN746B	TN754B	TN726B	μ^1
Singapore	TN742	TN746B	TN754B	TN726B	μ^1
Spain		TN2180	TN754B TN2136	TN726B	A
Taiwan	TN742	TN746B	TN754B	TN726B	μ
United Kingdom	TN467	TN468B TN468	TN754B TN413	TN726B	A
Venezuela	TN742	TN746B	TN754B TN413	TN726B	μ^1

Notes:

1. National standard is A-Law.

Table B-5. Trunk/Line CP Functionality Summary

CP Name	Description	# Ports	Supports Administrable Timers	Encoding Al μ
TN413	Digital Line	8	No	A
TN417	Aux Trunk	4	No	A
TN429	LS-DIOD	8	Yes	C μ
TN436	DID (Aust., Current Source)	8	Yes	CA
TN436B	DID (Aust., Current Source)	8	Yes	CA
TN437	4w E&M Tie	4	Yes	CA
TN437B	4w E&M Tie	4	Yes	CA
TN438	Analog LS CO	8	Yes	CA
TN438B	LS-CO 12 & 16 kHz PPM	8	Yes	CA
TN439	2w Tie	4	Yes	C μ
TN447	GS-CO 50 Hz PPM	8	Yes	CA
TN448	Analog Line	16	N/A	A
TN458	4w E&M Tie	4	Yes	CA
TN459	DID Current Source (U.K)	8	Yes	CA
TN459B	DID (U.K., Current Source)	8	Yes	CA
TN464B	E1	32	Yes	CA
TN464C	UDS1	24/32	Yes	CA
TN464D	UDS1	24/32	Yes	CA
TN465	LS-CO 16kHz PPM	8	Yes	CS
TN465B	LS-CO 12/16 KHz PPM	8	Yes	C μ
TN467	Analog Line ONS/OPS	8	N/A	CA
TN468	Analog Line ONS	16	N/A	A
TN468B	Analog Line	16	N/A	CA
TN479	Analog Line (Japan Ring Cadence)	16	N/A	μ
TN497	Italy TGE/TGI/TGU	4	Yes	CA
TN556B	ISDN-BRI Companding Version		N/A	C μ
TN722B	DS1 Tie	24	No	μ
TN726	Data Line	8	N/A	N/A
TN726B	Data Line	8	N/A	N/A
TN742	Analog Line	8	N/A	μ
TN746	Analog Line	16	N/A	μ
TN746B	Analog Line	16	N/A	C μ
TN746Bv6	Analog Line Adj. Flash Time	16	Yes	C μ
TN747	Analog CO	8	No	μ
TN747Bv12	CO w. Polarity Rev.	8	Yes	C μ
TN753	DID	8	No	C μ
TN754	Digital Line	8	N/A	μ
TN754B	Digital Line	8	N/A	C μ
TN760C	Tie	4	No	μ
TN760Dv.15	4w E&M Tie	4	Yes	C μ
TN762B	Hybrid Line	8	N/A	μ
TN763B	Aux Trunk	4	No	μ
TN763C	AUX Trunk	4	No	μ
TN763D	Aux Trunk	4	No	C μ
TN767	DS1	24	Yes	μ

Table B-5. Trunk/Line CP Functionality Summary (continued)

CP Name	Description	# Ports	Supports Administrable Timers	Encoding A/ μ
TN2135	Analog Line	16		CA
TN2136	Two-Wire Digital Line	8		CA
TN2138	LS-CO 12 & 16kHz PPM	8	Yes	CA
TN2139	DID	8	Yes	A
TN2140	4w E&M Tie	4	Yes	CA
TN2144	Analog Line Netherlands	16	Yes	CA
TN2146	DID (Belg, Neth.) Current Sink	8	Yes	CA
TN2147	Low Cost CO (UK,BG,Aus,Neth)	8	Yes	CA
TN2149	Analog Line Belgium	16	Yes	CA
TN2180	Analog Line Spain	16	Yes	CA

Notes:

CS - Software controlled - Switch controlled default.

CA - Software controlled - A-Law default.

C μ - Software controlled - μ -Law default.

Table B-6. Processing/Environmental CPs per Country

Country	SERVICE CIRCUITS							
	Memory Board	Processor Board	Tape Drive	Maintenance Board	Interface Expansion	AC Power Supply	DC Power Supply	Network Control
U.S. & Canada	TN761 TN770	TN759 TN765 TN786 TN773	TN774	TN759 TN775	TN765 TN722 TN776	†	676B	TN777B TN777
Argentina	TN770	TN765 TN773 TN786	TN774	TN775	TN722 TN776	†	676B	TN777B TN777
Australia	TN770	TN765 TN773 TN786	TN774	TN775	TN722 TN776	†	676B	TN777B TN777
Belgium	TN770	TN765 TN773 TN786	TN774	TN775	TN765 TN772 TN776	†	676B	TN777B TN777
CIS	TN770	TN765 TN773 TN786	TN774	TN775	TN722 TN776	†	676B	TN777B TN777
Czechoslovakia	TN770	TN765 TN773 TN786	TN774	TN775	TN765 TN772 TN776	PEC3981 UK	676B	TN777B
Ecuador	TN770	TN765 TN773 TN786	TN774	TN775	TN722 TN776	†	676B	TN777B TN777
Greece	TN770	TN765 TN773 TN786	TN774	TN775	TN722 TN776	†	676B	TN777B TN777
Hong Kong	TN770							
Hungary	TN770	TN765 TN773 TN786	TN774	TN775	TN722 TN776	†	676B	TN777B TN777
Italy	TN770	TN765 TN773 TN786	TN774	TN775	TN722 TN776	†	676B	TN777B TN777
Japan	TN770	TN765 TN773 TN786	TN774	TN775	TN722 TN776	†	676B	TN777B TN777
Mexico	TN770	TN765 TN773 TN786	TN774	TN775	TN722 TN776	†	676B	TN777B TN777
Netherlands	TN770	TN765 TN773 TN786	TN774	TN775	TN765 TN772 TN776	PEC3981 UK	676B	TN777B TN777
Poland	TN770	TN765 TN773 TN786	TN774	TN775	TN722 TN776	†	676B	TN777B TN777
Saudi Arabia	TN770	TN765 TN773 TN786	TN774	TN775	TN722 TN776	†	676B	TN777B TN777
Singapore	TN770	TN765 TN773 TN786	TN774	TN775	TN722 TN776	†	676B	TN777B TN777
Spain	TN770	TN765 TN773 TN786	TN774	TN775	TN765 TN772 TN776	PEC3981 UK	676B	TN777B TN777
Taiwan	TN770	TN765 TN773 TN786	TN774	TN775	TN722 TN776	†	676B	TN777B TN777
United Kingdom	TN770	TN765 TN773 TN786	TN774	TN775	TN772 TN776	PEC3981 UK	676B	TN777B TN777
Venezuela	TN770	TN765 TN773 TN786	TN774	TN775	TN722 TN776	†	676B	TN777B TN777

Notes:

† The following CPs are used for every country indicated: WP 91153 L2, 644A, 645B

Hardware Administration Country Codes

G3V2 supports administration of circuit pack operating parameters through the selection of *Country Codes*. Each code will correspond to a pre-defined set of (one or more) programmable hardware and/or firmware affecting attributes.

The Country Code assignments are as follows:

Table B-7. Country Code Assignments

Administered Code	Country
1	U.S. & Canada
2	Australia
3	Japan
4	Italy
5	Netherlands
6	Singapore
7	Mexico
8	Belgium
9	Saudi Arabia
10	United Kingdom
11	Spain
12	France
13	Germany
14	Czechoslovakia
15	CIS
16	Argentina
17	Greece



NOTE:

Although the Country Codes listed above have been defined, Codes 12 (France) and 13 (Germany) are not currently supported by G3V2. Entering Country Code 12 or 13 into a field will result in an error message.

If no Country Code value has been assigned to a particular country, (for example, no Country Code has been assigned to Venezuela) then an administrator will need to use the following table to determine the appropriate code for each feature area in that country when configuring the System.

Although this will be covered in the Individual Country Sections of this appendix, a summary table of recommended Country Codes is provided below.

Table B-8. Recommended Country Codes to be Entered by Administrators

Country	Tone Gen	ISDN	DIG. XMIT	TONE DET	TRUNK GROUP COUNTRY"	ANA.RING CADENCE	TONE DET. PRECISION
U.S. & Canada	1	1	1	1	1	1	Precise
Argentina	16	-	16	1	16	16	Broadband
Australia	2	2	2	2	2	-	Precise
Belgium	8*	8	5	5	8	-	Medium
CIS	15	-	15	4	15	15	Medium
Czechoslovakia	14*	-	14	4	14	14	Medium
Ecuador							
Greece	17	-	17	1	17	17	Broadband
Hong Kong	1	5	1	1	1	-	Precise
Hungary	-		1	1		1	Medium
Italy	4	4	4	1	4	4	Precise
Japan	3	3	3	1	3	3	Precise
Mexico	7*	-	7	1	7	7	Precise
Netherlands	5*	5	5	5	5	5	Medium
Poland	-		1	1		1	Medium
Saudi Arabia	9	-	9	1	9	9	Precise
Singapore	6*	6	6	1	6	6	Precise
Spain	11	-	11	4	11	11	Medium
Taiwan	1	3	1	1	1	1	Precise
UK OTR001	10	10	10B	3	10	-	Precise
UK Non-OTR001	10	10	10A	3	10	-	Precise
Venezuela	1	-	-	1	-	5	Precise

Notes:

- * Needs additional customized tone administration to meet country requirements. (This admin detail is covered in Individual Country sections of this document.)
- ** The country codes entered here select the appropriate FW protocols on the various Analog CO/DID trunks. These values also need to be duplicated on the DS1 Administration "Country Protocol" field for the appropriate FW protocol to be selected on the TN464x.
- Feature is not provided in this country or hardware does not support administrable selection. Administrator should accept default in these cases.

The following table provides expanded information for the **TONE DET** field in the previous table.

Table B-9. Available Tone Detection Modes

Code	Mode
1	Italy
2	Australia
3	UK
4	Standard Wideband
5	Broad Wideband

Country-Specific Configuration and Administration

The following sections present information for how G3V2 should be administered for each of the supported countries. Values shown are those that should actually be entered into fields on the specified forms.



NOTE:

In the tables that follow for each country, circuit packs listed in **BOLD** are intended for new systems. All other CPs (non-bold) are supported for upgrades only. Not all G3V2 functionality is available with upgrade CPs.

United States & Canada

All domestic circuit packs, as summarized in the table below, may be used with G3V2.

Table B-10. Supported Domestic Port and Service CPs

CP Code	Function	Notes
TN722	DS1 Trunk	
TN722B	DS1/DMI Trunk	
TN725B	SpeeCh Synthesis	
TN735	MET Line	
TN742	Analog Line (8)	
TN746B	Analog Line (16)	
TN747	Analog CO	B or C Vintage needed for ACD
TN747B	Analog CO	
TN748	Tone Detector	C Vintage needed for OCM
TN748B	Tone Detector	
TN748D	Tone Detector	
TN750B	Announcement	
TN753	DID Trunk	
TN754	Digital Line	
TN754B	Digital Line	
TN756	Tone Detector	Used in XE only
TN758	Pooled Modem	
TN760D	Tie Trunk	CAS needs $\geq$ B V.6
TN762	Hybrid Line	
TN763	Aux Trunk (DA)	AUDICHRON requires B, C or D Vintage
TN763B	Aux Trunk (DA)	
TN763D	Aux Trunk	
TN767	DS1 Interface	
TN464C	DS1 Interface	
TN464D	DS1 Interface	
TN768	Tone Clock	Used with SE+
TN769	Analog Line (with Neon)	
TN780	Tone Clock	Stratum 3

Administration

All timers and option selections will default to the values appropriate for operation in the US. Whenever a Country Code is requested, use Code 1.¹

1. The default Country Code value is always "1" (US).

Argentina

Recommended and available circuit packs are shown in the following Table:

Table B-11. Recommended and Available CPs in Argentina

Number	Function	Comments
TN750B	Announcement	
TN763D	Aux Trunk	
TN754B	Digital Line	
TN2136		
TN726B	Data Line	
TN748C	Tone Detector	
TN748D		
TN780	Tone Generator	
TN744v.7	Call Classifier	R2MFC
TN725	Speech Synth	
TN747B	Analog CO Trunk	
TN760Dv.15	4W Tie Trunk	
TN464Dv.3	Digital Trunk	
TN742	8 Port Analog Line	
TN746B	16 Port Analog Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should not normally be used in non-North American ARS/AAR tables:

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- System Parameters Features Administration
 - Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
 - Public Network Trunks on Conference Call: **1**
 - Conference Parties With PNTs: **3**
 - Conference Parties Without PNTs: **6**
 - Line Intercept Tone Timer: **30**
 - Night Service Disconnect Timer: **180 sec**
 - Short Interdigit Timer: **3 sec**
 - Unanswered DID Call Timer: **60**
 - Auto-Hold: **Yes²**
 - Attendant Tone: **Yes**
 - Bridging Tone: **No**
 - Conference Tone: **No**
 - Intrusion Tone: **No**
 - Repetitive Call Waiting Tone: **No**
 - DID Busy Treatment: **Attendant**
 - Pull Transfer: **No**
 - Level of Tone Detection: **Broadband**
 - Outpulse Without Tone: **Yes**
 - (Station-to-switch) Recall Timing:
 - Flashhook Interval: **Yes**
 - Upper Bound: **1000 ms**
 - Lower Bound: **200 ms**
- System Parameter Country Options Administration
 - Companding Mode: **mu-law**
 - Base Tone Generation Set: **16**
 - Tone Detection Mode: **1**

2. Although not a Type Approval issue, this represents the convention for this country.

- Interdigit Pause: **short**
- Digital Loss Plan: **16**
- Analog Ringing Cadence: **16**
- Customized Individual Tones

In this section, customized tone definitions follow the data-entry syntax as specified for entry on the Individual Tone Administration Screen:

[(Frequency/Level)|silence|goto)][(Duration ms)|l(Step)]

- Reorder (Congestion):
 1. (425/-11)(250)
 2. (silence)(250)
 3. (goto)(1)
- CO Dial Tone:
 1. (350+440/-13.75)(1000)
 2. (goto)(1)
- PBX Dial Tone:
 1. (425/-11)(1000)
 2. (goto)(1)

Analog Trunk Administration

- CO Trunks
 - Trunk Group Screen
 - Group Type: **CO**
 - Country: **16**
 - Trunk Gain: **high**
 - Direction: **two-way**
 - Digit Absorption List: **blank**
 - Prefix-1: **No**
 - Trunk Type: **loop-start**
 - Outgoing Dial Type: **tone** or **rotary**
 - Trunk Termination: **600 Ω**
 - Auto Guard: **no**
 - Dial Access: **Yes**
 - Call Still Held: **no**

- Terminal Balanced: **no**
- RA Trunk Loss: **0dB**
- Receive Answer Supervision: **no**
- Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In: **yes**
- Disconnect Supervision - Out: Selection is customer's choice.
- Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **300** ms
- Outgoing Disconnect: **300** ms
- Outgoing Dial Guard: **1000** ms
- Incoming Glare Guard: **3000** ms
- Outgoing Glare Guard: **3000** ms
- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **40** ms
- Outgoing Rotary Digit Dial Break: **60** ms
- Outgoing Rotary Dial Interdigit: **600** ms
- Ring Monitor Timer: **5000** ms
- Incoming Seizure: **130** ms
- Outgoing End-of-Dial: **10** sec
- Outgoing Seizure Response: **5**
- Programmed Dial Pause: **1500** ms
- Disconnect Signal Error: **240** sec
- End-To-End Signaling Pause: **150** ms (accept default)
- End-To-End Signaling Tone: **350** ms (accept default)
- Flash Length: **540** ms
- PPM: **No**

- DID Trunks

- Trunk Group Screen

- Group Type: **DID**
- Country: **16**
- Trunk Gain: **high**
- Digit Absorption List: **blank**
- Incoming Dial Type: **MF**
- Trunk Type: **immed-start**
- Trunk Termination: **rc** (complex impedance)
- Disconnect Supervision: **yes**
- Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
- Digit Treatment: **blank**
- Digits: **blank**
- Expected Digits: depends on system size and numbering plan
- Terminal Balanced: **no**
- RA Trunk Loss: **0dB**
- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **silence**
- Incoming Rotary Timeout (sec): **5** sec (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)
- Suppress # Outpulsing: **no**

- Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **500** ms
- Incoming Dial Guard: **70** ms
- Incoming Partial Dial: **18** sec
- Incoming Incomplete Dial: **255** sec

- Tie Trunks

No information is currently available.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks
 - DS1³ Administration Screen
 - Circuit Pack: TN464D (not entered as an administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **mu-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **16**
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **11111111**
 - Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog CO trunks.
- DID Trunks
 - DS1 Administration Screen
 - Circuit Pack: TN464D (not entered as an administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **mu-law**
 - Line Coding: **HDB3**
 - Signaling Mode **CAS**
 - Country Protocol: **16**
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **11111111**
 - Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog DID trunks.

3. DS1 is also analogous to the term *E1* that has been coined for the European T1 or 2 mbit interface.

- Tie Trunks

- Non-ISDN Signaling Example (DS1 Administration Screen)

- Circuit Pack: TN464D (Not entered as administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **mu-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **16**
 - Interconnect: **pbx**
 - CRC?: **no**
 - Idle Code: **01010100**

- ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

- DS1 Administration Form

- Circuit Pack: TN464D (or TN464C from upgrades)
 - Bit Rate: **2.046**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - country Protocol: **1**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **01010100**

- Signaling Group Form

- Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)

- Trunk Group Administration Form

- Group Type: **isdn-pri**
 - Service Type: **tie**

- ISDN-PRI (Public Network)

Not available for this country.

Australia

Recommended and available circuit packs are shown in the following Table:

Table B-12. Recommended and Available CPs in Australia

Number	Function	Comments
TN420C TN420B	Tone Detector	V2 CP to be sold
TN780 TN419B	Tone Gen/Clock	
TN457	Speech Synth	V2 CP to be sold
TN750B	Announcement	
TN763D TN417	Aux Trunk	
TN436B TN436	DID Trunk	
TN2147	CO w/o PPM	
TN438B	CO w/PPM	
TN437B TN437	4w Analog Tie	
TN439	2w Analog Tie	
TN464D TN464C	Digital Tie	
TN464D TN464C	ISDN CO	
TN467	8p Analog Line	V2 CP to be sold
IN468B TN468	16p Analog Line	V4 CP to be sold
TN754B TN413	Digital Line	Only from upgrades
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These (defaults) are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables:

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used in Australia:

- int:** For all international numbers.
- unk:** For all other types of digit strings.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- System Parameters Features Administration
 - Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
 - Public Network Trunks on Conference Call: **5**
 - Conference Parties With PNTs: **6**
 - Conference Parks Without PNTs: **6**
 - Line Intercept Tone Timer: **30**
 - Night Service Disconnect Timer: **180 sec**
 - Short Interdigit Timer: **3 sec**
 - Unanswered DID Call Timer **60**
 - Auto-Hold: **Yes⁴**
 - Attendant Tone: **Yes**
 - Bridging Tone: **No**
 - Conference Tone: **No**
 - Intrusion Tone: **Yes**
 - Repetitive Call Waiting Tone: **No**
 - DID Busy Treatment: **Attendant**
 - Pull Transfer: **No**
 - Level of Tone Detection: **Precise**
 - Outpulse Without Tone: **Yes**

4. Although not a Type Approval issue, this represents the convention for this country.

— (Station-to-switch) Recall Timing:

- Flashhook Interval: **Yes**
- Upper Bound: **1000 ms**
- Lower Bound: **200 ms**

■ System Parameter Country Options Administration

- Companding Mode: **A-law**
- Base Tone Generation Set: **2**
- Tone Detection Mode: **2**
- Interdigit Pause: **short**
- Digital Loss Plan: **2**
- Analog Ringing Cadence: **2**

Analog Trunk Administration

■ CO Trunks

— Trunk Group Screen

- Group Type: **CO**
- Country: **2**
- Trunk Gain: **high**
- Direction: **two-way**
- Digit Absorption List: **blank**
- Prefix-1: **No**
- Trunk Type: **loop-start** or **ground-start**
- Outgoing Dial Type: **tone**
- Trunk Termination: **rc** (complex impedance)
- Auto Guard: **yes**
- Dial Access: **yes**
- Call Still Held: **yes**
- Terminal Balanced: **yes**
- Receive Answer Supervision: **no**
- Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In: **yes**
- Disconnect Supervision - Out: Selection is customer's choice.

- Disconnect Timing: **500** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **500** ms
- Outgoing Disconnect: **500** ms
- Outgoing Dial Guard: **1800** ms
- Incoming Glare Guard: **1500** ms
- Outgoing Glare Guard: **1500** ms
- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **35** ms
- Outgoing Rotary Digit Dial Break: **65** ms
- Outgoing Rotary Dial Interdigit: **800** ms
- Ring Monitor Timer **5200** ms
- Incoming Seizure: **500** ms
- Outgoing End-of-Dial: **10** sec
- Outgoing Seizure Response: **240** sec
- Programmed Dial Pause: **1500** ms
- Disconnect Signal Error: **240** sec
- Flash Length: **100** ms
- PPM: **Yes**
- PPM Frequency: **50/12kHz**

■ DID Trunks

— Trunk Group Screen

- Group Type: **DID**
- Country: **2**
- Trunk Gain: **high**
- Digit Absorption List: **blank**
- Incoming Dial Type: **tone**
- Trunk Type: **immed-start**
- Trunk Termination: **rc** (complex impedance)

- Disconnect Supervision - In: **yes**
- Disconnect Timing: **500** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
- Digit Treatment: **blank**
- Digits: **blank**
- Expected Digits: depends on system size and numbering plan
- Terminal Balanced: **yes**
- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **silence**
- Incoming Rotary Timeout (sec): **5** sec (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **500** ms
 - Incoming Dial Guard: **50** ms
 - Incoming Partial Dial: **18** sec
 - Incoming Incomplete Dial: **255** sec
 - Flash Length: **100** ms
- Tie Trunks

No special Type Approval regulations apply. Tie trunks are administered on a case-by-case basis.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO and DID Trunks

Not available in this country.

- Tie Trunks

- Non-ISDN Signaling Example (DS1 Administration Screen)

- Circuit Pack: TN464D (Not entered as administrable item; TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **2**
 - Interconnect: **pbx**
 - CRC?: **no**
 - Idle Code: **11111111**

- ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

- DS1 Administration Form

- Circuit Pack: TN464D (TN464C,B from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **2**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **11111111**

- Signaling Group Form

- Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)

- Trunk Group Administration Form

- Group Type: **isdn-pri**
 - Service Type: **tie**

- ISDN-PRI (Public Network)
 - DS1 Administration Form
 - Circuit Pack: TN464D (Not entered as administrable item; TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **2**
 - Connect: **Network**
 - DMI-BOS? **Yes**
 - CRC: **No**
 - Idle Code: **11111111**
 - Signaling Group Form
 - Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)
 - Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **public_ntwrk**

Belgium

Recommended and available circuit packs are shown in the following Table:

Table B-13. Recommended and Available CPs in Belgium

Number	Function	Comments
TN420C	Tone Detector	
TN780v4	Tone Gen/Clock	
TN744	Call Classifier	R2-MFC
TN457	Speech Synth	V2 CP to be sold
TN750B	Announcement	
TN763D	Aux Trunk	
TN2146	DID Trunk	MFC Only
TN2147	CO w/o PPM	
TN465B	Analog CO w/PPM	
TN760Dv11	Analog Tie	Prescom TS-X 1276 converter required
TN464D	Digital CO	DTMF only
TN464D	Digital DID	MFC only
TN464D	Digital Tie	
TN464D	ISUN CO	Not yet TAed
TN2149	16p Analog Line	
TN754B	Digital Line	
TN2136		
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered to place CO calls. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables:

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ System Parameters Features Administration

- Off Premise Tone Detection Timeout: **10 sec**
- Trunk-to-Trunk Transfer: Not permitted in Belgium
- Distinctive Audible Alerting:
 - Int: **1**
 - Ext: **2**
 - Priority: **2**
- DID/TIE/ISDN Intercept Treatment: **Attendant**
- Public Network Trunks on Conference Call: **1**
- Conference Parties With PNTs: **3**
- Conference Parties Without PNTs: **6**
- Line Intercept Tone Timer: **30**
- Night Service Disconnect Timer: **180 sec**
- Short Interdigit Timer: **3 sec**
- Unanswered DID Call Timer: **25 sec**
- Auto-Hold: **Yes⁵**
- Attendant Tone: **Yes**
- Bridging Tone: **No**
- Conference Tone: **No**
- Intrusion Tone: **Yes**
- Repetitive Call Waiting Tone: **Yes**
- DID Busy Treatment: **Attendant**
- Pull Transfer: **No**
- Level of Tone Detection: **Medium**
- Outpulse Without Tone: **Yes**

5. Although not a Type Approval issue, this represents the convention for this country.

- (Station-to-switch) Recall Timing:
 - Flashhook Interval: **No**
 - Disconnect Timing: **350 ms**
- Network Feedback During Tone Detection: **No**
- System Parameter Multifrequency Signaling Administration
 - Incoming Call Type: **non-group-ii-mfc** (use default translations)
 - Test Call Extension: 160 or as negotiated.
- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- System Parameter Country Options Administration
 - Companding Mode: **A-law**
 - Base Tone Generation Set: **8**
 - Tone Detection Mode: **5**
 - Digital Loss Plan: **8**
 - Interdigit Pause: **long**
 - Dial Tone Validation Timer: **600 ms**
 - Analog Ringing Cadence: **8**
 - Customized Individual Tones

Customized tone definitions follow the syntax as specified:

[(Frequency/Level)|silence|goto)][(Duration ms)|l(Step)]

- Intercept Tone:
 1. (425/-4)(250)
 2. (silence)(250)
 3. (goto)(1)
- Conference Tone:
 1. (425/-11)(200)
 2. (silence)(9800)
 3. (goto)(1)
- 1 Call Wait Tone:
 1. (425/-11)(200)
- 2 Call Wait Tone:
 1. (425/-11)(200)

Analog Trunk Administration

■ CO Trunks

— Trunk Group Screen

- Group Type: **CO**
- Direction: **two-way**
- Digit Absorption List: **blank**
- Country Code: **8**
- Trunk Gain: **high** or **low** as required by loop length
- Dial Access: **No**
- Prefix-1: **No**
- Trunk Type: **loop-start**
- Outgoing Dial Type:
 - Digital Trunks: **tone**
 - Analog Trunks: **tone** or **rotary**
- Trunk Termination: **rc** (complex impedance)
- Auto Guard: **no**
- Sig Bit Inversion: **none**
- Call Still Held: **no**
- Terminal Balanced: **no**
- RA Trunk Loss: **0dB**
- Receive Answer Supervision: **no**
- Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In:
 - Analog Trunks: **no**
 - Digital Trunks: **yes**
- Disconnect Supervision - Out: Selection is customer's choice.
- Disconnect Timing: **500** msec (This field will not be used with for CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
- Cyclical Hunt: **Yes**
- Suppress # Outpulsing: **yes**

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **600** ms
- Outgoing Disconnect: **500** ms
- Outgoing Dial Guard: **1600** ms
- Incoming Glare Guard: **1500** ms
- Outgoing Glare Guard: **1500** ms
- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **35** ms
- Outgoing Rotary Digit Dial Break: **65** ms
- Outgoing Rotary Dial Interdigit: **800** ms
- Ring Monitor Timer: **5200** ms
- Incoming Seizure: **500** ms
- Outgoing End-of-Dial: **10** sec
- Outgoing Seizure Response:
 - Analog trunks: **10** sec
 - Digital trunks: **2** sec
- Programmed Dial Pause: **1500** ms
- End-To-End Signaling Pause: **150** ms (accept default)
- End-To-End Signaling Tone: **350** ms (accept default)
- PPM: **yes**⁶
- Frequency: **16khz**
- Flash Length: **100** ms

■ DID Trunks

— Trunk Group Screen

- Group Type: **DID**
- Direction: **incoming**
- Country Code: **8**
- Trunk Gain: **high** or **low** as required by loop length

6. PPM support on analog trunks will not be provided for Belgium until the TN465B is available.

- Digit Absorption List: **blank**
- Incoming Dial Type: **MF**
- Trunk Type: **immed-start**
- Trunk Termination: **rc** (complex impedance)
- Disconnect Timing: **500** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
- Digit Treatment: **blank**
- Digits: **blank**
- Expected Digits: **3** or **4**
- Terminal Balanced: **no**
- RA Trunk Loss: **0dB**
- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **silence**
- Disconnect Supervision:
 - Analog Trunks: **no**
 - Digital Trunks: **yes**
- Incoming Rotary Timeout (sec): **5** sec (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)
- Suppress # Outpulsing: **yes**

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **600** ms
- Incoming Dial Guard: **50** ms
- Incoming Partial Dial: **18** sec
- Incoming Incomplete Dial: **60** sec
- Flash Length: **100** ms

■ Tie Trunks

No special Type Approval regulations apply. Tie trunks are administered on a case-by-case basis.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks

- DS1 Administration Screen

- Circuit Pack: **TN464D**
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **8**
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**

- Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog CO trunks with the following exception.

- Outgoing Seizure Response: **2 sec.**

- DID Trunks

- DS1 Administration Screen

- Circuit Pack: **TN464D**
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **8**
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**

- Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog DID trunks.

- Tie Trunks

- Non-ISDN Signaling Example (DS1 Administration Form)

- Circuit Pack: TN464D
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **8**
 - Interconnect: **pbx**
 - CRC?: **no**
 - Idle Code: **01010100**

- ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

- DS1 Administration Form

- Circuit Pack: TN464D
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **8**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **01010100**

- Signaling Group Form

- Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)

- Trunk Group Administration Form

- Group Type: **isdn-pri**
 - Service Type: **tie**

- ISDN-PRI (Public Network)

Not available for this country.

■ Station Administration

Rotary stations are not supported in Belgium.

- Type: **2500**
- Switch Flash: **yes**

■ Call Vector Form

This is for use with Auto Transfer and Auto Answer through vectoring/prompting, and it is only allowed for Digital outgoing trunks.

- ASAI Routing: **no**
- Basic: **yes**
- Prompting: **yes**
- Wait time **6** seconds hearing **ringback**
- Announcement extension is *installation dependent*
- Route to number is *installation dependent* if unconditionally

Commonwealth of Independent States

Recommended and available circuit packs are shown in the following Table:

Table B-14. Recommended and Available CPs in the Commonwealth of Independent States

Number	Function	Comments
TN420C	Tone Detector	
TN780	Tone Gen/Clock	
TN457	Speech Synth	V2 CP to be sold
TN750B	Announcement	
TN763D	Aux Trunk	
TN753v.17	DID Trunk	
TN465	CO w/PPM	
TN747Bv.12	CO w/o PPM	
TN760Dv11	Analog Tie	
TN464D	Digital Tie	
TN464Dv.3	Digital CO/DID Trunk	
TN744	Call Classifier	Used only for MFR ANI Xmit
TN746B	16p Analog Line	
TN754B	Digital Line	
TN2136		
TN726B	Data line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- System Parameters Features Administration
 - Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
 - Public Network Trunks on Conference Call: **5**
 - Conference Parties With PNTs: **6**
 - Conference Parties Without PNTs: **6**
 - Line Intercept Tone Timer: **30**
 - Night Service Disconnect Timer: **180 sec**
 - Short Interdigit Timer: **3 sec**
 - Unanswered DID Call Timer: **60**
 - Auto-Hold: **Yes⁷**
 - Attendant Tone: **Yes**
 - Bridging Tone: **No**
 - Conference Tone: **No**
 - Intrusion Tone: **Yes**
 - Repetitive Call Waiting Tone: **No**
 - DID Busy Treatment: **Attendant**
 - Pull Transfer: **No**
 - Level of Tone Detection: **Medium**
 - Outpulse Without Tone: **Yes**
 - (Station-to-switch) Recall Timing:
 - Flashhook Interval: **No**
 - Disconnect Timing: **350 ms**
- Class of Restriction Administration
 - Category For C.I.S. ANI: **7**

7. Although not a Type Approval issue, this represents the convention for this country.

■ System Parameter Multifrequency Signaling Administration

- Incoming Call Type: **group-ii-mfc**
- Outgoing Call Type: **group-ii-mfc**
- Test Call Extension: Accept default
- Incoming Interdigit Timer: **20** sec
- Outgoing Forward Signal Absent Timer: **27** sec
- Incoming Signal Types:

GROUP-I	GROUP-II	GROUP-A	GROUP-B
11: send-congest	1: normal	1: next-digit	3: busy
12: ignored	2: busy-rt-attd	3: end-of-dial	4: congestion
13: ignored	3: busy-rt-attd	4: congestion	5: intercept
14: ignored	4: normal		6: free
15: end-of-dial	5: busy-rt-attd		
	6: normal		
	7: normal		
	8: normal		
	9: busy-rt-attd		
	10: normal		
	11: send-intercept		
	12: send-intercept		
	13: normal		
	14: normal		
	15: send-intercept		

- Outgoing Signal Types:

GROUP-I	GROUP-II	GROUP-A	GROUP-B
12: ani-not-avail	1: normal	1: next-digit	1: free
15: end-of-digits	1: attendant	2: last-digit	2: congestion
	6: data-call	3: end-of-dial	3: busy
		4: congestion	4: congestion
		5: call-info-ani	5: intercept
		6: setup-sppath	6: free
		7: last-2-digits	7: free
		8: last-3-digits	8: intercept
		9: congestion	9: busy
		10: congestion	10: busy
		11: congestion	11: busy
		12: congestion	12: busy
		13: congestion	13: busy
		14: congestion	14: busy
		15: congestion	15: busy

■ System Parameter Country Options Administration

- Companding Mode: **A-law**
- Base Tone Generation Set: **15**
- Tone Detection Mode: **4**
- Interdigit Pause: **short**

- Digital Loss Plan: **15**
- Analog Ringing Cadence: **15**

Analog Trunk Administration

■ CO Trunks

— Trunk Group Screen

- Group Type: **CO**
- Country: **15**
- Trunk Gain: **high**
- Direction: **outgoing**
- Digit Absorption List: **blank**
- Prefix-1: **No**
- Trunk Type: **loop-start**
- Outgoing Dial Type: **rotary**
- Trunk Termination: **600 Ω**
- Auto Guard: **no**
- Dial Access: **Yes**
- Call Still Held: **no**
- Terminal Balanced: **yes**
- Receive Answer Supervision: **yes**
- Answer Supervision Timeout: **0** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In: **yes**
- Disconnect Supervision - Out: Selection is customer's choice.
- Disconnect Timing: **500 msec** (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **200 ms**
- Outgoing Disconnect: **200 ms**

- Outgoing Dial Guard: **3000** ms
- Incoming Glare Guard: **1500** ms
- Outgoing Glare Guard: **5000** ms
- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **50** ms
- Outgoing Rotary Digit Dial Break: **50** ms
- Outgoing Rotary Dial Interdigit: **800** ms
- Ring Monitor Timer: **5200** ms
- Incoming Seizure: **200** ms
- Outgoing End-of-Dial: **254** sec
- Outgoing Seizure Response: **5** sec
- Programmed Dial Pause: **3** sec
- Disconnect Signal Error: **240** sec
- End-To-End Signaling Pause: **150** ms (accept default)
- End-To-End Signaling Tone: **350** ms (accept default)
- Flash Length: **100** ms
- PPM: **No**
- DID Trunks
 - Trunk Group Screen
 - Group Type: **DID**
 - Country: **15**
 - Trunk Gain: **high**
 - Direction: **incoming**
 - Protocol Type: **inloc** or **intol**
 - Digit Absorption List: **blank**
 - Incoming Dial Type: **rotary**
 - Trunk Type: **loop-start**
 - Trunk Termination: **rc** (complex impedance)
 - Disconnect Supervision: **yes**
 - Disconnect Timing: **500** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
 - Digit Treatment: **blank**

- Digits: **blank**
 - Expected Digits: depends on system size and numbering plan
 - Terminal Balanced: **yes**
 - Drop Treatment: **silence**
 - Incoming Rotary Timeout (sec): **5 sec** (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)
- Trunk Group Administration Screen (Timing)
- The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:
- Incoming Disconnect: **200 ms**
 - Incoming Dial Guard: **70 ms**
 - Incoming Partial Dial: **18 sec**
 - Incoming Incomplete Dial: **255 sec**
- Tie Trunks
- No information regarding Type Approval-related settings is currently available.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks
 - DS1⁸ Administration Screen
 - Circuit Pack: TN464D (not entered as an administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **15**

8. DS1 is also analogous to the term *E1* that has been coined for the European T1 or 2 mbit interface.

- Interconnect: **CO**
- CRC?: **No**
- Idle Code: **01010100**
- Trunk Group Administration Screen (Timing)
Digital trunk timing values should be set as for analog CO trunks.
- DID Trunks
 - DS1 Administration Screen
 - Circuit Pack: TN464D (not entered as an administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **15**
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**
 - Trunk Group Administration Screen (Timing)
Digital trunk timing values should be set as for analog DID trunks.
- Tie Trunks
 - Non-ISDN Signaling Example (DS1 Administration Screen)
 - Circuit Pack: TN464D (Not entered as administrable item; TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **1**
 - Interconnect: **pbx**
 - CRC?: **no**
 - Idle Code: **01010100**

— ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

■ DS1 Administration Form

- Circuit Pack: TN464D (or TN464C from upgrades)
- Bit Rate: **2.048**
- Interface Companding: **A-law**
- Line Coding: **HDB3**
- Signaling Mode: **isdn-pri**
- Country Protocol: **1**
- Connect: **pbx**
- Interface: **user**
- CRC: **No**
- Idle Code: **11111111**

■ Signaling Group Form

- Associated Signaling: **Yes**
- Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)

■ Trunk Group Administration Form

- Group Type: **isdn-pri**
- Service Type: **tie**

■ ISDN-PRI (Public Network)

Not available for this country.

Czechoslovakia

Recommended and available circuit packs are shown in the following Table:

Table B-15. Recommended and Available CPs in Czechoslovakia

Number	Function	Comments
TN420C	Tone Detector	
TN780	Tone Gen/Clock	
TN457	Speech Synth	V2 CP to be sold
TN750B	Announcement	
TN763D	Aux Trunk	
TN753v.17	DID Trunk	
TN465B	CO w/PPM	
TN747v.12	CO w/o PPM	
TN760Dv11	Analog Tie	
TN464D	Digital Tie	
TN464Dv.2	Digital CO/DID Trunk	
TN746B	16p Analog Line	V4 CP to be sold
TN754B	Digital Line	
TN2136		
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- System Parameters Features Administration
 - Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
 - Public Network Trunks on Conference Call: **1**
 - Conference Parties With PNTs: **6**
 - Conference Parties Without PNTs: **6**
 - Line Intercept Tone Timer: **30**
 - Night Service Disconnect Timer: **180 sec**
 - Short Interdigit Timer: **3 sec**
 - Unanswered DID Call Timer: **60**
 - Auto-Hold: **Yes⁹**
 - Attendant Tone: **Yes**
 - Bridging Tone: **No**
 - Conference Tone: **No**
 - Intrusion Tone: **Yes**
 - Repetitive Call Waiting Tone: **No**
 - DID Busy Treatment: **Attendant**
 - Pull Transfer: **No**
 - Level of Tone Detection: **Broadband**
 - Outpulse Without Tone: **Yes**
 - (Station-to-switch) Recall Timing:
 - Flashhook Interval: **No**
 - Disconnect Timing: **350 ms**

9. Although not a Type Approval issue, this represents the convention for this country.

■ System Parameter Multifrequency Signaling Administration

- Incoming Call Type: **group-ii-mfc**
- Outgoing Call Type: **group-ii-mfc**
- Test Call Extension: Accept default
- Incoming Interdigit Timer: **20** sec
- Outgoing Forward Signal Absent Timer: **27** sec
- Incoming Signal Types:

GROUP-I	GROUP-II	GROUP-A	GROUP-B
11: send-congest	1: normal	1: next-digit	3: busy
12: ignored	2: busy-rt-attd	3: and-of-dial	4: congestion
13: ignored	3: busy-rt-attd	4: congestion	5: intercept
14: ignored	4: normal		6: free
15: end-of-dial	5: busy-rt-attd		
	6: normal		
	7: normal		
	8: normal		
	9: busy-rt-attd		
	10: normal		
	11: send-intercept		
	12: send-intercept		
	13: normal		
	14: normal		
	15: send-intercept		

- Outgoing Signal Types:

GROUP-I	GROUP-II	GROUP-A	GROUP-B
12: ani-not-avail	1: normal	1: next-digit	1: free
15: end-of-digits	1: attendant	2: last-digit	2: congestion
	6: data-call	3: and-of-dial	3: busy
		4: congestion	4: congestion
		5: call-info-ani	5: intercept
		6: setup-sppath	6: free
		7: last-2-digits	7: free
		8: last-3-digits	8: intercept
		9: congestion	9: busy
		10: congestion	10: busy
		11: congestion	11: busy
		12: congestion	12: busy
		13: congestion	13: busy
		14: congestion	14: busy
		15: congestion	15: busy

■ System Parameter Country Options Administration

- Companding Mode: **A-law**
- Base Tone Generation Set: **14**
- Tone Detection Mode: **4**
- Interdigit Pause: **short**

- Digital Loss Plan: **14**
- Analog Ringing Cadence: **14**
- Customized Individual Tones

In this section, customized tone definitions follow the data-entry syntax as specified for entry on the Individual Tone Administration Screen:

[(Frequency/Level)|silence|goto)][(Duration ms)|l(Step)]

➤ Reorder (Congestion):

1. (425/-5)(100)
2. (silence)(100)
3. (goto)(1)

➤ Secondary Dial Tone:

1. (425/-5)(350)
2. (silence) (350)
3. (425/-5)(650)
4. (silence)(650)
5. (goto)(1)

➤ PBX Dial Tone:

1. (425/-5)(1000)
2. (goto)(1)

➤ Busy:

1. (425/-5)(350)
2. (silence)(350)
3. (goto)(1)

➤ Call Wait 1:

1. (425/-11)(350)

➤ Recall Dial:

1. (425/-4)(150)
2. (silence)(150)
3. (425/-4)(150)
4. (silence)(150)
5. (425/-4)(1000)
6. (goto)(5)

Analog Trunk Administration

■ CO Trunks

— Trunk Group Screen

- Group Type: **CO**
- Country: **14**
- Trunk Gain: **high**
- Direction: **two-way**
- Digit Absorption List: **blank**
- Prefix-1: **No**
- Trunk Type: **loop-start**
- Outgoing Dial Type: **mf**
- Trunk Termination: **600 Ω**
- Auto Guard: **no**
- Dial Access: **yes**
- Call Still Held: **no**
- Terminal Balanced: **yes**
- Receive Answer Supervision: **yes**
- Answer Supervision Timeout: **0** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In: **yes**
- Disconnect Supervision - Out: Selection is customer's choice.
- Disconnect Timing: **500 msec** (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **180 ms**
- Outgoing Disconnect: **100 ms**
- Outgoing Dial Guard: **3000 ms**
- Incoming Glare Guard: **1000 ms**
- Outgoing Glare Guard: **1500 ms**

- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **50** ms
- Outgoing Rotary Digit Dial Break: **50** ms
- Outgoing Rotary Dial Interdigit: **500** ms
- Ring Monitor Timer: **5200** ms
- Incoming Seizure: **500** ms
- Outgoing End-of-Dial: **254** sec
- Outgoing Seizure Response: **5**
- Programmed Dial Pause: **3** sec
- Disconnect Signal Error: **240** sec
- End-To-End Signaling Pause: **150** ms (accept default)
- End-To-End Signaling Tone: **350** ms (accept default)
- Flash Length: **100** ms
- PPM: **Yes**
- Frequency: **16kHz**
- DID Trunks
 - Trunk Group Screen
 - Group Type: **DID**
 - Country: **14**
 - CO Type: **analog** or **digital**
 - Trunk Gain: **high**
 - Digit Absorption List: **blank**
 - Incoming Dial Type: **mf**
 - Trunk Type: **immed-start**
 - Trunk Termination: **rc** (complex impedance)
 - Disconnect Supervision: **yes**
 - Disconnect Timing: **500** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
 - Digit Treatment: **blank**
 - Digits: **blank**
 - Expected Digits: depends on system size and numbering plan
 - Terminal Balanced: **yes**

- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **busy**
- Incoming Rotary Timeout (sec): **5 sec** (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **180 ms**
 - Incoming Dial Guard: **10 ms**
 - Incoming Partial Dial: **18 sec**
 - Incoming Incomplete Dial: **255 sec**
- Tie Trunks
- No information regarding Type Approval-related settings is currently available.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks

— DS1¹⁰ Administration Screen

- Circuit Pack: TN464D (not entered as an administrable item)
- Bit Rate: **2.048**
- Interface Companding: **A-law**
- Line Coding: **HDB3**
- Signaling Mode: **CAS**
- Country Protocol: **14**
- Interconnect: **CO**
- CRC?: **No**
- Idle Code: **01010100**

10. DS1 is also analogous to the term *E1* that has been coined for the European T1 or 2 mbit interface.

- Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog CO trunks.

- DID Trunks

- DS1 Administration Screen

- Circuit Pack: TN464D (not entered as an administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **14**
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**

- Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog DID trunks.

- Tie Trunks

- Non-ISDN Signaling Example (DS1 Administration Screen)

- Circuit Pack: TN464D (Not entered as administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **14**
 - Interconnect: **pbx**
 - CRC?: **no**
 - Idle Code: **01010100**

— ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

■ DS1 Administration Form

- Circuit Pack: TN464D
- Bit Rate: **2.048**
- Interface Companding: **A-law**
- Line Coding: **HDB3**
- Signaling Mode: **isdn-pri**
- Country Protocol: **1**
- Connect: **pbx**
- Interface: **user**
- CRC: **No**
- Idle Code: **11111111**

■ Signaling Group Form

- Associated Signaling: **Yes**
- Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)

■ Trunk Group Administration Form

- Group Type: **isdn-pri**
- Service Type: **tie**

■ ISDN-PRI (Public Network)

Not available for this country.

Ecuador

Recommended and available circuit packs are shown in the following Table:

Table B-16. Recommended CPs G3—Ecuador

Number	Function	Comments
TN747B	CO w/o PPM	
TN750B	Announcement	
TN746B	16p Analog Line	
TN760D	Analog Tie	
TN763D	Aux Trunk	
TN754B	Digital Line	
TN726B	Data Line	
TN2136		

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- **ARS/AAR Administration**

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- **Console Parameters Administration**

— Secondary Alert on Held Reminder Calls: **Yes**

- **System Parameters Features Administration**

- Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
- Public Network Trunks on Conference Call: **5**
- Conference Parties With PNTs: **6**
- Conference Parties Without PNTs: **6**
- Line Intercept Tone Timer: **30**
- Night Service Disconnect Timer: **180 sec**
- Short Interdigit Timer: **3 sec**
- Unanswered DID Call Timer: **60**
- Auto-Hold: **Yes**¹¹
- Attendant Tone: **Yes**
- Bridging Tone: **No**
- Conference Tone: **No**
- Intrusion Tone: **Yes**
- Repetitive Call Waiting Tone: **No**
- DID Busy Treatment: **Attendant**
- Pull Transfer: **No**
- Level of Tone Detection: **Medium**
- Outpulse Without Tone: **Yes**
- (Station-to-switch) Recall Timing:
 - Flashhook Interval: **No**
 - Disconnect Timing: **350 ms**
- System Parameter Country Options Administration
 - Companding Mode: **A-law**
 - Base Tone Generation Set:
 - Tone Detection Mode: **2**
 - Interdigit Pause: **short**
 - Digital Loss Plan:
 - Analog Ringing Cadence:

11. Although not a Type Approval issue, this represents the convention for this country.

Analog Trunk Administration

■ CO Trunks

— Trunk Group Screen

- Group Type: **CO**
- Country:
- Trunk Gain: **high**
- Direction: **two-way**
- Digit Absorption List: **blank**
- Prefix-1: **No**
- Trunk Type: **loop-start**
- Outgoing Dial Type: **tone**
- Trunk Termination: **500 Ω**
- Auto Guard: **no**
- Dial Access: **Yes**
- Call Still Held: **no**
- Terminal Balanced: **yes**
- Receive Answer Supervision: **no**
- Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In: **yes**
- Disconnect Supervision - Out: Selection is customer's choice.
- Disconnect Timing: **100 ms** (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **100 ms**
- Outgoing Disconnect: **100 ms**
- Outgoing Dial Guard: **3000 ms**
- Incoming Glare Guard: **1500 ms**
- Outgoing Glare Guard: **1500 ms**

- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **40** ms
- Outgoing Rotary Digit Dial Break: **60** ms
- Outgoing Rotary Dial Interdigit: **800** ms
- Ring Monitor Timer: **5200** ms
- Incoming Seizure: **500** ms
- Outgoing End-of-Dial: **255** sec
- Outgoing Seizure Response: **0**
- Programmed Dial Pause: **3** sec
- Disconnect Signal Error: **240** sec
- End-To-End Signaling Pause: **150** ms (accept default)
- End-To-End Signaling Tone: **350** ms (accept default)
- Flash Length: **100** ms
- PPM: **No**
- DID Trunks
 - Trunk Group Screen
 - Group Type: **DID**
 - Country:
 - Trunk Gain: **high**
 - Digit Absorption List: **blank**
 - Incoming Dial Type: **tone**
 - Trunk Type: **immed-start**
 - Trunk Termination: **rc** (complex impedance)
 - Disconnect Supervision: **no**
 - Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
 - Digit Treatment: **blank**
 - Digits: **blank**
 - Expected Digits: depends on system size and numbering plan
 - Terminal Balanced: **yes**
 - RA Trunk Loss: **0dB**
 - Extended Loop Range: (Used Only with TN459) **no**

- Drop Treatment: **silence**
- Incoming Rotary Timeout (sec): **5 sec** (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)
- Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

 - Incoming Disconnect: **100 ms**
 - Incoming Dial Guard: **10 ms**
 - Incoming Partial Dial: **18 sec**
 - Incoming Incomplete Dial: **255 sec**
- Tie Trunks

No information regarding Type Approval-related settings is currently available.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks
 - DS1¹² Administration Screen
 - Circuit Pack: TN464D (not entered as an administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol:
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**

12. DS1 is also analogous to the term *E1* that has been coined for the European T1 or 2 mbit interface.

- Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog CO trunks.

- DID Trunks

- DS1 Administration Screen

- Circuit Pack: TN464D (not entered as an administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol:
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**

- Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog DID trunks.

- Tie Trunks

- Non-ISDN Signaling Example (DS1 Administration Screen)

- Circuit Pack: TN464D (Not entered as administrable item; TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol:
 - Interconnect: **pbx**
 - CRC?: **no**
 - Idle Code: **01010100**

- ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

- DS1 Administration Form

- Circuit Pack: TN464D (or TN464C from upgrades)
 - Bit Rate: **2.048**

- Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **1**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **01010100**
- Signaling Group Form
 - Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)
- Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **tie**
- ISDN-PRI (Public Network)

Not available for this country.

Greece

Recommended and available circuit packs are shown in the following Table:

Table B-17. Recommended and Available CPs in Greece

Number	Function	Comments
TN748D TN756	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN725B	Speech Synth	
TN750B TN750	Announcement	
TN763D TN763C	Aux Trunk	
TN753	DID Trunk	
TN747B(V.12)	CO w/o PPM	
TN465	CO w/PPM	
TN760D	Analog Tie	
TN464D TN464C	Digital Tie	
TN464Dv.3	Digital CO/DID Trunk	
TN742	8p Analog Line	
TN746B	16p Analog Line	
TN754B	Digital Line	
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables:

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ System Parameters Features Administration

- Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
- Public Network Trunks on Conference Call: **5**
- Conference Parties With PNTs: **6**
- Conference Parties Without PNTs: **6**
- Line Intercept Tone Timer: **30**
- Night Service Disconnect Timer: **180 sec**
- Short Interdigit Timer: **3 sec**
- Unanswered DID Call Timer: **60**
- Auto-Hold: **Yes**¹³
- Attendant Tone: **Yes**
- Bridging Tone: **No**
- Conference Tone: **No**
- Intrusion Tone: **Yes**
- Repetitive Call Waiting Tone: **No**
- DID Busy Treatment: **Attendant**
- Pull Transfer: **No**
- Level of Tone Detection: **Broadband**
- Outpulse Without Tone: **Yes**
- (Station-to-switch) Recall Timing:
 - Flashhook Interval: **Yes**
 - Upper Bound: **1000 ms**
 - Lower Bound: **200 ms**

■ Console Parameters Administration

- Secondary Alert on Held Reminder Calls: **Yes**

13. Although not a Type Approval issue, this represents the convention for this country.

- System Parameter Country Options Administration

- Companding Mode: **mu-law**
- Base Tone Generation Set: **17**
- Tone Detection Mode: **1**
- Interdigit Pause: **short**
- Digital Loss Plan: **17**
- Analog Ringing Cadence: **17**
- 440 Hz PBX-dial Tone: **no**
- 440 Hz Secondary-dial Tone: **yes**

Analog Trunk Administration

- CO Trunks

- Trunk Group Screen

- Group Type: **CO**
- Country: **17**
- Trunk Gain: **high**
- Direction: **two-way**
- Digit Absorption List: **blank**
- Prefix-1: **No**
- Trunk Type: **loop-start** or **ground-start**
- Outgoing Dial Type: **tone**
- Trunk Termination: **rc** (complex impedance)
- Auto Guard: **no**
- Dial Access: **yes**
- Call Still Held: **no**
- Terminal Balanced: **yes**
- Receive Answer Supervision: **no**
- Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In: **no**
- Disconnect Supervision - Out: Selection is customer's choice.

- Disconnect Timing: **500 ms** (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **500 ms**
- Outgoing Disconnect: **500 ms**
- Outgoing Dial Guard: **1600 ms**
- Incoming Glare Guard: **1500 ms**
- Outgoing Glare Guard: **1500 ms**
- Outgoing Dial Pulse Rate (PPS): **10 pps**
- Outgoing Rotary Digit Dial Make: **35 ms**
- Outgoing Rotary Digit Dial Break: **65 ms**
- Outgoing Rotary Dial Interdigit: **800 ms**
- Ring Monitor Timer: **5200 ms**
- Incoming Seizure: **500 ms**
- Outgoing End-of-Dial: **10 sec**
- Outgoing Seizure Response: **240 sec**
- Programmed Dial Pause: **1500 ms**
- Disconnect Signal Error: **240 sec**
- Flash Length: **100 ms**
- PPM: **Yes**
- Frequency: **16kHz**

■ DID Trunks

— Trunk Group Screen

- Group Type: **DID**
- Country: **17**
- Trunk Gain: **high**
- Digit Absorption List: **blank**
- Incoming Dial Type: **tone**
- Trunk Type: **immed-start**
- Trunk Termination: **rc** (complex impedance)

- Disconnect Supervision: **no**
- Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
- Digit Treatment: **blank**
- Digits: **blank**
- Expected Digits: depends on system size and numbering plan
- Terminal Balanced: **yes**
- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **silence**
- Incoming Rotary Timeout (sec): **5** sec (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **500** ms
- Incoming Dial Guard: **50** ms
- Incoming Partial Dial: **18** sec
- Incoming Incomplete Dial: **255** sec
- Flash Length: **100** ms

■ Tie Trunks

No special Type Approval regulations apply. Tie trunks are administered on a case-by-case basis.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

■ CO Trunks

- Circuit Pack: TN464Dv.3
- Bit Rate: **2.048**
- Interface Companding: **mu-law**

- Line Coding: **HDB3**
- Signaling Mode: **CAS**
- Country Protocol: **17**
- Interconnect: **CO**
- CRC?: **no**
- Idle Code: **11111111**
- DID Trunks
 - Circuit Pack: TN464Dv.3
 - Bit Rate: **2.048**
 - Interface Companding: **mu-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **17**
 - Interconnect: **CO**
 - CRC?: **no**
 - Idle Code: **11111111**
- Tie Trunks
 - Non-ISDN Signaling Example (DS1 Administration Form)
 - Circuit Pack: TN464D
 - Bit Rate: **2.048**
 - Interface Companding: **mu-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **17**
 - Interconnect: **pbx**
 - CRC?: **no**
 - Idle Code: **11111111**
 - ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

 - DS1 Administration Form
 - Circuit Pack: TN464D
 - Bit Rate: **2.048**

- Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **1**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **11111111**
- Signaling Group Form
 - Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)
- Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **tie**
- ISDN-PRI (Public Network)

Not available in this country.

Hong Kong

Recommended and available circuit packs are shown in the following Table.

Table B-18. Recommended and Available CPs in Hong Kong

Number	Function	Comments
TN748D TN756	Tone Detector	V2 CP to be sold
TN780 TN756	Tone Gen/Clock	
TN725B TN750B TN750	Speech Synth Announcement	V2 CP to be sold
TN763D TN763C TN753	Aux Trunk DID Trunk	
TN747B (Ver.12) TN465	CO w/o PPM	
TN760D TN464D TN464C	Analog Tie Digital Tie	
TN742	8p AnalogLine	
TN746B TN754B TN726B	16p Analog Line Digital Line Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables:

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- System Parameters Features Administration
 - Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
 - Public Network Trunks on Conference Call: **5**
 - Conference Parties With PNTs: **6**
 - Conference Parties Without PNTs: **6**
 - Line Intercept Tone Timer: **30**
 - Night Service Disconnect Timer: **180 sec**
 - Short Interdigit Timer: **3 sec**
 - Unanswered DID Call Timer: **60**
 - Auto-Hold: **yes¹⁴**
 - Attendant Tone: **Yes**
 - Bridging Tone: **No**
 - Conference Tone: **No**
 - Intrusion Tone: **Yes**
 - Repetitive Call Waiting Tone: **No**
 - DID Busy Treatment: **Attendant**
 - Pull Transfer: **No**
 - Level of Tone Detection: **Precise**
 - Outpulse Without Tone: **Yes**
 - (Station-to-switch) Recall Timing:
 - Flashhook Interval: **Yes**
 - Upper Bound: **1000**
 - Lower Bound: **200**

14. Although not a Type Approval issue, this represents the convention for this country.

- System Parameter Country Options Administration

- Companding Mode: **mu-law**
- Base Tone Generation Set: **1**
- Tone Detection Mode: **1**
- Interdigit Pause: default
- Digital Loss Plan: **1**
- Analog Ringing Cadence: **1**

Analog Trunk Administration

- CO Trunks

- Trunk Group Screen

- Group Type: **CO**
- Country: **1**
- Trunk Gain: **high**
- Direction: **two-way**
- Digit Absorption List: **blank**
- Prefix-1: **No**
- Trunk Type: **loop-start**
- Outgoing Dial Type: **tone**
- Trunk Termination: **rc** (complex impedance)
- Dial Access: **yes**
- Auto Guard: **no**
- Call Still Held: **no**
- Terminal Balanced: **yes**
- Receive Answer Supervision: **no**
- Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In: **no**
- Disconnect Supervision - Out: Selection is customer's choice.
- Disconnect Timing: **500** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **500 ms**
- Outgoing Disconnect: **500 ms**
- Outgoing Dial Guard: **1600 ms**
- Incoming Glare Guard: **1500 ms**
- Outgoing Glare Guard: **1500 ms**
- Outgoing Dial Pulse Rate (PPS): **10 pps**
- Outgoing Rotary Digit Dial Make: **35 ms**
- Outgoing Rotary Digit Dial Break: **65 ms**
- Outgoing Rotary Dial Interdigit: **800 ms**
- Ring Monitor Timer: **5200 ms**
- Incoming Seizure: **500 ms**
- Outgoing End-of-Dial: **10 sec**
- Outgoing Seizure Response: **240 sec**
- Programmed Dial Pause: **1500 ms**
- Disconnect Signal Error: **240 sec**
- End-To-End Signaling Pause: **150 ms** (accept default)
- End-To-End Signaling Tone: **350 ms** (accept default)
- Flash Length: **100 ms**
- PPM: **no**

■ DID Trunks

— Trunk Group Screen

- Group Type: **DID**
- Country Code: **1**
- Trunk Gain: **high**
- Digit Absorption List: **blank**
- Incoming Dial Type: **tone**
- Trunk Type: **immed-start**
- Trunk Termination: **rc** (complex impedance)
- Disconnect Supervision: **no**

- Disconnect Timing: **500** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
- Digit Treatment: **blank**
- Digits: **blank**
- Expected Digits: depends on system size and numbering plan
- Terminal Balanced: **yes**
- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **silence**
- Incoming Rotary Timeout: **5** sec (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **500** ms
 - Incoming Dial Guard: **50** ms
 - Incoming Partial Dial: **18** sec
 - Incoming Incomplete Dial: **255** sec
 - Flash Length: **100** ms
- Tie Trunks

No special Type Approval regulations apply. Tie trunks are administered on a case-by-case basis.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks

Digital CO trunks are not available in this country.
- DID Trunks

Digital DID trunks are not available in this country.

- Tie Trunks

- Non-ISDN Signaling Example (DS1 Administration Form)

- Circuit Pack: TN464D
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **1**
 - Interconnect: **pbx**
 - CRC?: **No**
 - Idle Code: **11111111**

- ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered forms.

- DS1 Administration Form

- Circuit Pack: TN464D
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **1**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **11111111**

- Signaling Group Form

- Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)

- Trunk Group Administration Form

- Group Type: **isdn-pri**
 - Service Type: **tie**

- ISDN-PRI (Public Network)

Not available for this country.

Hungary

The information provided here is preliminary and subject to change.

Recommended and available circuit packs are shown in the following Table:

Table B-19. Recommended and Available CPs in Hungary

Number	Function	Comments
TN748D TN756	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN725B	Speech Synth	V2 CP to be sold
TN750B	Announcement	
TN763D	Aux Trunk	
TN753	DID Trunk	
TN747B	CO w/o PPM	
TN465B	CO w/PPM	
TN760D	Analog Tie	
TN464D	Digital Tie	
TN742	8p Analog Line	
TN746B	16p Analog Line	
TN2136	Digital Line	
TN754B		
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- System Parameters Features Administration
 - Trunk-to-Trunk Transfer Permitted by country's regulations - Selection is customer's choice.
 - Public Network Trunks on Conference Call: **5**
 - Conference Parties With PNTs: **6**
 - Conference Parties Without PNTs: **6**
 - Line Intercept Tone Timer: **30**
 - Night Service Disconnect Timer: **180 sec**
 - Short Interdigit Timer: **3 sec**
 - Unanswered DID Call Timer: **60**
 - Auto-Hold: **Yes**¹⁵
 - Attendant Tone: **Yes**
 - Bridging Tone: **No**
 - Conference Tone: **No**
 - Intrusion Tone: **Yes**
 - Repetitive Call Waiting Tone: **No**
 - DID Busy Treatment: **Attendant**
 - Pull Transfer: **No**
 - Level of Tone Detection: **Medium**
 - Outpulse Without Tone: **Yes**
 - (Station-to-switch) Recall Timing:
 - Flashhook Interval: **No**
 - Disconnect Thing: **350 ms**
- System Parameter Country Options Administration
 - Companding Mode: **A-law**
 - Base Tone Generation Set:

15. Although not a Type Approval issue, this represents the convention for this country.

- Tone Detection Mode: **2**
- Interdigit Pause: **short**
- Digital Loss Plan:
- Analog Ringing Cadence:

Analog Trunk Administration

■ CO Trunks

— Trunk Group Screen

- Group Type: **CO**
- Country:
- Trunk Gain: **high**
- Direction: **two-way**
- Digit Absorption List: **blank**
- Prefix-1: **No**
- Trunk Type: **loop-start**
- Outgoing Dial Type: **tone**
- Trunk Termination: **600 Ω**
- Auto Guard: **no**
- Dial Access: **Yes**
- Call Still Held: **no**
- Terminal Balanced: **yes**
- Receive Answer Supervision: **no**
- Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In: **no**
- Disconnect Supervision - Out: Selection is customer's choice.
- Disconnect Timing: **100 ms** (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **100** ms
- Outgoing Disconnect: **100** ms
- Outgoing Dial Guard: **3000** ms
- Incoming Glare Guard: **1500** ms
- Outgoing Glare Guard: **1500** ms
- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **40** ms
- Outgoing Rotary Digit Dial Break **60** ms
- Outgoing Rotary Dial Interdigit: **800** ms
- Ring Monitor Timer **5200** ms
- Incoming Seizure: **500** ms
- Outgoing End-of-Dial: **255** ssc
- Outgoing Seizure Response: **0**
- Programmed Dial Pause: **3** sec
- Disconnect Signal Error: **240** sec
- End-To-End Signaling Pause: **150** ms (accept default)
- End-To-End Signaling Tone: **350** ms (accept default)
- Flash Length: **100** ms
- PPM: **No**
- DID Trunks
 - Trunk Group Screen
 - Group Type: **DID**
 - Country:
 - Trunk Gain: **high**
 - Digit Absorption List: **blank**
 - Incoming Dial Type: **tone**
 - Trunk Type: **immed-start**
 - Trunk Termination: **rc** (complex impedance)
 - Disconnect Supervision: **no**
 - Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disonnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
 - Digit Treatment **blank**

- Digits: **blank**
- Expected Digits: depends on system size and numbering plan
- Terminal Balanced: **yes**
- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **silence**
- Incoming Rotary Timeout (sec): **5 sec** (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **100 ms**
- Incoming Dial Guard: **10 ms**
- Incoming Partial Dial: **18 sec**
- Incoming Incomplete Dial: **255 sec**

■ Tie Trunks

No information regarding Type Approval-related settings is currently available.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

■ CO Trunks

— DS1¹⁶ Administration Screen

- Circuit Pack: TN464D (not entered as an administrable item)
- Bit Rate: **2.048**
- Interface Companding: **A-law**
- Line Coding: **HDB3**
- Signaling Mode: **CAS**

16. DS1 is also analogous to the term *E1* that has been coined for the European T1 or 2 mbit interface.

- Country Protocol:
- Interconnect: **CO**
- CRC?: **No**
- Idle Code: **01010100**
- Trunk Group Administration Screen (Timing)
Digital trunk timing values should be set as for analog CO trunks.
- DID Trunks
 - DS1 Administration Screen
 - Circuit Pack: TN464D (not entered as an administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol:
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**
 - Trunk Group Administration Screen (Timing)
Digital trunk timing values should be set as for analog DID trunks.
- Tie Trunks
 - Non-ISDN Signaling Example (DS1 Administration Screen)
 - Circuit Pack TN464D (Not entered as administrable item; TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol:
 - Interconnect: **pbx**
 - CRC?: **no**
 - Idle Code: **01010100**
 - ISDN-PRI (Private Network) Signaling
This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

- DS1 Administration Form
 - Circuit Pack: TN464D (or TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **1**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **01010100**
- Signaling Group Form
 - Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)
- Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **public_ntwrk**
- ISDN-PRI (Public Network)

Not available for this country.

Italy

Recommended and available circuit packs are shown in the following Table:

Table B-20. Recommended and Available CPs in Italy

Number	Function	Comments
TN420C	Tone Detector	V2 CP
TN780 TN419B	Tone Gen/Clock	
TN433	Speech Synth	
TN750B	Announcement	
TN417 TN763D	Aux Trunk	
TN2138	CO w/PPM	
TN2139	DID Trunk	
TN2140	4w Analog Tie	
TN497	2w Analog Tie	
TN464D TN464C TN464B	Digital CO/DID	
TN464D TN464C TN464B	Digital Tie	
TN2135	16p Analog Line	
TN754B TN2136 TN413	Digital Line	
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
 - Return Call Timeout (sec): **10 sec**
- System Parameters Features Administration
 - Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
 - Public Network Trunks on Conference Call: **5**
 - Conference Parties With PNTs: **6**
 - Conference Parties Without PNTs: **6**
 - Line Intercept Tone Timer: **30**
 - Night Service Disconnect Timer: **180 sec**
 - Short Interdigit Timer: **3 sec**
 - Unanswered DID Call Timer: **60**
 - Auto-Hold: **Yes**¹⁷
 - Attendant Tone: **Yes**
 - Bridging Tone: **No**
 - Conference Tone: **No**
 - Intrusion Tone: **Yes**
 - Repetitive Call Waiting Tone: **No**
 - DID Busy Treatment: **Attendant**
 - Pull Transfer: **No**
 - Level of Tone Detection: **Precise**
 - Outpulse Without Tone: **Yes**

17. Although not a Type Approval issue, this represents the convention for this country.

- (Station-to-switch) Recall Timing:
 - Flashhook Interval: **Yes**
 - Upper Bound: **1000 ms**
 - Lower Bound: **200 ms**
- Country Options Parameters
 - Companding Mode: **A-law**
 - Base Tone Generation Set: **4**
 - Tone Detection Mode: **1**
 - Interdigit Pause: **short**
 - Digital Loss Plan: **4**
 - Analog Ringing Cadence: **4**

Analog Trunk Administration

- CO Trunks
 - Trunk Group Screen
 - Group Type: **CO**
 - Country: **4**
 - Trunk Gain: **high**
 - Direction: **two-way**
 - Digit Absorption List: **blank**
 - Prefix-1: **No**
 - Trunk Type: **loop-start** or **ground-start**
 - Outgoing Dial Type: **tone**
 - Trunk Termination: **rc** (complex impedance)
 - Auto Guard: **no**
 - Dial Access: **yes**
 - Call Still Held: **no**
 - Terminal Balanced: **yes**
 - Receive Answer Supervision: **no**
 - Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
 - Disconnect Supervision - In: **no**
 - Disconnect Supervision - Out: Selection is customer's choice.

- Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
- Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

 - Incoming Disconnect: **50** ms
 - Outgoing Disconnect: **50** ms
 - Incoming Dial Guard: **70** ms
 - Outgoing Dial Guard: **1000** ms
 - Incoming Glare Guard: **200** ms
 - Outgoing Glare Guard: **200** ms
 - Outgoing Dial Pulse Rate (PPS): **10** pps
 - Outgoing Rotary Digit Dial Make: **50** ms
 - Outgoing Rotary Digit Dial Break: **50** ms
 - Outgoing Rotary Dial Interdigit: **700** ms
 - Ring Monitor Timer: **5200** ms
 - Incoming Seizure: **500** ms
 - Outgoing End-of-Dial: **10** sec
 - Outgoing Seizure Response: **60** sec
 - Programmed Dial Pause: **1500** ms
 - Disconnect Signal Error: **255** sec
 - End-To-End Signaling Tone: **350** ms (accept default)
 - Flash Length: **100** ms
 - PPM: **Yes**
 - Frequency: **12kHz**
- DID Trunks
 - Trunk Group Screen
 - Group Type: **DID**
 - Country: **4**
 - Trunk Gain: **high**
 - Digit Absorption List: **blank**
 - Incoming Dial Type: **tone**

- Trunk Type: **immed-start**
- Trunk Termination: **rc** (complex impedance)
- Disconnect Supervision: **no**
- Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
- Digit Treatment: **blank**
- Digits: **blank**
- Expected Digits: depends on system size and numbering plan
- Terminal Balanced: **yes**
- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **silence**
- Incoming Rotary Timeout (sec): **5** sec (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **500** ms
- Incoming Dial Guard: **50** ms
- Incoming Partial Dial: **6** sec
- Incoming Incomplete Dial: **255** sec
- Flash Length: **100** ms

■ Tie Trunks

The TN2140 is used for E&M trunks that may be administered as either Continuous or Discontinuous. This section lists the **only** valid administration combinations possible for these trunks.

Use the following administration for these types

— Continuous T1

- Group Type: **tie, tandem, access, aplt** or **rlt**
- Trunk Signaling Type: **cont**
- Trunk Type (in/out): **cont/cont**

- Send Release Ack: **y**
- Receive Release Ack: **y**
- Send Answer Supervision: **n**
- Receive Answer Supervision: **n**
- Continuous T2
 - Group Type: **tie, tandem, access, aplt, or rlt**
 - Trunk Signaling Type: **cont**
 - Trunk Type (in/out): **immed/immed**
 - Send Release Ack: **y**
 - Receive Release Ack: **y**
 - Send Answer Supervision: **y**
 - Receive Answer Supervision: **y**
- Discontinuous T1
 - Group Type: **tie, tandem, access, aplt, or rlt**
 - Trunk Signaling Type: **dis**
 - Trunk Type (in/out): **immed/immed**
 - Send Release Ack: **y**
 - Receive Release Ack: **y**
 - Send Answer Supervision: **n**
 - Receive Answer Supervision: **n**
- Discontinuous T2
 - Group Type: **tie, tandem, access, aplt, or rlt**
 - Trunk Signaling Type: **dis**
 - Trunk Type (in/out): **disc/disc**
 - Send Release Ack: **n**
 - Receive Release Ack: **n**
 - Send Answer Supervision: **y**
 - Receive Answer Supervision: **y**
- Discontinuous T3
 - Group Type: **tie, tandem, access, aplt or rlt**
 - Trunk Signaling Type: **dis**
 - Trunk Type (in/out): **immed/immed**
 - Send Release Ack: **n**
 - Receive Release Ack: **n**

- Send Answer Supervision: **y**
- Receive Answer Supervision: **y**
- Discontinuous T4
 - Group Type: **tie, tandem, access, aplt, or rlt**
 - Trunk Signaling Type: **dis**
 - Trunk Type (in/out): **disc/disc**
 - Send Release Ack: **n**
 - Receive Release Ack: **n**
 - Send Answer Supervision: **n**
 - Receive Answer Supervision: **n**
- Discontinuous T5
 - Group Type: **tie, tandem, access, aplt, or rlt**
 - Trunk Signaling Type: **dis**
 - Trunk Type (in/out): **immed/immed**
 - Send Release Ack: **n**
 - Receive Release Ack: **n**
 - Send Answer Supervision: **n**
 - Receive Answer Supervision: **n**

If the TN497 is used as tie trunk interface CP, set Group Type and Signaling Type fields as follows:

- Group Type: **tie**
- Signaling Type: **tge, tgu or tgi**
- Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following tie trunk timer values for this country:

- Incoming Disconnect: **300** ms (E&M cont)
- Outgoing Disconnect: **300** ms (E&M cont)
- Outgoing Dial Guard: **400** ms (E&M cont,dis)
- Incoming Glare Guard: **300** ms (E&M cont,dis)
- Outgoing Glare Guard: **1000** ms (E&M cont)
Outgoing Glare Guard: **1200** ms (E&M dis)
- Outgoing Dial Pulse Rate (PPS): **10** pps

- Outgoing Rotary Digit Dial Make: **40 ms**¹⁸
- Outgoing Rotary Digit Dial Break **60 ms**
- Outgoing Rotary Dial Interdigit: **700 ms**
- Incoming Seizure: **100 ms** (E&M cont)
- Outgoing End-of-Dial: **10 sec**
- Outgoing Seizure Response: **1 sec** (E&M cont,dis).
- Disconnect Signal Error: **2 sec** (E&M cont)
Disconnect Signal Error: **1 sec** (E&M dis)
- Incoming Partial Dial: **15 sec**

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks
 - DS1 Administration Screen
 - Circuit Pack: TN464D (Not entered as administrable item; TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **4**
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**
 - Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog CO trunks.

18. If connected to a 20-pps system, then set the Outgoing Rotary Digit Dial Make and Outgoing Rotary Digit Dial Break times to **20** and **30** ms, respectively.

- DID Trunks

- DS1 Administration Screen

- Circuit Pack: TN464D (or TN464C,B)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **4**
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**

- Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog DID trunks.

- Tie Trunks

- Non-ISDN Signaling Example (DS1 Administration Form)

- Group Type: **tie**
 - Circuit Pack: TN464D (or TN464C,B)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **4**
 - Interconnect: **pbx**
 - CRC?: **no**
 - Idle Code: **01010101**

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following tie trunk timer values for this country:

- Incoming Disconnect: **50 ms**
- Outgoing Disconnect: **50 ms**
- Incoming Dial Guard: **70 ms**
- Outgoing Dial Guard: **1000 ms**
- Incoming Glare Guard: **200 ms**
- Outgoing Glare Guard: **200 ms**
- Outgoing Dial Pulse Rate (PPS): **10 pps**
- Outgoing Rotary Digit Dial Make: **50 ms**
- Outgoing Rotary Digit Dial Break: **50 ms**
- Outgoing Rotary Dial Interdigit: **700 ms**
- Incoming Seizure: **100 ms**
- Outgoing Seizure Response: **60 sec**
- Disconnect Signal Error: **255 sec**
- Incoming Partial Dial: **6 sec**

— ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

- DS1 Administration Form
 - Circuit Pack: TN464D (or TN464C,B from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **4**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **01010101**

- Signaling Group Form
 - Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)
- Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **tie**
- ISDN-PRI (Public Network)

Not available in this country.

Japan

Recommended and available circuit packs are shown in the following Table:

Table B-21. Recommended and Available CPs in Japan

Number	Function	Comments
TN748D TN756	Tone Detector	V2 CP to be sold
TN780 TN756	Tone Gen/Clock	
TN725B TN750B TN750	Speech Synth Announcement	V2 CP to be sold
TN763D TN763C	Aux Trunk	
TN429 TN429 TN465	DID Trunk CO w/o PPM	
TN760D TN439	4-w Analog Tie 2-w Analog Tie	
TN464D TN464C TN767	Digital CO/DID	A MUX will grant Japanese customers Fractional T1 service with CMI Conversion already provided.
TN464D TN464C TN767	Digital Tie	
TN464D TN464C	ISDN CO	
TN742	8p Analog Line	
TN746B TN479	16p Analog Line	
TN754B	Digital line	
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ System Parameters Features Administration

- Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
- Public Network Trunks on Conference Call: **5**
- Conference Parties With PNTs: **6**
- Conference Parties Without PNTs: **6**
- Line Intercept Tone Timer: **30**
- Night Service Disconnect Timer: **180 sec**
- Short Interdigit Timer: **3 sec**
- Unanswered DID Call Timer: **60**
- Auto-Hold: **Yes**¹⁹
- Attendant Tone: **Yes**
- Bridging Tone: **No**
- Conference Tone: **No**
- Intrusion Tone: **Yes**
- Repetitive Call Waiting Tone: **No**
- DID Busy Treatment: **Attendant**
- Pull Transfer: **No**
- Level of Tone Detection: **Broadband**
- Outpulse Without Tone: **Yes**

19. Although not a Type Approval issue, this represents the convention for this country.

- (Station-to-switch) Recall Timing:
 - Flashhook Interval: **Yes**
 - Upper Bound: **1000 ms**
 - Lower Bound: **200 ms**
- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- Country Options Parameters
 - Companding Mode: **mu-law**
 - Base Tone Generation Set: **3**
 - Tone Detection Mode: **default**
 - Interdigit Pause: **default**
 - Digital Loss Plan: **3**
 - Analog Ringing Cadence: **3**

Analog Trunk Administration

- CO Trunks
 - Trunk Group Screen
 - Group Type: **CO**
 - Country Code: **3**
 - Trunk Gain: **high**
 - Direction: **two-way**
 - Digit Absorption List: **blank**
 - Prefix-1: **No**
 - Trunk Type: **loop-start** or **ground-start**
 - Outgoing Dial Type: **tone**
 - Trunk Termination: **rc** (complex impedance)
 - Auto Guard: **no**
 - Dial Access: **Yes**
 - Call Still Held: **no**
 - Terminal Balanced: **yes**
 - Receive Answer Supervision: **no**
 - Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)

- Disconnect Supervision - In: **no**
- Disconnect Supervision - Out: Selection is customer's choice.
- Disconnect Timing: **500** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **500** ms
- Outgoing Disconnect: **500** ms
- Outgoing Dial Guard: **1600** ms
- Incoming Glare Guard: **1500** ms
- Outgoing Glare Guard: **1500** ms
- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **35** ms
- Outgoing Rotary Digit Dial Break: **65** ms
- Outgoing Rotary Dial Interdigit: **800** ms
- Ring Monitor Timer: **5200** ms
- Incoming Seizure: **500** ms
- Outgoing End-of-Dial: **10** sec
- Outgoing Seizure Response: **240** sec
- Programmed Dial Pause: **1500** ms
- Disconnect Signal Error: **240** sec
- End-To-End Signaling Pause: **150** ms (accept default)
- End-To-End Signaling Tone: **350** ms (accept default)
- Flash Length: **100** ms
- PPM: **no**

- DID Trunks

- Trunk Group Screen

- Group Type: **DID**
- Country: **3**
- Trunk Gain: **high**
- Digit Absorption List: **blank**
- Incoming Dial Type: **tone**
- Trunk Type: **loop-start**
- Trunk Termination: **rc** (complex impedance)
- Disconnect Supervision: **no**
- Disconnect Timing: **500** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
- Digit Treatment: **blank**
- Digits: **blank**
- Expected Digits: depends on system size and numbering plan
- Terminal Balanced: **yes**
- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **silence**
- Incoming Rotary Timeout (sec): **5** sec (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)

- Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **500** ms
- Incoming Dial Guard: **50** ms
- Incoming Partial Dial: **18** sec
- Incoming Incomplete Dial: **255** sec
- Flash Length: **100** ms

- Tie Trunks

No special Type Approval regulations apply. Tie trunks are administered on a case-by-case basis.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks

Not available in this country.

- DID Trunks

Not available in this country.

- Tie Trunks

- Non-ISDN Signaling Example (DS1 Administration Screen)

- Circuit Pack: TN464D (or TN464C,TN767)
 - Bit Rate: **1.544**
 - Interface Companding: **mu-law**
 - Line Coding: **B8ZS**
 - Line Compensation: **1**
 - Framing Mode: **esf**
 - Signaling Mode: **common-chan**
 - Country Protocol: **1**
 - CRC?: **no**
 - Idle Code: **11111111** (Idle code must contain at least 3 ones. Accept default.)
 - DMI-BOS? **Yes**

- ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

- DS1 Administration Form

- Circuit Pack: TN464D (or TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **1**
 - Connect: **pbx**
 - Interface: **user**

- CRC: **No**
 - Idle Code: **11111111**
- Signaling Group Form
 - Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)
- Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **tie**
- ISDN-PRI (Public Network)
 - DS1 Administration Form
 - Circuit Pack: TN464C
 - Bit Rate: **1.544**
 - Interface Companding: **mu-law**
 - Line Coding: **B8ZS**
 - Line Compensation: **1**
 - Framing Mode: **esf**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **3**
 - Conned: **Network**
 - DMI-BOS? **Yes**
 - Idle Code: **11111111**
 - Signaling Group Form
 - Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)
 - Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **public_ntwrk**

Mexico

Recommended and available circuit packs are shown in the following Table:

Table B-22. Recommended and Available CPs in Mexico

Number	Function	Comments
TN748D TN756	Tone Detector	V2 CP to be sold
TN780 TN756	Tone Gen/Clock	
TN744	Call Classifier	R2-MFC Service
TN725B TN750B TN750	Speech Synth Announcement	V2 CP to be sold
TN763D TN763C	Aux Trunk	
TN747B (Ver.12)	CO w/o PPM	
TN465	CO w/PPM	Sold if PPM needed
TN760D	Analog Tie	
TN464D	Digital CO/DID	
TN464D TN464C	Digital Tie	
TN742	8p Analog Line	
TN746B	16p Analog Line	
TN754B	Digital Line	
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables:

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ System Parameters Features Administration

- Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
- Public Network Trunks on Conference Call: **5**
- Conference Parties With PNTs: **6**
- Conference Parties Without PNTs: **6**
- Line Intercept Tone Timer: **30**
- Night Service Disconnect Timer: **180 sec**
- Short Interdigit Timer: **3 sec**
- Unanswered DID Call Timer: **60**
- Auto-Hold: **Yes**²⁰
- Attendant Tone: **Yes**
- Bridging Tone: **No**
- Conference Tone: **No**
- Intrusion Tone: **Yes**
- Repetitive Call Waiting Tone: **No**
- DID Busy Treatment: **Attendant**
- Pull Transfer: **No**
- Level of Tone Detection: **Broadband**
- Outpulse Without Tone: **Yes**
- (Station-to-switch) Recall Timing:
 - Flashhook Interval: **Yes**
 - Upper Bound: **1000 ms**
 - Lower Bound: **200 ms**

■ Console Parameters Administration

- Secondary Alert on Held Reminder Calls: **Yes**

20. Although not a Type Approval issue, this represents the convention for this country.

■ System Parameter Multifrequency Signaling Administration

- Incoming Call Type: **group-ii-mfc**
- Outgoing Call Type: **group-ii-mfc**
- Test Call Extension: As negotiated
- Incoming Interdigit Timer: **15 sec**
- Incoming Signal Types:

GROUP-I	GROUP-II	GROUP-A	GROUP-B
Use defaults	Use defaults	Use defaults	1: free 2: busy 4: congestion 5: intercept

- Outgoing Signal Types:

GROUP-I	GROUP-II	GROUP-A	GROUP-B
Use defaults	2: normal 2: attendant 2: data-call	1: next-digit 2: restart 3: end-of-dial 4: congestion 5: congestion 6: congestion 7: congestion 8: congestion 9: congestion 10: congestion 11: congestion 12: congestion 13: congestion 14: congestion 15: congestion	1: free 2: busy 3: congestion 4: congestion 5: intercept 6: congestion 7: congestion 8: congestion 9: congestion 10: congestion 11: congestion 12: congestion 13: congestion 14: congestion 15: congestion

■ Country Options Parameters

- Companding Mode: **mu-law**
- Base Tone Generation Set: **7**
- Tone Detection Mode: **1**
- Interdigit Pause: **short**
- Digital Loss Plan: **7**
- Analog Ringing Cadence: **7**

— Customized Individual Tones

Customized tone definitions follow the syntax as specified:

[(Frequency/Level)|silence|goto)][(Duration ms)|(Step)]

➤ Busy:

1. (350+425/-4)(250)
2. (silence)(250)
3. (goto)(1)

➤ Secondary Dial Tone:

1. (425/-4)(1000)
2. (goto)(1)

➤ Intrusion Tone:

1. (425/-4)(500)
2. (silence)(150)
3. (425/-4)(150)
4. (silence)(150)
5. (goto)(1)

➤ 1-Call Wait:

1. (425/-4)(200)
2. (silence)(600)
3. (425/-4)(200)

➤ 2-Call Wait:

1. (425/-4)(200)
2. (silence)(600)
3. (425/-4)(200)

Analog Trunk Administration

■ CO Trunks

— Trunk Group Screen

- Group Type: **CO**
- Country: **7**
- Trunk Gain: **high**
- Direction: **two-way**
- Digit Absorption List: **blank**
- Prefix-1: **No**

- Trunk Type: **loop-start** or **ground-start**
- Outgoing Dial Type: **tone**
- Trunk Termination: **rc** (complex impedance)
- Auto Guard: **no**
- Dial Access: **Yes**
- Call Still Held: **no**
- Terminal Balanced: **yes**
- Receive Answer Supervision: **no**
- Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In: **no**
- Disconnect Supervision - Out: Selection is customer's choice.
- Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **500** ms
- Outgoing Disconnect: **500** ms
- Outgoing Dial Guard: **1600** ms
- Incoming Glare Guard: **1500** ms
- Outgoing Glare Guard: **1500** ms
- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **40** ms
- Outgoing Rotary Digit Dial Break: **60** ms
- Outgoing Rotary Dial Interdigit: **800** ms
- Ring Monitor Timer: **5200** ms
- Incoming Seizure: **500** ms
- Outgoing End-of-Dial: **10** sec
- Outgoing Seizure Response: **240** sec
- Programmed Dial Pause: **1500** ms

- Disconnect Signal Error: **240** sec
- Flash Length: **100** ms
- PPM: **Yes**
- Frequency: **16kHz**
- DID Trunks
 - Analog DID trunks are not provided at present for Mexico.
- Analog Tie Trunks
 - No specific Type Approval requirements apply to tie trunk administration.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks
 - DS1 Administration Screen
 - Circuit Pack: TN464D (Not entered as administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **7**
 - Interconnect: **co**
 - CRC?: **No**
 - Idle Code: **11111111**
 - Trunk Group Administration Screen (Timing)
 - Digital trunk timing values should be set as for analog CO trunks.
- DID Trunks
 - DS1 Administration Form
 - Circuit Pack: TN464D (Not entered as administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Interconnect: **co**
 - Signaling Mode: **CAS**

- Country Protocol: **7**
- CRC?: **No**
- Idle Code: **11111111**
- Tie Trunks
 - Mexico Two-way (DIOD) Operation
 - DS1 Administration Form
 - Circuit Pack: TN464Dv.2 or greater
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **7**
 - Interconnect: **pbx** or **CO**
 - CRC?: **no**
 - Idle Code: **11111111**
 - Trunk Group Administration Form
 - Group Type: **tie**
 - U.S.A. Tie Operation (DS1 Administration Form)
 - Circuit Pack: TN464D (or TN464C)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **1**
 - Interconnect: **pbx**
 - CRC?: **no**
 - Idle Code: **11111111**
 - ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

 - DS1 Administration Form
 - Circuit Pack: TN464D (or TN464C,B from upgrades)
 - Bit Rate: **2.048**

- Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **1**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **11111111**
- Signaling Group Form
 - Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)
- Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **tie**
- ISDN-PRI (Public Network)

Not available for this country.

The Netherlands

Recommended and available circuit packs are shown in the following Table:

Table B-23. Recommended and Available CPs in The Netherlands

Number	Function	Comments
TN420C	Tone Detector	
TN780v.5	Tone Gen/Clock	
TN744	Call Classifier	
TN457	Speech Synth	V2 CP to be sold
TN750B	Announcement	
TN763D	Aux Trunk	
TN2146	DID Trunk	Signaling type B2 Incoming only
TN2147	CO w/o PPM	Polarity-Rev. Signal. Signaling type A & B1, DTMF only
TN465B	Analog CO w/PPM	
TN760Dv11	Analog Tie	Needs external converter for CEPT-LI: Prescom TS-X 1276
TN464D	Digital CO/DID	
TN464D	Digital Tie	
TN464D	ISDN CO	
TN2144	16p Analog Line	V4 CP to be sold
TN754B	Digital Line	
TN2136		
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These (defaults) are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- System Parameters Features Administration
 - Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
 - Public Network Trunks on Conference Call: **5**
 - Conference Parties With PNTs: **6**
 - Conference Parties Without PNTs: **6**
 - Line Intercept Tone Timer: **30**
 - Night Service Disconnect Timer: **180 sec**
 - Short Interdigit Timer: **3 sec**
 - Unanswered DID Call Timer: **60**
 - Auto-Hold: **Yes**²¹
 - Attendant Tone: **Yes**
 - Bridging Tone: **No**
 - Conference Tone: **No**
 - Intrusion Tone: **Yes**
 - Repetitive Call Waiting Tone: **No**
 - DID Busy Treatment: **Attendant**
 - Pull Transfer: **No**
 - Level of Tone Detection: **Medium**
 - Outpulse Without Tone: **No**
 - (Station-to-switch) Recall Timing:
 - Flashhook Interval: **Yes**
 - Upper Bound: **1000 ms**
 - Lower Bound: **200 ms**

21. Although not a Type Approval issue, this represents the convention for this country.

- Country Options Parameters

- Companding Mode: **A-law**
- Base Tone Generation Set: **5**
- Tone Detection Mode: **2**
- Interdigit Pause: **short**
- Dial Tone Validation Timer: **1050** ms
- Digital Loss Plan: **5**
- Analog Ringing Cadence: **5**

Analog Trunk Administration

- CO Trunks

- Trunk Group Screen

- Group Type: **CO**
- Country: **5**
- Trunk Gain: **high**
- Direction: **two-way**
- Digit Absorption List: **blank**
- Prefix-1: **No**
- Trunk Type: **loop-start**
- Outgoing Dial Type: **tone**
- Trunk Termination: **rc**
- Auto Guard: **no**
- Dial Access: **Yes**
- Call Still Held: **no**
- Terminal Balanced: **no**
- RA Trunk Loss: **0dB**
- Trunk Gain: **high**
- Receive Answer Supervision: **yes** if using Battery Reversal
- Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In:
 - Signaling Type A: **no**
 - Signaling Type B1: **yes**

- Disconnect Supervision - Out: Selection is customer's choice.
- Disconnect Timing: **500** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
- Suppress # Outpulsing: **yes**

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **500** ms
- Outgoing Disconnect: **500** ms
- Outgoing Dial Guard: **1600** ms
- Incoming Glare Guard: **1500** ms
- Outgoing Glare Guard: **1500** ms
- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **40** ms
- Outgoing Rotary Digit Dial Break: **60** ms
- Outgoing Rotary Dial Interdigit: **800** ms
- Ring Monitor Timer: **5200** ms
- Incoming Seizure: **200** ms
- Outgoing End-of-Dial: **10** sec
- Outgoing Seizure Response: **5** (not needed in The Netherlands)
- Programmed Dial Pause: **1500** ms
- Disconnect Signal Error: **240** sec
- End-To-End Signaling Pause: **150** ms (accept default)
- End-To-End Signaling Tone: **350** ms (accept default)
- Flash Length: **100** ms²²
- PPM: **No**

■ DID Trunks

22. A Toll Fraud possibility exists if the Trunk Flash feature is activated since no dialed digits are checked after the flash.

— Trunk Group Screen

- Group Type: **DID**
- Country: **5**
- Trunk Gain: **high**
- Digit Absorption List: **blank**
- Incoming Dial Type: **tone** or **rotary**
- Trunk Type: **immed-start**
- Trunk Termination: **rc** (complex impedance)
- Disconnect Supervision: **no**
- Disconnect Timing: **500** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
- Digit Treatment: **blank**
- Digits: **blank**
- Expected Digits: depends on system size and numbering plan
- Terminal Balanced: **no**
- RA Trunk Loss: **0dB**
- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **silence**
- Incoming Rotary Timeout (sec): **5** sec (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **500** ms
- Incoming Dial Guard: **70** ms
- Incoming Partial Dial: **18** sec
- Incoming Incomplete Dial: **255** sec

■ Tie Trunks

No information regarding Type Approval-related settings is currently available.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks
 - DS1²³ Administration Screen
 - Circuit Pack: TN464D (not entered as an administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **5**
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**
 - Slip Detection: **y**
 - Trunk Group Administration

Digital CO trunk parameters should be set as for analog CO trunks except the following:

 - PPM: **yes**
 - Frequency: **50Hz/12kHz**
 - Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog CO trunks.
- DID Trunks
 - DS1 Administration Screen
 - Circuit Pack: TN464D (not entered as an administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **5**

23. DS1 is analogous to the term *E1* that has been coined for the European T1 or 2 mbit interface.

- Interconnect: **CO**
- CRC?: **No**
- Idle Code: **01010100**
- Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog DID trunks.
- Tie Trunks
 - Non-ISDN Signaling Example (DS1 Administration Screen)
 - Circuit Pack: TN464D (Not entered as administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **5**
 - Interconnect: **pbx**
 - CRC?: **no**
 - Idle Code: **01010100**
 - ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

 - DS1 Administration Form
 - Circuit Pack: TN464D
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **1**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **01010100**
 - Signaling Group Form
 - Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)

- Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **tie**
- ISDN-PRI (Public Network)
 - DS1 Administration Form
 - Circuit Pack: TN464C (Not entered as administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **5**
 - Connect: **Network**
 - Idle Code: **01010100**
 - Signaling Group Form
 - Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)
 - Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **public_ntwrk**

Poland

The information provided here is preliminary and subject to change.

Recommended and available circuit packs are shown in the following Table:

Table B-24. Recommended and Available CPs in Poland

Number	Function	Comments
TN748D TN748C	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN744	Call Classifier	R2-MFC Service
TN725B	Speech Synth	
TN750B	Announcement	
TN763D	Aux Trunk	
TN753	DID Trunk	Needs MFC
TN747B	CO w/o PPM	
TN760Dv11	Analog Tie	
TN464D	Digital Tie	
TN742	8p Analog Line	
TN746B	16p Analog Line	
TN754B TN2136	Digital Line	
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables:

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- System Parameters Features Administration
 - Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
 - Public Network Trunks on Conference Call: **5**
 - Conference Parties With PNTs: **6**
 - Conference Parties Without PNTs: **6**
 - Line Intercept Tone Timer: **30**
 - Night Service Disconnect Timer: **180 sec**
 - Short Interdigit Timer: **3 sec**
 - Unanswered DID Call Timer: **60**
 - Auto-Hold: **Yes**²⁴
 - Attendant Tone: **Yes**
 - Bridging Tone: **No**
 - Conference Tone: **No**
 - Intrusion Tone: **Yes**
 - Repetitive Call Waiting Tone: **No**
 - DID Busy Treatment: **Attendant**
 - Pull Transfer: **No**
 - Level of Tone Detection: **Medium**
 - Outpulse Without Tone: **Yes**
 - (Station-to-switch) Recall Timing:
 - Flashhook Interval: **No**
 - Disconnect Timing: **350 ms**

24. Although not a Type Approval issue, this represents the convention for this country.

■ System Parameter Multifrequency Signaling Administration

- Incoming Call Type: **group-ii-mfc**
- Outgoing Call Type: **group-ii-mfc**
- Test Call Extension: Accept default
- Incoming Interdigit Timer: Accept default
- Incoming Signal Types:

GROUP-I	GROUP-II	GROUP-A	GROUP-B
Use defaults	1: normal 2: normal 3: normal 4: normal 5: normal 6: data-call 7: normal 8: data-call 9: normal 10: normal 11: normal 12: data-call 13: normal 14: normal 15: normal	Use defaults	3: busy 4: congestion 5: intercept 6: free

- Outgoing Signal Types:

GROUP-I	GROUP-II	GROUP-A	GROUP-B
Use defaults	1: normal 1: attendant 6: data-call	1: next-digit 2: congestion 3: end-of-dial 4: congestion 5: call-info-ani 6: congestion 7: congestion 8: congestion 9: congestion 10: congestion 11: congestion 12: congestion 13: congestion 14: congestion 15: congestion	1: congestion 2: congestion 3: busy 4: congestion 5: intercept 6: free 7: congestion 8: congestion 9: congestion 10: congestion 11: congestion 12: congestion 13: congestion 14: congestion 15: congestion

■ Country Options Parameters

- Companding Mode: **A-law**
- Base Tone Generation Set:
- Tone Detection Mode: **2**
- Interdigit Pause: **short**
- Digital Loss Plan:

— Analog Ringing Cadence:

Analog Trunk Administration

■ CO Trunks

— Trunk Group Screen

- Group Type: **CO**
- Country:
- Trunk Gain: **high**
- Direction: **two-way**
- Digit Absorption List: **blank**
- Prefix-1: **No**
- Trunk Type: **loop-start**
- Outgoing Dial Type: **tone**
- Trunk Termination: **600 Ω**
- Auto Guard: **no**
- Dial Access: **Yes**
- Call Still Held: **no**
- Terminal Balanced: **yes**
- Receive Answer Supervision: **no**
- Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In: **no**
- Disconnect Supervision - Out: Selection is customer's choice.
- Disconnect Timing: **100** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **100** ms
- Outgoing Disconnect: **100** ms
- Outgoing Dial Guard: **3000** ms

- Incoming Glare Guard: **1500** ms
- Outgoing Glare Guard: **1500** ms
- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **40** ms
- Outgoing Rotary Digit Dial Break: **60** ms
- Outgoing Rotary Dial Interdigit: **800** ms
- Ring Monitor Timer: **5200** ms
- Incoming Seizure: **500** ms
- Outgoing End-of-Dial: **255** sec
- Outgoing Seizure Response: **0**
- Programmed Dial Pause: **3** sec
- Disconnect Signal Error: **240** sec
- End-To-End Signaling Pause: **150** ms (accept default)
- End-To-End Signaling Tone: **350** ms (accept default)
- Flash Length: **100** ms
- PPM: **No**
- DID Trunks
 - Trunk Group Screen
 - Group Type: **DID**
 - Country:
 - Trunk Gain: **high**
 - Digit Absorption List: **blank**
 - Incoming Dial Type: **tone**
 - Trunk Type: **immed-start**
 - Trunk Termination: **rc** (complex impedance)
 - Disconnect Supervision: **no**
 - Disconnect Timing: **500** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
 - Digit Treatment: **blank**
 - Digits: **blank**
 - Expected Digits: depends on system size and numbering plan
 - Terminal Balanced: **yes**

- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **silence**
- Incoming Rotary Timeout (sec): **5 sec** (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **100 ms**
- Incoming Dial Guard: **10 ms**
- Incoming Partial Dial: **18 sec**
- Incoming Incomplete Dial: **255 sec**

■ Tie Trunks

No information regarding Type Approval-related settings is currently available.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks

- DS1²⁵ Administration Screen

- Circuit Pack: TN464D (not entered as an administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol:
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**

- Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog CO trunks.

- DID Trunks

- DS1 Administration Screen

- Circuit Pack: TN464D (not entered as an administrable item)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol:
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**

- Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog DID trunks.

25. DS1 is also analogous to the term *E1* that has been coined for the European T1 or 2 mbit interface.

- Tie Trunks

- Non-ISDN Signaling Example (DS1 Administration Screen)

- Circuit Pack: TN464D (Not entered as administrable item; TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol:
 - Interconnect: **pbx**
 - CRC?: **no**
 - Idle Code: **01010100**

- ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

- DS1 Administration Form

- Circuit Pack: TN464D (or TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **1**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **01010100**

- Signaling Group Form

- Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)

- Trunk Group Administration Form

- Group Type: **isdn-pri**
 - Service Type: **tie**

- ISDN-PRI (Public Network)

Not available for this country.

Saudi Arabia

Notes:

1. R2-MFC DID signaling is used.
2. The PBX supplies DID Battery.
3. 600 Ω resistive impedance is used on CO trunks.
4. Ringback tone to network: 425 Hz 1.2/4.65 Cadence.

Recommended and available circuit packs are shown in the following Table:

Table B-25. Recommended and Available CPs in Saudi Arabia

Number	Function	Comments
TN748D TN756	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN744 TN725B	Call Classifier Speech Synth	R2-MFC Service
TN750B	Announcement	
TN763D TN763C	Aux Trunk	
TN753 TN747B (ver.12)	DID Trunk CO w/o PPM	MFC needed
TN760D	Analog Tie	
TN464D TN464C	Digital Tie	
TN742	8p Analog line	
TN746B	16p Analog Line	
TN754B	Digital Line	
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ System Parameters Features Administration

- Trunk-to-Trunk Transfer Permitted by country's regulations - Selection is customer's choice.
- Public Network Trunks on Conference Call: **5**
- Conference Parties With PNTs: **6**
- Conference Parties Without PNTs: **6**
- Line Intercept Tone Timer: **30**
- Night Service Disconnect Timer: **180 sec**
- Short Interdigit Timer: **3 sec**
- Unanswered DID Call Timer: **60**
- Auto-Hold: **Yes**²⁶
- Attendant Tone: **Yes**
- Bridging Tone: **No**
- Conference Tone: **No**
- Intrusion Tone: **Yes**
- Repetitive Call Waiting Tone: **No**
- DID Busy Treatment: **Attendant**
- Pull Transfer: **No**
- Level of Tone Detection: **Broadband**
- Outpulse Without Tone: **Yes**

26. Although not a Type Approval issue, this represents the convention for this country.

- (Station-to-switch) Recall Timing:
 - Flashhook Interval: **Yes**
 - Upper Bound: **1000 ms**
 - Lower Bound: **200 ms**
- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- System Parameter Multifrequency Signaling Administration
 - Incoming Call Type: **group-ii-mfc**
 - Test Call Extension: As negotiated
 - Incoming Interdigit Timer: **10 sec**
 - Incoming Signal Types:

GROUP-I	GROUP-II	GROUP-A	GROUP-B
11: dmp	1: normal	Use defaults	3: busy
12: ignored	2: busy-rt-attd		4: congestion
13: maint-call	3: normal		5: intercept
14: ignore	4: normal		6: free
15: ignore	5: busy-rt-attd		
	6: data-call		
	7: normal		
	8: data-call		
	9: busy-rt-attd		
	10: busy-rt-attd		
	11: normal		
	12: busy-rt-attd		
	13: normal		
	14: busy-rt-attd		
	15: normal		

- Country Options Parameters
 - Companding Mode: **mu-law**
 - Base Tone Generation Set: **9**
 - Tone Detection Mode: default
 - Interdigit Pause: default
 - Digital Loss Plan: **9**
 - Analog Ringing Cadence: **9**

Analog Trunk Administration

- CO Trunks
 - Trunk Group Screen
 - Group Type: **CO**

- Country: **9**
- Trunk Gain: **high**
- Direction: **two-way**
- Digit Absorption List: **blank**
- Prefix-1: **No**
- Trunk Type: **loop-start** or **ground-start**
- Outgoing Dial Type: **tone**
- Trunk Termination: **rc** (complex impedance)
- Auto Guard: **no**
- Dial Access: **Yes**
- Call Still Held: **no**
- Terminal Balanced: **yes**
- Receive Answer Supervision: **no**
- Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In: **no**
- Disconnect Supervision - Out: Selection is customer's choice.
- Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **500** ms
- Outgoing Disconnect: **500** ms
- Outgoing Dial Guard: **1600** ms
- Incoming Glare Guard: **1500** ms
- Outgoing Glare Guard: **1500** ms
- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **35** ms
- Outgoing Rotary Digit Dial Break: **65** ms
- Outgoing Rotary Dial Interdigit: **800** ms

- Ring Monitor Timer: **5200** ms
- Incoming Seizure: **500** ms
- Outgoing End-of-Dial: **10** sec
- Outgoing Seizure Response: **240** sec
- Programmed Dial Pause: **1500** ms
- Disconnect Signal Error: **240** sec
- Flash Length: **100** ms
- PPM: **no**
- DID Trunks
 - Trunk Group Screen
 - Group Type: **DID**
 - Country: **9**
 - Trunk Gain: **high**
 - Digit Absorption List: **blank**
 - Incoming Dial Type: **MF**
 - Trunk Type: **immed-start**
 - Trunk Termination: **rc** (complex impedance)
 - Disconnect Supervision: **no**
 - Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
 - Digit Treatment: **blank**
 - Digits: **blank**
 - Terminal Balanced: **yes**
 - Extended Loop Range: (Used Only with TN459) **no**
 - Drop Treatment: **silence**
 - Incoming Rotary Timeout (sec): **5** sec (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)
 - Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

Incoming Disconnect: **500** ms

- Incoming Dial Guard: **50** ms
- Incoming Partial Dial: **18** sec
- Incoming Incomplete Dial: **255** sec
- Flash Length: **100** ms
- Tie Trunks
No special Type Approval regulations apply. Tie trunks are administered on a case-by-case basis.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks
Not available in this country.
- DID Trunks
Not available in this country.
- Tie Trunks
 - Non-ISDN Signaling Example (DS1 Administration Form)
 - Circuit Pack: TN464C
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **9**
 - Interconnect: **pbx**
 - CRC?: **no**
 - Idle Code: **11111111**
 - ISDN-PRI (Private Network) Signaling
This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.
 - DS1 Administration Form
 - Circuit Pack: TN464C
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**

- Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **9**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **11111111**
- Signaling Group Form
 - Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)
- Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **tie**
- ISDN-PRI (Public Network)

Not available in this country.

Singapore

Recommended and available circuit packs are shown in the following Table:

Table B-26. Recommended and Available CPs in Singapore

Number	Function	Comments
TN748D TN756	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN744	Call Classifier	R2-MFC Service
TN725B	Speech Synth	
TN760B	Announcement	
TN763D TN763C	Aux Trunk	
TN753	DID Trunk	MFC needed
TN747B (Ver.12)	CO w/o PPM	
TN760D	Analog Tie	
TN464D TN464C	Digital Tie	
TN464D TN464C	ISDN CO	
TN742	8p Analog Line	
TN746B	16p Analog Line	
TN754B	Digital Line	
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- **ARS/AAR Administration**

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ System Parameters Features Administration

- Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
- Public Network Trunks on Conference Call: **5**
- Conference Parties With PNTs: **6**
- Conference Parties Without PNTs: **6**
- Line Intercept Tone Timer: **30**
- Night Service Disconnect Timer: **180 sec**
- Short Interdigit Timer: **3 sec**
- Unanswered DID Call Timer: **60**
- Auto-Hold: **Yes**²⁷
- Attendant Tone: **Yes**
- Bridging Tone: **No**
- Conference Tone: **No**
- Intrusion Tone: **No**
- Repetitive Call Waiting Tone: **No**
- DID Busy Treatment: **Attendant**
- Pull Transfer: **No**
- Level of Tone Detection: **Broadband**
- Outpulse Without Tone: **Yes**
- (Station-to-switch) Recall Timing:
 - Flashhook Interval: **Yes**
 - Upper Bound: **1000 ms**
 - Lower Bound: **200 ms**

27. Although not a Type Approval issue, this represents the convention for this country.

- System Parameter Multifrequency Signaling Administration

- Incoming Call Type: **group-ii-mfc**
- Test Call Extension: As Negotiated
- Incoming Interdigit Timer: **10 sec**
- Incoming Signal Types:

GROUP-I
Use defaults

GROUP-II
Use defaults

GROUP-A
Use defaults

GROUP-B
1: **free**
2: **busy**
5: **congestion**
7: **intercept**

- Console Parameters Administration

- Secondary Alert on Held Reminder Calls: **Yes**

- Country Options Parameters

- Companding Mode: **mu-law**
- Base Tone Generation Set: **6**
- Tone Detection Mode: default
- Interdigit Pause: default
- Digital Loss Plan: **6**
- Analog Ringing Cadence: **6**

Analog Trunk Administration

- CO Trunks

- Trunk Group Screen

- Group Type: **CO**
- Country: **6**
- Trunk Gain: **high**
- Direction: **two-way**
- Digit Absorption List: **blank**
- Prefix-1: **No**
- Trunk Type: **loop-start** or **ground-start**
- Outgoing Dial Type: **tone**
- Trunk Termination: **rc** (complex impedance)
- Auto Guard: **no**
- Dial Access: **yes**
- Call Still Held: **no**

- Terminal Balanced: **yes**
- Receive Answer Supervision: **no**
- Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In: **no**
- Disconnect Supervision - Out: Selection is customer's choice.
- Disconnect Timing: **500 ms** (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **500 ms**
- Outgoing Disconnect: **500 ms**
- Outgoing Dial Guard: **1600 ms**
- Incoming Glare Guard: **1500 ms**
- Outgoing Glare Guard: **1500 ms**
- Outgoing Dial Pulse Rate (PPS): **10 pps**
- Outgoing Rotary Digit Dial Make: **35 ms**
- Outgoing Rotary Digit Dial Break: **65 ms**
- Outgoing Rotary Dial Interdigit: **800 ms**
- Ring Monitor Timer: **5200 ms**
- Incoming Seizure: **500 ms**
- Outgoing End-of-Dial: **10 sec**
- Outgoing Seizure Response: **240 sec**
- Programmed Dial Pause: **1500 ms**
- Disconnect Signal Error: **240 sec**
- Flash Length: **100 ms**
- PPM: **no**

■ DID Trunks

— Trunk Group Screen

- Group Type: **DID**

- Country: **6**
- Trunk Gain: **high**
- Digit Absorption List: **blank**
- Incoming Dial Type: **MF**
- Trunk Type: **immed-start**
- Trunk Termination: **rc** (complex impedance)
- Disconnect Supervision: **no**
- Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
- Digit Treatment: **blank**
- Digits: **blank**
- Expected Digits: depends on system size and numbering plan
- Terminal Balanced: **yes**
- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **silence**
- Incoming Rotary Timeout (sec): **5** sec (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **500** ms
 - Incoming Dial Guard: **50** ms
 - Incoming Partial Dial: **18** sec
 - Incoming Incomplete Dial: **255** sec
 - Flash Length: **100** ms
- Tie Trunks

No special Type Approval regulations apply. Tie trunks are administered on a case-by-case basis.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks

Not available in this country.

- DID Trunks

Not available in this country.

- Tie Trunks

- Non-ISDN Signaling Example (DS1 Administration Screen)

- Circuit Pack: TN464D (or TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **6**
 - Interconnect: **pbx**
 - CRC?: **no**
 - Idle Code: **11111111**

- ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

- DS1 Administration Form

- Circuit Pack: TN464D (or TN464C,B from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **1**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **11111111**

- Signaling Group Form
 - Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)
- Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **tie**

ISDN-PRI (Public Network)

Not available for this country.

Spain

Recommended and available circuit packs are shown in the following Table:

Table B-27. Recommended and Available CPs in Spain

Number	Function	Comments
TN420C	Tone Detector	Modified for use in Spain
TN744v8	Call Classifier	Modified for use in Spain for MFE
TN780	Tone Gen/Clock	
TN457	Speech Synth	
TN750B	Announcement	
TN763D	Aux Trunk	
TN2147	Analog CO	
TN465B	Analog CO w/PPM	12 KHz
TN464Dv.2	Digital CO/DID	PTT & IBERCOM compatible;Needs MFE
TN464D	ISDN CO	
TN2180	16p Analog Line	Modified for Spain
TN754B TN2136	Digital Line	
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- System Parameters Features Administration
 - Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
 - Public Network Trunks on Conference Call: **5**
 - Conference Parties With PNTs: **6**
 - Conference Parties Without PNTs: **6**
 - Line Intercept Tone Timer: **30**
 - Night Service Disconnect Timer: **180 sec**
 - Short Interdigit Timer: **3 sec**
 - Unanswered DID Call Timer: **60**
 - Auto-Hold: **Yes**
 - Attendant Tone: **Yes**
 - Bridging Tone: **Yes**
 - Conference Tone: **Yes**
 - Intrusion Tone: **Yes**
 - Repetitive Call Waiting Tone: **Yes**
 - DID Busy Treatment: **Attendant**
 - Pull Transfer: **No**
 - Level of Tone Detection: **Medium**
 - Outpulse Without Tone: **No**
 - (Station-to-switch) Recall Timing:
 - Flashhook Interval: **No**
 - Upper Bound: **1000 ms**
 - Lower Bound: **150 ms**
- Country Options Parameters
 - Companding Mode: **A-law**
 - Base Tone Generation Set: **11**
 - Tone Detection Mode: **4**
 - Interdigit Pause: **long**
 - Digital Loss Plan: **11**
 - Analog Ringing Cadence: **11**
 - Dial Tone Validation Timer: **1500 ms**

— Customized Individual Tones

In this section, customized tone definitions follow the data-entry syntax as specified for entry on the Individual Tone Administration Screen:

[(Frequency/Level)IsilenceIgoto)][(Duration ms)I(Step)]

➤ Ringback Tone:

1. (425/-4)(1500)
2. (silence)(3000)
3. (goto)(1)

➤ Busy Tone:

1. (425/-4)(200)
2. (silence)(200)
3. (goto)(1)

➤ Reorder Tone:

1. (425/-4)(200)
2. (silence)(200)
3. (425/-4)(200)
4. (silence) (200)
5. (425/-4)(200)
6. (silence)(600)
7. (goto)(1)

➤ 1 Call Wait Tone:

1. (425/-11)(150)
2. (silence)(150)
3. (425/-11)(150)

- Intercept Tone:
 1. (425/-4)(200)
 2. (silence)(200)
 3. (425/-4)(200)
 4. (silence)(600)
 5. (goto)(1)
- Intrusion:
 1. (1400/-11)(400)
 2. (silence)(5000)
 3. (goto)(1)

Analog Trunk Administration

- CO Trunks
 - Trunk Group Screen
 - Group Type: **CO**
 - Country: **11**
 - Trunk Gain: **high**
 - Direction: **two-way**
 - Digit Absorption List: **blank**
 - Prefix-1: **No**
 - Trunk Type: **loop-start**
 - Outgoing Dial Type: **tone** or **rotary**
 - Trunk Termination: **rc**
 - Auto Guard: **no**
 - Call Still Held: **no**
 - Terminal Balanced: **yes**
 - Receive Answer Supervision: **Yes**
 - Answer Supervision Timeout: **0** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
 - Disconnect Supervision - In: **Yes**
 - Disconnect Supervision - Out: Selection is customer's choice.

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **600** ms
- Outgoing Disconnect: **600** ms
- Outgoing Dial Guard: **100** ms
- Incoming Glare Guard: **1000** ms
- Outgoing Glare Guard: **1000** ms
- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **35** ms
- Outgoing Rotary Digit Dial Break: **65** ms
- Outgoing Rotary Dial Interdigit: **700** ms
- Ring Monitor Timer: **5200** ms
- Incoming Seizure: **500** ms
- Outgoing Seizure Response: **5** sec
- Programmed Dial Pause: **1500** ms
- End-To-End Signaling Tone: **350** ms (accept default)
- Flash Length: **100** ms
- PPM: **Yes**
- Frequency: **12kHz**
- DID Trunks
Spain does not permit the use of analog DID circuits.
- Tie Trunks
Private networks are not permitted in Spain; therefore, tie circuits will not be used.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks
 - DS1 Administration Screen
 - Circuit Pack: TN464D
 - Bit Rate: **2.048**

- Interface Companding: **A-law**
- Line Coding: **HDB3**
- Signaling Mode: **CAS**
- Country Protocol: **11**
- Interconnect: **CO**
- CRC?: **No**
- Idle Code: **01010100**
- Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Unless otherwise stated below, the Digital CO trunk timers should be set according to the analog equivalents.

 - Incoming Disconnect: **50 ms**
 - Outgoing Dial Guard: **1000 ms**
 - Incoming Glare Guard: **200 ms**
 - Outgoing Glare Guard: **200 ms**
- DID Trunks
 - DS1 Administration Screen
 - Circuit Pack: TN464D
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **11**
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**
 - Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

 - Incoming Disconnect: **500 ms**
 - Incoming Dial Guard: **50 ms**
 - Incoming Partial Dial: **6 sec**
 - Incoming Incomplete Dial: **255 sec**

- Flash Length: **100** ms
- Tie Trunks

Private networks are not permitted in Spain; therefore, tie circuits will not be used.

 - ISDN-PRI (Private Network) Signaling

Private networks are not permitted in Spain; therefore, ISDN private internetworking is not permitted.
- ISDN-PRI (Public Network)
 - DS1 Administration Form
 - Circuit Pack: TN464D
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **1**
 - Idle Code: **01010100**
 - Signaling Group Form
 - Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)
 - Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **public_ntwrk**

Taiwan

Recommended and available circuit packs are shown in the following Table:

Table B-28. Recommended and Available CPs in Taiwan

Number	Function	Comments
TN748D TN756	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN725B	Speech Synth	
TN750B	Announcement	
TN763D TN763C	Aux Trunk	
TN753	DID Trunk	
TN747B (Ver.12)	CO w/o PPM	
TN760D	Analog Tie	
TN464D TN464C TN767	Digital Tie	
TN742	8p Analog Line	
TN746B	16p Analog Line	
TN754B	Digital Line	
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

int: For all international numbers.

natl: For all national PN numbers.

unk: For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- System Parameters Features Administration
 - Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
 - Public Network Trunks on Conference Call: **5**
 - Conference Parties With PNTs: **6**
 - Conference Parties Without PNTs: **6**
 - Line Intercept Tone Timer: **30**
 - Night Service Disconnect Timer: **180 sec**
 - Short Interdigit Timer: **3 sec**
 - Unanswered DID Call Timer: **60**
 - Auto-Hold: **Yes**²⁸
 - Attendant Tone: **Yes**
 - Bridging Tone: **No**
 - Conference Tone: **No**
 - Intrusion Tone: **Yes**
 - Repetitive Call Waiting Tone: **No**
 - DID Busy Treatment: **Attendant**
 - Pull Transfer: **No**
 - Level of Tone Detection: **Broadband**
 - Outpulse Without Tone: **Yes**
 - (Station-to-switch) Recall Timing:
 - Flashhook Interval: **Yes**
 - Upper Bound: **1000 ms**
 - Lower Bound: **200 ms**

28. Although not a Type Approval issue, this represents the convention for this country.

- Country Options Parameters
 - Companding Mode: **mu-law**
 - Base Tone Generation Set: **1**
 - Tone Detection Mode: default
 - Interdigit Pause: default
 - Digital Loss Plan: **1**
 - Analog Ringing Cadence: **1**
 - 440 Hz PBX-dial Tone: **yes**
 - 440 Hz Secondary-dial Tone: **no**

Analog Trunk Administration

- CO Trunks
 - Trunk Group Screen
 - Group Type: **CO**
 - Country: **1**
 - Trunk Gain: **high**
 - Direction: **two-way**
 - Digit Absorption List: **blank**
 - Prefix-1: **No**
 - Trunk Type: **loop-start** or **ground-start**
 - Outgoing Dial Type: **tone**
 - Trunk Termination: **rc** (complex impedance)
 - Auto Guard: **no**
 - Dial Access: **yes**
 - Call Still Held: **no**
 - Terminal Balanced: **yes**
 - Receive Answer Supervision: **no**
 - Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
 - Disconnect Supervision - in: **no**
 - Disconnect Supervision - Out: Selection is customer's choice.

- Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **500** ms
- Outgoing Disconnect: **500** ms
- Outgoing Dial Guard: **1600** ms
- Incoming Glare Guard: **1500** ms
- Outgoing Glare Guard: **1500** ms
- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **35** ms
- Outgoing Rotary Digit Dial Break: **65** ms
- Outgoing Rotary Dial Interdigit: **800** ms
- Ring Monitor Timer: **5200** ms
- Incoming Seizure: **500** ms
- Outgoing End-of-Dial: **10** sec
- Outgoing Seizure Response: **240** sec
- Programmed Dial Pause: **1500** ms
- Disconnect Signal Error: **240** sec
- Flash Length: **100** ms
- PPM: **no**

■ DID Trunks

— Trunk Group Screen

- Group Type: **DID**
- Country: **1**
- Trunk Gain: **high**
- Digit Absorption List: **blank**
- Incoming Dial Type: **tone**
- Trunk Type: **immed-start**
- Trunk Termination: **rc** (complex impedance)
- Disconnect Supervision: **no**

- Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
- Digit Treatment: **blank**
- Digits: **blank**
- Expected Digits: depends on system size and numbering plan
- Terminal Balanced: **yes**
- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **silence**
- Incoming Rotary Timeout (sec): **5** sec (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **500** ms
 - Incoming Dial Guard: **50** ms
 - Incoming Partial Dial: **18** sec
 - Incoming Incomplete Dial: **255** sec
 - Flash Length: **100** ms
- Tie Trunks

No special Type Approval regulations apply. Tie trunks are administered on a case-by-case basis.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks

Not available in this country.
- DID Trunks

Not available in this country.

■ Tie Trunks

— Non-ISDN Signaling Example (DS1 Administration Form)

- Circuit Pack: TN464D (or TN464C,TN767)
- Bit Rate: **1.544**
- Interface Companding: **mu-law**
- Line Coding: **B8ZS**
- Line Compensation: **1**
- Framing Mode: **esf**
- Signaling Mode: **common-chan**
- Country Protocol: **5**
- CRC?: **no**
- Idle Code: **11111111**
- DMI-BOS? **Yes**

— ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

■ DS1 Administration Form

- Circuit Pack: TN464D (or TN464C,B from upgrades)
- Bit Rate: **2.048**
- Interface Companding: **A-law**
- Line Coding: **HDB3**
- Signaling Mode: **isdn-pri**
- Country Protocol: **1**
- Connect: **pbx**
- Interface: **user**
- CRC: **No**
- Idle Code: **11111111**

■ Signaling Group Form

- Associated Signaling: **Yes**
- Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)

- Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **tie**
- ISDN-PRI (Public Network)
Not available in this country.

United Kingdom

Recommended and available circuit packs are shown in the following table:

Table B-29. Recommended and Available CPs in the United Kingdom

Number	Function	Comments
TN420C TN420B	Tone Detector	V2 CP to be provided
TN780 TN419B	Tone Gen/Clock	
TN457	Speech Synth	V2 CP to be provided
TN750B	Announcement	
TN763D TN417	Aux Trunk	
TN459B TN459	DID Trunk	
TN2147	CO w/o PPM	
TN447	CO w/PPM	
TN458	Analog Tie	
TN464D TN464C	Digital Tie	
TN464D	Digital DID	Administered as a Tie Trunk
TN464D	ISDN CO	Needs an external converter for ETSI to DAS II/DPNSS
TN467	8p Analog Line	
TN468B TN468	16p Analog Line	V4 CP to be sold
TN754B TN413	Digital Line	
TN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

- int:** For all international numbers.
- natl:** For all national PN numbers.
- unk:** For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- System Parameter Features Administration
 - Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
 - Public Network Trunks on Conference Call: **5**
 - Conference Parties With PNTs: **6**
 - Intrusion Tone: **Yes**
 - DID Busy Treatment: **Attendant**
 - Level of Tone Detection: **Precise**
 - Pull Transfer: **No**
 - (Station-to-switch) Recall Timing:
 - Flashhook Interval: **No**
 - Disconnect Timing: **150 ms**
- Country Options Parameters
 - Companding Mode: **A-law**
 - Base Tone Generation Set: **10**
 - Tone Detection Mode: **3**
 - Interdigit Pause: **short**
 - Digital Loss Plan: **10**
 - Version of Digital Loss Plan:
 - With Only V2 CPs in System: **A**
 - With Only New (G3V2) CPs in System: **B**
 - With New& V2 CPs Mixed in System: **B**
 - Analog Ringing Cadence: **10**

Analog Trunk Administration

- CO Trunks

- Trunk Group Screen

- Country: **10**
 - Trunk Gain: **high**
 - Group Type: **CO**
 - Direction: **two-way**
 - Digit Absorption List: **blank**
 - Prefix-1: **No**
 - Trunk Type:
 - **loop-start** (for Loop-Calling, Guarded Clearing)
 - **ground-start** (for Earth Calling)
 - Outgoing Dial Type: **tone**
 - Trunk Termination: **rc** (complex impedance)
 - Auto Guard: **no**
 - Dial Access: **yes**
 - Call Still Held: **no**
 - Terminal Balanced: **yes**
 - Receive Answer Supervision: **no**
 - Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
 - Disconnect Supervision - In:
 - **no** (for LCGC Trunks)
 - **yes** (for Earth Calling Trunks)
 - Disconnect Supervision - Out: Selection is customer's choice.
 - Disconnect Timing: **500** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **500** ms
- Outgoing Disconnect: **500** ms
- Outgoing Dial Guard: **1600** ms
- Incoming Glare Guard: **1500** ms
- Outgoing Glare Guard: **1500** ms
- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **35** ms
- Outgoing Rotary Digit Dial Break: **65** ms
- Outgoing Rotary Dial Interdigit: **800** ms
- Ring Monitor Timer: **5200** ms
- Incoming Seizure: **250** ms
- Outgoing End-of-Dial: **10** sec
- Outgoing Seizure Response: **240** sec
- Programmed Dial Pause: **1500** ms
- Disconnect Signal Error: **240** sec
- End-To-End Signaling Pause: **150** ms (accept default)
- End-To-End Signaling Tone: **350** ms (accept default)
- Flash Length: **100** ms
- PPM: **yes**
- Frequency: **50** Hz

— PPM

The PPM frequency monitored will depend upon the particular CO trunk CP being used (a CP capable of monitoring the required frequency must be provided. Some trunk CPs do not support any PPM monitoring.) For this country, the CP used for PPM monitoring must detect **50Hz** pulses.

- DID Trunks

- Trunk Group Screen

- Group Type: **DID**
 - Country: **10**
 - Gain: **high**
 - Digit Absorption List: **blank**
 - Incoming Dial Type: **tone**
 - Trunk Type: **immed-start**
 - Trunk Termination: **rc** (complex impedance)
 - Disconnect Timing: **500** msec (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
 - Digit Treatment: **blank**
 - Digits: **blank**
 - Expected Digits: depends on system size and numbering plan
 - Terminal Balanced: **yes**
 - Extended Loop Range: (Used Only with TN459) **no**
 - Drop Treatment: **silence**
 - Disconnect Supervision: **yes**
 - Incoming Rotary Timeout (sec): **5** sec

- Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **500** ms
 - Incoming Dial Guard: **50** ms
 - Incoming Partial Dial: **18** sec
 - Incoming Incomplete Dial: **255** sec
 - Flash Length: **100** ms

- Tie Trunks

No special Type Approval regulations apply. Tie trunks are administered on a case-by-case basis.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks
 - DS1 Administration Screen
 - Circuit Pack: TN464D (or TN464C from upgrade)
 - Bit Rate: **2.048** (bit-rate selection cannot be made with TN464B)
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **10**
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**
 - Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog CO trunks.
- DID Trunks
 - DS1 Administration Screen
 - Circuit Pack: TN464D (or TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **10**
 - Interconnect: **CO**
 - CRC?: **No**
 - Idle Code: **01010100**
 - Trunk Group Administration Screen (Timing)

Digital trunk timing values should be set as for analog DID trunks.

- Tie Trunks

- Non-ISDN Signaling Example (DS1 Administration Form)

- Circuit Pack: TN464D (or TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **CAS**
 - Country Protocol: **1**
 - Interconnect: **pbx**
 - CRC?: **No**
 - Idle Code: **01010100**

- ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

- DS1 Administration Form

- Circuit Pack: TN464D (or TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **1**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **01010100**

- Signaling Group Form

- Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)

- Trunk Group Administration Form

- Group Type: **isdn-pri**
 - Service Type: **tie**

- ISDN-PRI (Public Network)
 - DS1 Administration Form
 - Circuit Pack: TN464D (or TN464C from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **10**
 - Connect: **Network**
 - Idle Code: **01010100**
 - Signaling Group Form
 - Associated signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)
 - Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **public_ntwrk**

Venezuela

Recommended and available circuit packs are shown in the following Table:

Table B-30. Recommended and Available CPs in Venezuela

Number	Function	Comments
TN748D TN756	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN744	Call Classifier	R2-MFC Service
TN725B	Speech Synth	
TN750B TN750	Announcement	
TN763D TN763C	Aux Trunk	
TN753	DID Trunk	MFC needed
TN747B	CO w/o PPM	
TN465	CO w/PPM	
TN760D	4w Analog Tie	
TN439	2w Analog Tie	
TN464D TN464C	Digital Tie	
TN742	8p Analog Line	
TN746B	16p Analog Line	
TN754B TN413	Digital Line	
IN726B	Data Line	

Feature Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

■ ARS/AAR Administration

ARS must be administered ON for CO calls to be placed. It is important also to check all ARS/AAR defaults. These defaults are intended for US operation and certain values are likely to be inappropriate internationally. In particular, the following call types (which appear as ARS/AAR defaults) should *not* normally be used in non-North American ARS/AAR tables:

fnpa: North American numbers with an area code.

hnpa: North American numbers without an area code.

svc: North American numbers of the form "x11".

It is recommended that only the following call types be used outside North America:

- int:** For all international numbers.
- natl:** For all national PN numbers.
- unk:** For all other external (that is, not extensions) numbers.

System Parameter Administration

Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

- Console Parameters Administration
 - Secondary Alert on Held Reminder Calls: **Yes**
- System Parameters Features Administration
 - Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
 - Public Network Trunks on Conference Call: **5**
 - Conference Parties With PNTs: **6**
 - Conference Parties Without PNTs: **6**
 - Line Intercept Tone Timer: **30**
 - Night Service Disconnect Timer: **180 sec**
 - Short Interdigit Timer: **3 sec**
 - Unanswered DID Call Timer: **60**
 - Auto-Hold: **Yes**²⁹
 - Attendant Tone: **Yes**
 - Bridging Tone: **No**
 - Conference Tone: **No**
 - Intrusion Tone: **Yes**
 - Repetitive Call Waiting Tone: **No**
 - DID Busy Treatment: **Attendant**
 - Pull Transfer: **No**
 - Level of Tone Detection: **Broadband**
 - Outpulse Without Tone: **Yes**

29. Although not a Type Approval issue, this represents the convention for this country.

- (Station-to-switch) Recall Timing:
 - Flashhook Interval: **Yes**
 - Upper Bound: **1000 ms**
 - Lower Bound: **200 ms**
- System Parameter Multifrequency Signaling Administration
 - Incoming Call Type: **non-group-ii-mfc** (use default translations)
 - Test Call Extension: As Negotiated
 - Incoming Interdigit Timer: **10 sec**
- Country Options Parameters
 - Companding Mode: **mu-law**
 - Base Tone Generation Set: **1**
 - Tone Detection Mode: default
 - Interdigit Pause: default
 - Digital Loss Plan: **1**
 - Analog Ringing Cadence: **1**

Analog Trunk Administration

- CO Trunks
 - Trunk Group Screen
 - Group Type: **CO**
 - Country: **1**
 - Trunk Gain: **high**
 - Direction: **two-way**
 - Digit Absorption List: **blank**
 - Prefix-1: **No**
 - Trunk Type: **loop-start** or **ground-start**
 - Outgoing Dial Type: **tone**
 - Trunk Termination: **rc** (complex impedance)
 - Auto Guard: **no**
 - Dial Access: **yes**
 - Call Still Held: **no**
 - Terminal Balanced: **yes**
 - Receive Answer Supervision: **no**

- Answer Supervision Timeout: **10** (This sets both the CP firmware timer and software timer. This should be set to 0 for any trunk that will receive answer supervision.)
- Disconnect Supervision - In: **no**
- Disconnect Supervision - Out: Selection is customer's choice.
- Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following CO trunk timer values for this country:

- Incoming Disconnect: **500** ms
- Outgoing Disconnect: **500** ms
- Outgoing Dial Guard: **1600** ms
- Incoming Glare Guard: **1500** ms
- Outgoing Glare Guard: **1500** ms
- Outgoing Dial Pulse Rate (PPS): **10** pps
- Outgoing Rotary Digit Dial Make: **35** ms
- Outgoing Rotary Digit Dial Break: **65** ms
- Outgoing Rotary Dial Interdigit: **800** ms
- Ring Monitor Timer: **5200** ms
- Incoming Seizure: **500** ms
- Outgoing End-of-Dial: **10** sec
- Outgoing Seizure Response: **240** sec
- Programmed Dial Pause: **1500** ms
- Disconnect Signal Error: **240** sec
- Flash Length: **100** ms
- PPM: **Yes**
- Frequency: **16kHz**

■ DID Trunks

— Trunk Group Screen

- Group Type: **DID**
- Country: **1**

- Trunk Gain: **high**
- Digit Absorption List: **blank**
- Incoming Dial Type: **MF**
- Trunk Type: **immed-start**
- Trunk Termination: **rc** (complex impedance)
- Disconnect Supervision: **no**
- Disconnect Timing: **500** ms (This field will not be used with CPs that can accept the *Incoming Disconnect* and *Outgoing Disconnect* timers. These latter two timers will be set from the Administrable Timers Screen.)
- Digit Treatment: **blank**
- Digits: **blank**
- Terminal Balanced: **yes**
- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **silence**
- Incoming Rotary Timeout (sec): **5** sec (This field will not be used with CPs that can accept the *Incoming Partial Dial* timer. This timer will be set from the Administrable Timers Screen.)

— Trunk Group Administration Screen (Timing)

The following timers are set from the Administrable Timers screen during administration of each trunk group. Select the following DID trunk timer values for this country:

- Incoming Disconnect: **500** ms
 - Incoming Dial Guard: **50** ms
 - Incoming Partial Dial: **18** sec
 - Incoming Incomplete Dial: **255** sec
 - Flash Length: **100** ms
- Tie Trunks

No special Type Approval regulations apply. Tie trunks are administered on a case-by-case basis.

Digital Trunk Administration

Not all possible valid administrable combinations are listed in this section: Only the most common or standard combination, compatible with public-network and Type Approval standards for each country is presented:

- CO Trunks

Not available in this country.

- DID Trunks

Not available in this country.

- Tie Trunks

- Non-ISDN Signaling Example (DS1 Administration Screen)

- Circuit Pack: TN464D (or TN464C)
- Bit Rate: **2.048**
- Interface Companding: **A-law**
- Line Coding: **HDB3**
- Signaling Mode: **CAS**
- Country Protocol: **1**
- Interconnect: **pbx**
- CRC?: **no**
- Idle Code: **11111111**

- ISDN-PRI (Private Network) Signaling

This example assumes use of US Option 1 with facility associated signaling. Other feature options will require changes in one or more administered items.

- DS1 Administration Form

- Circuit Pack: TN464D (or TN464C,B from upgrades)
 - Bit Rate: **2.048**
 - Interface Companding: **A-law**
 - Line Coding: **HDB3**
 - Signaling Mode: **isdn-pri**
 - Country Protocol: **1**
 - Connect: **pbx**
 - Interface: **user**
 - CRC: **No**
 - Idle Code: **11111111**

- Signaling Group Form
 - Associated Signaling: **Yes**
 - Primary D_Channel: **xxxx16** (xxxx=>depends on CP physical location)
- Trunk Group Administration Form
 - Group Type: **isdn-pri**
 - Service Type: **tie**
- ISDN-PRI (Public Network)

Not available in this country.

System Hardware and Software Capacity Limits

C

The maximum parameters for the DEFINITY Communications System Generic 1 and 3 hardware and software items are listed on the following pages. Unless otherwise noted, these parameters apply to both the single-carrier and multi-carrier cabinet systems. Also:

- For both G3s V1 and G3s V2, when a capacity limit is the same for ABP and PBP, the common limit is listed. When a capacity limit for ABP and PBP differ, the ABP limit is given first followed by the PBP limit.
- Most G3i and G3i-Global capacity limits are the same. In the few cases where a G3i-Global capacity limit differs from the corresponding G3i capacity limit, the G3i limit is given followed by the G3i-Global limit in parenthesis.
- For G3i V2 and G3r V2 configurations, the maximum number of administrable ports may vary depending on the number of ports administered on the System-Parameters Customer-Options form. Refer to the "Port Sensitive Pricing" feature description in Chapter 3 for more information.

Port Sensitive Pricing does not affect G3s V2 or G3vs V2 configurations.



NOTE:

Not all maximum capacities listed in the following table can be reached simultaneously with all versions or all configurations of the System.

Table C-1. Maximum System Parameters For Hardware and Software Items**NOTE:**

Not all features are available for G3V1.1. In cases where a feature is not available for V1.1, capacity number reflects V2 capacity only. G3V2 is not available on the 286 platform.

ITEM	G3 V1				G3 V1.1 or V2				
	G3vsV1 ABP/PBP	G3sV1 ABP/PBP	G3iV1/ G3i-Global	G3rV1	G3iV1.1- 286	G3vsV2 ABP/PBP	G3sV2 ABP/PBP	G3iV2- 386	G3rV2
Abbreviated Dialing (AD)									
AD Lists Per System	200	200	1,600/2,400	5,000	1,600	200	200	2,400	5,000
AD List Entry Size	24	24	24	24	24	24	24	24	24
AD Entries Per System	2,000	2,000	10,000/12,000	50,000	10,000	2,000	2,000	12,000	50,000
Enhanced List (System List)	NA/1	NA/1	1	1	1	NA/1	NA/1	1	1
Max. entries	NA/1,000	NA/1,000	1,000	1,000	1,000	NA/1,000	NA/1,000	1,000	1,000
Group Lists	100	100	100	100	100	100	100	100	1,000
Max. entries	90	90	90	90	90	90	90	90	90
Group lists/extension	3	3	3	3	3	3	3	3	3
System List	1	1	1	1	1	1	1	1	1
Max. entries	90	90	90	90	90	90	90	90	90
Personal Lists	200	200	1,600/2,400	5,000	1,600	200	200	2,400	5,000
Max. entries	10	10	10	10	10	10	10	10	10
Personal lists/extension	3	3	3	3	3	3	3	3	3
Applications Adjuncts									
CallVisor ASAI Adjuncts	NA/NA	NA/4	8	8	8	NA/NA	NA/4	8	8
Asynchronous Links (RS232)	5	5	5	10	5	5	5	5	10
CDR Output Devices	2	2	2	2	2	2	2	2	2
Journal:System Printer	2:1	2:1	2:1	2:1	2:1	2:1	2:1	2:1	2:1
Property Mgt Systems	1	1	1	1	1	1	1	1	1
BX.25 Physical Links(1)	4	4	8	16	8	4	4	8	16
App. Processors(i.e.,3B2-MCS)	1	1	1	7	1	1	1	1	7
AUDIX Adjuncts	1	1	1	8	1	1	1	1	8
CMS Adjuncts	1	1	1	1	1	1	1	1	1
ICM Adjuncts									
ISDN Gateway	NA/1	NA/1	1	1	1	NA/1	NA/1	1	1
BX.25 Processor Channels	64	64	64	128	64	64	64	64	128
Hop channels	64	64	64	128	64	64	64	64	128

1. In the case of SCC, only four BX.25 physical links are supported in G3sV2 and G3iV2.

Table C-1. Maximum System Parameters For Hardware and Software Items (continued)

ITEM	G3 V1				G3V1.1 or V2				
	G3vsV1 ABP/PBP	G3sV1 ABP/PBP	G3iV1/ G3i-Global	G3rV1	G3iV1.1- 286	G3vsV2 ABP/PBP	G3sV2 ABP/PBP	G3iV2- 366	G3rV2
ARS/AAR (2) (3)									
AAR/ARS Patterns (Shared)	NA/40	NA/40	254	640	254	20/40	20/40	254	640
ARS/AAR Table Entries (NPA,NXX,RXX,HNPA,FNPA)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Choices per RHNPA Table	12	12	12	12	12	12	12	12	12
Digit Conversion Entries	300	300	300	400	400	400	400	400	400
AAR/ARS Digit Conversion									
Digits Deleted for ARS/AAR	23	23	23	23	23	23	23	23	23
Digits Inserted for ARS/AAR	18	18	18	18	18	18	18	18	18
AAR/ARS Sub-Net Trunking									
Digits Deleted for ARS/AAR	23	23	23	23	23	23	23	23	23
Digits Inserted for ARS/AAR	36	36	36	36	36	36	36	36	36
Entries in HNPA & RHNPA Tables	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
FRLs	8	8	8	8	8	8	8	8	8
Inserted Digit Strings (4)	450	450	1,200	3,000	1,200	450	450	1,200	3,000
Patterns for Measurement									
Shared Patterns for Measurement	20	20	20	25	20	20	20	20	25
RHNPA Tables	32	32	32	32	32	32	32	32	32
Routing Plans	8	8	8	8	8	8	8	8	8
Toll Tables	32	32	32	32	32	32	32	32	32
Entries per Toll Table	800	800	800	800	800	800	800	800	800
Trunk Groups in an ARS/AAR Pattern	6	6	6	16	6	6	6	6	16
UDP (Entries)	NA/240	NA/240	240	50,000	240	NA/240	NA/240	10,000	50,000
TOD Charts	8	8	8	8	8	8	8	8	8

2. AAR is **not an optional feature** in G3sV2 ASP.
3. ARS is available in G3s if the Automatic Route Selection Option Is selected.
4. This is the number of 12 character inserted-digit-strings available for AAR/ARS preferences.

Table C-1. Maximum System Parameters For Hardware and Software Items (continued)

ITEM	G3 V1				G3V1.1 or V2				
	G3vsV1 ABP/PBP	G3sV1 ABP/PBP	G3iV1/ G3i-Global	G3rV1	G3iV1.1- 286	G3vsV2 ABP/PBP	G3sV2 ABP/PBP	G3iV2- 386	G3rV2
Attendant Service									
Attendant Consoles(day:night) (5)	4:1	6:1	6:1/15:1	27:1	15:1	4:1	6:1	15:1	27:1
Attendant Console 100s Groups/Attendant	20	20	20	20	20	20	20	20	20
Attendant Control Restriction Groups	64	64	64	96	96	96	96	96	96
Centralized Attendant Service									
Release Link Trunks at Branch	NA/99	NA/99	99	99	99	NA/99	NA/99	99	255
Release Link Trk Grp at Branch	NA/1	NA/1	1	1	1	NA/1	NA/1	1	1
Release Link Trunks at Main	NA/100	NA/100	400	4,000	400	NA/100	NA/100	400	4,000
Release Link Trk Grp at Main (6)	NA/32	NA/32	99	666	99	NA/32	NA/32	99	666
Other Access Queues									
Max. Number of Queues	1	1	1 (12)	12	12	12	12	12	
Max. Number of Queue Slots (7)	30	30	50/80	80	80	30	30	80	80
Size range of Reserved Queue	NA	NA	NA (2-75)	2-75	2-75	2-25	2-25	2-75	2-75
Reserved Queue Default Size	NA	NA	NA (5)	5	5	5	5	5	5
(Queue Length	30	30	30/80	300	80	30	30	80	300
Switched Loops/Console	6	6	6	6	6	6	6	6	6
Authorization									
Authorization Codes	1,500	1,500	5,000	90,000	5,000	1,500	1,500	5,000	60,000
Classes of Restriction	64	64	64/96	96	96	96	96	96	96
Classes of Service	16	16	16	16	16	16	16	16	16
Length of Authorization Code	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7
Length of Barrier Code	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7
Length of Forced Entry Account Codes	NA/1-15	NA/1-15	1-15	1-15	1-15	NA/1-15	NA/1-15	1-15	1-15
Restricted Call List	1	1	1	1	1	1	1	1	1
Remote Access Barrier Codes	10	10	10	10	10	10	10	10	10
CDR Forced Entry Account Code List	NA/1	NA/1	1	1	1	NA/1	NA/1	1	1
Toll Call List	1	1	1	1	1	1	1	1	1
Unrestricted/Allowed Call Lists	10	10	10	10	10	10	10	10	10
Total Call List Entries	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Automatic Callback Calls	20	20	160/240	1,000	160	20	20	240	1,500
Automatic Wakeup									
Simultaneous Display Requests	10	10	10	10	10	10	10	10	30
Wakeup Requests per System	200	200	1,600/2,400	10,000	1,200	200	200	2,400	15,000
Wakeup Request per Extension	1	1	1	1	1	1	1	1	1
Wakeup Requests per 15 min Interval	150	150	300	950	300	150	150	450	950

5. For G3vs, there can be four day consoles if there are no night consoles. Three of the four must be powered by auxiliary power.

6. The number of "Release Link Trunk Groups at Main" is the same as the number of trunk groups in the system.

7. The "Maximum number of queue slots" is referred to as "emergency access queue length" in G1.

Table C-1. Maximum System Parameters For Hardware and Software Items (continued)

ITEM	G3 V1				G3 V1.1 or V2				
	G3veV1 ABP/PBP	G3sV1 ABP/PBP	G3iV1/ G3i-Global	G3rV1	G3iV1.1- 286	G3vsV2 ABP/PBP	G3sV2 ABP/PBP	G3iV2- 386	G3rV2
Basic CMS									
Daily Summary Reports	7	7	7	7	7	7	7	7	7
Measured Agents	75	75	200	200	200	75	75	200	200
Measured Splits	12/24	12/24	99	99	99	12/24	12/24	99	99
Measured Trunk Groups	16/32	16/32	99	32	32	16/32	16/32	32	32
Measured VDNs	NA/24	NA/24	99	512	99	NA/24	NA/24	99	512
Reporting Periods (30 or 60 min)	25	25	25	25	25	25	25	25	25
Number of Terminal User IDs	5	5	5	8	5	5	5	5	8
Cabinets									
EPN									
MCC(8)	NA	NA	2	21	2	NA	NA	2	21
SCC(8)	NA	NA	8	80	8	NA	NA	8	80
Small (Upgrades only)(9)	NA	NA	2	20	2	NA	NA	2	20
Inter-Port Network Connectivity									
Port Networks	1	1	3	22	3	1	1	3	22
Max No. of Port Networks/Cabinet	1	1	1	2	1	1	1	1	2
Switch Node Carriers (Simplex)	NA	NA	NA	2	NA	NA	NA	NA	2
Switch Node Carriers (Duplex)	NA	NA	NA	4	NA	NA	NA	NA	4
DS1 Converter Complex (Simplex)	NA	NA	NA	20	NA	NA	NA	NA	20
DS1 Converter Complex (Duplex)	NA	NA	NA	40	NA	NA	NA	NA	40
PPN									
MCC (10)	NA	NA	1	1	1	NA	NA	1	1
SCC/ESCC	NA	4	4	NA	4	NA	4	4	NA
CSCC	1	NA	NA	NA	NA	1	NA	NA	NA
Remote Modules									
Remote Port Network	NA	NA	2/1	21	2	NA	NA	2	21
Call Appearances									
Bridged Images/Appearance	7	7	7	15	7	7	7	7	15
Call Appearances/Station(11)	54	54	54	54	54	54	54	54	54
Max. Appearances per Ext.	10	10	10	10	10	10	10	10	10
Min. Appearances per Ext.	2	2	2	2	2	2	2	2	2
Total Bridged Appearances	200	200	1600/2,400	10,000	1,600	200	200	2,400	25,000
Max.Simultaneous Off-Hook per Call(12)	5	5	5	5	5	5	5	5	5

8. The EPNs in G3r can be DS1-remote EPNs.

9. Small systems refer to the two-carrier cabinet systems that are no longer sold to new customers.

10. MCC includes Medium Cabinet.

11. The number of call appearances is the sum of primary and bridged appearances; at most ten can be primary. A maximum of 54 administrable buttons are supported for the 7434D terminal—34 buttons in the basic terminal and an additional 20 buttons in the coverage module.

12. Does not apply to conferencing.

Table C-1. Maximum System Parameters For Hardware and Software Items (continued)

ITEM	G3 V1				G3 V1.1 or V2				
	G3vsV1 ABP/PBP	G3sV1 ABP/PBP	G3iV1/ G3i-Global	G3rV1	G3iV1.1- 2 8 6	G3vsV2 ABP/PBP	G3sV2 ABP/PBP	G3iV2- 386	G3rV2
Call Coverage									
Coverage Answer Groups (CAG)	30	30	200	500	200	30	30	200	750
Coverage Paths	150	150	600	5,000	600	150	150	600	7,500
With Hospitality Parameter Reduction	NA/5	NA/5	5	5	5	NA/5	NA/5	5	5
Coverage Paths Incl. in Call Covg.Report	100	100	100	100	100	100	100	100	100
Coverage Path per Station (13)	4	4	4	4	4	4	4	4	4
Coverage Points in a Path	3	3	3	3	3	3	3	3	3
Max Users/Coverage Path(14)	500	500	2900 (3500)	21,875	2900	500	500	3,500	36,065
Members per CAG	8	8	8	8	8	8	8	8	8
Call Detail Recording									
CDRU Trackable Extensions	200	200	1,600, 2400	10,000	1,600	200	200	2,400	25,000
Intra-switch Call Trackable Extensions	100	100	100	500	100	100	100	100	500
No. of CDRUs/System (15)	1	1	1	1	1	1	1	1	1
Call Forwarding (Follow-me)									
Call Forwarded Digits (off-net)	16	16	16	16	16	16	16	16	16
Call Forwarded Numbers	200	200	1,600/2,400	10,000	1,600	200	200	2,400	25,000
Call Park									
Attnd.Grp Common Shared Exten.Nos.	10	10	10	40	10	10	10	10	80
No. of Parked Calls	180	180	723	5,302	723	180	180	723	5,302
Call Pickup Groups									
Call Pickup Members/Group	50	50	50	50	50	50	50	50	50
Call Pickup Members/System	200	200	1600/ 2400	10,000	1,600	200	200	2,400	25,000
No. of Groups	100	100	800	5,000	800	100	100	800	5,000
With Hospitality Parameter Reduction	NA/5	NA/5	5	5	5	NA/5	NA/5	5	5

13. Only available with ABP when AT&T Voice Power adjunct (AUDIX, AUDIX Voice Power, AUDIX Voice Power Lodging, and DEFINITY AUDIX) are used.

14. The maximum number of users per coverage path equals the number 01 dial plan extensions (including hunt groups, TEGs, etc.).

15. The CDRU adjunct capacity is 40,000 calls per hour, and exceeds the system call capacity for all systems except for G3r.

Table C-1. Maximum System Parameters For Hardware and Software Items (continued)

ITEM	G3 V1				G3 V1.1 or V2				
	G3vsV1 ABP/PBP	G3sV1 ABP/PBP	G3iV1/ G3i-Global	G3rV1	G3iV1.1- 286	G3vsV2 ABP/PBP	G3sV2 ABP/PBP	G3iV2- 386	G3rV2
Call Vectoring/Call Prompting									
Expert Agent Selection									
Skill Groups	NA	NA	NA	NA	NA	NA/24	NA/24	99	255
VDN Skill Preferences	NA	NA	NA	NA	NA	NA/3	NA/3	3	3
Multiple Skills per Call	NA	NA	NA	NA	NA	NA/3	NA/3	3	3
Multiple Skills per Agent	NA	NA	NA	NA	4	NA/4	NA/4	4	4
Agent Login IDS	NA	NA	NA	NA	NA	NA/450	NA/450	1,500	10,000
Multiple Splits per Call	NA/3	NA/3	3	3	3	NA/3	NA/3	3	3
Priority Levels	NA/4	NA/4	4	4	4	NA/4	NA/4	4	4
Recorded Announcement	NA/128	NA/128	128	256	128	NA/128	NA/128	128	256
Steps per Vector	NA/15	NA/15	15	15	32	NA/32	NA/32	32	32
Vector Directory Numbers	NA/100	NA/100	500	3,000	500	NA/100	NA/100	512	20,000
Measured VDNs	NA/100	NA/100	500	2,000	500	NA/100	NA/100	512	2,000
Vectors per System	NA/48	NA/48	256	512	256	NA/48	NA/48	256	512
CallVisor ASAI									
Active Station Controlling Assoc.	NA	NA/250	2,000/NA	6,000	2,000	NA	NA/250	2,000	6,000
Call Controllers per Call	NA	NA/1	1/NA	1	1	NA	NA/1	1	1
Call Monitors per Call	NA	NA/14	14/NA	14	1	NA	NA/1	1	1
Extension Controllers per Station Domain	NA	NA/2	2/NA	2	2	NA	NA/2	2	2
Max. Simultaneous Call Classif.	NA	NA/40	40/NA	100	40	NA	NA/40	40	400
No. of ASAI Links	NA	NA/4	8/NA	8	8	NA	NA/4	8	8
Notification Requests	NA	NA/50	170/NA	460	170	NA	NA/50	170	460
Simultaneous Active Adj.Controlled Calls	NA	NA/75	300/NA	3,000	300	NA	NA/75	300	3,000
Switch to Adjunct Associations	NA	NA/127	127/NA	127	127	NA	NA/127	127	127
Conference Parties	6	6	6	6	6	6	6	6	6
Simultaneous three-way Conf. Calls (16)	161	161	483	3,542	483	161	161	483	3,542
Simultaneous six-way Conf. Calls (17)	80	80	240	1,760	240	80	80	240	1,760
Data Parameters									
Administered Connections	NA/24	NA/24	128	128	128	NA/24	NA/24	128	128
Permanent Switched Call	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alphanumeric Dialing									
Max. entries	50	50	200	1,250	200	50	50	200	1,250
Characters/Entry	22	22	22	22	22	22	22	22	22
Digital Data Endpoints	75	75	800	5,000	800	75	75	800	7,500

16. Simultaneous three-way Conference Call=(483/3)* number PNs. Simultaneous three-way Conference Call is limited by the number of Simultaneous Circuit-Switched Calls of 180 in G3sV2.

17. Simultaneous six-way Conference Call=(483/6)* number PNs.

Table C-1. Maximum System Parameters For Hardware and Software Items (continued)

ITEM	G3 V1				G3V1.1 or V2				
	G3vsV1 ABP/PBP	G3sV1 ABP/PBP	G3iV1/ G3i-Global	G3rV1	G3iV1.1- 286	G3vsV2 ABP/PBP	G3sV2 ABP/PBP	G3iV2- 386	G3rV2
Dial Plan									
DID LDNs	8	8	8	20	8	8	8	8	20
Extensions (18)	500	500	2900/ 3500	21,875	2900	500	500	3,500	36,065
Extension No. Portability (19)	NA/240	NA/240	240	50,000	240	NA/240	NA/240	10,000	50,000
Feature Dial Access Codes									
No. of Access Codes	70	70	70	70	70	70	70	70	70
No. of Digits	1-3	1-3	1-3	1-4	1 4	1-4	1 4	1-4	1 4
Integrated Directory Entries	204	207	1607/ 2407	10,000	1,616	207	207	2,416	25,028
Max Extension Size	5	5	5	5	5	5	5	5	5
Min Extension Size	1	1	1	1	1	1	1	1	1
Miscellaneous Extensions (20)	150	150	800	3317	900	150	150	900	3317
Names									
No. of names (21)	448/464	448/464	3,406/4,215	22,569	3,615	448/464	448/464	4,215	36,511
No. of characters in a name	15	15	15	15	15	15	15	15	15
Non-DID LDNs	50	50	50	666	50	50	50	50	666
Prefix Extensions	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Trunk Dial Access Codes									
No of Access Codes	105	105	197	884	157	49/65	49/65	317	884
No of digits	1-3	1-3	1-3/1-4	1-4	1-4	1-4	1-4	1-4	1-4
Do Not Disturb (DND)									
DND Requests per system	200	200	1600/ 2400	10,000	1,600	200	200	2,400	25,000
Simultaneous Display Requests	10	10	10	10	30	10	10	10	30

18. Extensions include stations, data endpoints, hunt groups, announcements, TEGs, VDNs, common shared extensions, and code calling IDs.

19. The numbers shown in "Extension Number Portability" are Uniform Dialing Plan (UDP) entries.

20. Used for PCOL groups, common shared extensions, access endpoints, administered TSCs, code calling IDs, VDNs, LDNs, hunt groups, announcements, and TEGs.

21. The Number of Names = number of stations + attendant consoles + trunk groups + digital data endpoints + miscellaneous extensions.

Table C-1. Maximum System Parameters For Hardware and Software Items (continued)

ITEM	G3 V1				G3 V1.1 or V2				
	G3vsV1 ABP/PBP	G3sV1 ABP/PBP	G3iV1/ G3i-Global	G3rV1	G3iV1.1- 2 8 6	G3vsV2 ABP/PBP	G3sV2 ABP/PBP	G3iV2- 386	G3rV2
Facility Busy Indicators									
Buttons per Tracked Resource	100	100	100	100	100	100	100	100	100
No. of Indicators (Station & Trk Grps)	450	450	2400/3600	2400	2400	450	450	3,600	5,000
Hunt Groups or Splits									
Announcements per Group	2	2	2	2	2	2	2	2	2
Announcements per System	128	128	128	256	128	128	128	128	256
Groups and/or Splits	12/24	12/24	88	255	88	12/24	12/24	99	255
With Hospitality Parameter Reduction	NA/5	NA/5	5	5	5	NA/5	NA/5	5	5
Group Members per Group/Split	150	150	200	999	200	150	150	200	999
Group Members per System	150	150	500	3,000	500	150	150	500	5200
Measured ACD Agents (Switch Limits)									
Agents Logged in per System	75	75	400	1023	400	150	150	500	5200
Logged-In Splits per Agent	3	3	3	3	4	4	4	4	4
ACD Supervisor Assist Per System (22)	12/24	12/24	99	255	99	12/24	12/24	99	255
Queue Slots per Group	200	200	200	999	200	200	200	200	999
Queue Slots per System	200	200	1,000	10,000	1000	200	200	1,000	10,500
Intercom Translation Table (ICOM)									
Automatic/Manual and Dial									
ICOM groups per system	10	10	32	256	32	10	10	32	256
Auto/Manual	16	16	32	256	32	10	10	32	256
Dial	16	16	32	256	32	10	10	32	256
Members per ICOM group									
Auto	32	32	32	32	32	32	32	32	32
Dial	32	32	32	32	32	32	32	32	32
Members per System	320	320	1,024	8,192	1,024	320	320	1,024	8,192

22. One supervisor assist per split.

Table C-1. Maximum System Parameters For Hardware and Software Items (continued)

ITEM	G3 V1				Q3 V1.1 or V2				
	G3vsV1 ABP/PBP	G3sV1 ABP/PBP	G3iV1/ G3i-Global	G3rV1	G3iV1.1- 286	G3vsV2 ABP/PBP	G3sV2 ABP/PBP	G3iV2- 386	G3rV2
Last Number Dialed									
Entries/System (23)	275	275	2,400/ 3,200	15,000	2,416	282	282	3,216	32,528
Number of Digits	16	16	16	24	24	24	24	24	24
Leave Word Calling (Switch-Based) (24)									
Messages Stored	450	450	2,000	2,000	2,000	450	450	2,000	2,000
Messages per User	10	10	10	16	10	10	10	10	16
Remote Message Waiting Indicators									
Per Extension	80	80	80	80	80	80	80	80	80
Per System	80	80	80	500	80	80	80	80	500
Simultaneous Message Retrievers	60	60	60	400	60	60	60	60	400
System-wide Message Retrievers	10	10	10	10	10	10	10	10	10
Malicious Call Trace									
Max.Simultaneous Traces	NA	NA	NA	16	16	16	16	16	16
MLDN									
Via DID	8	8	8	20	8	8	8	8	20
Via CO	50	50	50	50	50	50	50	50	50
Modem Pool Groups									
Mode 2/Analog									
Group members per system	64	64	160	2,016	160	64	64	160	2,016
Number of groups	2	2	5	63	5	2	2	5	63
Members per group	32	32	32	32	32	32	32	32	32
Networking									
CAS Nodes	NA/99	NA/99	99	99	99	NA/99	NA/99	99	99
DCS Nodes									
BX.25	NA/20	NA/20	20	63	20	NA/20	NA/20	20	20
ISDN PRI	NA/63	NA/63	63	63	63	NA/63	NA/63	63	63
Hybrid	NA/63	NA/63	63	63	63	NA/63	NA/63	63	63
UDP Nodes	NA/240	NA/240	240	999	240	NA/240	NA/240	240	999

23. Last Number Dialed Entries + Stations + Digital Data Endpoints.

24. Leave Word Calling is available with G3s ABP only if the Voice Mail Application Support Options is purchased.

Table C-1. Maximum System Parameters For Hardware and Software Items (continued)

ITEM	G3 V1				G3 V1.1 or V2				
	G3vsV1 ABP/PBP	G3sV1 ABP/PBP	G3iV1/ G3i-Global	G3rV1	G3iV1.1- 286	G3vsV2 ABP/PBP	G3sV2 ABP/PBP	G3iV2- 386	G3rV2
Partitions									
Attendant Partition	1	1	1	1	1	1	1	1	1
Ext.Partition Group	8	8	8	8	8	8	8	8	8
Extension Partition	8	8	8	8	8	8	8	8	8
Paging									
Code Calling IDs	125	125	125	125	125	125	125	125	125
Loudspeaker Zones	9	9	9	9	9	9	9	9	9
Personal CO Lines (PCOL)									
PCOL Appearances	4	4	4	16	4	4	4	4	16
PCOL Lines (Trunk Groups)	15	15	40/200	100	40	15	15	200	200
PCOL Trunks Per Trunk Group	1	1	1	1	1	1	1	1	1
Port Circuit Pack Slots (25)									
Per EPN									
MCC Simplex	NA	NA	99	99	99	NA	NA	99	99
MCC Duplex	NA	NA	98	98	98	NA	NA	98	98
SCC Simplex	NA	NA	71	71	71	NA	NA	71	71
SCC Duplex	NA	NA	70	70	70	NA	NA	70	70
Small Cabinet Simplex(Upgrade only)	NA	NA	39	39	39	NA	NA	39	39
Small Cabinet Duplex(Upgrade only)	NA	NA	38	38	38	NA	NA	38	38
Per PPN									
MCC Simplex	NA	NA	89	80	89	NA	NA	89	80
MCC Duplex	NA	NA	78	60	78	NA	NA	78	60
SCC Simplex	NA	NA	64	NA	64	NA	NA	64	NA
SCC Duplex	NA	NA	56	NA	56	NA	NA	56	NA
ESCC Simplex	NA	70	NA	NA	NA	70	70	70	NA
ESCC Duplex	NA	NA	NA	NA	NA	NA	NA	68	NA
CSCC Simplex	10	NA	NA	NA	NA	10	NA	NA	NA

25. Only port slots are included in this count. For example, there are 99 port slots per MCC EPN cabinet. One slot in the cabinet is already dedicated for the Tone/Clock board. Other service circuits may be required which would further reduce the number of port slots available. In G3 carriers, a 21st slot of MCC port carriers may be equipped with service boards that do not require tip and ring connections.

Table C-1. Maximum System Parameters For Hardware and Software Items (continued)

ITEM	G3 V1				G3V1.1 or V2				
	G3vsV1 ABP/PBP	G3sV1 ABP/PBP	G3iV1/ G3i-Global	G3rV1	G3iV1.1- 2 8 6	G3vsV2 ABP/PBP	G3sV2 ABP/PBP	G3iV2- 386	G3rV2
Recorded Announcements									
Analog Queue Slots per Annc.	50	50	150	300	150	50	50	150	1,000
Analog Queue Slots per System	50	50	150	300	150	50	50	150	1,000
Calls Connected per Annc.									
Integrated Annc. or Aux. Trunk	5	5	5	255	5	5	5	25	255
Analog Ports	5	5	5	128	5	5	5	25	128
Channels per Integrated Annc. Circuit Pack	16	16	16	16	16	16	16	16	16
Integrated Annc. Circuit Pack	1	1	1	1	1	1	1	1	1
Integrated Annc. Recording Time(Min:Sec)									
16 KB recording	8:32	8:32	8:32	8:32	8:32	8:32	8:32	8:32	8:32
32KB	4:16	4:16	4:16	4:16	4:16	4:16	4:16	4:16	4:16
Integrated Queue Slots per System	50	50	50	300	50	50	50	50	1,000
Recorded Announcements	128	128	128	256	128	128	128	128	256
System Administration									
Admin History File Entries	50	50	250	1,250	250	50	50	250	1,250
Simultaneous Administration Command	1	1	1	5	1	1	1	1	5
Simultaneous Maintenance Command	1	1	1	3	1	1	1	1	5
Simultaneous SM Sessions	3	3	5	8	5	3	3	5	8
Printer Queue Size	50	50	50	50	50	50	50	50	50
Speech Synthesis Circuit Packs	6	6	6	6	6	6	6	6	40
Channels per Speech Circuit Pack	4	4	4	4	4	4	4	4	4
Terminating Extension Groups (TEG)									
TEGs	32	32	32	32	32	32	32	32	32
Users That May Share a TEG	4	4	4	4	4	4	4	4	4
Time Slots									
Simultaneous Ckt Switched Calls (26)	180	180	723	5,302	723	180	180	723	5,302
Total Slots (27)	512	512	1536	11,264	1536	512	512	1,536	11,264
Time Slots for Voice & Data (28)	483	483	1449	10,604	1449	483	483	1,449	10,604
Time Slots per Port Network	512	512	512	512	512	512	512	512	512

26. 241 Simultaneous Circuit-Switched Calls per port network except for G3s, where the maximum is 180.

27. 512 time slots per port network.

28. 483 time slots for Voice and Data per port network. Even though an EPN is supported in G3sV2, giving a total of two port networks, G3sV2 is engineered to support only 180 Simultaneous Circuit-Switched Calls.

Table C-1. Maximum System Parameters For Hardware and Software Items (continued)

ITEM	G3 V1				G3V1.1 or V2				
	G3vsV1 ABP/PBP	G3sV1 ABP/PBP	G3iV1/ G3i-Global	G3rV1	G3iV1.1- 286	G3vsV2 ABP/PBP	G3sV2 ABP/PBP	G3iV2- 386	G3rV2
Tone Classifiers									
Call Classifier Boards	NA/10	NA/10	10	50	10	NA/10	NA/10	10	50
Call Progress/Touch Tone Receivers	NA/80	NA/80	80	400	60	NA/80	NA/80	80	400
Tone Detector Boards	10	20	20	50	20	10	20	20	50
General Purpose Tone Detectors	20	40	40	100	40	20	40	40	100
Touch-Tone Receivers	40	80	80	200	80	80	80	80	200
Prompting TTR Queue Size	NA	NA	80	80	80	NA/80	NA/80	80	80
TTR Queue Size	4	4	4	4	4	4	4	4	4
Trunks									
DS1 Circuit Packs	8	8	30	166	30	8	8	30	166
Queue Slots for Trunks	32/64	32/64	198	1,332	198	32/64	32/64	198	1,332
PRI Interfaces via PI (29)	NA/4	NA/4	8	NA	8	NA/4	NA/4	8	NA
PRI Interfaces via PKTINT	NA/4	NA/4	NA/8	166	NA	NA	NA	NA	166
PRI Temporary Signaling Connections TSCs in System	NA/164	NA/164	656	4,256	656	NA/164	NA/164	656	4,256
Call Associated TSCs	NA/100	NA/100	400	4,000	400	NA/100	NA/100	400	4,000
Non Call Associated TSCs	NA/64	NA/64	256	256	256	NA/64	NA/64	256	256
Administered TSCs	NA/32	NA/32	128	128	128	NA/32	NA/32	128	128
Ringback Queue Slots	120	120	120	1,332	198	32/64	32/64	198	1,332
Total PRI Interfaces (30)	NA/4	NA/4	8	166	8	NA/4	NA/4	8	166
Trunk Groups Hourly Measurements	NA	NA	NA	75	25	25	25	25	75
Trunk Groups In the System	16/32	16/32	99	666	99	16/32	16/32	99	666
Trunk Members in a Trunk Group	50/99	50/99	99	255	99	50/99	50/99	99	255
Trunks in System (incl Rem Access)(32)	50/100	50/100	400	4,000	400	50/100	50/100	400	4,000
With Hospitality Parameter Reduction	NA/NA	NA/NA	50	50	50	NA/50	NA/50	50	50
Measured Trunks in System	50/100	50/100	400	2000	400	50/100	50/100	400	4000

29. Only one PI board is supported in G3vs/G3s (both MCC and SCC), and therefore a total of four physical links, used for BX.25 or PRI, are available.

In G3i, two PI boards can be supported in the MCC, and therefore a total of eight physical links (used for BX.25 or PRI) are available. Since the SCC can only support one PI board, a total of four physical links (used for BX.25 or PRI) are available in the SCC 286 and Medium configurations.

30. All digital stations can be display stations.

Table C-1. Maximum System Parameters For Hardware and Software Items (continued)

ITEM	G3 V1				G3 V1.1 or V2				
	G3vsV1 ABP/PBP	G3sV1 ABP/PBP	G3iV1/ G3i-Global	G3rV1	G3iV1.1- 286	G3vsV2 ABP/PBP	G3sV2 ABP/PBP	G3iV2- 386	G3rV2
Voice Terminals									
Associated Data Modules (e.g.,DTDMs)	75	75	800	5,000	800	75	75	800	7,500
BRI Stations (31)	NA	50	1,000	5,000	1,000	NA	50	1,000	7,000
Digital Stations (32)	200	200	1,600	10,000	1,600	200	200	2,400	25,000
Stations (32)	200	200	1,600	10,000	1,600	200	200	2,400	25,000
Station Button Capacity(K Units)(33)	102.6	102.6	547.2	4120	410.4	68.4	68.4	547.2	5,260

31. All BRI stations can be display stations.

32. G3vs has the same software capacities for stations and trunks as does G3s. However, these software capacities are limited by the cabinet hardware. A typical switch would probably have 20 to 50 stations with 10 to 20 trunks. Station capacities can be reached only by administration without hardware (AWOH). This includes extensions administered without associated hardware.

33. In G3, "Station Button Capacity (units) 'replaces' Maximum Button Modules."

The following examples show how these units can be used. The assumption is that only three call appearances are assigned to the sets (except analog sets which have no call appearances).

- Analog sets (for example, 7104A): G3r, 76 units; all other releases, 62 units.
- Digital sets with 10 buttons (for example, 7403D): G3r, 124 units; all other releases, 102 units.
- Digital sets with 34 buttons, without display (for example, 7405D): G3r, 412 units; all other releases, 342 units.
- Digital sets with 34 buttons, with display (for example, 7405D): G3r, 568 units; all other releases, 472 units.
- 7406D Digital sets with display: G3r, 412 units; all other releases, 342 units.
- BRI sets with 17 buttons, with display (for example, 7506D): G3r, 304 units; all other releases, 250 units.

The station button capacity can support all stations equipped as 7406D digital sets with display.
For example, a total of $342 \times 1200 = 410.4K$ units for the G3iV1.1-286.

System Management

D

Overview

This chapter provides the information necessary for the System Manager to administer DEFINITY Communications System Generic 3 using any of the administration terminals listed later in this section. If system administration will be performed using the DEFINITY Communications System Generic 3 Management Applications (G3-MA), refer to *DEFINITY Communications System Generic 3 Management Applications Operations*, 585-229-202, for system management procedures. Unless otherwise noted, the DEFINITY Communications System will be referred to as the “system” throughout this chapter.

In order to administer the system, the following must first be done:

- Attend the System Customer Training Course.
- Be familiar with the information in the *DEFINITY Communications System Generic 3 System Description*, 555-230-208, and the *DEFINITY Communications System Generic 3-Feature Description*, 555-230-204.
- Obtain a list from the Account Team and determine what hardware has been ordered.
- Using this manual, complete:
 - the Communications Survey
 - the applicable system records and forms
- Retain all the completed system forms in the *Implementation* manual for use in initializing and administering the system.

System Management is the process by which the System Manager controls,

maintains, and monitors the system. The System Manager provides reports which enable the manager to assess system functionality and use. System Management also allows the System Manager to make additions and/or changes as necessary to meet business requirements.

System Manager's Role

The System Manager is responsible for the following:

- Adding, changing, removing, and monitoring the system and voice terminal features on a day-to-day basis
- Performing system backup procedures
- Monitoring system performance
- Maintaining system security

Initialization

After the system is installed and initialized, the System Manager can administer the system using the system administration terminal.

Once completed and duplicated, all forms from the *Implementation* Blank Forms should be sorted into groups. For example, all voice terminal, hunt group, and trunk group forms should be in separate groups. A copy of the Port Assignment Record should be available to keep track of the items being installed in the system. These records can be used as a permanent record to show how the system was initially set up. These records can be replaced as system and voice terminal features are added or removed.

Ongoing Administration

Ongoing administration is the process of using system commands to perform a variety of functions to meet business requirements. These functions include: add, change, display, set time, lli, duplicate, perform system measurements, perform security and alarms, configure, monitor system performance, and remove system and/or voice terminal features.

Record Keeping

Record keeping plays a vital role in system administration. Records provide a current status of what hardware and which features have been installed.

The Port Assignment Record provides a record of how a system is initialized and administered. Ports are the physical location on a circuit pack where terminals, trunks, or system adjuncts are connected. Once port numbers are assigned, they become the "address" of the associated equipment or facility in the system. It is necessary that a record be made and kept of port assignments for system installation/hWalization and ongoing administration.

A work request form or worksheet should be used to keep track of people who requested the features and the features they desired. Follow your company policy concerning keeping records.

You should have thorough training on the following items before attempting to administer the system:

- System and voice terminal features
- Hardware requirements
- Port assignments
- Manager I terminal operation

DEFINITY Administration Terminals

Overview

The terminal supplied with the system must be located within 50 feet of the system cabinet. The terminal consists of a video display and a keyboard that allow a System Manager to communicate with the system. After initialization, the terminal is used to reconfigure translations and to monitor system performance. The terminal can also be used by maintenance personnel.

The system can be equipped with any of the following terminals:

- 715 Multi-Task (MT) Terminal
- 513 BCT
- 610 BCT
- 615 MT Terminal
- 4410 Terminal
- 4425 Terminal
- AT&T Personal Computer (PC) 6300 using an AT&T 513, 4410, or 4425 emulation software package
- DEC VT220

If your DEFINITY System is being used with a G3-MA, refer to *DEFINITY Communications System Generic 3 Management Applications—Operations*, 585-229-202, for terminal operating instructions and system management procedures. No operating instructions are given in this document.

The operating instructions in this document cover the 715, 513, 4410, 4425, and VT220 terminal types. The operating instructions for the 610 BCT or 615 MT terminal are the same as for the 513 BCT if the 610 or 615 MT terminal is supplied with the 513 emulation cartridge or as for the 4410 if the 513 emulation cartridge is not supplied with the 610 BCT or 615 MT terminal. The instructions describe how the terminal keys can be used, for example, to enter, cancel, display, and change system translations. Instructions on how to use the function keys are also provided.

The terminal key instructions are provided in Table D-1.

Refer to the following manuals for additional operation information on the 715, 513, 610, 4410, or 4425 terminals:

- *AT&T 715 MT Terminal User's Guide and Service Manual*, 999-300-760, for the 715 terminal
- *AT&T Information Systems 513 Business Communications Terminal (BC&T) Users Guide*, 999-700-486IS, for the 513 BCT
- *AT&T Information Systems 610 Business Communications Terminal (BCT) Users Guide*, 999-300-270IS, for the 610 BCT
- *AT&T Information Systems 615 Multi-Tasking Terminal Users Guide*, 999-300-302IS, for the 615 MT terminal
- *AT&T Information Systems Display Terminal Users Guide*, 999-300-180IS, for the 4410 terminal
- *AT&T Information Systems User's Guide*, 999-310-181IS, for the 4425 terminal
- The owners manual for the VT220 terminal. You must order this book from Digital Equipment Corporation. The telephone number is 1-800-DIGITAL.

715 MT Terminal

The 715 MT terminal emulates the AT&T 615 MT Terminal/System 75 Cartridge combination (513 emulation) when operated in the "BCS" operating mode. The terminal operating mode is set by selecting the **Emulation** option of the **User Preferences** submenu or via an escape sequence.

Keyboard Overview

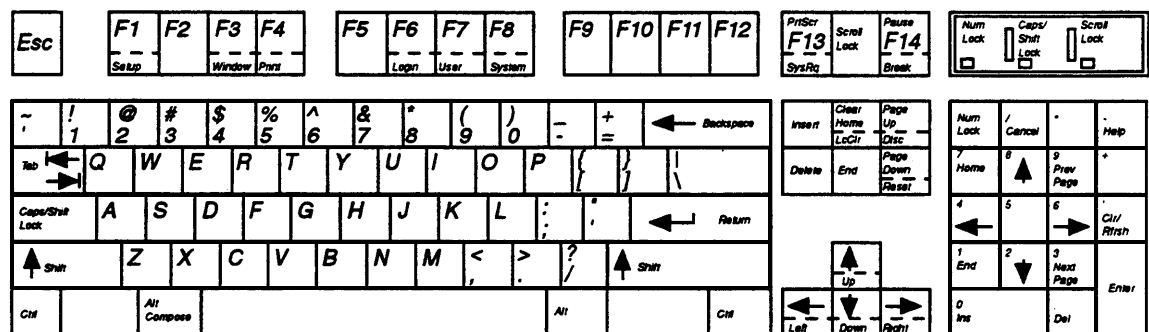


Figure D-1. 715 MT Keyboard

The 715 keyboard is equipped with special keys that allow the user to make corrections and do editing functions. Various function keys perform specific

functions. Figure D-1 shows the layout of the 715 keyboard.

The keyboard's top row includes 14 function keys that provide access to the modules and features of the terminal. They are used as terminal function keys, as screen-labeled keys, or as function keys. For more information on using or programming the 715's function keys, see the *AT&T 715 MT Terminal User's Guide and Service Manual*, 999-300-760. Table D-1 provides a list of the cursor keys, function keys, and programmable keys with a brief description of each.

513 BCT Keyboard

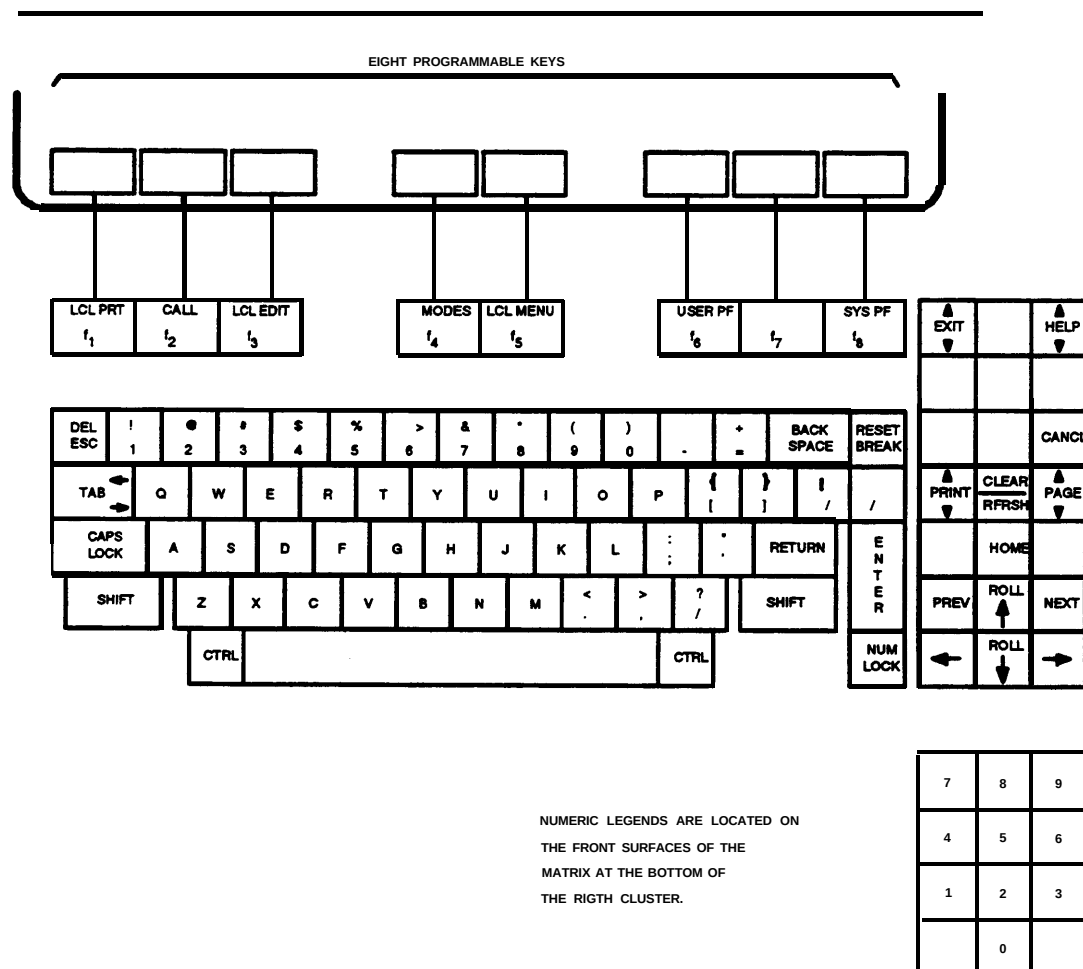


Figure D-2. 513 BCT Keyboard Function Keys and Programmable Keys

The 513 BCT keyboard is equipped with special cursor keys that allow the user to make corrections and perform editing functions. Function keys that allow

single keystrokes to do specific functions are also provided. Each type of key used on the 513 BCT is described in the following paragraphs.

Cursor Keys

The cursor keys allow the user to move the cursor between fields and pages on a screen form. The cursor must be positioned on a field before the user can change information in that field. The backspace key is used to correct typing mistakes by backspacing and overstriking mistyped characters.

Programmable Keys

The 513 BCT keyboard is equipped with eight programmable keys ([F1] to [F8]) located at the top of the keyboard. Each key can be programmed by the user to perform a specific function. The keys are programmed by accessing the **USER PF KEY SET-UP** screen form. Figure D-2 shows the layout of the 513 BCT keyboard.

Function Keys

Three function keys ([CANCL] , [ENTER] , and [RETURN]) are provided.

The [CANCL] key is used to erase a form or command. Once the key is pressed, the system returns the user to the **enter command:** (tasks request) level and asks for a new command. Any data entered on a screen form prior to pressing [CANCL] is ignored. Any command entered is ignored and the user is returned to the **enter command:** prompt.

The [ENTER] key is used to store the data entered on a screen form into the system's memory.

The [RETURN] key, when pressed, automatically moves the cursor to the next field on a screen form.

How to Program the Function Keys for a 513 BCT

This section covers the procedures used to program the function keys for a 513 BCT. The programmable function keys can be used to save time by eliminating unnecessary typing. For example, a function key can be programmed to type the **change station** command. When the programmed key is pressed, **change station** appears on the terminal screen. The user then enters the extension number associated with the voice terminal. The user should be familiar with the User PF Keys section in the *513 BCT User's Guide*, 999-700-486IS, before attempting to program the function keys. Program the function keys as follows:

1. Turn on the 513 BCT.
2. Log into the system.
3. Press **[SHIFT]** and **[F5]** (LCL MENU). See Figure D-3.
4. The function for each programmable key is displayed at the bottom of the screen. See Figure D-3.
5. Press **[F3]** (USER PF SET UP). See Figure D-4.
6. Screen displays the **USER PF KEY SET-UP** screen form. See Figure D-4. The values displayed are default values which can be changed.
7. Press **[F8]** (MONITOR MODE). This allows the user to program control characters associated with the **USER PF KEY SET-UP** screen form. See Figure D-4 or Figure D-5 .
8. To program **[F1]** , position the cursor under the Action heading for **[F1]** .
9. Type in send .
10. Position the tumor under the Label heading.
11. Enter the desired administration command. (This command can be typed on two lines.) For example, if you type in duplicate station, this is the function assigned to **[F1]** . See Figure D-5 for examples on how to enter the **duplicate station**, **display station** and **change station** commands.
12. Position the tumor under the Function String heading.
13. Type in the desired string, up to 80 characters.
14. Repeat the above steps for other keys you want to program.
15. Press the **[F6]** (SAVE ALL) key. This stores the currently displayed values for all the keys that were programmed. The default values that were not changed remain with the key.
16. The screen is blank except for the labels displayed at the bottom of the screen. See Figure D-3.

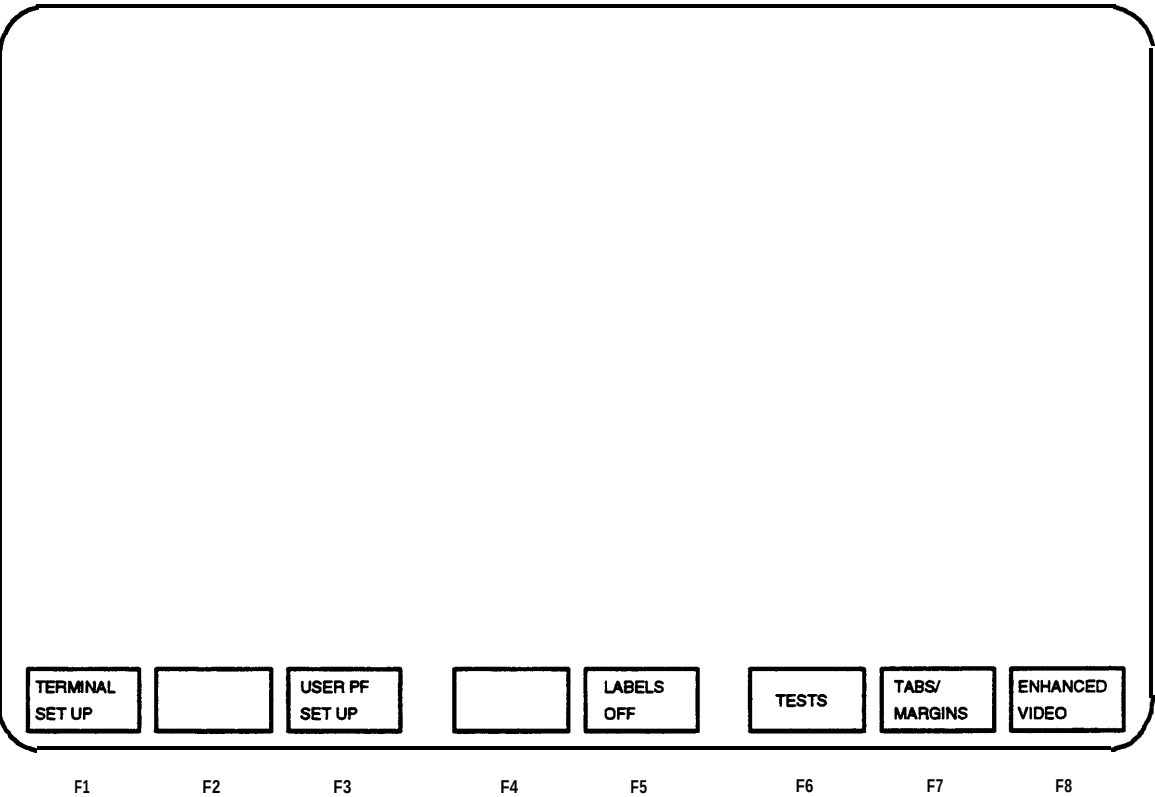


Figure D-3. Screen Labels for LCL MENU Key (513 BCT)

USER PF KEY SETUP

	Action	Label	Function String
f1:	keyed	f1	O c -----
f2:	keyed	f2	O d -----
f3:	keyed	f3	O e -----
f4:	keyed	f4	O f -----
f5:	keyed	f5	O g -----
f6:	keyed	f6	O h -----
f7:	keyed	f7	O i -----
f8:	keyed	f8	O j -----

PREVIOUS
FIELD

NEXT
FIELD

STEP

DEFAULT
VALUES

SAVED
VALUES

SAVE
ALL

PRINT
SCREEN

MONITOR
MODE

F 1
F 2
F 3
F 4
F 5
F 6
F 7
F 8

Figure D-4. USER PF SET-UP Key Display (513 BCT)

USER PF KEY SET-UP

	Action	Label	Function String
f1:	send	DUPLICAT STATION	duplicate stationHc
f2:	send	DISPLAY STATION	display stationHc
f3:	send	CHANGE STATION	change stationHc
f4:	keyed	f4	Of
f5:	keyed	f5	Og
f6:	keyed	f6	Oh
f7:	keyed	f7	Oi
f8:	keyed	f8	Oj

PREVIOUS FIELD

NEXT FIELD

STEP

DEFAULT VALUES

SAVED VALUES

SAVE ALL

PRINT SCREEN

MONITOR MODE

F1

F2

F3

F4

F5

F6

F7

F8

Figure D-5. Assigning Administrative Functions to Function Keys (513 BCT)

Table D-1. Terminal Keys

For This Function	Terminal Type			
	715‡	513 or 610* or 615 MT*	4410 or 610† or 615 MT†	4425
	Press Key Below:			
To cancel a screen form or command Once the key is pressed, the system returns the user to the enter command : (tasks request) level. Any data entered on a screen form prior to pressing CANCL (Cancel) or [F1] is ignored. For the 4410 or 4425, the associated [F1] screen label (CANCEL) is automatically assigned.	Cancel	CANCL	[F1]	[F1]
To clear and redraw a screen form The system redraws the same screen. For the 4410 or 4425, the associated [F2] screen label (REFRESH) is displayed when the add , change , or display command is entered and the screen form is displayed.	Clr/ Rfrsh	CLEAR RFRSH	[F2]	[F2]
To clear all data in a field The cursor must be positioned at the field the user wants to clear before pressing this key. For the 4410 or 4425, the associated [F4] screen label (CLEAR FIELD) is displayed when the add or change command is entered and the screen form is displayed.	(shift) Clear Home	CLEAR RFRSH (shift)	[F4]	[F4]

* If a 513 emulation cartridge is used for a 610 or 615 MT, the 610 or 615 MT Terminal keys will function the same as the 513 BCT keys.

† If a 513 emulation cartridge is not used with a 610 or 615 MT, the 610 or 615 MT Terminal keys will function the same as the 4410 keys.

‡ The 715 must be set to the "BCS" emulation mode which causes it to function like a 615 MT Terminal equipped with a 513 emulation cartridge.

Table D-1. Terminal Keys (continued)

For This Function	Terminal Type			
	715‡	513 or 610* or 615 MT*	4410 or 610† or 615 MT†	4425
	Press Key Below:			
To display the next page of a screen form Used to display the next page of a screen form that has more than one page. For the 4410 or 4425, the associated [F7] screen label (NEXT PAGE) appears when the screen form has more than one page.	Page Down	PAGE	[F7]	[F7]
To display the previous page of a screen form Used to display the previous page of a form which has more than one page. For the 4410 or 4425, the associated [F8] screen label (PREV PAGE) is displayed only when the screen has more than one page.	Page Up	PAGE (shift)	[F8]	[F8]
To display the first page of a multiple screen form Used to display the first page of multiple forms when using the command (typical— display station xxxx count 1-10). For the 4410 or 4425, the associated [F6] screen label (NEXT FORM) is displayed only when multiple forms are to be displayed.	—	—	[F6]	[F6]

* If a 513 emulation cartridge is used for a 610 or 615 MT, the 610 or 615 MT Terminal keys will function the same as the 513 BCT keys.

† If a 513 emulation cartridge is not used with a 610 or 615 MT, the 610 or 615 MT Terminal keys will function the same as the 4410 keys.

‡ The 715 must be set to the "BCS" emulation mode which causes it to function like a 615 MT Terminal equipped with a 513 emulation cartridge.

Table D-1. Terminal Keys (continued)

For This Function	Terminal Type			
	715‡	513 or 610* or 615 MT*	4410 or 610† or 615 MT†	4425
	Press Key Below:			
To display help information for a field or command Used to display help information on the type of data that can be entered into the field associated with the current cursor position. The system displays all the possible entries the user can input for that field. This key can also be pressed at the enter command: level to obtain a list of all the system commands. <u>[HELP]</u> can be pressed at other command levels to obtain a list of objects and entries for identifiers. For the 4410 or 4425, the associated <u>[F5]</u> screen label (HELP) is displayed when the user logs into the system.	<u>[Help]</u>	<u>[HELP]</u>	<u>[F5]</u>	<u>[F5]</u>
To move the cursor to the next field on a line If the cursor is in the last field on a line, then it moves to the first field on the next line. If the cursor is in the last field on the last line, then it moves to the first field on the first line.	<u>[→]</u> or <u>[TAB]</u> or <u>[Return]</u>	<u>[→]</u> or <u>[TAB]</u> or <u>[→]</u>	<u>[→]</u> or <u>[TAB]</u>	<u>[→]</u> or <u>[TAB]</u>

* If a 513 emulation cartridge is used for a 610 or 615 MT, the 610 or 615 MT Terminal keys will function the same as the 513 BCT keys.

† If a 513 emulation cartridge is not used with a 610 or 615 MT, the 610 or 615 MT Terminal keys will function the same as the 4410 keys.

‡ The 715 must be set to the "BCS" emulation mode which causes it to function like a 615 MT Terminal equipped with a 513 emulation cartridge.

Table D-1. Terminal Keys (continued)

For This Function	Terminal Type			
	715‡	513 or 610* or 615 MT*	4410 or 610† or 615 MT†	4425
	Press Key Below:			
To move the cursor to the previous field on a line If the cursor is in the first field on a line, then it moves to the last field of the previous line. If it is in the first field of the first line, then it moves to the last field of the last line.	[←] or [TAB] (shift)	[←] or [TAB] [←] (shift)	[←] or [TAB] (shift)	[←] or [TAB] (shift)
To move the cursor to the next line If the cursor is on the last line, it moves to the first line.	[↓]	ROLL [↓]	[0] [↓]	[↓]
To move the cursor to the previous line If the cursor is on the first line, it moves to the last line.	[↑]	ROLL [↑]	[2] [↑]	[↑]
To store the data entered on a screen form Used to enter into system memory the data that is displayed on a screen form. For the 4410 or 4425, the associated [F3] screen label (ENTER) is displayed when the add or change command is entered and the associated screen form	[Enter]	[ENTER]	[F3]	[F3]

* If a 513 emulation cartridge is used for a 610 or 615 MT, the 610 or 615 MT Terminal keys will function the same as the 513 BCT keys.

† If a 513 emulation cartridge is not used with a 610 or 615 MT, the 610 or 615 MT Terminal keys will function the same as the 4410 keys.

‡ The 715 must be set to the "BCS" emulation mode which causes it to function like a 615 MT Terminal equipped with a 513 emulation cartridge.

Table D-1. Terminal Keys (continued)

For This Function	Terminal Type			
	715‡	513 or 610* or 615 MT*	4410 or 610† or 615 MT†	4425
		Press Key Below:		
To update the BCMS screen form using Monitor commands(G1) Used to obtain immediate update of real time status reports for agents and splits. Used only with the BCMS monitor bcms split and monitor bcms system commands.	[F6]	[F6]	[F6]	[F6]

- * If a 513 emulation cartridge is used for a 610 or 615 MT, the 610 or 615 MT Terminal keys will function the same as the 513 BCT keys.
- † If a 513 emulation cartridge is not used with a 610 or 615 MT, the 610 or 615 MT Terminal keys will function the same as the 4410 keys.
- ‡ The 715 must be set to the "BCS" emulation mode which causes it to function like a 615 MT Terminal equipped with a 513 emulation cartridge.

4425, 4410, 610, and 615 MT Terminals

The 4425, 4410, 615 MT, and 610 terminals can also be used to administer DEFINITY Communication Systems. The 4425, 4410, 615 MT, and 610 terminals have eight function keys ([F1] through [F8]) that are automatically assigned functions by the system software. These keys allow the user to edit and fill out the screen forms and then submit the forms into system translations. Since the keys are assigned by the system, they cannot be programmed by the user.

The function assigned to each of the keys is displayed at the bottom of the 4425 or 4410 screen. Figure D-4 shows the location of the eight keys and their relationship to the screen for the 4425. Figure D-5 shows the same information for the 4410. Figure D-6 shows the information for the 610. Figure D-7 shows the information for the 615 MT Terminal.

When the user logs into the system and receives the enter command: prompt, the system automatically assigns the **CANCEL** function to [F1] and the **HELP** function to [F5] .

When the user types in a command, the system automatically assigns the **REFRESH** function to [F2] , the **ENTER** function to [F3] , and the **CLEAR FIELD**

function to [F4] . These functions will appear at the bottom of the screen after the station screen form is displayed.

If the screen form has more than one page, the system automatically assigns the **NEXT PAGE** function to [F7] and the **PREV PAGE** function to [F8] . See Table D-1 for a description of how to use the keys.

AT&T PC 6300 Keyboard

The PC 6300 function keys will work like a 4410 if the terminal is equipped with an AT&T 4410 emulation software package or a 4425 if it is equipped with an AT&T 4425 emulation software package. The function keys are automatically assigned by system software when the user logs in.

If the PC is equipped with an AT&T 513 emulation software package, the user must assign function keys such as HELP and NEXT PAGE to the function key labels on the PC screen and then use these keys as function keys. The system does not automatically assign the function keys. The escape sequences that must be assigned to the labels for the function keys are in Table D-2:

Table D-2. Escape Sequences

Label	Escape Sequence
HELP	[ESC] OM
NEXT PAGE	[ESC] [U
PREV PAGE	[ESC] [V
ENTER	[ESC] SB
CANCEL	[ESC] Ow
REFRESH	[ESC] Na

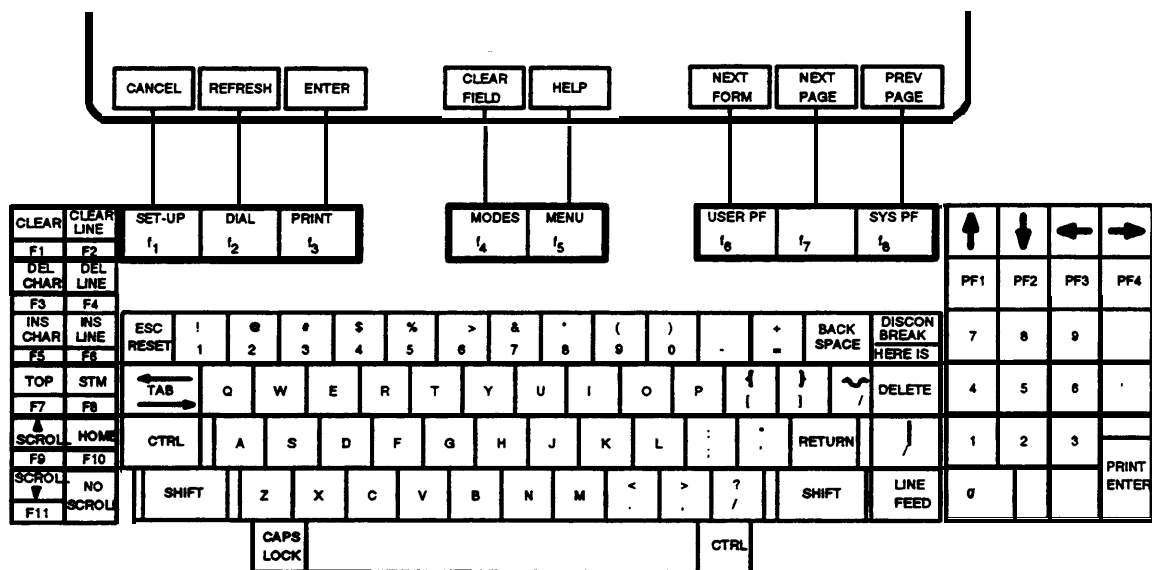


Figure D-6. 4425 Keyboard Assignments

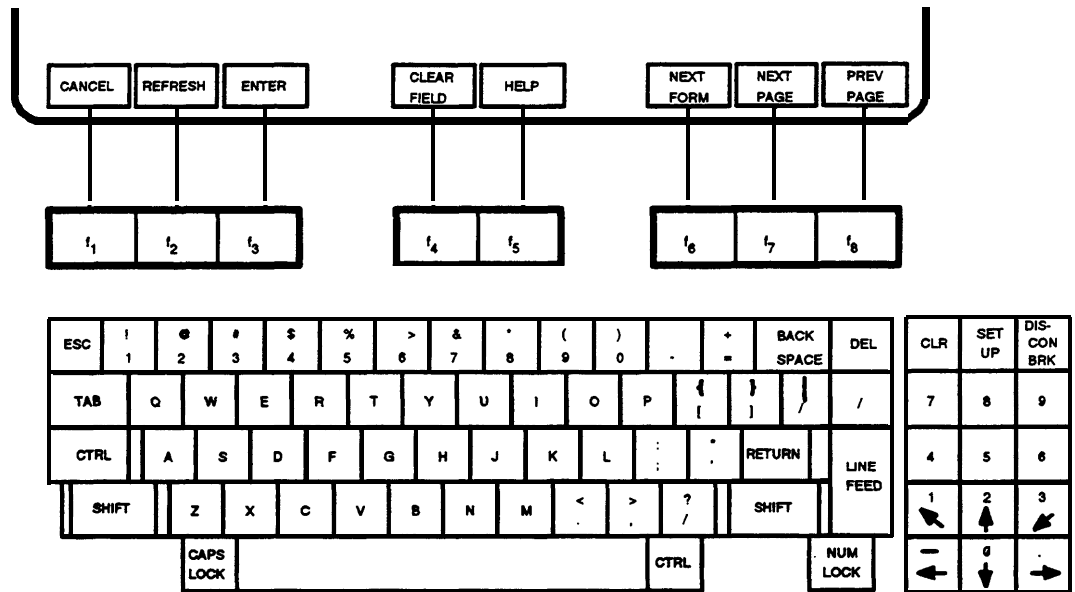


Figure D-7. 4410 Keyboard Assignments

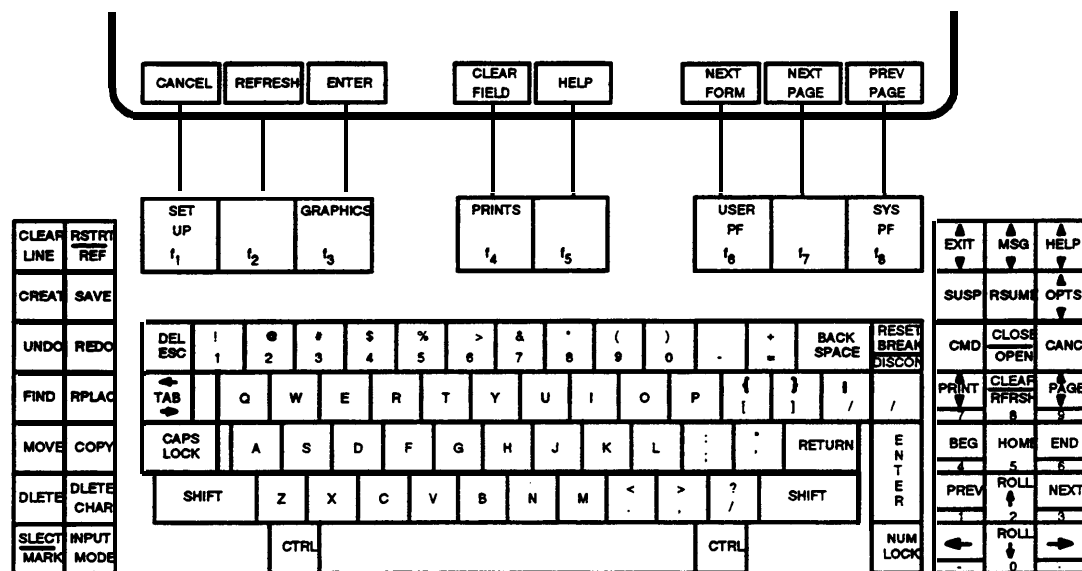


Figure D-8. 610 MT Terminal Keyboard Assignments

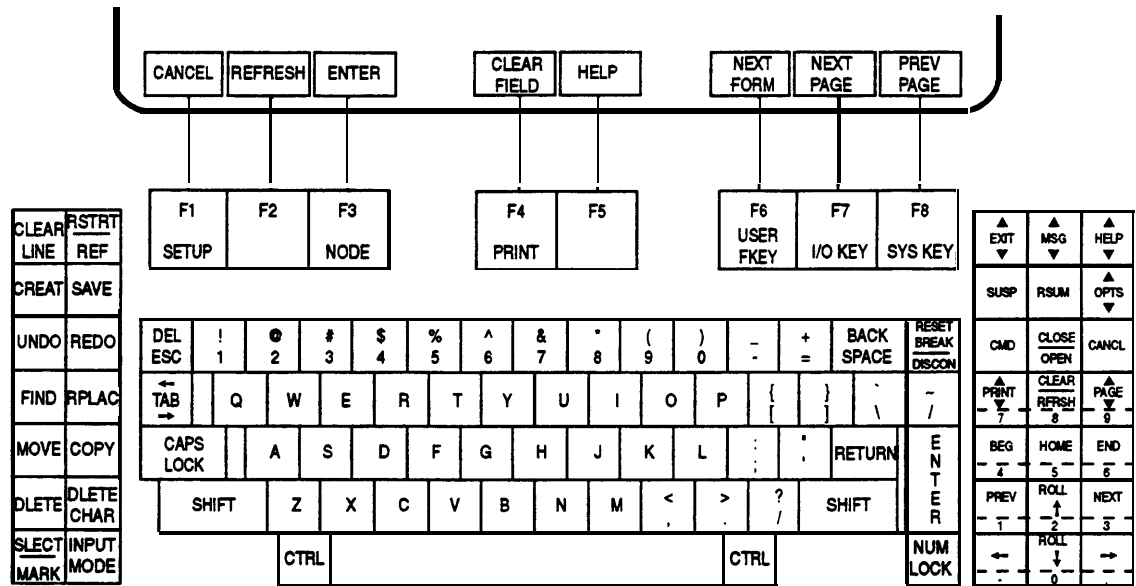


Figure D-9. 615 MT Keyboard Assignments Used Without a 513 Emulation Cartridge

DEC™ VT220 Terminal

G3i-Global also supports the Digital Equipment Corporation's VT220 terminal. This section provides the basic control functions of the VT220. The North American keyboard is used when discussing the function keys. For more information, consult the *VT220 Owner's Manual*.

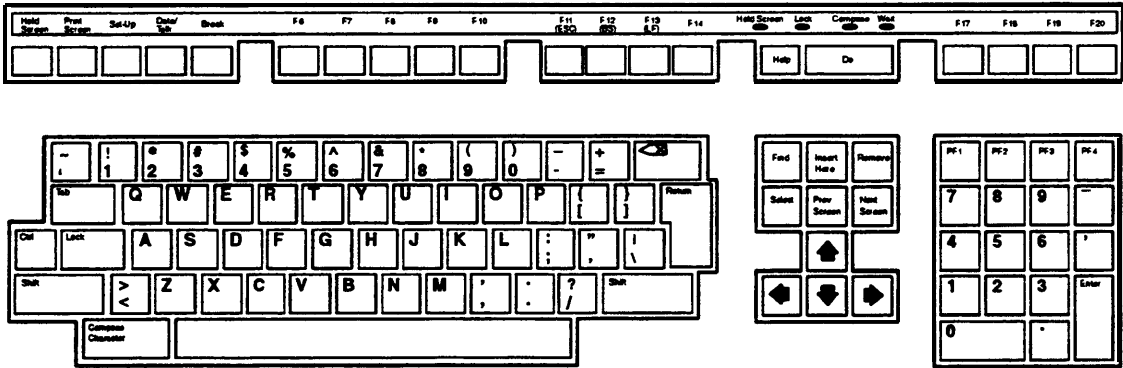


Figure D-10. DEC VT220 North American Keyboard

Table D-3 provides the mapping of the basic control functions of the DEC VT220.

Table D-3. Mapping of Basic Control Functions

FUNCTION	VT220 KEY
Help	Help
Previous Page	Previous Screen
Next Page	Next Screen
Cancel	Remove
Submit	Do
Previous Field	F17
Next Field	F18
Clear Field	F19
Refresh	F20
Next Form	Select
Up Arrow	Up_Arrow
Down Arrow	Down_Arrow
Right Arrow	Right_Arrow
Left Arrow	Left_Arrow
Update Form	Find

Table D-4 provides the escape sequences for the function keys described in the previous table.

Table D-4. Escape Sequences for Function Keys

FUNCTION	KEY	ESCAPE SEQUENCE
Help	Help	<u>[ESC]</u> [28
Previous Page	Previous Screen	<u>[ESC]</u> [5
Next Page	Next Screen	<u>[ESC]</u> [6
Cancel	Remove	<u>[ESC]</u> [3
Submit	Do	<u>[ESC]</u> [29
Previous Field	F17	<u>[ESC]</u> [31
Next Field	F18	<u>[ESC]</u> [32
Clear Field	F19	<u>[ESC]</u> [33
Refresh	F20	<u>[ESC]</u> [34
Next Form	Select	<u>[ESC]</u> [4
Up Arrow	Up Arrow	<u>[ESC]</u> [A
Down Arrow	Down Arrow	<u>[ESC]</u> [B
Right Arrow	Right Arrow	<u>[ESC]</u> [C
Left Arrow	Left Arrow	<u>[ESC]</u> [D
Update Form	Find	<u>[ESC]</u> [1

Table D-5 provides the escape sequences for the display control on the DEC VT220.

Table D-5. Display Control Escape Sequences

TERMINAL CONTROL	ESCAPE SEQUENCE	COMMENTS
Cursor Position	<u>[ESC]</u> [PI;PcH	PI=line, Pc=column
Cursor Position Column	<u>[ESC]</u> [PnC	Pn=column
Save Cursor	<u>[ESC]</u> 7	
Restore Cursor	<u>[ESC]</u> 8	
Top and Bottom Margins	<u>[ESC]</u> [Pt;Pbr	Pt=top line number Pb=bottom line number
Enhancement Video	<u>[ESC]</u> [Ps; . . .; Psm	Ps=0 -> Off Ps=4 -> Underline Ps=5 -> Blinking Ps=7 -> Reverse
Clear Line (1)	<u>[ESC]</u> [K	Erase from the cursor to the end of the line (including the cursor position)
Clear Line (2)	<u>[ESC]</u> [1K	Erase from the beginning of the line to the cursor (including the cursor position)
Clear Line (3)	<u>[ESC]</u> [2K	Erase the complete line
Clear Screen (1)	<u>[ESC]</u> [J	Erase from the cursor to the end of the screen (including the cursor position)
Clear Screen (2)	<u>[ESC]</u> [1J	Erase from the beginning of the screen to the cursor (including the cursor position)
Clear Screen (3)	<u>[ESC]</u> [2J	Erase the complete display
Printer Port	<u>[ESC]</u> [?Psn	Ps=10 -> Printer Ready Ps=11 -> Printer Busy Ps=13 -> No Printer Ps=15 -> Printer Status
Printer Controller	<u>[ESC]</u> [Psi	Ps=0 -> Print Screen Ps=5 -> Set Transp Mode Ps=4 -> Reset Transp Mode

System Administration

Administration Sequence

After the system is installed, the System Manager must enter the translation data into the system memory using the system administration terminal.

Before initializing the system, turn on the terminal and verify that the screen displays **Login:**. If your terminal does not display **Login:**, call your AT&T Account Team.

The *Implementation* manual for your DEFINITY system provides the details for gathering the translation data. It also provides detailed descriptions and procedures required to complete all the screen forms used to enter translation data into the system. The document also provides the administration commands that can be used to administer system and voice terminal features, and error messages.

NOTE:

If you are using a G3-MA, refer to the *DEFINITY Communications System Generic 3 Management Applications Operations*, 555-229-202, for terminal operating instructions and system management procedures.

Obtain all duplicated forms from *Implementation* and sort them into groups. For example, forms for all voice terminals, and hunt and trunk groups should be separated. A copy of the Port Assignment Record should be available to keep track of the items being installed in the system.

When entering the translation data into the system, the System Manager should periodically save the translations on tape. This creates a nonvolatile copy of the translation already entered into the system. If a power outage or system failure occurs, the translation data saved on the tape will not have to be entered again.

The system features should be entered into the switch in an ordered manner. The following is the recommended order in which data should be entered into the system.

1. Login and Password (Change Password, if necessary)
2. Dial Plan
3. Feature Access Codes
4. System Features (Class of Service and Class of Restriction)
5. Console Parameters
6. Attendant Consoles
7. System Parameters
8. Voice Terminals
9. Modules

10. Netcon Channels
11. Groups (hunt groups, pickup groups, etc.)
12. Trunk Groups
13. Automatic Route Selection
14. Administered Connections

These items cannot be added to the system; however, they can be changed to suit business needs by entering the **change** command for that feature and changing the screen form. The **add** command must be used to add trunks, pickup groups, hunt groups, and intercom groups. The **duplicate** command can be used to duplicate voice terminals and data modules.

Login and Password

Once all the forms have been grouped, the System Manager can log into the system using the terminal and receive the **enter command:** prompt. The System Manager can change the password, if so desired.

Establish a Dial Plan

The Dial Plan and Feature Access Codes (FACs) must be administered before voice terminals, hunt groups, pickup groups, coverage groups, and attendant consoles can be administered. The default values for the Dial Plan can be changed if they do not meet business requirements. The Dial Plan can be changed by entering the commands **change dialplan**, **add second-digit**, or **change second-digit** and then changing the default values on the screen form. The Dial Plan can use up to 5 digits, 6 digits for prefixed extensions.

Feature Access Codes

The defaulted values on the FAC form can be changed if they do not meet business requirements. FACs can be changed by entering the command **change feature-access-codes** and then changing the default values on the screen form. The number of digits assigned to the FAC must agree with the Dial Plan.

System Features

System features include the Class of Service (COS) and Class of Restriction (COR). These features cannot be added; they can only be changed. To change these system features, enter the command **change cos** for COS or **change cor 0-95** for COR. Once the screen form is displayed, the data entries can be changed.

Console Parameters and Attendant Consoles

Attendant consoles must be added one at a time. A vacant port on a digital line circuit pack is required for each attendant console used. For reliability, attendant consoles should not be assigned to the same circuit pack.

System Parameters

System parameters allow the System Manager to assign values for system related features such as Leave Word Calling (LWC), Hospitality Features, and Station Message Detail Recording (SMDR).

Voice Terminals

Once the Dial Plan and FACs have been assigned, the System Manager can add the various voice terminals. The **duplicate** command can be used to add the same types of voice terminals. The extension number, location, type, and user name should be entered on the form.

Modules

Data modules can be assigned after voice terminal administration. Some data modules must be added during voice terminal administration if the voice terminal has a data module. Other data modules can be added separately.

Netcon Channels

Netcon channels are used to provide switched data access for the following:

- Call Detail Recording (CDR)
- On-premises administration/maintenance terminal
- Remote administration/maintenance terminal
- Property Management System (PMS) Link
- PMS Log Printer
- Journal Printer
- Recorded Announcements
- System Printer

Netcon channels are assigned by entering the command **add data-module (extension number or next)** and then entering Netcon in the **Type** field. Up to four Netcon channels can be assigned. The channels can be added by entering the command **duplicate data-module xxx (extension number to be duplicated)**.

Groups

After the voice terminals are added, the following items can be administered using the **add** commands:

- Abbreviated Dialing (System, Group, Enhanced)
- Hunt Groups
- Call Coverage Answer Groups
- Pickup Groups
- Intercom Groups
- Terminating Extension Groups

Trunk Groups

Trunk groups are assigned by entering the command **add trunk-group 1-99 (or next)**. For the Hospitality Reduction Parameter feature, only 50 trunk groups can be assigned.

The Network Access Features forms are filled out by the Account Team and must always be entered. The Network Access forms are provided in two sections, Private and Public. The Public Network Access includes the Trunk Group forms which, when entered, provide voice terminals and attendants with access to and from the public network.

Private Network Access allows calls to be connected to several networks, such as the following:

- Common Control Switching Arrangement (CCSA)
- Digital Signal Level 1 (DS1) Interface
- Electronic Tandem Network (ETN)
- Enhanced Private Switched Communications Service (EPSCS) Access
- Tandem Tie Trunk Network (TTN)
- Integrated Services Digital Network-Primary Rate Interface (ISDN-PRI)
- Software Defined Data Network (SDDN)

Administrative Tasks—System

This section covers administrative tasks that allow the System Manager to add, remove, and change system and voice terminal features to meet business requirements. The following administrative tasks are covered:

- How to log in and log off
- How to change your password
- How to set up the system to allow remote administration
- How to administer the system from a remote location
- How to administer netcon channels
- How to initially administer dial plan and feature access codes
- How to administer abbreviated dialing
- How to set time and date
- How to print on demand
- How to list history
- How to set up night service

How to Log In and Log Off

The system translations are protected by the login/password concept. The login name identifies the type of terminal user to the system. The password is a personal code that can be changed periodically to enhance system security. Before any system administration commands or functions can be executed, the System Manager must successfully log into the system and receive the **enter command:** prompt.



NOTE:

When logging into the system from a remote location using the asynchronous link, the user should not be on the link too long or leave the terminal logged on unattended. This link is used by the system to transmit alarms and errors to the Customer Service Support Organization (CSSO).



NOTE:

Please note that logins such as

- cust
- rcust
- bcms
- browse

don't have default passwords. This means that these logins have to be assigned passwords by the System Administrator at setup time. Use the **init** login and use the "change password" command to enter a password

which can be used for each of the logins listed above.

Login to System

The following procedure is used for logging into the system.

1. Turn on the terminal, if required. Screen displays:

Login:

2. Enter your login name and press the RETURN key. Screen displays:

Password:

3. Enter your password and press the RETURN key.

For security reasons, the password is not displayed as you type it. The system verifies a valid login and password name were entered. If an invalid login or password name was entered, the system responds with

INCORRECT LOGIN

Login:

4. If **INCORRECT LOGIN** is displayed, you must repeat Steps 2 and 3.
5. If the system recognizes the login and password name,

Terminal Type (Enter 513, 4410, or 4425): [513]

is displayed on the screen.

6. Do one of the following to identify the terminal type:

If the system is equipped with a 4410 terminal, enter **4410** and press the RETURN key.

If the system is equipped with a 4425 terminal, enter **4425** and press the RETURN key.

If the system is equipped with a 513 BCT, press the RETURN key. The 513 in brackets [513] is the system default.

If the system is equipped with a 610 or 615 MT BCT that has a 513 emulation cartridge, press the RETURN key. The 513 in brackets [513] is the system default.

If the system is equipped with a 610 or 615 MT that does not have the 513 emulation cartridge, enter **4410** and press the RETURN key.

7. If **enter command:** is displayed, you may enter the desired command. Press the HELP key to obtain the list of permissible commands.

System Logoff Procedure

The system logoff procedure should be done anytime the system terminal is not being used. This assures the system translations will not be accidentally corrupted. To log off the system, type **logoff** and press the RETURN key. The system automatically disconnects you from the system.

If the user logs off at the terminal located within 50 feet from the switch, the system will automatically request a login. The terminal user accessing the maintenance board, data channel, or netcon channel will be disconnected from the system when **logoff** is typed in. These users must dial up the system in order to access the system.

How to Change Your Password

Password Administration allows the user to change the password used to access the system. This section provides the steps required to change a password.

The password should be changed if another person has discovered it. It should also be changed if someone has gained access to the system and made changes to features that could alter business transactions.

The System Manager's password must be obtained from the installation organization responsible for installing the system. The login name cannot be administered.

The password should also be changed each time a new person takes over the System Manager role. The password can be changed once the user has logged onto the system.

Do not give the password to anyone. Do keep passwords in a locked place. Change password periodically, at least every six months.

The following procedure is used to change a password.

1. Verify screen displays:

enter command:.

2. Enter **change password xxxxxxxx** (where xxxxxxxx is the Login name) and press the RETURN key.
3. Verify Password Change form is displayed on the screen (see Screen D-1).
4. Cursor is positioned on Your Current Password field.
5. Enter the current password you logged in with and press the RETURN key.
6. Cursor is positioned on **New Password For Login Name.**
7. Enter your new password and press the RETURN key.



NOTE:

Valid passwords contain four to seven alpha or numeric characters, or a combination of alpha and numeric characters.

8. Cursor is positioned on **New Password (enter again):**.
9. Reenter your new password.
10. Press the ENTER key.
11. Verify screen displays:

command completed successfully

enter command:

```
change password xxxxxx                                     Page 1 of 1

                                PASSWORD CHANGE

Change Password For Login Name: xxxxxx

Your Current Password: _____

New Password For Login Name: _____

New Password (enter again): _____
```

Screen D-1. Password Change Screen Form

How to Set Up System to Allow Remote Administration

Another way to administer the system, other than the Manager I terminal, is from a Remote Terminal. The Remote Terminal can be located either on or off the customer's premises. All functions of the Manager I terminal are retained by the Remote Terminal; however, terminal operation speed is limited to 1200 bps (bits per second) from a dial-up facility.

Up to five terminals can be connected to the system. In any type of configuration, only one terminal at a time can be used for administration

purposes such as adding, changing, or deleting system and voice terminal features. The other terminals may be used by ACD supervisors to view Basic Call Management System (BCMS) information. To setup the system to allow for Remote Administration, use the following steps.

 NOTE:

Remote Access numbers and barrier code assignments should be kept confidential to prevent unauthorized persons from accessing the system. Toll and service charges resulting from the unauthorized access of the system are the responsibility of the customer. As a result, it is recommended that the Remote Access number and associated Barrier Codes be changed periodically to maintain system security.

 NOTE:

Remote Access users should be careful when using any command that requires user input such as **next page**. This command, if not used properly, will not let the system time out after 30 minutes and logoff the user. If the command is not used properly, system alarms cannot be reported which may affect system service.

1. If not translated previously, translate all four netcon channels. (See the section on How to Administer Data or Netcon Channels.)
2. Translate a Uniform Call Distribution (UCD) hunt group using a hunt group form.
 - a. In the Group Extension field, enter an extension number. If the system is equipped with Direct Inward Dialing (DID), enter a DID extension number.
 - b. In the Group Members Assignment field, enter the four extension numbers (non-DID numbers) previously assigned to the four netcon channels.

If the system will be remotely administered from an on-premises terminal, no additional translations are required.

If the system will be remotely administered from an off-premises location via a dial-up facility, complete Steps 3 and 4.

3. Translate a pooled modem if not translated previously.
4. Translate a trunk group in one of the following ways.
 - a. DID equipped systems Using a DID trunk group form, translate a new trunk. The NAME (Tel. number) assigned in the Group Member Assignments field **must** be the same DID number assigned to the UCD hunt group (see Step 2a).

b. DID equipped systems using a non-DID trunk	Using a CO trunk group form, translate a new trunk group. In both the Incoming Destination and Night Service fields, enter the UCD hunt group extension number (see Step 2a).
c. Non-DID equipped systems—calls made from Remote (off-premises) terminal will be to the Listed Directory Number (LDN)	If not translated previously, translate a trunk group containing the LDN.
d. Non-DID equipped systems—calls made from Remote (off-premises) terminal will be to a trunk dedicated to Remote Administration	Using a CO trunk group form, translate a new trunk group. In both the Incoming Destination and Night Service fields, enter the UCD group extension number (see Step 2a).

How to Administer System From a Remote Location

Make sure data terminal speed settings are set at 1200 bps. Top speed for a data or netcon channel is 1200.

1. Using either the keyboard or voice terminal, dial the UCD group extension number. This number will be one of the following:
 - a. From off-premises:
 - a DID number (7 or 10 digits), or
 - an LDN (7 or 10 digits), or
 - a trunk number dedicated to Remote Administration (7 or 10 digits).
 - b. From on-premises:
 - an extension number
2. If a DID number, dedicated trunk number, or extension was dialed, receive data tone or visually receive answer confirmation.

If an LDN was dialed, the attendant will answer. Ask to be transferred to the UCD group extension number. Receive data tone or visually receive answer confirmation.

3. Screen displays login.

4. Enter your login and password.
5. Perform system administration.
6. Log off and disconnect.

How to Administer Netcon Channels

This part contains the procedures required to administer system netcon channels. The system has four netcon channels (01 through 04) that are used to provide switched data access.

The Manager I terminal, which is located within 50 feet of the system cabinet, is not administered using netcon channels. The Manager I terminal should not be confused with the on-premises or remote system administration terminals.

The netcon channels are administered separately using the data module form and entering **netcon** in the "Type" field. The netcon channels are assigned to the Network Control circuit pack. One netcon channel form must be completed for each channel.

Once the netcon channel has been assigned, the user must administer the modules or modems required to support SMDR, system administration/maintenance terminals, recorded announcements, and/or the Property Management System (PMS) link.

The same commands used to administer data modules are also used to administer netcon channels. The extension number entered at the end of the data module command determines which netcon channel will be added, displayed, duplicated, changed, removed, or printed.

All four netcon channels must be assigned. The following steps can be used to add a data or netcon channel:

1. Verify terminal displays:

enter command:

2. Enter **add data module 4444** where 4444 is the extension number assigned to the netcon channel. The extension number will appear in the Data Extension field on the screen form. Press the RETURN key. The screen displays a Processor Data Module (PDM) form. Cursor is positioned on the Type field.
3. In the field labeled "Type," enter **netcon** and press the RETURN key.
4. Screen displays the netcon channel form.
5. The cursor is positioned on the Physical Channel field.
6. Enter a netcon channel number from 01 through 04 and press the RETURN key.
7. The cursor is positioned on the Name field.

8. Make no entry, press the RETURN key.
9. Cursor is positioned on the COS field.
10. Enter a COS number from 0 through 15 and press the RETURN key.
11. Cursor is positioned on the COR field.
12. Enter a COR number from 0 through 63 that will allow or deny access and press the RETURN key.
13. Cursor is positioned on the Abbreviated Dialing List1 field.
14. Make no entry, press the ENTER key.
15. Screen displays:

command successfully completed,

enter command:

16. Repeat Steps 1 through 16 until all four netcon channels have been established. A different extension number must be entered for each netcon channel. The system automatically assigns the extension number if **next** is entered at the end of the **add data-module** command (**add data-module next**).

The netcon channels can be added by entering the **duplicate data-module xxxx (extension number to be duplicated)** command. This command must be entered for each netcon channel being added.

After all four netcon channels have been assigned, the user can refer to the section on How to Administer System From a Remote Location, if the system is administered for these features.

How to Change a Netcon Channel

Netcon channels can be changed, for example, by entering the **change data module 4444** command and pressing the RETURN key. Extension number 4444 is the extension number assigned to the data or netcon channel.

Once the form is displayed on the screen, the user can make changes. Once all changes have been made, press the ENTER key to submit the changes into system translations.

How to List Netcon Channels

The **list data-module** command can be used to display a list of all netcon channels that have been assigned in the system. The display gives a list of all data modules and netcon channels and their associated data that includes:

- Extension number
- Port number

- Type of module (netcon channels are listed along with the other types of modules)
- Name if assigned
- Class of Service
- Class of Restriction
- Information Systems Network (ISN). This field shows if the data module is connected to the ISN.

The **display data-module xxxx (extension number) [print]** command can be used to obtain a printout for one netcon channel.

How to Administer Dial Plan and Feature Access Codes

The Dial Plan Record and the Feature Access Codes (FAC) can be administered together to insure continuity for the number of digits assigned to FAC. The number of digits used to dial the FAC must agree with the number of digits assigned to the fac field on the Dial Plan Record. The system does not allow a mismatch between these numbers. For example, if the Dial Plan Record has two digits assigned for FAC, then each FAC must be assigned two digits. The user dials these digits to activate and deactivate a feature.

The Dial Plan Record must be administered before assigning FAC, trunk access codes, and voice terminal extensions. The Dial Plan Record can be administered as a stand-alone screen form as long as the changes being made do not affect the FAC, Trunk Access Codes (TAC), and voice terminal extension numbers. Once the TAC and voice terminal extension numbers have been assigned, the user cannot change the Dial Plan Record.

Once the Dial Plan Record and FAC have been administered, the System Manager can change the digits assigned to FAC as long as they agree with the Dial Plan Record. For example, the System Manager can change a FAC from 12 to 13 as long as no other FAC is assigned to 13.

The following steps give an example on how to change the FAC from three to two digits.

1. Verify screen displays:

enter command:

2. Enter **change feature-access-codes** and press the RETURN key.
3. Screen displays Feature Access Codes form.
4. Position the cursor over the 3-digit access codes and press the space bar until the 3-digit code disappears.
5. Press the RETURN key and repeat the above step until all 3-digit access codes have been removed.

6. Press the ENTER key. Screen displays:

command successfully completed,

enter command:

7. Enter **change dialplan** and press RETURN key.
8. Screen displays Dial Plan Record form.
9. Press the RETURN key until the cursor is positioned on the "1: Number of Digits" field.
10. Enter FAC and press the ENTER key. Screen displays:

command successfully completed,

enter command:

11. Enter **change feature-access-codes** and press the RETURN key.
12. Screen displays Feature Access Codes form.
13. Assign 2-digit access codes to the desired features. After all codes have been assigned, press the ENTER key. Screen displays

command successfully completed,

enter command:

How to Administer Abbreviated Dialing

This part covers the commands required to administer Abbreviated Dialing (AD). AD is administered using several types of screen forms. The forms administered depend on the types of AD being added to the system.

The AD personal list must be assigned to the voice terminal and data module before it can be added to the system.

AD can be administered using the following screen forms:

- 7103A terminal list form
- Abbreviated dialing group list form
- Abbreviated dialing personal list form
- Abbreviated dialing system list form
- Abbreviated dialing enhanced list form

The enhanced, system, personal, and group lists can be assigned to the "Abbreviated Dialing" section on the voice terminals data modules and internal/external trunk groups forms.

The following commands can be used to administer abbreviated dialing:

Abbreviated Dialing Command for 7103A Buttons

- add abbreviated-dialing 7103A-buttons
- change abbreviated-dialing 7103A-buttons
- display abbreviated-dialing 7103A-buttons [print or schedule]
- remove abbreviated-dialing 7103A-buttons

Abbreviated Dialing Group

- add abbreviated-dialing group 1-100 (1-1000 G3r) or next
- change abbreviated-dialing group 1-100 (1-1000 G3r)
- display abbreviated-dialing group 1-100 (1-1000 G3r) [print or schedule]
- list abbreviated-dialing group [xx] (count 1-100 or 1-1000 G3r) [print or schedule]
- remove abbreviated-dialing group 1-100 (1-1000 G3r)

Abbreviated Dialing Personal

- add abbreviated-dialing personal xxx (extension number of assigned object with a personal list) and List 1-3 or "next"
- change abbreviated-dialing personal xxxx (extension number of assigned personal list) and List 1-3
- display abbreviated-dialing personal xxxx (extension number of assigned personal list) and List 1-3 [print or schedule]
- list abbreviated-dialing personal [print or schedule]
- remove abbreviated-dialing personal xxxx (extension number of assigned personal list) and List 1-3



NOTE:

When a station is added or changed that has an abbreviated dialing personal list in the system, the system will automatically add a five member list for the station being added or changed. Also the list is automatically removed when the voice terminal is removed.

Abbreviated Dialing System

- add abbreviated-dialing system
- change abbreviated-dialing system
- display abbreviated-dialing system [print or schedule]
- remove abbreviated-dialing system

When a station is added or changed that has an AD personal list in the system, the system will automatically add a five member list for the station being added or changed.

Abbreviated Dialing Enhanced List

- add abbreviated-dialing enhanced w (form number 0-9)
- change abbreviated-dialing enhanced w (form number 0-9)
- display abbreviated-dialing enhanced w (form number 0-9)
[print or schedule]
- remove abbreviated-dialing enhanced w (form number 0-9)

The following procedure shows how to add an Abbreviated Dialing Group:

1. Verify that screen displays:

enter command:

2. Enter **add abbreviated-dial group 1** and press the RETURN key.
3. Screen displays the Abbreviated Dialing Group List form.
4. Assign the required data.
5. Press the ENTER key. Screen displays:

command successfully completed,

enter command:

6. Assign the group list to the desired voice terminals and data modules.

How to Set Time and Date

The system date and time are set using the Date and Time form (see Screen D-2). This form is displayed on the terminal screen and is modified using the terminal keyboard. The time must be reset for daylight savings time. The correct time and date assure that SMDR records are correct for the records being kept. SMDR will not work until the time and date have been entered. Do the following procedure to set the system time and date:

1. Log in.
2. Verify screen displays:

enter command:

3. Enter **set time** and press the RETURN key.
4. Verify screen displays Date and Time form (see Screen D-2).



NOTE:

Cursor is positioned on **Day of the Week:** line.

5. Enter day of week (**Sunday—Saturday**) and press the RETURN key.



NOTE:

Cursor is positioned on **Month:** line.

6. Enter current month (**January—December**) and press the RETURN key.



NOTE:

Cursor is positioned on **Day of the Month:** line.

7. Enter day of month (**1—31**) and press the RETURN key.



NOTE:

Cursor is positioned on **Year:** line.

8. Enter current year (**1990—2099**) and press the RETURN key.



NOTE:

Cursor is positioned on **Hour:** line.

9. Enter current hour (**0—23**) and press the RETURN key. Screen D-2 shows the standard time conversion to 24-hour time. Enter the 24-hour time as shown. For example, if the current time is 2:00 p.m., enter **14**.



NOTE:

Cursor is positioned on **Minute:** line.

10. Enter current minute (**0—59**).
11. Press the ENTER function key.
12. Verify screen displays:

The set time form command is completed successfully

enter command:

13. Enter **save translation** and press the RETURN key so the correct time and date will be entered in system translations. See the end of this chapter for save translation information.
14. Verify date/time data by entering **Display Time** and pressing the RETURN key.



NOTE:

The Date and Time Form is displayed showing all data entered in the above steps followed by:

enter command:

set time

page 1 of 1

DATE AND TIME

DATE

Day of the Week: _____ Month: _____

Day of the Month: __ Year: ____

TIME

Hour: __ Second: XX

Minute: __

Screen D-2. Date and Time Screen Form

Table D-6 shows how to convert to 24-hour clock for those not familiar with this standard.

Table D-6. Conversion to 24-Hour Clock

12-Hour Standard Time Clock	24-Hour Clock
12:00 a.m.	0
1:00 a.m.	1
2:00 a.m.	2
3:00 a.m.	3
4:00 a.m.	4
5:00 a.m.	5
6:00 a.m.	6
7:00 a.m.	7
8:00 a.m.	8
9:00 a.m.	9
10:00 a.m.	10
11:00 a.m.	11
12:00 p.m.	12
1:00 p.m.	13
2:00 p.m.	14
3:00 p.m.	15
4:00 p.m.	16
5:00 p.m.	17
6:00 p.m.	18
7:00 p.m.	19
8:00 p.m.	20
9:00 p.m.	21
10:00 p.m.	22
11:00 p.m.	23

How to Print on Demand

The user can get a printout when **print** or the abbreviated version **pr** is entered as the last qualifier for the **list** and **display** commands. For example, the command **display abbreviated-dialing group 20 print** provides a printout for AD group number 20.

The terminal must have a printer connected to it before a hard copy printout can be obtained.

The following procedure can be used to obtain a printout of Pickup Group 25.

1. Log on.
2. Enter **display pickup-group 25 print** or **display pickup-group 25 pr** and press the RETURN key.
3. Screen displays the form for Pickup Group 25. At the same time, the screen form is also printed out at the printer.

System Backup for DEFINITY G3i-286

DEFINITY G3i systems use a tape-only backup system with or without a duplication option. In case of a power failure of 10 minutes or more, the system translations can be restored using the data on the system or backup tape.

Save Translation

To ensure that the tape drive cassette tape contains the most recent copy of the translation data, the system can automatically save the translation data onto the cassette tape every 24 hours.

⇒ NOTE:

Automatic daily backup of the system translation data is controlled by an entry in the system parameters that is defaulted to “y” (yes), which means the system will automatically save the translation data every 24 hours.

If many translation data changes are made, it is recommended that the System Manager save the translation data using the **save translation** command. This will save the new changes on the cassette tape without having to wait for the next automatic daily translation backup. If extensive changes, additions, or deletions are made, translations should be saved more frequently, alternating the two tapes. Then, in case of a power outage, only the data entered since the last “save” will be lost. See the “Tape Backup” sections of this chapter.

⇒ NOTE:

It is recommended that “save translations” should be performed after business hours so dial tone delays will not be encountered.

⇒ NOTE:

“save translations” should not be performed if any tape alarm conditions occur or if the system is having problems.

Save and Restore Recorded Announcements

The recorded announcements in the system can be saved on the system cassette tape by entering the command **save announcements spe-active/spe-standby**. These commands should only be used after business hours or when the system is operating during a low usage period. The system takes about 45 minutes to one hour to transfer the recorded announcements from the announcement board to the system tape. During this time period, the administration terminal cannot be used to administer the system until the transfer is complete; however, all other administration terminals, if provided, are allowed to perform administration procedures.

The recorded announcements in the system can be restored back into the system memory from the system tape by entering the command **restore announcements**. The system performs an audit to make sure that the announcements on the announcement board match the announcements

administered in the switch. If the restore announcements fails in a duplicated system because of a tape or tape drive failure, the system will alarm the tape drive that didn't restore and switch to the standby Switch Processing Element (SPE) provided the standby is operational. The restore announcements must then be recentered on the new active SPE to restore the announcements.

Tape Backup for a System Without the Duplication Option

Two cassette tapes are provided with the system. **It is recommended that backup copies of the translation data be made weekly**, or after many changes have been made to the translation data. This will minimize the loss of recent translation data changes if the cassette tapes in the system become damaged.

The following procedure can be used to make a backup tape:

1. Remove the cassette tape from the tape drive.
2. Insert the backup cassette tape into the tape drive.
3. Log into the terminal.
4. Verify that the screen displays:

enter command:

5. Enter `save translation` and press **[RETURN]**. This command instructs the system to take all translation information in memory and write it onto the cassette tape. See Screen D-3 below.
6. The screen displays:

```
save translation                                SPE A
                                         SAVE  TRANSLATION

Processor                                Command Completion Status      Error Code
SPE_A                                    Success                                0

Command successfully completely
enter command:
```

Screen D-3. Save Translation—SPEA

7. Verify that a **0** is displayed in the **Error Code** column. A **0** indicates that the save translation was successfully completed for the tape drive. If a **0** did not appear, the save translation did not complete. Record the "error code number" and the "error message" and notify maintenance support.

8. If the system is equipped with a TN750 Announcement circuit pack, the recorded announcements can be saved using the save announcement commands. Enter `save announcements` and press `[RETURN]`.
9. See Screen D-4.

save announcement		SPE A
	SAVE ANNOUNCEMENT	
Processor	Command Completion Status	Error Code
SPE_A	Success	0
Command successfully completely enter command:		

Screen D-4. Save Announcements Screen—SPEA

10. Verify that a **0** is displayed for SPE_A in the **Error Code** column. A **0** indicates that the save announcement was a success for the tape drive. If a **0** did not appear, the save announcement did not complete. Record the “error code number” and the “error message” and notify maintenance support.
11. Remove the backup cassette tape from the tape drive and insert the original cassette tape into the tape drive.
12. Label the backup cassette tape with the date and time it was updated. A special notation may be put on the tape to clearly distinguish it from other cassette tapes.
13. Store the backup tape in a secure place.

Tape Backup for a System With the Duplication Option

Four cassette tapes are provided with the system. **It is recommended that backup copies of the translation data be made weekly**, or after many changes have been made to the translation data. This will minimize the loss of recent translation data changes if the cassette tapes in the system become damaged.

The following procedure can be used to make backup tapes:

1. Remove the two original cassette tapes from the tape drives.
2. Insert the two backup cassette tapes into the tape drives.
3. Log into the terminal.
4. Verify that the screen displays:

enter command:

5. Enter `save translations` and press `[RETURN]`. This command instructs the system to take all translation information in memory and write it onto the two cassette tapes.
6. See Screen D-5.

save translation			SPE B
SAVE TRANSLATION			
Processor	Command	Completion Status	Error Code
SPE_B		Success	0
SPE_A		Success	0
Command successfully completely			
enter command:			

Screen D-5. Save Translation—SPE_B

Administration Note:

The active SPE's completion status is always displayed first. During the save translation, as illustrated in the above screen, **SPE_B** is displayed as the active SPE in the upper right corner of the screen.

7. Verify that a **0** is displayed for **SPE_B** and **SPE_A** in the **Error Code** column. A **0** indicates that the save translation was a success for each tape drive. If a **0** did not appear for **SPE_B** and **SPE_A**, the save translation did not complete. Record the "error code number" and the "error message" for the SPE that did not have a **0** and notify maintenance support.
8. If the system is equipped with a TN750 Announcement circuit pack, the recorded announcements can be saved using the **save announcement** commands. Enter `save announcements` and press `[RETURN]`.
9. See Screen D-6.

save announcements				SPE B
SAVE ANNOUNCEMENT				
Processor	Command	Completion	Status	Error Code
SPE_B		Success		0
SPE_A		Success		0
Command successfully completely				
enter command:				

Screen D-6. Save Announcements—SPE_B

Administration Note:

The active SPE's completion status is always displayed first. During the save announcement, as illustrated in the above screen, **SPE_B** is displayed as the active SPE in the upper right corner of the screen.

10. Verify that a **0** is displayed for SPE_B and SPE_A in the **Error Code** column. A **0** indicates that the save announcement was a success for each tape drive. If a **0** did not appear for SPE_B and SPE_A, the save announcement did not complete. Record the "error code number" and the "error message" for the SPE that did not have a **0** and notify maintenance support.
11. Remove the two backup cassette tapes from the tape drives and insert the original two cassette tapes into the tape drives.
12. Label the two backup cassette tapes with the date and time they were updated. A special notation may be put on the tapes to clearly distinguish them from other cassette tapes.
13. Store the two backup tapes in a secure place.

Tape Errors

Since the tape drive is a mechanical device, tape-related failures may occur. When these failures occur, the system responds with "tape error messages". The following is a list of the tape error messages and recommended responses to each. Check for proper operation after each response is done.

1. **Tape access error: no tape cartridge or device problem**

Indicates that the cassette tape is missing or improperly seated. This error can also occur if the tape drive has a hardware problem.

Response: Check tape drive for missing or improperly seated cassette tape.

Check cassette tape to determine if write-protect indicator points to SAFE. If so, turn pointer away from SAFE to allow "write" capability.

Check for alarm at attendant console. If alarm is present, notify maintenance support to repair tape drive.



NOTE:

Check for damaged or worn cassette tape. If the cassette tape is damaged, do not insert the backup tape. If the backup tape is inserted it may also be destroyed. Notify maintenance support to repair the tape drive.

2. **Tape currently in use**

Indicates that the system is currently accessing the tape for administration

or maintenance purposes.

Response: Wait a few minutes and repeat the command that generated the tape error message.

3. **Cannot write to tape: cartridge or device problem or Tape write failure: cartridge or device failure**

Indicates that there was a failure in writing to the tape.

Response: Refer to the procedures in message 1.

4. **Cannot read from tape: cartridge or device problem or Tape write failure: cartridge or device failure**

Indicates that there was a failure reading from the tape.

Response: Refer to the procedures in message 1.

5. **System error or Internal system error**

Indicates that the system software requires reset procedures.

Response: Notify maintenance support.

6. **Internal translation data is corrupted**

Indicates that the translation data is inconsistent and the translation was not saved on tape.

Response: Replace cassette tape with system backup tape.

Enter the command **reset system 3**. After the command completes, remove the backup tape, install the original tape, and then repeat the command that generated the error message. Notify maintenance support if the same error message is displayed again.

7. **Translation file is too large to fit on tape**

Indicates that the system software has malfunctioned.

Response: Notify maintenance support.

System Backup for DEFINITY G3i/G3s/G3vs

The backup system for the DEFINITY G3i-386/G3s/G3vs system employs a Memory Card. The standard Memory Card is a 1MB without an Announcements Circuit Pack. 4MB and 10MB memory cards are available as an upgrade for G3s and G3i. The larger memory cards are not available for G3vs. In case of a power failure, the system translations and announcements can be restored using the Memory Card.

Save Translation

Translation data can be automatically saved every 24 hours. However, if your translation data changes frequently, you should also save translations frequently to assure that you have the most up-to-date information.



NOTE:

“Save translation” should not be performed if any Memory Card alarm conditions occur or if the system is having problems (such as processor, memory, or netcon alarms).

It is recommended that you save translation after business hours to prevent dial tone delays. Or, if your business operates 24 hours, you should save translation during slow business hours.

The following procedure is used to save translations to the Memory Card:

1. Verify that the Memory Card is in the TN777B Netcon circuit pack.
2. Log into the administration terminal.
3. Verify that the screen displays:

enter command:

4. Enter `save translation` and press **[RETURN]**. This command instructs the system to take all translation information in memory and transfer it into the Memory Card.
5. See Screen D-7.


```

save translation                                     SPE A

                                     SAVE TRANSLATION

Processor                                     Command Completion Status      Error Code

SPE_A                                         Success                               0

Command successfully completely
enter command:

```

Screen D-7. Save Translation Screen—SPEA

6. Verify that the **Success** message appears in the **Command Completion Status** field. If it does not, an error message will appear instead.
7. If the system is equipped with a TN750 Announcement circuit pack, the recorded announcements can be saved using the **save announcements** commands. Enter `save announcements` and press [RETURN].
8. See Screen D-8:

```

save announcements

                                     SAVE ANNOUNCEMENTS

Processor                                     Command Completion Status      Error Code

SPE_A                                         Success                               0

Command successfully completely
enter command:

```

Screen D-8. Save Announcements Screen—SPEA

9. Verify that the **Success** message appears in the **Command Completion Status** field. If it does not, an error message will appear instead.

One Memory Card is provided with the system. If a backup Memory Card has been purchased, the following procedure can be used to make a backup copy of the system translations and/or announcements.

1. Remove the Memory Card from the TN777B Netcon circuit pack.
2. Insert the backup Memory Card into the TN777B Netcon circuit pack.
3. Log into the administration terminal.
4. Verify that the screen displays:

enter command:

5. Enter save translation and press **[RETURN]**. This command instructs the system to take all translation information in memory and transfer it into the Memory Card.
6. See Screen D-9:

save translation		SPE A
SAVE TRANSLATION		
Processor	Command Completion Status	Error Code
SPE_A	Success	0
Command successfully completely enter command:		

Screen D-9. Save Translation Screen—SPEA

7. Verify that the **Success** message appears in the **Command Completion Status** field. If it does not, an error message will appear instead.
8. If the system is equipped with a TN750 Announcement circuit pack, the recorded announcements can be saved using the **save announcements** commands. (See the next subsection "Save and Restore Recorded Announcements.") Enter save announcements and press **[RETURN]**.
9. See Screen D-10:

save announcements		
SAVE ANNOUNCEMENTS		
Processor	Command Completion Status	Error Code
SPE_A	Success	0
Command success fully completely enter command:		

Screen D-10. Save Announcements Screen—SPEA

10. Verify that the **Success** message appears in the **Command Completion Status** field. If it does not, an error message will appear instead.
11. Remove the backup Memory Card from the slot in which it is installed and insert the original Memory Card into that slot.
12. Label the backup Memory Card with the date and time it was updated. A special notation may be put on the card to clearly distinguish it from other Memory Cards.

13. Store the backup Memory Card in a secure place.

Save and Restore Recorded Announcements

Enter the **save announcements** command to save the recorded announcements in the system on the system Memory Cards.



NOTE:

A 4 Mb Memory Card is required to save and restore announcements.

The system takes about 30 minutes to complete this task. Because the administration terminal is unavailable during this time, it is recommended that this command be used after business hours (or during slow business hours for a 24 hour business operation). During this time period, the administration terminal cannot be used to administer the system until the transfer is complete; however, all other administration terminals, if provided, are allowed to perform administration procedures.

Enter the **restore announcements** command to restore the recorded announcements from the Memory Card back into system memory. The system takes about 22 minutes to complete this task. **The system performs an audit to make sure that the number of announcements on the announcement board match the announcements administered in the switch.**

The working copy of the announcements are stored on the announcement board. You should also save announcements on 4 Mb Memory Cards.

Errors

Memory Card-related failures may occur for two reasons: the card is at fault or the (TN777B) Netcon circuit pack is at fault. When these failures occur, the system responds with "error messages." The following is a list of the error messages in alphabetical order and recommended responses to each. Check for proper operation after each response is done. You should also check the hardware error log for errors, and then use the maintenance manual or complete repair procedures.

1. Cannot access file storage area

The wrong Memory Card may be installed.

Response: Check to see which Memory Card is installed. If the correct one is installed, test it. If it passes, and the problem still persists, escalate the problem to the next level of support.

2. Cannot access file; wrong type of Memory Card is inserted

You have not inserted the correct Memory Card for the operation you wish to perform. *Response:* Load the appropriate Memory Card.

3. **Cannot access mass storage system now; try again later**

Indicates the storage system is in use.

Response: Try again later.

4. **Cannot turn on 12 volt power supply**

Indicates something may be wrong with the (TN777B) Netcon circuit pack (where the power supply is).

Response: Test the 12-volt power supply by running the **test card-mem** command from the system administration terminal. Executing the command causes the system to run Test 701 (12 Volt Power Supply Test). If the power supply test fails, replace the (TN777B) Netcon circuit pack. To do this, follow the instructions in the Maintenance manual for MO 12v-PWR. Then, repeat whichever command failed.

5. **Command has been aborted; please try later**

The command has been preempted.

Response: Try again later.

6. **Could not write to Memory Card.**

Indicates something may be wrong with the Memory Card.

Response: Test the Memory Card (run **test card-mem**).

7. **File size exceeded**

You have run out of file space.

Response: Call your AT&T representative.

8. **Invalid directory on memory card**

Indicates the Memory Card needs refreshing, or that something is wrong with the Memory Card.

Response: Run **test card-mem** and be sure all tests pass. Replace the Memory Card.

9. **Memory Card is not inserted In the system**

You have not inserted the memory card.

Response: Insert the Memory Card.

10. **Memory Card is write-protected**

Indicates the switch on the top side of the Memory Card is incorrectly set.

Response: Move the switch to the correct position with the point of a pencil or similar object. Refer to the figure below:

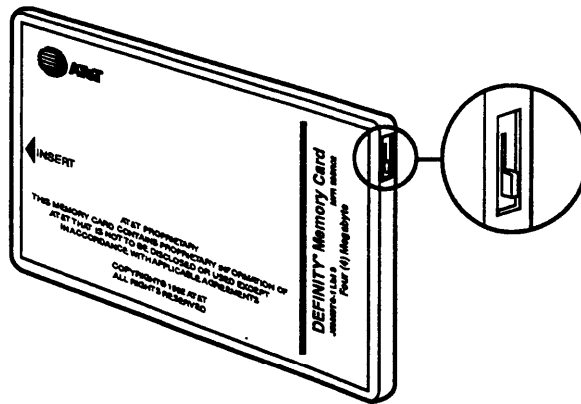


Figure D-11. Memory Card Write-Protect Switch

11. Memory Card is unusable

Indicates something is wrong with the Memory Card.

Response: Replace the Memory Card.

12. Request is incompatible with currently running operations

Indicates the storage system is in use.

Response: Try again later.

13. Saved copy of announcements is unusable

The file on the Memory Card is unusable.

Response: Use another backup card if you have one. Instances such as this illustrate the importance of having backup cards.

14. Saved copy of translations is unusable

The copy of the translations on your Memory Card is faulty.

Response: Run the **save translations** command again.

15. Success: translation file nearly full - get larger card

This message appears in response to a "save translation" command. The translation was saved successfully but this is just a warning that the card is 95 percent full. *Response:* Order the next larger card.

16. Transmission problem; please try later

There is a problem communicating with the announcement board.

Response: Check to see that a data module, "Type: announcement" has been administered correctly. Use the list data-module command to determine if the data-module "Type: announcement" is administered. The data module "Type: announcement" is administered using the **add data-module** <extension_number of data module type announcement>. If adding or checking the data module type announcement, verify that the "Board:" field is translated with network, carrier and slot where the announcement circuit pack is installed. Check that the Class of Restriction (COR) of the data module "Type announcement" is allowed to terminate calls from the data-modules "Type: netcon." The data modules "Type Netcon:" with their COR can be identified by using the "list data-module" command. Note the netcon data modules must also have their COR's translated that they can call each other.

17. Unknown type of Memory Card

The software does not know what type of Memory Card is inserted in the slot. This can occur if the card is unformatted or if the current vintage of the software does not recognize that type of Memory Card.

Response: Replace the Memory Card with a formatted Memory Card the software can recognize.

18. Upgrade Memory Card inserted

You may have inserted the System Upgrade Memory Card instead of the 4 Mb Memory Card.

Response: Insert the 4 Mb Memory Card.

System Backup for Definity G3r

Overview

The DEFINITY G3r Mass Storage System (MSS) utilizes tape and disk to provide stable storage of switch data. MSS configurations include single Switch Processing Element (SPE) and duplicated systems. There are four basic MSS configurations:

Simplex Disk/Tape	In a simplex disk-tape system, the disk drive is the primary MSS device and the tape is the secondary MSS device. If the disk is not available, the tape is available to boot from or to save system data. The tape unit is normally a backup of the disk. In addition, a tape provides a removable backup of the system data.

Duplex Disk/Tape	In a duplicated processor system, each processor normally boots from its local disk unit only. Data is backed up from memory to the local disk, the local tape unit, the standby disk unit, the standby tape unit, both disk units, or both tape units. Normally, when data is written, both the active and standby disk units are updated simultaneously.

Backup from disk to tape can occur on the active system, the standby system, or on both simultaneously. Restore from tape to disk can occur on the active system, the standby system, or on both simultaneously.

In addition, scheduled maintenance is provided to verify that the file systems on each storage device are consistent and that the files are consistent between the different storage devices.

The primary backup operations are:

- **Save translation:** All translation data is kept in memory during system operation. This means that all data would be lost if the switch went down. The save translation operation allows the System Manager to save the in-memory translation data on disk/tape. This operation may be done as part of scheduled maintenance and/or as required.
- **Backup/Restore:** In a disk/tape configuration, additional data integrity is achievable through the disk-to-tape backup process. The backup operation can be done as part of scheduled maintenance and/or as required. The contents of the disk will be copied onto a tape. This tape backup contains enough formatting/structure to allow the system to boot from it.

Command Interface Conventions

In the following sections, the commands used to interface with the MSS are described. The conventions used to describe the commands are:

- **Optional Command Arguments**

A set of brackets [] is used to designate optional groups of arguments to a command. One item listed within each set of brackets can be specified on the command line.

- **Error Conditions**

Following the descriptions of the command operations is a list of error conditions which may occur before or during command execution. Within the command descriptions, error condition notations may appear (E#, where # corresponds to the error condition number). Refer to the "Error Conditions" section of this chapter for explanations of the specific error conditions.

Save Announcements Command

The **save announcements** operation copies announcement data from the announcement board (TN750) to the MSS. By default, announcement data is written to the primary MSS device in a simplex processor system, or to both primary MSS devices in a duplicated processor system. In addition, the **save announcements** command can be directed to write to devices on either of the processors and/or to the secondary device(s).

Command Syntax

save announcements [active | standby | PE-A | PE-B | both | either] [disk | tape]

The bracketed options specify to which mass storage system the announcements are saved. This set of options only applies in a duplicated system. The options, **active** and **standby**, refer to the currently active and standby processors, respectively, in a duplicated system. The options, **PE-A** and **PE-B**, refer to the processors in carriers **A** and **B**, respectively, in a duplicated system.

Invoking the **save announcements** command with the **active** option forces the system to write the announcements data to the specified device in the currently active processor. In a simplex system, **active** is the same as **PE-A** and is the default.

Invoking the **save announcements** command with the **standby** option forces the system to write the announcements data to the specified device in the standby processor.

Invoking the **save announcements** command with the **PE-A** option forces the system to write the announcements data to the specified device in processor A.

PE-A is the default in a simplex system.

Invoking the **save announcements** command with the **PE-B** option forces the system to write the announcements data to the specified device in processor B.

Invoking the **save announcements** command with the **both** option forces the system to write the announcements data to the specified device in both mass storage systems concurrently. If either access fails, the entire operation fails. In a duplex system, **both** is the default.

Invoking the **save announcements** command with the **either** option forces the system to write the announcements data to the specified device in both mass storage systems concurrently. If there is a failure in accessing one of the devices, the announcements data will still be written to the device that has not failed.

The **[disk | tape]** options specify the device on which to save the announcements data. These options only apply in a system with a disk.

Invoking the **save announcements** command with the **disk** option forces the system to write the announcements data to the disk. In a system configured with both a disk and a tape, **disk** is the default.

Invoking the **save announcements** command with the **tape** option forces the system to write the announcements data to the tape. In a system configured with only a tape unit, **tape** is the default.

Command Operation

The **save announcement** command will only be allowed if there is an integrated announcement board in the system (E28).

The save announcement command will be denied if:

- No announcement data module has been administered (E29).
- No system port data module has been administered (E35).
- The announcement data module port is out of service (E34).
- The announcement data module port is active (for example, performing an announcement playback) (E36).
- No announcements are on the ANN board (E33).
- A user is in an integrated announcements session (E31).
- The board is currently being uploaded or downloaded (E29).

A user cannot enter an integrated announcement session after the **save announcements** command has started, although 15 channels are still available for announcement playback (one is reserved for uploading and downloading).

If saving to tape, the **save announcements** command will abort if:

- The tape is not in the tape drive (E37) or the tape is write-protected (E38).
- No system access port is available (E39).
- The MSS is in use by the **SPE** duplication memory refresh activity (E41).

In addition, the **save announcements** command will not be allowed if the MSS is in use. The MSS may be in use by either another user (E3) or by maintenance (E42).

Options entered by the user are validated against the system configuration and the target devices for the save announcement command are determined (E11, E12).

If the user requests that announcements be saved to a disk, the disk must be in service (E13).

If the user requests that announcements be saved to a tape, the tape must be in service (E14).

If the user requests that announcements be saved to the standby processor, the standby processor must be in service, shadowing must be enabled, and handshake must be up (E16).

If an error is encountered in the above steps, the save operation is not attempted.

When MSS devices on both processors in a duplicated system are specified, the save announcements operation will save announcement data from the announcement board to the active and standby MSS devices in parallel. The status of each save operation is reported to the user separately. If one of the save operations fail, the save operation to the other device continues. The goal is to save the new announcement data on some MSS device so that it is not totally lost; this will cause the announcement data to be inconsistent between these MSS devices.

The command completion status is displayed on the system administration terminal. The screen will be identical to that shown in Figure D-8, except it will be entitled "Save Announcement." The displayed information includes a success or error message for each processor.

In case of a failure, it is the user's responsibility to make the announcement files on the two MSS devices consistent. The files may become inconsistent due to hardware failures or if "save" to one device fails while the other continues; for example, while using the **either** option.

If announcement files are inconsistent due to failure on the hardware used during the **save announcements** command, the user should take appropriate action based on the error message returned. Maintenance software monitoring this hardware will log a hardware error with maintenance. Maintenance software will

invoke tests to diagnose and attempt to correct the problem. If maintenance software fails to correct the problem, an alarm would be raised and the system technician should take appropriate action.

The **save announcements** command writes two time-stamped identical copies of announcement data to the selected device(s). The time stamp for both copies will be the same (it will be the time of writing to the first copy). Each copy is written as consecutive 2K blocks. Each block contains a checksum for error detection purpose. Each copy contains the following status information: time stamp, and the state of the copy (that is, "good" or "bad").

The save operation writes one complete copy first, then writes the second copy in a different area of the device. The save operation only updates one of the copies at a time. The save operation will always choose to overwrite the "least good" copy first. The following selection criteria is applied separately on the active and standby devices:

- If a copy has a bad status, then always overwrite that copy first.
- If both copies have good status, then overwrite the one with the older time stamp. If both time stamps are the same, then it doesn't matter which copy is overwritten first since both copies are identical.

Each copy of the announcement data is marked "bad" prior to an announcement save operation, and it will only be marked "good" after the save operation to that file completes successfully. Any failure during the save operation, including a system crash, should only affect one copy of announcement data. In that case, the affected copy will be marked with a "bad" status indicator and will not be used to restore announcements into the system. Thus, an intact copy of announcement data can be used as a backup. Normally at least one of the two copies should be in a good state.

If a good copy of the announcement file is not available, then the restore announcements operation cannot be executed until the **save announcements** command is successfully completed. The announcements on the board are still accessible and usable.

Restore Announcements Command

The **restore announcements** command copies announcement data from the specified MSS device to the announcement board (TN750).

Command Syntax

restore announcements [disk | tape]

The announcement file is always restored from the active device.

The **[disk | tape]** options specify the device from which to restore the announcement board data. This set of options only applies in a system with a disk.

Invoking the **restore announcements** command with the **disk** option forces the system to copy the announcement board data from the disk to the announcement board.

Invoking the **restore announcements** command with the **tape** option forces the system to copy the announcement board data from the tape to the announcement board.

Command Operation

There is only one announcement board allowed in the system. The announcement file is always restored from the active processor's device.

The **restore announcements** command will not be allowed if there is no integrated announcement board in the system (E28); or if any port on the ANN board is active (E31).

The **restore announcements** command will be denied if:

- No announcement data module has been administered (E29).
- No system port data module has been administered (E35).
- The announcement data module is out of service (E34).
- A user is in an integrated announcements session (E31).

A user cannot enter an integrated announcement session after the restore announcements command has started.

- The MSS is in use.

The MSS may be in use by either another user or by maintenance (E3).

- The announcement file is not formatted on the MSS (E40).

If restoring from tape, the **restore announcements** command will abort if no tape is in the tape drive (E37).

The **restore announcements** command will also abort if:

- No system access port is available (E39).
- The MSS is in use by the **SPE** duplication memory refresh activity (E41).

Announcements on the ANN board will not be available until the restore operation is complete. Treatment to calling users will vary according to the feature. Otherwise, normal call processing service continues during the restore announcements operation.

The command completion status is displayed on the system administration terminal. The displayed information includes a successor error message.

In case of a failure, it is the user's responsibility to make sure the announcement file is completely copied to the announcement board, although the system will

continually attempt to download the board in 10 minute intervals until a download is successful, announcements are recorded, or a download is initiated from the system administration terminal. The user should take appropriate action based on the error message returned. If the error is the result of a hardware or firmware failure, the MSS software will log a hardware error with maintenance. Maintenance software will invoke tests to diagnose and attempt to correct the problem. If maintenance software fails to correct the problem, an alarm would be raised and the system technician should take appropriate action.

In the case where the system crashes and/or there is a processor interchange, the restore operation will fail. In this case, there will not be a valid announcement file on the announcement board. The command should be restarted on the newly active processor to copy the announcements from the active processor's MSS device to the announcement board. Until the announcements are successfully and completely copied to the announcement board, calls will not be connected to any announcements on the ANN board.

When the ANN board is plugged in or reset, maintenance will perform a series of tests, including a DRAM Checksum test. The test will fail due to the power loss to the board, resulting in automatic downloading of the announcement file.

Error Conditions

The following is a list of all error messages displayed to the user. If any of these error conditions can be attributed to hardware failures or disk/tape configuration problems, they will be logged with the maintenance subsystem. Error messages that are caused by a user entering improper command operations will not be logged with the maintenance subsystem; the user is notified of the error.

For each error message listed, an identifier is provided which indicates whereon the screen the message will occur. If (M) is shown next to the error code, the error message will appear on the message line. If (W) is shown next to the error code, the error message will appear as command output.

A failure can occur on either processor in a duplicated system. When the error is displayed, it is associated with the processor on which the error was encountered.

E3 (M) MSS is currently in use

This message means some other administration or maintenance user is currently making use of the MSS device and, therefore, it is not available for the MSS operation requested.

E11 (M) Standby option invalid on a simplex system

This message means a duplex option to a command was specified on a simplex system.

E12 (M) The disk option is invalid in a tape-only system

This message means that a disk option was entered on an MSS

command for a tape-only system.

E13 (W) **Disk device is out of service**

This message means that the disk device has been taken out of service by maintenance.

E14 (W) **Tape device is out of service**

This message means that the tape device has been taken out of service by maintenance.

E16 (W) **Standby processor (PE_A) is not available or
Standby processor (PE_B) is not available**

This message means that the standby processor has been taken out of service by maintenance, that the PE-SELECT switches are not in their normal position, or that some other hardware problem exists. When the standby processor is out of service, memory shadowing from the active processor to the standby processor is disabled.

E28 (W) **Integrated announcement board not present**

This message indicates that the announcement board is not present in the system.

E29 (W) **Required data module not administered or unavailable.**

The required data module is either not administered or is currently in use.

E31 (W) **Announcement port in use; please try later.**

One or more of the announcement ports are in use. The port could be in use for an integrated announcements session or for integrated announcement playback.

E32 (W) **Bad announcement file on tape (disk).**

This message indicates that the announcement file stored on disk or tape is corrupt. A valid file must be stored on the MSS before it can be accessed. This helps to prevent overwriting valid announcements on the ANN board.

E33 (W) **No announcements on board.**

Announcements must be stored on the ANN board in order to proceed with command. This helps to prevent overwriting or corrupting a good announcement file on the MSS.

E34 (W) **Announcement data module out of service.**

This message indicates that the announcement data module has been taken out of service by maintenance. The data module could have been taken out of service because of errors on the data module

detected by maintenance.

E35 (W) **Required system access port not administered or out of service.**

A system access port is either not available or is out of service.

E36 (W) **Announcement data module not available.**

Cannot access the announcement data module because the upload/download port is active.

E37 (W) **Tape access failure; no tape cartridge or tape drive failure.**

No tape is in the tape drive.

E38 (W) **Tape write failure; no tape cartridge or tape drive failure.**

The tape is write protected.

E39 (W) **Required system access port unavailable.**

The required system access port is unavailable.

E40 (W) **Tape (disk) not formatted with announcement file.**

Device must be formatted with the announcement file in order to read or write it.

E41 (W) **Refresh currently in progress, please try again later.**

MSS is in use by **SPE** duplication memory refresh. This is an indication to try the command again later.

E42 (W) **MSS device is maintenance busy.**

Save Translation Command

The **save translation** command copies translation data from memory to the MSS. By default, translation data is written to the primary MSS device in a simplex processor system, or to both primary MSS devices in a duplicated processor system. In addition, the **save translation** command can be directed to write to devices on either of the processors and/or the secondary device(s). The translation data can be automatically backed up as part of regularly scheduled maintenance. It is recommended that automatic backup be performed on a daily basis.

Command Syntax

save translation [**active** | **standby** | **SPE_A** | **SPE_B** | **both** | **either**] [**disk** | **tape**]

The bracketed options specify which mass storage system the translation data is to be saved to. This set of options only applies in a duplicated system. The options, **SPE_A** and **SPE_B**, refer to processors **A** and **B** respectively in a duplicated system.

Invoking the command with the **active** option instructs the system to write to the specified device in the active processor.

Invoking the command with the **standby** option instructs the system to write to the specified device in the standby processor.

Invoking the command with the **either** option causes the system to write the translation data to the specified device on both processors. If the standby processor is inaccessible, the command will still execute on the active processor and data will be copied to the specified device.

Invoking the **save translation** command with the **SPE_A** option forces the system to write the translation data to the specified device in processor A. **SPE_A** is the default in a simplex system.

Invoking the **save translation** command with the **SPE_B** option forces the system to write the translation data to the specified device in processor B.

In duplicated systems, **both** is the default option.

The [**disk** | **tape**] option specifies the device on which to save the translation data. This option set only applies in a system with a disk.

Invoking the **save translation** command with the **disk** option forces the system to write the translation data to the disk. In a system configured with both a disk and a tape, **disk** is the default.

Invoking the **save translation** command with the **tape** option forces the system to write the translation data to the tape. In a system configured with only a tape unit, **tape** is the default.

In a duplex system, the capability to save translation to only one of the MSS devices is provided. This capability should be exercised with extreme caution since it is likely to lead to translation data inconsistencies between the different devices on the two processors.

Command Operation

The **save translation** command writes two time-stamped identical copies of translation data to the selected device(s). The time stamp for both copies will be the same (it will be the time of writing to the first copy). Each copy is written as consecutive 2K blocks. Each block contains a checksum for error detection purposes. Each copy contains a time stamp and the state of the copy (either "good" or "bad").

The save operation writes one complete copy first, then writes the second copy in a different area of the device. The save operation updates only one copy at a time. The save operation will always choose to overwrite the "least good" copy first. The following selection criteria should be applied on both the active and standby devices:

- If a copy has a bad status, always overwrite that copy first.
- If both copies have good status, overwrite the one with the older time stamp. If both time stamps are the same, it does not matter which copy is overwritten first since the copies are identical.

Each copy of the translation data is marked "bad" prior to a translation save operation, and it will only be marked "good" after the save operation to that file completes successfully. Any failure during the save operation, including a system crash, will usually affect only one copy of translation data. If this occurs, the affected copy will be marked with a "bad" status indicator and should not be used to load translation into the system. Thus an intact copy of translation can be used as a backup. Normally at least one of the two copies will be in a good state. If **save translation** is performed automatically as part of daily scheduled maintenance, there is a high degree of probability that identical copies of translation exist on the tape.

When MSS devices on both processors in a duplicated system are specified, the save operation will save translation data from the active processor to the active and standby MSS devices in parallel. The status of each save operation is reported to the user separately. If one of the save operations fail, the save operation to the other device continues.

If invoked during regularly scheduled maintenance, the **save translation** command in a duplicated processor system will save the translation to one of the MSS devices even if the other device is out of service.

The command completion status is displayed on Screen D-11.

Save Translation		
Processor	Command Completion Status	Error Code
SPE_A*	success/specific error message	n1
SPE_B*	success/specific error message	n2

Screen D-11. Command Completion Status

* In a simplex system, only the active (default) SPE status is given. In a duplex system, if a qualifier is used to select save translation for only one SPE, only that SPE's status is given.

The displayed information includes either a success message or an error message and error code for each processor (see Table D-7). A success message means both copies of translation data were updated successfully on a particular device from the in-memory translation data. The error code for each processor provides further information as to whether only one or two copies of translation data were updated successfully. If only one copy was updated or neither copy was updated, an alarm would be raised on that device so that the system technician can take appropriate repair actions.

Table D-7. Save Translation Command Error Codes

CODE Interpretation	
0	The save operation was a complete success; both copies of translation data were updated.
1	The save operation was a partial success; only one of the two copies of translation data was redated.
2	The save operation failed completely; no translation was saved to either copy of translation data.

The following operational rules apply to the **save translation** command:

1. The **save translation** command will only be allowed if there are no translation updates being made. All requests to update translation, after the command starts, will be denied (E1).

If Terminal Translation initialization (TTI) activation or deactivation is in progress, the **save translation** command will be denied (E2).

2. The **save translation** command will not be allowed if the MSS is engaged by another user or is being used for background maintenance (E3).
3. The options entered by the user are validated against the system configuration and the target devices for the **save translation** command are determined (E11, E12).

4. If the user requests that translation be saved to a disk, the disk must be in service (E13). If the user requests that translation be saved to a tape, the tape must be in service (E14). If the user requests that translation be saved to the standby processor, the standby processor must be in service, shadowing must be enabled, refresh must be completed, and handshake must be up (E16).
5. If the file system of the target device is a core-dump file system, the command will be denied (E17).

If the target device is a tape, and the file system type of the tape is an installation file system, and the vintage of the boot image running in the active processor matches the vintage of the boot image on the tape, then the system will first configure the tape with the same configuration as is currently running. If the in-memory vintage does not match the vintage on the tape, the save translation command will be denied (E18). In this situation, the user must manually configure the tape by using the **configure** command and then reissue the **save translation** command.

6. If errors are encountered in the operations described above, the save operation should not be attempted.

Backup Command

Additional data integrity is achievable through disk to tape backups. These backups may be done on demand or run daily as part of scheduled maintenance. The **backup** command will work in either a simplex SPE or a duplex SPE system. When the command is run as part of scheduled maintenance, the default for a simplex system is an **incremental** backup of SPE A. In a duplex system, the default is an **incremental** backup on **both** SPE A and SPE B.

When the **backup** command is executed on demand the defaults remain the same.

Command Syntax

backup disk [active | standby | SPE_A | SPE_B | both | either] [incremental | full]

The bracketed options, **[active | standby | SPE_A | SPE_B | both | either]**, specify which mass storage system the user wishes to backup. Invoking the **backup** command with the **SPE_A** option causes files from the disk associated with processor **A** to be copied to the tape cartridge on the same processor. **SPE_A** is the default in a simplex system. Invoking the **backup** command with the **SPE_B** option causes the files on the disk on processor **B** to be copied to the tape on the same processor.

Invoking the command with the **active** option causes the files on the disk on the active processor to be copied to the tape on that processor.

Invoking the command with the **standby** option causes the files on the disk on the standby processor to be copied to the tape on that processor.

Invoking the **backup** command with the **both** option causes files on the disks associated with both of the processors to be backed up to their respective tapes concurrently. If the standby processor is inaccessible the command will fail on both processors. No files will be copied from disk to tape on either processor. The default value in a duplex system is **both**.

Invoking the **backup disk** command with the **either** option causes the files on the disks associated with both of the processors to be backed up to their respective tapes concurrently. If the standby processor is inaccessible, the command will still execute on the active processor and the disk files will be copied to tape.

Invoking the command with the **incremental** option causes a selective backup to be performed. In this case, all files on the disk that are marked as "good files" and which have a newer last file update time than the corresponding tape files, are copied to the tape. Not copying files marked as "bad" ensures that corrupted files do not overwrite good (but possibly older) files. The default value is **incremental**.

If a **full** disk backup is specified, the entire disk is copied to tape. All files, "good" and "bad," regardless of the last file update times, will be copied to the tape.

Command Operation

When an **incremental** backup is performed, the following procedure governs this operation. Before each file is copied from the disk to the tape, the file on the tape is marked as "bad." When the file has been completely copied over to the tape, the file is then marked as "good" on the tape. This process ensures that if the system were to reboot in the middle of this operation, files in the process of being copied will not be usable (on the tape) because they will still be marked as "bad."

When a **full** backup is performed, the following procedures are used. When the process begins, all files on the tape are marked as "bad." When the entire disk has been copied, the files on the tape will be marked as "good." The only exception to this is that a file which is marked as "bad" on the disk will retain this marking on the tape also.

When the backup is performed on **both** processors, the operation is performed in parallel. If the backup operation fails on one processor the backup operation will proceed on the other processor.

The success or failure of the backup operation for each processor will be displayed on the screen, as shown on Screen D-12:

Backup Disk			
Processor		Command Completion Status	
SPE_A*		success/specific	error message
SPE_B*		success/specific	error message

Screen D-12. Backup Completion Station

* In a simplex system, only the active (default) SPE status is given. In a duplex system, if a qualifier is used to select backup disk for only one SPE, only that SPE's status is given.

The following operational rules apply to the **backup** command:

1. The **backup** command will only be allowed if there are no other applications currently using the MSS devices (E3).
2. The options entered by the user are validated against the system configuration and the target devices for the backup command are determined (E11).
3. The disk must be in service (E13). The tape must be in service (E14).
4. If the user requests that the **backup** take place on the standby processor, the standby processor must be in service, shadowing enabled, and refresh completed (E16). If the file system of the tape is a core-dump file system, the command will be denied (E17).

For incremental backup, if the file system type of the tape is an installation file system, and the vintage of the boot image running in the active processor matches the vintage of the boot image on the tape, then the system will first configure the tape with the same configuration as is currently running. If the in-memory vintage does not match the vintage on the tape, the **backup** command will be denied (E18). The tape must be manually configured in this situation.

If the **incremental** option is specified and the file systems of the disk and tape are not the same, the command will be denied (E23).

5. For full backup, if the tape has installation, large, or core-dump file system, backup will proceed.
6. If errors are encountered in the operations described above, the backup operation should not be attempted.

Restore Command

The **restore** command allows the user to copy files from a tape (which was used to backup the disk) to the disk. This operation will be used for system installation, system upgrades/updates, or after a repair of the disk has occurred.

Command Syntax

restore disk [active | standby | SPE_A | SPE_B | both | either] [incremental | full]

The options, **[active | standby | SPE_A | SPE_B | either | both]**, specify which mass storage system the user wishes to restore.

Invoking the **restore** command with the **SPE_A** option causes files from the tape associated with processor **A** to be copied to the disk on that same processor. **SPE_A** is the default in a simplex system.

Invoking the **restore** command with the **SPE_B** option causes files from the tape associated with processor **B** to be copied to the disk on that same processor.

Invoking the **restore** command with the **active** option causes the files on the tape on the active processor to be copied to the disk on the same processor.

Invoking the **restore** command with the **standby** option causes files from the tape associated with the standby processor to be copied to the disk on that same processor.

Invoking the **restore** command with the **both** option forces the system to copy files from the tape-to-disk device on both mass storage systems concurrently. If the standby processor is inaccessible, the command will fail on both processors. This means that no data will be written on either of the specified processors. The default in a duplex system is **both**.

Invoking the **restore** command with the **either** option forces the system to copy files from tape to disk device in both mass storage systems concurrently. If the standby processor is inaccessible, the command will still execute on the active processor and files will be copied to the disk.

Invoking the command with the **incremental** option causes a selective restore operation to be performed. In this case, all files on the tape that are marked as "good" and which have a newer last file update time than the corresponding disk files, are copied to the disk. Not copying files marked as "bad" ensures that corrupted files do not overwrite good (but possibly older) files. The default value is **full**.

If a **full** disk restore is specified, the entire contents of the tape are copied to the disk. All files, "good" and "bad:" regardless of the last file update times, are copied to the disk.

Command Operation

For an **incremental** restore, the files are copied in the following manner. Before each file is copied from the tape to the disk, the file on the disk is marked as "bad." When the file from the tape has been completely copied over onto the disk, the file is then marked as "good" on the disk. This process ensures that if the system were to reboot in the middle of the operation, files in the process of being copied will not be usable because they are still marked as "bad."

For a **full** restore operation, the files are copied in the following manner. When the process begins, all files on the disk will be marked as "bad." When the entire tape has been copied to disk, the files on the disk will be marked as "good." The only exception to this is that a file which is marked as "bad" on the tape will retain this marking on the disk also.

The success or failure of the command for each processor will be displayed on the screen, as shown in Screen D-13:

Restore Disk			
Processor	Command	Completion	Status
SPE_A*	success/specific	error	message
SPE_B*	success/specific	error	message

Screen D-13. Restore Completion Status

The following operational rules apply to the restore command:

1. The **restore** command will only be allowed to run if there are no other applications currently using the MSS devices (E3).
2. The options entered by the user will be validated against the system configuration, and the target devices for the restore command are determined (E11).
3. The disk must be in service (E13). The tape must be in service (E14).
4. If the user requests that the restore take place on the standby processor, the standby processor must be in service, shadowing enabled, and refresh completed (E16).
5. If the file system of the tape is a core-dump file system, the command will be denied (E17).

If the file system of the tape is an installation file system, the command will be denied (E22). If the **incremental** option is specified and the file systems of the disk and tape are not the same, the command will be denied (E23).

6. If errors are encountered in the operations described above, the restore operation should not be attempted.

Error Conditions

The following is a list of all error messages displayed to the user. If any of these error conditions can be attributed to hardware failures or disk/tape configuration problems, they will be logged with the maintenance subsystem. Error messages that are caused by a user entering improper command options are not logged with the maintenance subsystem; the user is notified of the error.

For each error message listed, an identifier is provided which indicates whereon the screen the message will occur.

A failure can occur on either processor in a duplicated system. When the error is displayed, it is associated with the processor on which the error was encountered.

E1 **login: cha station 51001 has data locked**

This error message is displayed for the **save translation** command when there is an active **translation update** command.

E2 (M) **TTI activation or deactivation is in progress; this command is not allowed at this time**

When TTI activation or deactivation is in progress, **save translation** cannot occur. The TTI activation or deactivation must be suspended first.

E3 (M) **'loginid': "command" has cmd conflict**

This message means that the user logged in with 'loginid' has a command that conflicts with the MSS command you are using.

E4 (W) **No tape in tape drive**

This message means that the tape cartridge is missing from the drive.

E5 (W) **Tape write failure: tape cartridge or device failure**

This message means that there is a failure in writing to the tape. This may be caused by the tape cartridge missing from the tape drive, or by non-operational tape hardware.

E6 (W) **Tape read failure: tape cartridge or device failure**

This message means there is a failure in reading from the tape. This may be caused by the tape cartridge missing from the tape drive, or by non-operational tape hardware.

E7 (M) **System error; Reboot**

This message means there was a severe system error while processing this request. This might require system reboot or craft intervention to resolve.

E9 (W) Disk write failure: device failure

This message means that there is a hardware problem with the drive itself.

E10 (W) Disk read failure: device failure

This message means there was a failure in reading from the disk. This may be caused by a media error or by non-operational disk hardware.

E12 (M) The disk option is invalid in a tape-only system

This message means that the disk option was entered on an MSS command for a tape-only system.

E13 (W) Disk device is out of service

This message means that the disk device has been taken out of service by maintenance.

E14 (W) Tape device is out of service

This message means that the tape device has been taken out of service by maintenance.

**E16 (M) Standby processor (SPE_A) is not available or
Standby processor (SPE_B) Is not available**

This message means that the standby processor has been taken out of service by maintenance, that the SPE-SELECT switches are not in their normal position, or that some other hardware problem exists. When the standby processor is out of service, memory shadowing from the active processor to the standby processor is disabled.

E17 (W) Tape contains a coredump file system

This message indicates that the wrong type of tape is in the tape drive.

**E18 (W) Tape vintage does not match in-memory vintage; must
configure tape first**

By ensuring that the tape vintage matches the in-memory vintage, the system technician is made aware of a possible operational error.

E19 (W) Large system boot image is corrupt on the tape

This message means that the large system boot image has been overwritten by a core dump. The tape cannot be converted to a large system tape.

E22 (W) Tape file contains an installation file system

This message indicates that the wrong type of tape is in the tape

drive.

E23 (W) **Disk and tape are configured with different file systems**

This message occurs when the disk and tape are configured with different file systems and the **backup** or **restore** commands are issued with the **incremental** options.

E27 (W) **Device access failure: device directory corruption**

This message means that the directory files on a device are corrupt.

E28 (W) **Small file system already exists**

This message means that the user is trying to configure a small file system to a tape that already contains a small file system. This operation is not allowed.

E29 (W) **Large file system already exists**

This message means that the user is trying to configure a large file system to a tape that already contains a large file system. This operation is not allowed.

References

E

The following is an abbreviated listing of DEFINITY Generic 3 documents. Included is a brief description of each document in the list.

To order copies of any of these documents, refer to the address on the back of this document's title page. In addition to the following documents, other DEFINITY books are available. See the GBCS Publications Catalog also available from AT&T Customer Information Center.

DEFINITY Communications System Generic 3 CallVisor **555-230-220**
ASAI Technical Reference
Issue 2

This manual is intended for applications designers to use in building and programming custom applications and features using the Adjunct/Switch Application Interface.

DEFINITY Communications System Generic 3 CallVisor **555-230-221**
ASAI Protocol Reference
Issue 2

This document describes the layer 3 protocol by providing an understanding of the ISDN messages, Facility Information Elements, and information elements. It is designed for the library or driver programmer for an adjunct computer to use in creating the library of commands used by the applications programmer.

*DEFINITY Communications System Generic 3 ASAI
Planning Guide
Issue 2* **555-230-222**

This document provides procedures and directions to the account team and customer personnel for effectively planning and implementing the CallVisor ASAI PBX-Host environment. Hardware and software requirements are given.

*DEFINITY Communications System Generic 3 V2
Version 2 Capabilities
Issue 1* **555-230-496**

Provides a description of the new capabilities, features and enhancements available on the DEFINITY Generic 3 V2 systems that were not available on DEFINITY Generic 1 and Generic 3 V1 systems.

*DEFINITY Communications System Generic 3 V2
DS1/CEPT/ISDN PRI Reference Manual
Issue 1* **555-230-107**

A detailed technical description of digital trunks in the DEFINITY Communication Systems. This includes trunks conforming to the DS1 standard (1.544 Mbps) and the CEPT1 standard and all other methods of signaling, including bit oriented signaling as well as ISDN-PRI signaling. This document includes background information on these topics, information on how digital trunk capabilities have been designed into the DEFINITY systems and information for field personnel and customers on how to provision and administer digital trunk capabilities and features. Provides both domestic and international information.

*DEFINITY Communications System Generic 3 Feature
Description
Issue 1* **555-230-204**

Provides a technical description of system features and parameters.

*An Introduction to DEFINITY Communications System
Generic 3
Issue 1* **555-230-023**

Provides an overview of DEFINITY Generic 3. Major hardware components, such as the switch, terminals, and software applications, are described to provide an understanding of the system's functional areas. Also provides an overview of System Management and data features and functions available with DEFINITY Generic 3.

*DEFINITY Communications System Generic 3
Hospitality Services
Issue 1* **555-230-024**

Provides an overview of DEFINITY Genetic 3 Hospitality Services. Major hardware components, such as the system cabinet, and terminals are described to provide an understanding of the system's functional areas. Also provides an overview of the hospitality features available with the system, as well as other voice, data, and System Management features.

*DEFINITY Communications System Generic 3 V2 —
Pocket Reference
Issue 1* **555-230-205**

Provides the reader with a quick, pocket-sized reference to the benefits, requirements, limitations, parameters, features, and circuit packs associated with the system.

*DEFINITY Communications System Generic 3 System
Description
Issue 1* **555-230-206**

Provides a technical description of the system and its hardware, environmental and space requirements, and parameters. Also provides a brief description of features and services.

*DEFINITY Communications System Generic 3 V2
Transition Reference
Issue 1* **555-230-498**

A compendium of information needed by AT&T personnel and customers involved in planning upgrades or migrations from either G1, G3iV1, or G3rV1.

*DEFINITY Communications System Genetic 2 to
Generic 3 V2 Transition Reference
Issue 2* **555-230-520**

A compendium of information needed by AT&T personnel and customers involved in planning upgrades or migrations from G2.

*DEFINITY Communications System
Generic 3 Wideband Technical Reference
Issue 1* **555-230-230**

The purpose of this book is to provide an overview of the Wideband switching feature. This book covers the basics, a description of the feature itself, available data services, and a sample configuration.

*DEFINITY Communications System Generic 3
Implementation
Issue 1* **555-230-653**

Provides the procedures and associated forms for collecting system and terminal software information for G3 V2 systems. This information is used to initialize the system using the DEFINITY G3-MT.

*DEFINITY Communications System Generic 3
Implementation Blank Forms
Issue 1* **555-230-653B**

Contains forms for collecting data necessary to initialize the DEFINITY switch. Automatically included when ordering the Implementation manual but may be ordered separately.

*DEFINITY Communications System Generic 3 V2 Traffic
Reports
Issue 1* **555-230-511**

A technical description for administrators who validate traffic reports and evaluate system performance.

*DEFINITY Communications System
Generic 1 and Generic 3 Installation and Test
Issue 4* **555-230-104**

Provides the information necessary to perform the tasks of installing and testing the system's common equipment. Includes a description of the necessary tools and equipment.

*DEFINITY Communications System Generic 3 — Basic
Call Management System Operations
Issue 3* **555-230-703**

Describes all the features and provides the "how-to-operate" instructions for the Basic Call Management System (BCMS) feature.

*DEFINITY Communications System Generic 1 and
Generic 3 — Console Operations
Issue 2*

555-230-700

Provides “how-to-operate” instructions for the attendant console. Serves as a reference when defining the console control keys and Incoming Call Identification requirements.

*DEFINITY Communications System Generic 1 and
Generic 3 — User's Guide — Hospitality Operations
Issue 2*

555-230-723

Contains procedures for using the Hospitality Services of DEFINITY Generic 1 and Generic 3. These services include a group of system-based features that support the lodging and health industries.

*DEFINITY Communications System Generic 1 and
Generic 3 Automatic Call Distribution (ACD) Agent
Instructions
Issue 2*

555-230-722

Provides information for use by agents after training is completed. The various ACD features are described and the procedures for using them are provided in this document.

*DEFINITY Communications System Generic 1 and
Generic 3 Automatic Call Distribution (ACD) Supervisor
Instructions
Issue 2*

555-230-724

Provides information for use by supervisors after training is completed. The various ACD features are described and the procedures for using them are provided in this document.

*DEFINITY Communications System Generic 1 and
Generic 3i/s/vs Maintenance
Issue 6*

555-204-105

Provides the information necessary for monitoring, testing, and maintaining the system. It is intended to cover many of the faults and troubles that can occur in the system.

*DEFINITY Communications System Generic 3r
Maintenance V1 and V2
Issue 3* **555-230-105**

Provides the information necessary for monitoring, testing, and maintaining the system. It is intended to cover many of the faults and troubles that can occur in the system.

*DEFINITY Communications System Generic 3 V1.1 and
V2 Upgrades and Additions
Issue 1* **555-230-107**

Provides procedures and information required to upgrade a from an earlier system to a DEFINITY Generic 3 system and to make additions to an existing G3 system after the initial switch installation.

*DEFINITY Communications System Generic 3 Call
Vectoring Guide
Issue 2* **535-230-520**

The Call Vectoring Guide discusses how to write, use, and troubleshoot vectors, which are command sequences that process telephone calls in an Automatic Call Distribution (ACD) environment. The guide is organized into two parts: a step-by-step tutorial that illustrates how to write and implement a basic vector; and a reference with detailed descriptions of the Call Vectoring features, vector management, vector administration, adjunct routing, troubleshooting, and interactions with management information systems (including the Call Management System).

*DEFINITY Communications System Generic 3 Planning
and Configuration
Issue 2* **555-230-601**

Provides information be used by the Account Team to determine the customer's requirements and to collect the information needed to estimate system hardware requirements.

Glossary

3B2 Message Server

An AT&T software application that combines voice and data messaging services for voice terminal users whose extensions are connected to a DEFINITY G1 or DEFINITY G3.

800 service

A service in the USA, which allows incoming calls from a certain area or areas to an assigned number for a flat-rate charge based on usage.

A

abandoned call

An incoming call where the caller hangs up before being answered.

access code

A 1-, 2-, or 3-digit dial code used to activate or cancel a feature, or access an outgoing trunk. The star (*) and pound (#) can be used as the first digit of an access code.

access endpoint

Either a nonsignaling channel on a DS1 interface or a nonsignaling port on an analog tie trunk circuit pack that is assigned a unique extension.

access tie trunk

A trunk that connects a main communications system with a tandem communications system in an electronic tandem network (ETN). An access tie trunk can also be used to connect a system or tandem to a serving office or service node. Also called "access trunk"

ACCUNET

A trademarked name for a family of digital services offered by AT&T in the USA.

ACD

See **Automatic Call Distribution**. ACD also refers to the "Work State" indicating that the agent is on an ACD call.

ACD split (or Split)

A group of extensions that are staffed by agents trained to handle a certain type of incoming call. Valid split numbers range from 1 through 99. Each number identifies a unique grouping of ACD agent positions. (Also referred to as an ACD hunt group or just hunt group.)

ACD work modes

See **Work Modes**.

active-notification association

A "link" that is initiated by the adjunct allowing it to receive Event Reports for a specific switch entity, for example, an outgoing call. This association is initiated by the adjunct via the *Event Notification Request* capability.

active-notification call

A call for which Event Reports are being sent over an active-notification association (communication channel) to the adjunct. Sometimes referred to as a monitored call.

active notification domains

Domains are VDNs and ACD Split extensions for which Event Notification has been requested.

adjunct-control association

A relationship initiated by an application via the *Third Party Make Call*, the *Third Party Take Control* or *Domain (Station) Control* capabilities to setup calls and control calls already in progress.

adjunct-controlled calls

Include all the calls that can be controlled using an adjunct-control association. These calls must have been originated via the *Third Party Make Call* or *Domain (Station) Control* capabilities or must have been taken control of via the *Third Party Take Control* or *Domain (Station) Control* capabilities.

adjunct-controlled splits

ACD splits administered to be under adjunct control. Agents logged into such splits must do all telephony and ACD login and/or logout and change work mode functions through the adjunct (except for

auto-available adjunct controlled splits, whose agents may not be logged in and/or logged out or have their work modes changed).

Adjunct-Monitored Calls

Include all the adjunct-controlled calls and the active-notification calls. In addition it includes calls which provide event reporting over domain-control associations.

application

An application refers to an adjunct entity that requests and receives ASAI services or capabilities. One or more applications can reside on a single adjunct. However, the switch cannot distinguish among several applications residing on the same adjunct and treats the adjunct, and all resident applications, as a single application. The terms application and adjunct are used interchangeably throughout this document.

after call work (ACW) mode

In this mode, agents are unavailable to receive ACD calls. Agents should enter the ACW mode to perform ACD-related activities such as filling out a form after an ACD call. If agents are in the Manual-in mode and disconnect from an ACD call, they automatically enter the ACW mode. Agents who normally use Auto-In mode can enter the ACW state by depressing the ACW button while on a call.

adjunct

A processor that does one or more tasks for another processor and that is optional in the configuration of the other processor.

adjunct-switch application interface (ASAI)

An AT&T recommendation for interfacing adjuncts and communications systems, based on the CCITT Q.932 specification for layer 3.

administer

To access and change parameters associated with the services or features of a system.

Administered Connection (AC)

The Administered Connection is a feature in DEFINITY G3V2 that allows the switch to automatically establish and maintain end-to-end connections between access

endpoints (trunks) and/or data endpoints (data modules).

administration terminal

A terminal used to administer and maintain a system. See also **terminal**.

Administration Without Hardware (AWOH)

Provides the ability to administer ports without the need for the associated terminals or other hardware to be physically present.

abandoned call

An incoming call where the caller hangs up before being answered.

agent (or ACD agent)

An answering position who receives calls that are directed to a split. A member of an ACD hunt group (ACD split).

agents in multiple splits

An agent may be logged into more than one split (three maximum). If, while logged into more than one split, the agent (1) answers an ACD call, (2) is in ACW mode for any split, or (3) makes or receives a direct extension call, the switch will not distribute additional ACD calls to that agent.

agent report

Provides historical traffic information for internally measured agents.

American National Standard Code for Information Interchange

See **ASCII**.

analog

The representation of information by means of continuously variable physical quantities such as amplitude, frequency, and phase.

analog data

Data that is transmitted over a digital facility in analog (pulse code modulation) form. The data must pass through a modem either at both ends or at a modem pool at the distant end.

analog telephone

A telephone that receives acoustic voice signals and sends analog electrical signals along the telephone line. Analog telephones are usually served by a single wire pair (tip and ring). The model-2500 telephone set is a typical example of an

analog telephone.

analog-to-digital converter (ADC)

A device that converts an analog signal to digital form. See also **digital-to-analog converter**.

angel

A microprocessor located on each port card in a processor port network (PPN). The angel uses the control-channel message set (CCMS) to manage communications between the port card and the archangel on the controlling switch processing element (SPE). The angel also monitors the status of other microprocessors on a port card and maintains error counters and thresholds. See also **archangel**.

answerback code

An assigned number used to respond to a page from a code-calling or loudspeaker-paging system, or to retrieve a parked call.

appearance

A software process that is associated with an extension and whose purpose is to supervise a call. Also called "call appearance," "line appearance," and "occurrence."

applications processor

A minicomputer used with several user-controlled applications such as traffic analysis and electronic documentation.

architecture

The organizational structure of a system, including hardware and/or software.

ASCII (American National Standard Code for Information Interchange)

The standard code, using a coded character set consisting of 7-bit coded characters (eight bits, including parity check), used for information interchange among data processing systems, data communications systems, and associated equipment. The ASCII set consists of control characters and graphic characters.

asynchronous data transmission

A method of transmitting data in which each character is preceded by a start bit and followed by a stop bit, thus permitting data characters to be transmitted at irregular intervals. This type transmission is advantageous when transmission is not

regular (characters typed at a keyboard). Also called "asynchronous transmission." See also **synchronous data transmission**.

Association

An association is a communication channel between the adjunct and switch for messaging purposes. An active association is one which applies to an existing call on the switch or to an extension on the call.

asynchronous data unit (ADU)

A data communications equipment (DCE) type device that allows direct connection between RS232C equipment and a digital switch.

attendant

A person at a console on a customer's premises who provides personalized service for incoming callers and voice-services users by performing switching and signaling operations. See also **attendant console**.

attendant console

The workstation used by an attendant. The attendant console allows the attendant to originate a call, answer an incoming call, transfer a call to another extension or trunk, put a call on hold, and remove a call from hold. Attendants using the console can also manage and monitor some system operations. Also called "console." See also **attendant**.

Audio Information Exchange (AUDIX)

A fully integrated voice-mail system that can be used with a variety of communications systems to provide call-history data, such as subscriber identification and reason for redirection.

auto-in trunk groups

Those trunk groups where the CO processes all of the digits for the incoming call. Whenever the DEFINITY switch determines that the CO has seized a trunk from an Auto-In trunk group, it automatically (without processing any digits) connects the trunk to the destination. The destination will typically be an ACD split where-if there are no agents available—the call will go into a queue in which the callers wait to be answered in the

order in which they arrived.

auto-in work mode

One of four agent work modes. The work mode where an agent indicates, to the system, that the agent is ready to process another call as soon as the current call is completed. Specifically, if an agent disconnects from an ACD call while in Auto-in Work Mode, then that agent immediately becomes available to receive another ACD call. See **Manual-In Work Mode** for a contrast.

Automatic Call Distribution (ACD) split

Calls of a similar type are distributed among agents.

automatic trunk

A trunk that does not require the sending or receiving of addressing information because the destination is predetermined. A request for service on the trunk, called a "seizure," is sufficient to route the call. The normal destination of an automatic trunk is the communications-system attendant group. Also called "automatic incoming trunk" and "automatic tie trunk."

automatic restoration

A service that restores disrupted connections between access endpoints (nonsignaling trunks) and data endpoints (devices that connect the switch to data terminal and/or communications equipment). This restoration is done within seconds of a service disruption so that critical data applications can remain operational.

auxiliary equipment

Equipment used for optional system features, such as Loudspeaker Paging and Music-on-Hold.

auxiliary trunk

A trunk used to connect auxiliary equipment, such as radio-paging equipment, to a communications system.

Aux-Work Mode

In this mode, agents are unavailable to receive ACD calls. Agents should enter Aux-Work mode when involved in non-ACD activities such as taking a break, going to lunch, or placing an outgoing call.

When agents log in, they are automatically placed in the Aux-Work mode. They can then use the Auto-In or Manual-In feature to make themselves available to answer the first call.

Also, the last available agent in a split cannot enter the Aux-Work mode if any ACD calls are remaining in the queue. If the last available agent attempts to enter Aux-Work mode, the following occurs (1) Calls in the queue are routed to the agent until the queue is empty (2) If the last available agent has an Aux-Work button, the light next to the button flashes until all calls in the queue are answered. When the last call is answered, the light next to the button goes on steadily, and the agent then enters Aux-Work mode.

B

bandwidth

The difference, expressed in Hertz, between the highest and lowest frequencies in a range of frequencies.

barrier code

A security code used with the Remote Access feature to prevent unauthorized access to the system.

baud

In telecommunications applications, a unit of transmission speed equal to the number of signal events per second. See also **bit rate** and **bits per second**.

BCC

The Bearer Capability Class (BCC) identifies the type of a call, for example, voice and different types of data. Determination of BCC is based on the call originator's characteristic for non-ISDN endpoints and on the Bearer Capability and Low-Layer Compatibility Information Elements of an ISDN endpoint.

Current BCCs are

- 0: Voice-grade data and voice
- 1: DMI Mode 1,56 kbps data transmission

- 2: DMI Mode 2, synchronous/asynchronous data transmission up to 19.2 kbps
- 3: DMI Mode 3, 64 kbps circuit/packet data transmission
- 4: DMI Mode 0, 64 kbps synchronous data
- 5: Temporary Signaling Connection
- 6: Wideband Call, 128 to 1984 kbps synchronous data

bit (binary digit)

One unit of information in binary notation having two possible states or values, 0 or 1.

bits per second (bps)

The number of binary units of information that are transmitted or received per second. See also **baud** and **bit rate**.

bit rate

The speed at which bits are transmitted, usually expressed in bits per second. Also called "data rate." See also **baud** and **bits per second**.

bridge (bridging)

The appearance of a voice terminal's extension at one or more other voice terminals.

BRI

The ISDN Basic Rate Interface specification.

bridged appearance

A call appearance on a voice terminal that matches a call appearance on another voice terminal for the duration of a call.

buffer

(1) In hardware, a circuit or component that isolates one electrical circuit from another. Typically, a buffer holds data from one circuit or process until another circuit or process is ready to accept the data. (2) In software, an area of memory used for temporary storage.

bus

A multiconductor electrical path used to transfer information over a common connection from any of several sources to any of several destinations.

business communications terminal (BCT)

An integrated digital data terminal used for business applications. A BCT can function via a digital terminal data module (DTDM) or a processor data module (PDM) as a special-purpose terminal for services provided by an applications processor (AP) or, as a terminal for data entry and retrieval.

BX.25

An AT&T version of the CCITT X.25 protocol for data communications. BX.25 adds a fourth level to the standard X.25 interface. This uppermost level combines levels 4, 5, and 6 of the International Standards Organization (ISO) reference model.

bypass tie trunks

A one-way, outgoing tie trunk from a tandem switch to a main switch in an electronic tandem network (ETN). Bypass tie trunks, provided in limited quantities, are used as a "last-choice" route when all trunks to another tandem switch are busy. Bypass tie trunks are used only if all applicable intertandem trunks are busy.

byte

A sequence of (usually eight) bits processed together.

C

cabinet

Housing for racks, shelves, or carriers that hold electronic equipment.

cable

The physical connection between two pieces of equipment — for example, cable from a data terminal to a modem — or between a piece of equipment and a termination field — for example, circuit pack I/O cables.

cable connector

A cable connector is either a jack (female) or plug (male) on the end of a cable. A cable connector connects wires on a cable to specific leads on telephone or data equipment.

call appearance, attendant console

Six buttons, labeled "a" through "f," and used to originate, receive, and hold calls. Each button has two lights to show the status of the call appearance.

call appearance, voice terminal

A button labeled with an extension number and used to place outgoing calls, receive incoming calls, or hold calls. Two lights next to the button show the status of the call appearance or the status of the call.

call control capabilities

call control capabilities are all the capabilities (*Third Party Selective Hold, Third Party Reconnect, Third Party Merge*) that can be used in either of the Third Party Call Control ASE (cluster) subsets: Call Control and Domain Control.

call detail recording

A switch feature that utilizes software and hardware to record call data. (Same as SMDR or CDRU.)

call detail recording utility (CDRU)

Applications software that collects, stores, optionally filters, and outputs call detail records for direct or polled output to peripheral devices.

call management system (CMS)

An application, running on an adjunct processor, that collects information from an Automatic Call Distribution (ACD) unit. CMS enables customers to monitor and manage telemarketing centers by generating reports on the status of agents, splits, trunks, trunk groups, vectors, and vector directory numbers (VDNs), and enables customers to partially administer the ACD feature for a communications system.

call reference value (CRV)

An identifier present in ISDN messages that serves to associate a related sequence of messages. In ASAI, the CRVs distinguish between associations.

call vector

A set of up to 15 vector commands to be performed for an incoming or internal call.

callback call

A call that is automatically returned to a voice terminal user who activated the Automatic Callback or Ringback Queuing feature.

call-waiting ringback tone

A low-pitched tone identical to ringback tone except that the tone decreases in the last 0.2 second. A call-waiting ringback tone notifies the attendant that the Attendant Call Waiting feature has been activated and that the called user is aware of the waiting call.

call work code

A number, up to 16 digits, entered by Automatic Call Distribution (ACD) agents to record the occurrence of customer-defined events (such as account codes, social security numbers, or phone numbers) on ACD calls.

carrier

An enclosed shelf containing vertical slots that hold circuit packs.

carried load

The amount of traffic actually served by traffic-sensitive facilities during a given interval.

CCS or hundred call seconds

A unit of traffic measure that is used to determine usage. In order to determine usage for a facility, it is scanned every 100 seconds. If the facility is found busy, then it is assumed to have been busy for the entire scan interval. There are 3600 seconds per hour. The Roman numeral for 100 is the capital letter "C." The abbreviation for call seconds is CS. Therefore, 100 call seconds is abbreviated as CCS. If a facility is busy for an entire hour, then it is said to have been busy for 36 CCS. *See also Erlang.*

capability

A capability is either a request or indication of an operation. For example, a *Third Party Make Call* is a request for setting-up a call and an *Event Report* is an indication that an event has occurred.

capability groups

Capability groups are sets of capabilities, provisioned through switch administration, that can be requested by an application. Each capability group may contain capabilities from several capability groups. Capability groups are also referred to, in other documentation, as administration groups or Application Service Elements (ASEs). Capability groups denote association types. For example, *Call Control* is a type of association which allows certain functions (the ones in the capability group) to be performed over this type of association.

Cause Value

A Cause Value is returned in responses to requests or in event reports when a denial occurs or an unexpected condition is encountered. ASAI cause values fall into two "coding standards": Coding Standard 0 includes any cause values that are part of AT&T and CCITT ISDN specifications, and, Coding standard 3 includes any other ASAI cause values. This document uses a notation for cause value where the coding standard for the cause is given first, then a slash, then the cause value. For example, CS0/100 is coding standard 0, cause value 100.

CCITT (Comit  Consultatif International Telephonique et Telegraphique)

An international body that sets universal standards for data communications, including Integrated Services Digital Network (ISDN). CCITT members are from telecommunications companies and organizations around the world. See also **BX.25**.

center stage switch (CSS)

The central interface between the processor port network (PPN) and expansion port networks (EPNs) in a CSS-connected system.

central office (CO)

The location housing telephone switching equipment that provides local telephone service and access to toll facilities for long-distance calling.

central office (CO) codes

The first three digits of a 7-digit public network telephone number. CO codes are numbered from 200 through 999.

central office (CO) trunk

A telecommunications channel that provides access from the system to the public network through the local CO.

Channel

The term channel is nonspecific and must be taken in context. Two definitions are presented below.

Channel may refer to an entire circuit switched call or a communications path for transmitting voice and/or data.

For Wideband, a channel refers to all of the time slots necessary to support a call. For example, an H0-channel uses six 64 kbps time slots as shown in the table. This definition of channel is the same whether the time slots necessary to support the call are contiguous or noncontiguous.

Channel may also refer to a DS0 on a T1 or E1 facility not specifically associated with a logical circuit switched call. In this context, a channel is analogous to a single trunk.

channel negotiation

Channel negotiation is the process by which the channel offered in the Channel Identification Information Element (CIIE) in the SETUP message is "negotiated" to be another channel acceptable to the switch receiving the SETUP message and ultimately to the switch that sent the SETUP. Negotiation will only be attempted if the CIIE is encoded as *Preferred*.

Channel negotiation will not be attempted for wideband calls.

circuit

- (1) An arrangement of electrical elements through which electric current flows, providing one or more specific functions.
- (2) A channel or transmission path between two or more points.

circuit pack

A card on which electrical circuits are printed, and integrated circuit (IC) chips and electrical components are installed. A circuit pack is installed in a switch carrier.

Class of Restriction (COR)

A feature that allows up to 64 classes of call-origination and call-termination restrictions for voice terminals, voice terminal groups, data modules, and trunk groups. See also **Class of Service (COS)**.

Class of Service (COS)

A feature that uses a number (0 through 15) to specify if voice terminal users can activate the Automatic Callback, Call Forwarding—All Calls, Data Privacy, or Priority Calling features.

Common Control Switching Arrangement (CCSA)

A private telecommunications network using dedicated trunks and a shared switching center for interconnecting company locations.

communications system

The software-controlled processor complex that interprets dialing pulses, tones, and/or keyboard characters and makes the proper interconnections both within the system and external to the system. The communications system itself consists of a digital computer, software, storage device, and carriers with special hardware to perform the actual connections. A communications system provides voice and/or data communications services, including access to public and private networks, for telephones and data terminals on a customer's premises. See also **switch**.

confirmation tone

Three short bursts of tone followed by silence to confirm that a feature activation, deactivation, or cancellation has been accepted.

connectivity

The connection of disparate devices within a single system.

console

See **attendant console**.

contiguous

Contiguous, a Wideband term, refers to adjacent DS0s within one T1 or E1 facility or adjacent TDM or fiber time slots. Note that the first and last TDM bus, DS0, or fiber time slots are not considered

contiguous (no wraparound). For an E1 facility with a D-channel, DS0s 15 and 17 are considered contiguous.

control cabinet

See **control carrier**.

control carrier

A carrier in a multicarrier cabinet that contains the switch processing element (SPE) circuit packs and, unlike a G3r control carrier, port circuit packs. Also called "control cabinet" in a single-carrier cabinet. See also **switch processing element**.

controlled station

A station that is being monitored and controlled via a domain-control association.

coverage answer group

A group of up to eight voice terminals that ring simultaneously when a call is redirected to it by Call Coverage. Any one of the group can answer the call.

coverage call

A call that is automatically redirected from the called party's extension number to an alternate answering position when certain coverage criteria are met.

coverage path

The order in which calls are redirected to alternate answering positions.

coverage point

An extension or attendant group, vector directory number (VDN), or Automatic Call Distribution (ACD) split designated as an alternate answering position in a coverage path.

covering user

A person at a coverage point who answers a redirected call.

D

data channel

A communications path between two points used to transmit digital signals.

data communications equipment (DCE)

The equipment — usually a modem, data module, or packet assembler/disassembler — on the network side of a communications link that provides the functions to make the binary serial data from the source or transmitter compatible with the communications channel.

data link

The configuration of physical facilities enabling end terminals to communicate directly with each other.

data module

An interconnection device between a basic rate interface (BRI) or Digital Communications Protocol (DCP) interface of DEFINITY Generic 1 and DEFINITY Generic 3 and data terminal equipment (DTE) or data circuit-terminating equipment (DCE).

data path

The end-to-end connection used for a data-communications link. A data path is the combination of all the elements of an interprocessor communication in a distributed communications system (DCS).

data port

A point of access to a computer that uses trunks or lines for transmitting or receiving data

data rate

See **bit rate**.

data service unit (DSU)

A device designed to transmit digital data on transmission facilities.

data terminal

An input/output (I/O) device that has either switched or direct access to a host computer or to an applications processor (AP).

data terminal equipment (DTE)

Equipment consisting of the endpoints in a connection over a data circuit. For example, in a connection between a data terminal and a host, the terminal, the host, and their associated modems or data modules make up the DTE. DTE usually consists of the following functional units: control logic, buffer store, and one or more input or output devices or computers. DTE

can contain error control, synchronization, and telephone-identification capabilities.

D-channel backup

D-channel backup is used with Non-Facility Associated Signaling (NFAS). With D-channel backup, a primary D-channel provides signaling for an NFAS D-channel group (two or more PRI facilities). A second (redundant) D-channel, located on a separate PRI facility of the NFAS D-channel group is designated as backup for the D-channel. The failure of the primary D-channel causes an automatic transfer of call-control signaling to the backup D-channel. When this happens, the backup becomes the primary D-channel, and when the previous primary is returned to service it becomes the backup D-channel.

delay-dial trunk

A trunk that allows dialing directly into a communications system — that is, the digits are received as they are dialed.

denying a request

Denying a Request is the same as sending a negative acknowledgement (NAK), and is done by sending an Facility Information Element (FIE) with a *return error* component (a cause value is also provided). It should not be confused with the “denial” event report which applies to calls.

designated voice terminal

The specific voice terminal to which calls, originally directed to a certain extension number, are redirected. Commonly used to mean the “forwarded-to” terminal when Call Forwarding All Calls is active.

dial-repeating tie trunk

A tie trunk that transmits called-party addressing information between two communications systems.

digit conversion

A process used to convert specific dialed numbers into other dialed numbers.

Digital Communications Protocol (DCP)

An AT&T proprietary protocol used to transmit both digitized voice and digitized data over the same communications link. A DCP link is made up of two 64 kbps information (I-) channels and one 8-kbps

signaling (S-) channel.

digital data endpoints

In DEFINITY Generic 1 and Generic 3i, digital data endpoints include devices such as the 510D terminal or the 515-type business communications terminal (BCT).

digital multiplexed interface (DMI)

An interface that provides connectivity between a communications system and a host computer or between two communications systems using digital signal level-1 (DS1) 24th-channel signaling. DMI provides 23 64 kbps data channels and 1 common signaling channel over a twisted-pair connection. DMI is offered through two capabilities bit-oriented signaling (DMI-BOS) and message-oriented signaling (DMI-MOS).

digital signal level 0 (DS0)

A single 64 kbps voice channel.

A DS0 is a single 64 kbps channel in a T1 or E1 facility and consists of eight bits in a T1 or E1 frame every 125 micro-seconds.

digital terminal data module (DTDM)

An integrated or adjunct data module that shares with a digital telephone the same physical port for connection to a communications system. The function of a DTDM is similar to that of a processor data module (PDM) and modular processor data module (MPDM) in that it converts RS232C signals to DCP signals.

digital-to-analog converter

A device that converts data in digital form to the corresponding analog signals. See also **analog-to-digital converter**.

digital transmission

A mode of transmission in which the information to be transmitted is first converted to digital form and then transmitted as a serial stream of pulses.

digital trunk

A circuit in that carries digital voice and/or digital data in a telecommunications channel.

dial-repeating trunks

A PBX tie trunk that is capable of handling PBX station signaling information without attendant assistance.

direct agent

A switch feature accessed only via Adjunct Switch Applications Interface (ASAI) which allows a call to be placed in a split queue but routed only to a specific agent in that split. This allows a call to receive normal ACD call treatment (for example, announcements) and to be measured as an ACD call while ensuring that a particular agent answers.

Direct Extension Selection (DXS)

A feature on an attendant console that allows an attendant direct access to voice terminals by pressing a group select button and a DXS button.

Direct Inward Dialing (DID)

A feature that allows an incoming call from the public network (not FX or WATS) to reach a specific telephone without attendant assistance. DID calls to DID-restricted telephone lines are routed to an attendant or recorded announcement, depending on the option selected.

direct inward dialing (DID) trunk

An incoming trunk used for dialing directly from the public network into a communications system without help from the attendant.

disk drive

A mechanical device that stores data on and retrieves data from one or more disks.

distributed communications system (DCS)

A network configuration linking two or more communications systems in such a way that selected features appear to operate as if the network were one system.

Domain

Available domains are VDNs, ACD splits, and stations. The VDN domain is only used for active-notification associations, the station domain is only used for the domain-control associations. The ACD-split domain is for active-notification associations and domain-control associations.

Domain-Control Association

A *Third Party Domain Control Request* capability initiates a unique "CRV/link number" combination, which is referred to as a domain-control association.

Domain-Controlled Split

A split for which *Third Party Domain Control* request has been accepted. A domain-controlled split provides an event report for logout.

Domain-Controlled Station

A station for which a *Third_Party_Domain_Control* request has been accepted. A domain-controlled station provides event reports for calls that are alerting, connected, or held at the station.

Domain-Controlled Station on a Call

A station active on a call which provides event reports over one or two domain-control associations.

duplicate processor-only system

A system having the following two control carriers, duplicate expansion interface (EI) circuit packs in the PPN (in G3r with CSS), and duplicate switch node clock circuit packs in the switch node (SN) carriers. See also **duplicated common control**, **duplication**, **duplication option**, and **fully duplicated system**.

duplicated common control

Two processors ensuring continuous operation of a communications system. While one processor is on-line, the other functions as a backup. The backup processor goes on-line periodically or when a problem condition occurs.

duplication

The use of redundant components to improve availability. When a duplicated subsystem fails, its backup redundant system automatically takes over.

duplication option

A system option that duplicates the following:

- Control carrier, which contains the switch processing element (SPE)
- Expansion interface (EI) circuit packs in carriers
- Fiber-optic cabling between port networks (PNs)
- Center-stage switch (CSS) in a CSS-connected system

E

E1

A digital transmission standard that carries traffic at the rate of 2.048 Mbps.

The E1 facility is divided into 32 channels (DS0s) of 64 kbps information numbered from 0 to 31. Channel 0 is reserved for framing and synchronization information. When a D-channel is present, it occupies channel 16.

ear and mouth (E&M) signaling

Trunk supervisory signaling, used between two communications systems, whereby signaling information is transferred through two-state voltage conditions (on the E and M leads) for analog applications and through a single bit for digital applications.

electronic tandem network (ETN)

A tandem tie trunk network that has automatic call routing capabilities based on the number dialed and the most preferred route available at the time the call is placed. Each switch in the network is assigned a unique private network office code (RNx), and each voice terminal is assigned a unique extension number.

Electronics Industries Association (EIA)

A trade association of the electronics industry that establishes electrical and functional standards.

emergency transfer

If a major system failure occurs, the automatic transfer within a communications system of a predefined set of central office (CO) lines to a group of answering telephones with at least one telephone capable of making outgoing calls. The system operates in this mode until the failure is repaired and the system automatically returns to normal operation. Also called "power-failure transfer."

end-to-end signaling

The transmission of touch-tone signals generated by dialing from a voice terminal user to remote computer equipment. A connection must first be established over

an outgoing trunk from the calling party to the computer equipment. Then additional digits can be dialed to transmit information to be processed by the computer equipment. These digits are sent over the trunk as Touch-Tone (DTMF) digits whether the trunk signaling type is marked as tone or rotary and whether the originating station is tone or rotary. An example of the use of this capability is the calling to a Voice Mail machine or Automated Attendant service.

Enhanced Private Switched Communications Service (EPSCS)

An analog private telecommunications network based on the No. 5 Crossbar and 1A ESS that provides advanced voice and data telecommunications services to companies with many locations.

Erlang

A unit of traffic intensity, or load, used to express the amount of traffic it takes to keep one facility busy for one hour. One erlang is equal to 36 CCS. *See also* **Hundred Call Seconds**.

expansion archangel (EA)

A network-control microprocessor located on an expansion interface (EI) port circuit pack in an expansion port network (EPN). The EA provides an interface between the EPN and its controlling switch processing element (SPE).

expansion-archangel link (EAL)

A link-access function on the D-channel (LAPD) logical link that exists between a switch processing element (SPE) and an expansion archangel (EA). The EAL carries control messages from the SPE to the EA and to port circuit packs in an expansion port network (EPN).

expansion control cabinet

See **expansion control carrier**.

expansion control carrier

A carrier in a multicarrier cabinet that contains extra port circuit packs and a maintenance interface. Also called "expansion control cabinet" in a single-carrier cabinet.

expansion interface (EI)

A port circuit pack in a port network (PN) that provides the interface between a PN's time-division multiplex (TDM) bus and packet bus, and a fiber-optic link. The EI carries circuit-switched data, packet-switched data, network control, timing control, and DS1 control. In addition, an EI in an expansion port network (EPN) communicates with the master maintenance circuit pack to provide the EPN's environmental and alarm status to the switch processing element (SPE).

expansion port network (EPN)

A port network (PN) that is connected to the TDM bus and packet bus of a processor port network (PPN). Control is achieved by indirect connection of the EPN to the PPN via a port-network link (PNL). See also **port network**.

extension-in

Extension-In (ExtIn) is the work state agents go into when they answer (receive) a non-ACD call. If the agent is in Manual-In or Auto-In and receives an extension-in call, it is recorded by CMS as an AUX-In call.

extension-out

Extension-Out (ExtOut) is the work state agents go into when they place (originate) a non-ACD call. If the agent is in Manual-In or Auto-in and places an extension-out call, it is recorded by CMS as an AUX-Out call.

external measurements

Refers to those ACD measurements that are made by the External CMS adjunct.

extension number

A 1- to 5-digit number by which calls are routed through a communications system or, with a Uniform Dial Plan (UDP) or main-satellite dialing plan, through a private network. Extension numbers are primarily used for telephones and data terminals but can also be used with specific features.

external call

A connection between a communications system user and a party on the public network or on another communications system in a private network.

F

facility

A general term used for a telecommunications transmission pathway and associated equipment.

facility associated signaling (PAS)

Signaling in which a D-channel carries the signaling only for those channels on the same physical interface.

feature

A specifically defined function or service provided by the system.

feature button

A labeled button on a telephone or attendant console used to access a specific feature.

fiber optics

A technology using materials that transmit ultra wideband electromagnetic light-frequency ranges for high-capacity carrier systems.

fixed

Fixed is a trunk allocation term. In the fixed allocation scheme, the time slots necessary to support a wideband call are contiguous, and the first time slot is constrained to certain starting points.

flexible

Flexible is a trunk allocation term. The flexible allocation scheme allows the time slots of a wideband call to occupy noncontiguous positions within a single T1 or E1 facility.

floating

Floating is a trunk allocation term. In the floating allocation scheme, the time slots necessary to support a wideband call are contiguous, but the position of the first time slot is not fixed.

foreign exchange (FX)

A central office (CO) other than the one providing local access to the public telephone network.

foreign exchange trunk

A telecommunications channel that directly connects the system to a central office (CO) other than its local CO.

foreign numbering-plan area code (FNPAC)

An area code other than the local area code. The FNPAC must be dialed to call outside the local geographical area.

fully duplicated system

A system that has the following duplicated items: control carriers, tone-clock circuit packs, expansion interface (EI) circuit packs, and cabling between port networks (PNs) and center stage switch (CSS) in a CSS-connected system. See also **duplicated common control**, **duplicate processor-only system**, **duplication**, and **duplication option**.

G

generalized route selection (GRS)

An enhancement to Automatic Alternate Routing/Automatic Route Selection (AAR/ARS) that performs routing based on call attributes, such as Bearer Capability Classes (BCCs), in addition to the address and facilities restriction level (FRL), thus facilitating a Uniform Dial Plan (UDP) that is independent of the type of call being placed.

glare

The simultaneous seizure of a two-way trunk by two communications systems, resulting in a standoff.

grade of service

The number of call attempts that fail to receive service immediately. Grade of service is also expressed as the quantity of all calls that are blocked or delayed.

ground-start trunk

A trunk on which, for outgoing calls, the system transmits a request for services to a distant switching system by grounding the trunk ring lead. To receive the digits of the called number, that system grounds the trunk tip lead. When the system detects this ground, the digits are sent.

handshaking logic

A format used to initiate a data connection between two data module devices.

H

H0

An ISDN information transfer rate for 384 kbps data defined by CCITT and ANSI standards.

H11

An ISDN information transfer rate for 1536 kbps data defined by CCITT and ANSI standards.

H12

An ISDN information transfer rate for 1920 kbps data defined by CCITT and ANSI standards.

Hertz (Hz)

A unit of frequency equal to one cycle per second.

holding time

The total length of time in minutes and seconds that a facility is used during a call.

home numbering-plan area code

The local area code. The area code does not have to be dialed to call numbers within the local geographical area.

hop

Nondirect communication between two switch communications interfaces (SCIs) whereby the SCI message passes automatically without intermediate processing through one or more intermediate SCIs.

host computer

A computer, connected to a network, that processes data from data-entry devices.

hunt group

A group of extensions that are assigned the Station Hunting feature so that a call to a busy extension will reroute to an idle extension in the group.

I

immediate-start tie trunk

A trunk on which, after making a connection with a distant switching system for an outgoing call, the system waits a nominal 65 ms before sending the digits of the called number. This allows time for the distant system to prepare to receive digits. On an incoming call, the system has less than 65 ms to prepare to receive the digits.

information exchange

The exchange of data between users of two different systems (such as DEFINITY G1 or DEFINITY G3 and a host computer) over a local area network (LAN).

Information Systems Network (ISN)

A wide area network (WAN) and local area network (LAN) with an open architecture combining host computers, minicomputers, word processors, storage devices, PCs, high-speed printers, and nonintelligent terminals into a single packet-switching system.

inside call

A call placed from one telephone to another within the local communications system.

Integrated Services Digital Network (ISDN)

A public or private network that provides end-to-end digital communications for all services to which users have access by a limited set of standard multipurpose user-network interfaces defined by the CCITT. Through internationally accepted standard interfaces, ISDN provides digital circuit-switched or packet-switched communications within the network and links to other ISDNs to provide national and international digital communications. See also **Integrated Services Digital Network Basic Rate Interface** and **Integrated Services Digital Network Primary Rate Interface**.

Integrated Services Digital Network Basic Rate Interface (ISDN-BRI)

The interface between a communications system and terminal that includes two 64 kbps B-channels for transmitting voice

or data and one 16-kbps D-channel for transmitting associated B-channel call control and out-of-band signaling information — an arrangement called “2B+1D.” ISDN-BRI also includes 48 kbps for transmitting framing and D-channel contention information, for a total interface speed of 192 kbps. ISDN-BRI serves ISDN terminals and digital terminals fitted with ISDN terminal adapters. See also **Integrated Services Digital Network Primary Rate Interface**.

Integrated Services Digital Network Primary Rate Interface (ISDN-PRI)

The interface between multiple communications systems that in North America includes 24 64 kbps channels, corresponding to the North American digital signal level-1 (DS1) standard rate of 1.544 Mbytes per second.

The most common arrangement of channels in ISDN-PRI is 23 64 kbps B-channels for transmitting voice and data and one 64 kbps D-channel for transmitting associated B-channel call control and out-of-band signaling information — an arrangement called “23B+1D,” although with nonfacility-associated signaling (NFAS) ISDN-PRI can include 24 B-channels and no D-channel. See also **Integrated Services Digital Network** and **Integrated Services Digital Network Basic Rate Interface**.

intercept tone

An alternating high and low tone that indicates a dialing error or denial of the service requested.

interface

A common boundary between two systems or pieces of equipment.

internal call

A connection between two users within a system.

International Telegraph and Telephone Consultative Committee

See CCITT.

intraflow

Allows calls to forward to other splits on the same PBX or a different PBX using the Call Forward All Calls switch feature.

intraflow

Allows calls to be redirected to other splits on the same PBX on a conditional or unconditional basis using call coverage “busy,” “don’t answer,” or “all” criteria.

internal measurements

Refers to those BCMS measurements that are made by the system. ACD measurements that are made external to the system (via External CMS) are referred to as external measurements.

in-use lamp

A red light on a multiappearance voice terminal that is illuminated to show which call appearance will be selected when the handset is lifted or which call appearance is active when a user is off-hook

ISDN Gateway (IG)

A feature allowing integration of DEFINITY Generic 1 and Generic 3 and a host-based telemarketing application via a link to a gateway adjunct. The gateway adjunct is a 3B-based product that notifies the host-based telemarketing application of call events.

ISDN trunk

A trunk administered for use with integrated Services Digital Network primary rate interface (ISDN-PRI). Also called “ISDN facility.”

ISDN-PRI Terminal Adapter

A terminal adapter acts as interface between endpoint applications and an ISDN PRI facility. ISDN-PRI terminal adapters are currently available from other vendors and are primarily designed for video conferencing applications. Accordingly, currently available terminal adapters adapt the two pairs of video codec data (V.35) and dialing (RS-366) ports to an ISDN PRI facility

L

light-emitting diode (LED)

A semiconductor device that produces light when voltage is applied. LEDs provide a visual indication of the operational status of

hardware components, the results of maintenance tests, and the alarm status of circuit packs, and the activation of telephone features.

lightwave transceiver

Hardware that provides an interface to fiber-optic cable from port circuit packs and digital signal level-1 (DS1) converter circuit packs. Lightwave transceivers convert electrical signals to light signals and vice versa.

line

A transmission path between a communications system or central office (CO) switching system and a voice terminal or other terminal.

line port

The hardware that provides the access point to a communications system for each circuit associated with a telephone and/or data terminal.

link

A transmitter-receiver channel that connects two systems.

link-access procedure on the D-channel (LAPD)

A link-layer protocol on the Integrated Services Digital Network basic rate interface (ISDN-BRI) and primary rate interface (ISDN-PRI) data-link layer (level 2). LAPD provides data transfer between two devices, and error and flow control on multiple logical links. LAPD is used for signaling and low-speed packet data (X.25 and mode 3) on the signaling (D-) channel and for mode-3 data communications on a bearer (B-) channel.

local area network (LAN)

A networking arrangement designed for a limited geographical area. Generally, a LAN is limited in range to a maximum of 6.2 miles and provides high-speed carrier service with low error rates. Common configurations include daisy chain, star (including circuit-switched), ring, and bus.

logical link

The communications path between a processor and a basic rate interface (BRI) terminal.

loop-start trunk

A trunk on which, after establishing a connection with a distant switching system for an outgoing call, the system waits for a signal on the loop formed by the trunk leads before sending the digits of the called number.

M

main/satellite/tributary

A private network configuration that can either stand alone or access an electronic tandem network (ETN). A “main” switch provides interconnection, via tie trunks, with one or more subtending switches, called “satellites”; all attendant positions for the main/satellite configuration; and access to and from the public network. To a user outside the complex, a main/satellite configuration appears as one switch, with one listed directory number (LDN). A “tributary” switch is connected to the main switch via tie trunks, but which has its own attendant positions and LDN.

maintenance

The activities involved in keeping a telecommunications system in proper working condition: the detection and isolation of software and hardware faults, and automatic and manual recovery from these faults.

management terminal

The terminal that is used by the system administrator to administer the DEFINITY system. The terminal may also be used to access the BCMS feature.

major alarm

An indication of a failure that has caused critical degradation of service and requires immediate attention. Major alarms are automatically displayed on LEDs on the attendant console and maintenance or alarming circuit pack, logged to the alarm log, and reported to a remote maintenance facility, if applicable.

manual-in work mode

In this mode, agents automatically enter the ACW mode when they disconnect from an ACD call. However, in order to become available to receive another ACD call, they must then manually enter the Auto-In or Manual-In mode. See **Auto-In Work Mode** for a contrast.

memory

A device into which information can be copied and held, and from which the information can be obtained at a later time.

message center

An answering service that supplies agents to and stores messages for later retrieval.

message center agent

A member of a message center hunt group who takes and retrieves messages for voice terminal users.

minor alarm

An indication of a failure that could affect customer service. Minor alarms are automatically displayed on LEDs on the attendant console and maintenance or alarming circuit pack, sent to the alarm log, and reported to a remote maintenance facility, if applicable.

modem

A device that converts digital data signals to analog signals for transmission over telephone circuits. The analog signals are converted back to the original digital data signals by another modem at the other end of the circuit.

modem pooling

A capability that provides shared conversion resources (modems and data modules) for cost-effective access to analog facilities by data terminals. When needed, modem pooling inserts a conversion resource into the path of a data call. Modem pooling serves both outgoing and incoming calls.

modular processor data module (MPDM)

A processor data module (PDM) that can be configured to provide several kinds of interfaces (RS232C, RS449, and V.35) to customer-provided data terminal equipment (DTE). See also **processor data module**.

modular trunk data module (MTDM)

A trunk data module (TDM) that can be configured to provide several kinds of interfaces (RS232C, RS449, and V.35) to customer-provided data terminal equipment (DTE).

modulator/demodulator

See **modem**.

multiappearance voice terminal

A terminal equipped with several call appearance buttons for the same extension number, allowing the user to handle more than one call, on that same extension number, at the same time.

multicarrier cabinet

A structure that holds one to five carriers. See also **single-carrier cabinet**.

multifrequency-compelled (MFC), release 2 (R2) DID signaling

A signal consisting of two frequency components, such that when a signal is transmitted from a switch, another signal acknowledging the transmitted signal is received by the switch. "R2" designates signaling used in the USA and countries outside the USA, and "R1" (for no compelled signaling) designates signaling used only in countries outside the USA.

multiplexer

A device used to combine a number of individual channels into a single common bit stream for transmission.

multiplexing

A process whereby a transmission facility is divided into two or more channels, either by splitting the frequency band into a number of narrower bands or by dividing the transmission channel into successive time slots. See also **time-division multiplexing**.

Multirate

Multirate refers to the new N x DS0 service (see N x DS0).

N

N x DS0

N x DS0, equivalently referred to as N x 64 kbps, is an emerging standard for wideband calls separate from H0, H11, and H12 ISDN channels. The emerging N x DS0 ISDN multirate circuit mode bearer service will provide circuit switched calls with data rate multiples of 64 kbps up to 1536 kbps on a T1 facility or up to 1920 kbps on an E1 facility; DEFINITY N x DS0 channels will range up to 1984 kbps using NFAS E1 interfaces.

Narrowband

Circuit switched call at any data rate up to and including 64 kbps. All nonwideband DEFINITY calls are considered narrowband.

Non-Facility Associated Signaling (NFAS)

A method that allows multiple T1 and/or E1 facilities to share a single D-channel to form an Integrated Services Digital Network primary rate interface (ISDN PRI). If D-Channel Backup is not used, one facility is configured with a D-channel, while the other facilities that share the D-channel are configured without D-channels. If D-Channel Backup is used, two facilities are configured to have D-channels (one D-channel on each facility), while the other facilities that share the D-channels are configured without D-channels.

On every facility, all DS0s that are not D-channels are available as B-channels. Therefore, a T1 facility without a D-channel has 24 B-channels, and an E1 facility without a D-channel has 31 B-channels.

network

A series of points, nodes, or stations connected by communications channels

network-specific facility (NSF)

An information element in an ISDN-PRI message that specifies which public-network service is used. NSF applies only when Call-by-Call Service Selection is used to access a public-network service.

network interface

A common boundary between two systems in an interconnected group of systems.

node

A switching or control point for a network. Nodes are either "tandem" — they receive signals and pass them on — or "terminal" — they originate or terminate a transmission path.

O

offered load

The traffic that would be generated by all the requests for service occurring within a monitored interval, usually one hour.

othersplit

The Work State that indicates the agent is currently active on another split's call, or in ACW for another split.

P

packet

A group of bits — including a message element, which is the data, and a control information element (IE), which is the header — used in packet switching and transmitted as a discrete unit. In each packet, the message element and control IE are arranged in a specified format. See also **packet bus** and **packet switching**.

packet bus

A wide-bandwidth bus that transmits packets.

packet switching

A data-transmission technique whereby user information is segmented and routed in discrete data envelopes called "packets," each with its own appended control information, for routing, sequencing, and error checking. Packet switching allows a channel to be occupied only during the transmission of a packet; on completion of the transmission, the channel is made available for the transfer of other packets.

See also **BX.25** and **packet**.

paging trunk

A telecommunications channel used to access an amplifier for loudspeaker paging.

party/extension active on call

A party is on the call if it is actually connected to the call (in active talk or in held state). An originator of a call is always a party on the call. Alerting parties, busy parties, and tones are not parties on the call.

PCOL

Personal Central Office Line.

primary extension

The main extension associated with the physical station set.

principal

A station that has its primary extension bridged on one or more other stations.

personal computer (PC)

A personally controllable microcomputer.

pickup group

A group of individuals authorized to answer any call directed to an extension number within the group.

port

A data-or voice-transmission access point on a device that is used for communicating with other devices.

port carrier

A carrier in a multicarrier cabinet or a single-carrier cabinet containing port circuit packs, power units, and service circuits. Also called a "port cabinet" in a single carrier cabinet.

port network (PN)

A cabinet containing a TDM bus and packet bus to which the following components are connected port circuit packs, one or two tone-clock circuit packs, a maintenance circuit pack, service circuit packs, and (optionally) up to four expansion interface (EI) circuit packs in G3. Each PN is controlled either locally or remotely by a switch processing element (SPE). See also **expansion port network** and **processor port network**.

port-network connectivity

The interconnection of port networks (PNs), regardless of whether the configuration uses direct or switched connectivity.

Primary Rate Interface (PRI)

A standard Integrated Services Digital Network (ISDN) frame format that specifies the protocol used between two or more communications systems. PRI runs at 1.544 Mbps and, as used in North America, provides 23 64 kbps B-channels (voice or data) and one 64 kbps D-channel (signaling). The D-channel is the 24th channel of the interface and contains multiplexed signaling information for the other 23 channels.

PRI Endpoint (PE)

The Wideband Switching Capability introduces PRI Endpoints on DEFINITY line-side interfaces. A PRI Endpoint consists of one or more contiguous B-channels on a line-side T1 or E1 ISDN PRI facility and has an extension number. Endpoint applications have call control capabilities over PRI Endpoints.

principal (user)

A person to whom a telephone is assigned and who has message center coverage.

private network

A network used exclusively for the telecommunications needs of a particular customer.

private network office code (RNX)

The first three digits of a 7-digit private network number. These codes are numbered 220 through 999, excluding any codes that have a 0 or 1 as the second digit.

processor carrier

A phrase used for "control carrier" in DEFINITY G3r. See also **control carrier**.

processor data module (PDM)

A device that provides an RS232C data circuit-terminating equipment (DCE) interface for connecting to data terminals, applications processors (APs), and host computers and provides a Digital Communications Protocol (DCP) interface for connection to a communications system. See also **modular processor**

data module.

processor port network (PPN)

A port network (PN) controlled by a switch processing element (SPE) that is directly connected to that PN's time-division multiplex (TDM) bus and local area network (LAN) bus. See also **port network**.

processor port network (PPN) control carrier

A carrier containing the maintenance circuit pack, tone/clock circuit pack, and switch processing element (SPE) circuit packs for a processor port network (PPN) and, optionally, port circuit packs.

Property Management System (PMS)

A stand-alone computer used by lodging and health services organizations use for services such as reservations, housekeeping, and billing.

protocol

A set of conventions or rules governing the format and timing of message exchanges to control data movement and correction of errors.

public network

The network that can be openly accessed by all customers for local or long-distance calling.

pulse-code modulation (PCM)

An extension of pulse-amplitude modulation (PAM) in which carrier-signal pulses modulated by an analog signal, such as speech, are quantized and encoded to a digital, usually binary, format.

Quadrant

A quadrant is a group of six contiguous DS0s in fixed locations on an ISDN PRI facility. Note that this term comes from T1 terminology (one-fourth of a T1), but there are five quadrants on an E1 ISDN PRI facility (30B + D).

A quadrant is considered available or idle when all six contiguous DS0s are idle. Otherwise, the quadrant is considered contaminated or partially contaminated. This is a dynamic condition; quadrants become idle and contaminated as calls are placed and dropped. Note that a T1 facility containing the primary or backup D-channel (23B + D) has a maximum of three idle

quadrants. The fourth quadrant (DS0s 19-24) never has six contiguous idle DS0s because one is always allocated to the D-channel. On an E1 facility, channel 0 is reserved for framing and synchronization, and channel 16 contains the D-channel when present, but five quadrants are potentially available.

queue

An ordered sequence of calls waiting to be processed.

queuing

The process of holding calls in order of their arrival to await connection to an attendant, to an answering group, or to an idle trunk. Calls are automatically connected in first-in, first-out sequence.

R

random access memory (RAM)

A storage arrangement whereby information can be retrieved at a speed independent of the location of the stored information.

read-only memory (ROM)

A storage arrangement primarily for information retrieval applications.

recall dial tone

Three short bursts of tone followed by steady dial tone signaling that the system has completed a function (such as holding a call) and is ready to accept dialing.

redirection criteria

The information administered for each voice terminal's coverage path that determines when an incoming call is redirected to coverage.

redirection on no answer

An optional feature that redirects an unanswered ringing ACD call after an administered number of rings. The call is then redirected back to the agent.

remote home numbering-plan area code (RHNPA)

A foreign numbering-plan area code that is treated as a home area code by the

Automatic Route Selection (ARS) feature. Calls can be allowed or denied based on the area code and the dialed central office (CO) code rather than just the area code. If the call is allowed, the ARS pattern used for the call is determined by these six digits.

removable mass storage subsystem (RMSS)
A tape storage device that stores the software information for the system.

reorder tone
A fast-busy tone repeated 120 times a minute to signal that at least one of the facilities, such as a trunk or a digit transmitter, needed for the call was not available at the time the call was placed.

report scheduler
Software that is used in conjunction with the system printer for the purpose of scheduling the days of the week and time of day that the desired reports are to be printed.

RS232C
A physical interface specified by the EIA. RS232C transmits and receives asynchronous data at speeds of up to 19.2 kbps over cable distances of up to 50 feet.

ROSE
Remote Operations Service Element is a CCITT and ISO standard that defines a notation and services that support interactions between the various entities that make up a distributed application.

S

sanity-and-control interface (SAKI)
A custom, very-large-scale-integration (VLSI) microchip located on each port circuit pack. The SAKI provides address recognition, buffering, and synchronization between the angel and the five control time slots that make up the control channel. The SAKI also scans and collects status information for the angel on its port circuit pack and, when polled, transmits this information to the archangel.

simplex system
A system that has no redundant hardware.

simulated bridged appearance
The same as a **temporary bridged appearance**, allows the station user (usually the principal) the ability to bridge onto a call which had been answered by another party on its behalf.

single-carrier cabinet
A combined cabinet and carrier unit that contains one carrier. See also **multicarrier cabinet**.

single-line voice terminal
A voice terminal served by a single-line tip and ring circuit (models 500, 2500, 7101A, 7103A).

small computer system interface (SCSI)
An ANSI bus standard that provides a high-level command interface between host computers and peripheral devices.

software
A set of computer programs that do one or more tasks.

split
A condition whereby a caller is temporarily separated from a connection with an attendant. A split condition automatically occurs when the attendant, active on a call, presses the start button.

split number
The split's identity to the switch and BCMS.

split report
Provides historical traffic information for internally measured splits.

split (agent) status report
Provides the real-time status and measurement data for internally measured agents and the split to which they are assigned.

staffed
Indicates an agent position is logged-in. A staffed agent will be functioning in one of four work modes: Auto-In, Manual-In, ACW, or AUX-work.

station message detail recording (SMDR)
Also called CDR (See Call Detail Recording). A switch feature that utilizes software and hardware to record call data.

standard serial interface (SSI)

A communications protocol developed by AT&T Teletype Corporation for use with the 500 business communications terminals (BCTs) and the 400-series printers.

status lamp

A green light that shows the status of a call appearance or a feature button by the state of the light (lit, flashing, fluttering, broken flutter, or unlit).

stroke counts

A method used by Automatic Call Distribution (ACD) agents to record up to nine customer-defined events per call when the Call Management System (CMS) is active.

switch

Any kind of telephone switching system.
See also **communications system**.

switchhook

The buttons located under the receiver on a voice terminal.

switch node (SN) carrier

A carrier containing a single switch node, power units, and, optionally, one or two digital signal level-1 (DS1) converter circuit packs. An SN carrier is located in a center stage switch (CSS).

switch node (SN) clock

The circuit pack in a switch node (SN) carrier that provides clock and maintenance alarm functions and environmental monitors for an SN.

switch node interface (SNI)

The basic building block of a switch node. An SNI circuit pack controls the routing of circuit, packet, and control messages.

switch node link (SNL)

The hardware that provides a bridge between two or more switch nodes. The SNL consists of the two switch node interface (SNI) circuit packs residing on the switch nodes and the hardware connecting the SNIs. This hardware can include lightwave transceivers that convert the SNI's electrical signals to light signals, the copper wire that connects the SNIs to the lightwave transceivers, a full-duplex fiber-optic cable, digital signal level-1 (DS1) converter circuit cards and DS1 facilities if a

company does not have rights to lay cable, and appropriate connectors.

switch processing element (SPE)

A complex of circuit packs — processor, memory, disk controller, and bus-interface cards — mounted in a processor-port-network (PPN) control carrier. The SPE serves as the control element for that PPN and, optionally, for one or more expansion port networks (EPNs).

synchronous data transmission

A method of sending data in which discrete signal elements are sent at a fixed and continuous rate and specified times.

system administrator

The designated individual who maintains overall customer responsibility for system administration. Generally, all administration functions are performed from the G3 Management Terminal. The switch requires a special login, referred to as the system administrator login, in order to gain access to the system administration capabilities.

system printer

An optional printer that may be used to print scheduled reports via the Report Scheduler.

system report

Provides historical traffic information for all internally measured splits.

system status report

Provide real-time status information for internally measured splits.

system manager

A person responsible for specifying and administering features and services for a system.

system reload

A process that allows stored data to be written from a tape into the system memory (normally after a power outage).

T

T1

A digital transmission standard that in North America carries traffic at the digital signal level-1 (DS1) rate of 1.544 Mbps.

T1 facilities are also used in Japan and some Middle-Eastern countries.

The T1 facility is divided into 24 channels (DS0s) of 64 kbps information numbered from 1 to 24. These 24 channels, with an overall digital rate of 1.536 Mbps, and an 8 kbps framing and synchronization channel make up the 1.544 Mbps transmission. When a D-channel is present, it occupies channel 24.

TAC

Trunk Access Code.

tandem switch

A switch within an electronic tandem network (ETN) that provides the logic to determine the best route for a network call, possibly modifies the digits outputted, and allows or denies certain calls to certain users.

tandem through

The switched connection of an incoming trunk to an outgoing trunk without human intervention.

tandem tie-trunk network

A private network that interconnects several customer switching systems by dial-repeating tie trunks. Access to the various systems is dictated by codes that must be individually dialed for each system.

TEG

Terminating Extension Group.

terminal

A device that sends and receives data within a system. See also **administration terminal**.

tie trunk

A telecommunications channel that directly connects two private switching systems.

time-division multiplex (TDM) bus

A bus that is time-shared regularly by preallocating short time slots to each transmitter. In a PBX, all port circuits are connected to the TDM bus, permitting any port to send a signal to any other port.

time-division multiplexing (TDM)

Multiplexing that divides a transmission channel into successive time slots. See also **multiplexing**.

time interval

The period of time, either one hour or one-half hour, that BCMS measurements are collected for a report(s).

time slice

See **Time Interval**.

time slot

A time slot refers to 64 kbps of digital information structured as eight bits every 125 micro-seconds. Taken in context, a time slot will refer to either a DS0 on a T1 or E1 facility or a 64 kbps unit on the TDM bus or fiber connection between DEFINITY port networks.

time slot sequence integrity

Time slot sequence integrity means that the "N" octets of a wideband call that are transmitted in one T1 or E1 frame arrive at the output in the same order that they were introduced.

to control

To control means that an application can invoke Third Party Call Control capabilities using either an adjunct-control or a domain-control association.

to monitor

To monitor means that an application can receive *Event_Reports* on either an active-notification, adjunct-control, or a domain-control association.

tone ringer

A device with a speaker, used in electronic voice terminals to alert the user.

trunk

A dedicated telecommunications channel between two communications systems or central offices (COs).

Trunk Allocation

The manner in which trunks are selected to form wideband channels.

trunk data module

A device that provides the interface for connection between off-premises private-line trunk facilities and a DEFINITY Generic 1 or DEFINITY Generic 3. The trunk data module provides conversion between the RS232C and the Digital Communications Protocol (DCP), and can connect to direct distance dialing (DDD) modems as the DCP member of a modem pool.

trunk group

Telecommunications channels assigned as a group for certain functions that can be used interchangeably between two communications systems or central offices (COs).

U

uniform dial plan

A feature that allows a unique 4-or 5-digit number assignment for each terminal in a multiswitch configuration such as a distributed communications system (DCS) or main-satellite-tributary configuration.

V

vector directory number (VDN)

An extension that provides access to the Vectoring feature on the switch. Vectoring allows a customer to specify the treatment of incoming calls based on the dialed number.

vector-controlled split

A hunt group or ACD split administered with the "vector" field enabled. Access to such split is only possible by dialing a VDN extension. Vector-Controlled Splits cannot be Active Notification Domains.

voice terminal

A single-line or multiappearance telephone.

W

wide area telecommunications service (WATS)

A service that allows calls to a certain area or areas for a flat-rate charge based on expected usage.

wideband

A circuit switched call on a single T1 or E1 facility with bandwidth between 128 and 1536 (T1) or 1984 (E1) kbps in multiples of 64 kbps. H0, H11, H12, and N x DS0 calls are all wideband.

wideband access endpoint

The Wideband Switching Capability extends Access Endpoints to include Wideband Access Endpoints. A Wideband Access Endpoint consists of one or more contiguous DS0s on a line-side T1 or E1 facility and has an extension number. The Administered Connections feature provides call control for calls originating from Wideband Access Endpoints.

wink-start tie trunk

A trunk with which, after making a connection with a distant switching system for an outgoing call, the system waits for a momentary signal (wink) before sending the digits of the called number. Similarly, on an incoming call, the system sends the wink signal when ready to receive digits.

work modes (or ACD work modes)

A work mode is one of four states (Auto-in, Manual-In, ACW, AUX-work) that an ACD agent enters after logging in. Immediately upon logging in, an agent enters the AUX-work mode. To become available to receive ACD calls, the agent enters either the Auto-In or Manual-In work modes. To do work associated with an ACD call, at the conclusion of the call, an agent would enter the ACW mode. If an agent changes work modes while handling a call, the change becomes effective when the agent finishes the call. The system does not recognize the change until the call is completed.

In order to answer an ACD call, the ACD agent must specify a Work Mode. Generally, two methods are available for indicating Work Modes: (1) by pressing the appropriate button on their voice terminal, and (2) by dialing an access code. The four work modes associated with ACD call handling are Auto-In, Manual-In, ACW, and AUX-work. An agent can change work modes while handling a call, but the system will not recognize the change until the call is completed. It is important that the ACD agents always accurately indicate their correct work mode, otherwise the BCMS measurements will not be accurate.

work state

An ACD agent may be a member of up to three different splits. Each ACD agent continuously exhibits a Work State for every split that it is a member of. Valid work states are Avail, Unstaffed, AUX-work, ACW, ACD (answering an ACD call), Extin, ExtOut, and OtherSpl. An agent's work state for a particular split may change for a variety of reasons (for example, whenever a call is answered, abandoned, the agent changes work modes, etc.). The BCMS feature monitors the work states and uses this information to provide the BCMS reports.

write operation

The process of putting information onto a storage medium such as magnetic tape.

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