Lucent Technologies
Bell Labs Innovations

DEFINITY® Communications System

Generic 3i - Global

Implementation

555-230-652
Issue 1
December 1992

555-230-652
Issue 1
December 1992

Notice
While reasonable efforts were made to ensure that the information in this document was complete and accurate at the time of printing, Lucent Technologies can assume no responsibility for any errors. Changes and corrections to the information contained in this document may be incorporated into future reissues.

Your Responsibility for Your System's Security
Your are responsible for the security of your system. Lucent Technologies does not warrant that this product is immune from or will prevent unauthorized use of common-carrier telecommunication services or facilities accessed through or connected to it. Lucent Technologies will not be responsible for any charges that result from such unauthorized use. Product administration to prevent unauthorized use is your responsibility and your system administrator should read all documents provided with this product to fully understand the features available that may reduce your risk of incurring charges.

Federal Communications Commission Statement
Class A Statement. This equipment generates, uses, and can radiate radio-frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at his/her own expense will be required to take whatever measures may be required to correct the interference.

Answer-Supervision Signaling. Allowing this equipment to be operated in a manner that does not provide proper rules. This equipment returns answer-supervision signals to the public switched network when:

- Answered by the called station
- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

This equipment returns answer-supervision signals on all DID calls forwarded back to the public switched telephone network. Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received

Trademarks
DEFINITY is a registered trademark of Lucent Technologies. In this document, DEFINITY Communications System Generic 3 is often abbreviated to DEFINITY Generic 3 or Generic 3.

Ordering Information
The ordering number for this document is 555-230-652. To order this document, call the Lucent Technologies Customer Information Center at 1-888-582-3688. For more information about Lucent Technologies documents, refer to the *Business Communications Systems Publications Catalog* (555-000-010).

Comments
To comment on this document, return the comment card at the front of the document.

Acknowledgment
This document was prepared by the BCS Systems Documentation Development Department in Denver, CO.

Intellectual property related to this product (including trademarks) and registered to AT&T Corporation has been transferred to Lucent Technologies Incorporated.

Any references within this text to American Telephone and Telegraph Corporation or AT&T should be interpreted as references to Lucent Technologies Incorporated. The exception is cross references to books published prior to December 31, 1996, which retain their original AT&T titles.

Lucent Technologies – formed as a result of AT&T's planned restructuring – designs, builds, and delivers a wide range of public and private networks, communication systems and software, consumer and business telephone systems, and microelectronic components. The world-renowned Bell Laboratories is the research and development arm for the company.

Contents

Contents

Contents

Contents

Contents

Contents

Contents

Contents

Introduction

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 3i Global 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 1 and Generic 3 — System Management*, 555-230-500, to implement the System. All forms and features described in this manual apply to the Generic 3i Global system 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.

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 1 and Generic 3 System Description*, 555-230-200, and *DEFINITY Communications System Generic 3i Global — Feature Description*, 555-230-203).
- Know what System and terminal hardware has been ordered.

Refer to "References" in Appendix C of this manual for a listing of other documents you may need.

Document 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 and Error Messages — 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 and a table of all administration-type commands is provided. In addition, a detailed listing of administration related error messages is provided along with a brief explanation of what might have caused the error.

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 that are 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 3i Global system in each supported country.

References — Lists the AT&T documents that will be useful to you in administering a G3i Global system.

Abbreviations — 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

In addition, a separate Blank Forms book (555-230-652B), 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 This Document

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 Blank Forms book (555-230-652B) and are to be used for reproduction of working copies of the forms. After these forms have been completed, they should be used with administration commands in Chapter 2 and the information in *DEFINITY Communications System Generic 1 and Generic 3 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.

How to Make Comments About This Document

Reader comment cards are behind the title page of this document. While we have tried to make this document fit your needs, we are interested in your suggestions for improving it and urge you to complete and return a reader comment card.

If the reader comment cards have been removed from this document, please send your comments to:

Product Document Development
AT&T
Room 22-2C11
11900 North Pecos Street
Denver, Colorado 80234

1. Communications Survey

Communications Survey

1

A 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 hardcopy 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 with hardware and software requirements 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".

The following documents provide additional information:

- *DEFINITY Communications System Generic 1 and Generic 3i System Description*, 555-230-200
- *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203
- *DEFINITY Communications System Generic 1 and Generic 3 Planning and Configuration*, 555-230-600

Step 1 — (Account Team)

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 Assignments (Account Team/Client)

This section contains the Port Assignment procedures for the System.

Port assignments play an important role in 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 a port number is assigned, it becomes the "address" of the associated equipment or facility in the System. A record of port assignments must be made and kept as it will eventually be used for System installation/initialization and ongoing administration.

During the planning/configuration process, the types and quantities of circuit packs to be provided with the System were identified. This information must now be entered on the Port Assignment Records.

Using the hardware Configuration Layout record, complete the Port Assignment Records per the following instructions. Note that the System cabinet configuration can include a combination of multi-carrier and single-carrier cabinets.

The following steps provide instructions for completing the communications survey for *multi-carrier cabinets*. Instructions for *single-carrier cabinets* are provided following the multi-carrier cabinet information.

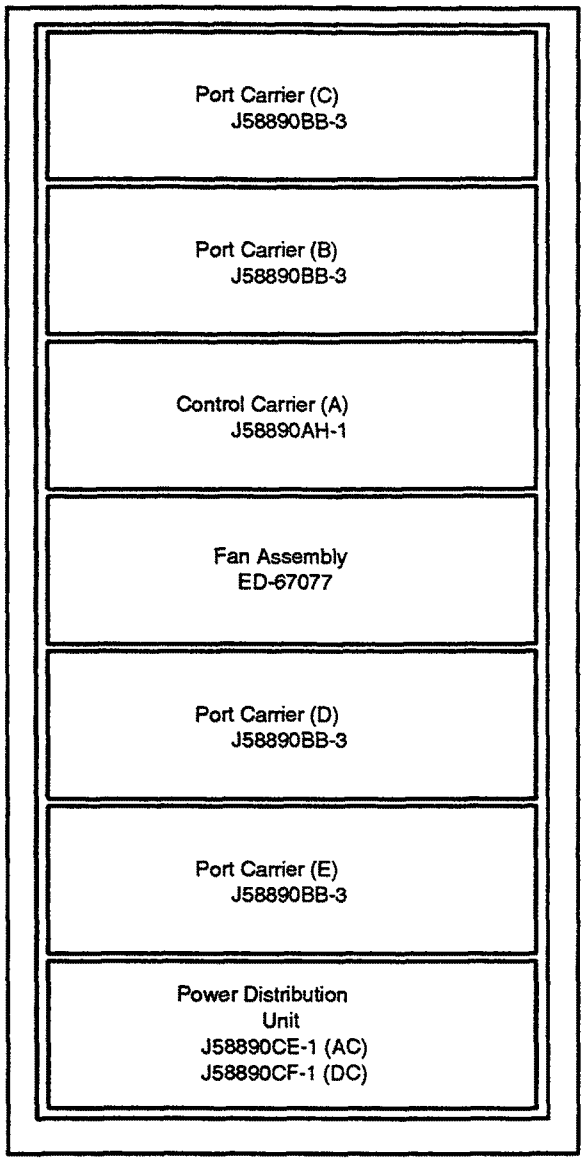
Multi-Carrier Cabinet — Port Assignment Records

Identify on Table 1-1 the cabinet type(s) and the number of port carriers to be used in the System. Figures 1-1 through 1-3 show the cabinet configurations as noted on the table.

Table 1-1. Multi-Carrier Cabinets

Cabinet	Port Carriers	Port Circuit Pack Slots *
PPN Without Duplication	1	29
	2	49
	3	69
	4	89
PPN With Duplication	1	38
	2	58
	3	78
EPN 1 or 2	1	39
	2	59
	3	79
	4	99

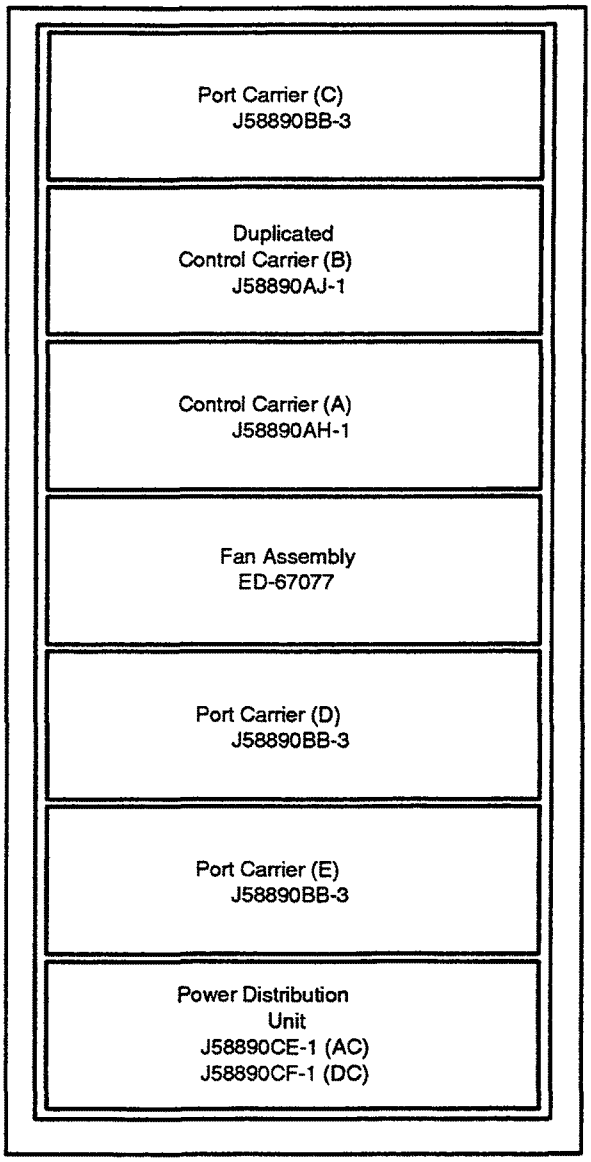
* Number represents all universal port slots in carrier (that is, slots associated with Tone Clocks, Expansion Interface, and so on, are not excluded)



Note: The Cabinet is available in the following arrangements:

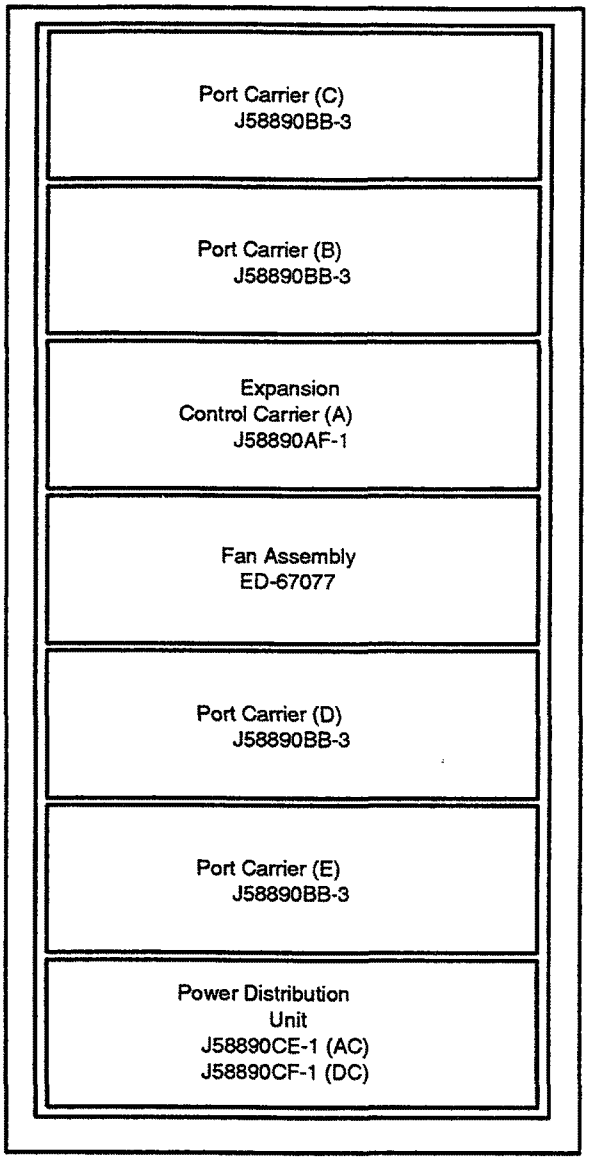
1. Port Carrier in Position B.
2. Port Carriers in Positions B and C
3 Port Carriers in Positions B, C, and D
4. Port Carriers in Positions B, C, D, and E

Figure 1-1. Without Duplication Option (Front View)



Note: The Cabinet is available in the following arrangements
1 Port Carrier in Position C.
2. Port Carriers in Positions C and D.
3 Port Carriers in Positions C, D, and E.

Figure 1-2. With Duplication Option (Front View)



Note: The Cabinet is available in the following arrangements:

1. Port Carrier in Position B.
2 Port Carriers in Positions B and C.
3 Port Carriers in Positions B, C, and D
4. Port Carriers in Positions B, C, D, and E

Figure 1-3. With or Without Duplication Option (Front View)

Remove the blank Port Assignment Record forms (Figures 1-4 and 1-5) and duplicate as many times as necessary to have enough pages for each type carrier and associated circuit packs to be assigned in the System. A blank Port Assignment Record for eight ports (Figure 1-4) is required for all circuit packs that contain up to eight ports. Each 8-port record provides assignment space for up to four circuit packs on a carrier. A blank Port Assignment Record for 32 ports (Figure 1-5) is required for each carrier slot that will house circuit packs that contain more than eight ports. For example, the TN722B DS1 Tie Trunk circuit pack has 24 administrable ports and a TN746 Analog Line circuit pack has 16 administrable ports.

Obtain sets of blank records for all control and port carriers to be used, then complete the following:

1. With a set of records for a carrier, following the "CARRIER" entry at the top of the Port Assignment Record form, enter the following carrier ID as applicable:
   - Enter 1A for the Control Carrier (J58890AH-1).
   - Enter 1B for the Duplicated Control Carrier (J58890AJ-1).
   - Enter 2A for the Expansion Control Carrier (J58890AF-1).
   - Assign a letter (B, C, D, or E) to all records for each Port Carrier (J58890BB-3). Use the letter as noted on Figures 1-1, 1-2, or 1-3 for the Port Carrier location in the cabinet configuration.
2. Following the "CABINET" entry at the top of the record, enter the cabinet type as either PPN (Processor Port Network), EPN 1 (Expansion Port Network 1), or EPN 2 (Expansion Port Network 2), as applicable.
3. Repeat the preceding steps and complete the sets of records for each cabinet and for all Control Carrier and Port Carriers used in each cabinet.
4. Assign port circuit pack slot numbers on the sets of records as follows (refer to Table 1-2 for circuit pack port slot availability and associated notes where applicable):
   - For Control Carrier 1A, begin with slot number 1 and number through 9.
   - For Control Carrier 1B, begin with slot number 1 and number through 9.
   - For the Expansion Control Carrier 2A, begin with slot 1 and number through 19.
   - All Port Carriers (B, C, D, E) slots should be numbered 1 through 20

Table 1-2 is provided to show the number of universal port circuit pack slots available on the various carriers and the number of administrable ports available on each circuit pack type. This manual does not provide guidelines or procedures associated with the distribution and configuration of circuit packs across the port networks. Considerations based on communities of interest, shared resources, minimizing inter-port network traffic, and so on, are not covered in this manual. Obtain the hardware configuration layout from the factory for your System. The layout will identify the circuit pack mounting locations of each circuit pack for your System.

CARRIER ____________ **CABINET** ____________ **PORT ASSIGNMENT RECORD** **Page** ________

Slot	Port	Jack*	Extension Number		Bldg Flr Rm	Voice Terminal		Voice Terminal Adjunct	Module	Power*		User Name/Use
			Old	New		Type	Color					
	01											
______	02											
Slot	03											
	04											
	05											
______	06											
CKT PK Type	07											
	08											
	01											
______	02											
Slot	03											
	04											
	05											
______	06											
CKT PK Type	07											
	08											
	01											
______	02											
Slot	03											
	04											
	05											
______	06											
CKT PK Type	07											
	08											
	01											
______	02											
Slot	03											
	04											
	05											
______	06											
CKT PK Type	07											
	08											

* To be completed by installer

Figure 1-4. Port Assignment Record (for up to Eight Ports)

CARRIER _____ CABINET _____ PORT ASSIGNMENT RECORD Page _____

Slot	Port	Jack*	Extension Number Old	Extension Number New	Bldg Flr Rm	Voice Terminal Type	Voice Terminal Color	Voice Terminal Adjunct	Module	Power*		User Name/Use
	01											
	02											
	03											
	04											
	05											
	06											
	07											
	08											
	09											
	10											
	11											
Slot	12											
	13											
	14											
	15											
CKT PK Type	16											
	17											
	18											
	19											
	20											
	21											
	22											
	23											
	24											
	25											
	26											
	27											
	28											
	29											
	30											
	31											
	32											

* To be completed by installation technician

Figure 1-5. Port Assignment Record (for up to 32 Ports)

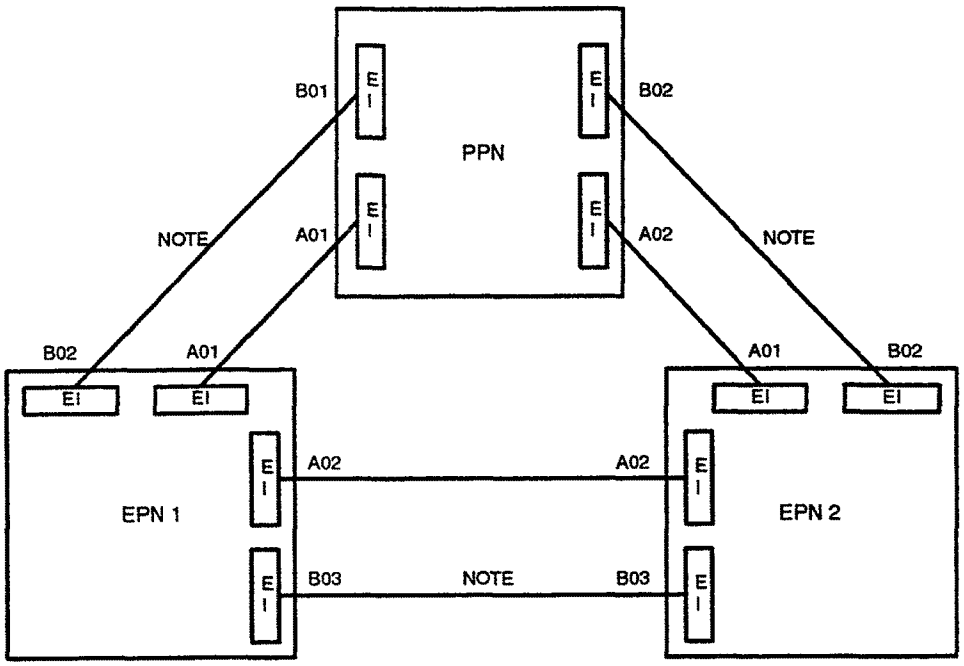
NOTE:
See appendix B, *Application Notes*, to determine which circuit packs are recommended for installations outside of the United States of America.

Table 1-2. Multi-Carrier Cabinet — Universal Port Slots and Associated Circuit Packs

Circuit Pack		Ports	Port Carrier (B, C, D, E) (J58890BB-3)		Control Carrier (1A) (J58890AH-1)		Duplicated Control Carrier (1B) (J58890AJ-1)		Expansion Control Carrier (2A) (J58890AF-1)	
Name	Code		Port Slot	Note	Port Slot	Note	Port Slot	Note	Port Slot	Note
Analog Line (8)	TN742	8	1-20	1	1-9	1	1-9	1	2-19	1
Analog Line (neon)	TN769	8	1-20	1	1-9	1	1-9	1	2-19	1
Analog Line (16)	TN746B	16	1-20	1	1-9	1	1-9	1	2-19	1
Announcement	TN750				1-9	7	1-9	7	2-19	7
Auxiliary Trunk	TN763C	4	1-20	1	1-9	1	1-9	1	2-19	1
Call Classifier	TN744		1-20		1-9		1-9		2-19	
CO Trunk	TN747B	8	1-20	1	1-9	1	1-9	1	2-19	1
Data Line	TN726B	8	1-20	1	1-9	1	1-9	1	2-19	1
DID Trunk	TN753	8	1-20	1	1-9	1	1-9	1	2-19	1
Digital Line	TN754B	8	1-20	1	1-9	1	1-9	1	2-19	1
DS1 Tie Trunk	TN722B	24	1-20	1	1-9	1	1-9	1	2-19	1
DS1 Interface	TN767	24	1-20	1	1-9	1	1-9	1	2-19	1
Expansion Interface	TN776		1, 2	4	1, 2	4	1, 2	4	1, 2	3, 4
Expansion Interface	TN570		1, 2	4	1, 2	4	1, 2	4	1, 2	3, 4
Hybrid Line	TN762B	8	1-20	1	1-9	1	1-9	1	2-19	1
ISDN-BRI Line	TN556	12	1-20	1	1-9	1	1-9	1	2-19	1
Maintenance/Test	TN771B		1-20	1	1-9	1	1-9	1	2-19	8
MET Line	TN735	4	1-20	1	1-9	1	1-9	1	2-19	1
Pooled Modem	TN758	2	1-20	1	1-9	1	1-9	1	2-19	1
Power Unit	TN755B				9	2	9	2	19	2
Speech Synthesizer	TN725B	4	1-20	1	1-9	1	1-9	1	2-19	1
Tie Trunk	TN760C	4	1-20	1	1-9	1	1-9	1	2-19	1
Tone-Clock	TN768			6						
Tone-Clock (Stratum 3)	TN780			9						
Tone Detector	TN748C		1-20	5	1-9	3	1-9	3	2-19	1

Notes:

1. Provided as required
2. Power Unit — required when neon message waiting power is required
3 One always required.
4 The TN776 Expansion Interface may be used when no Adjunct Switch Applications Interface (ASAI) functions are supported However, the TN570 is required for ASAI Refer to Figure 1-6 for the Expansion Interface carrier/slot assignments based on the system configuration
5 Tone Detector — one always required when equipped in cabinet positions B and C
6 Tone Clock — required when connecting to a duplicated PPN Only required in carrier cabinet position B mounted in an EPN Has a designated slot
7. Only one Announcement circuit pack may be assigned in the System Assign in Control Carrier 1A when possible
8 One TN771B required in a duplicated system
9 Required when connecting to an external Stratum 3 clock Has a designated slot



NOTE: Used Only For Duplication Option

Legend:
EI Expansion Interface
EPN Expansion Port Network
PPN Processor Port Network
A01 Carrier A, Slot 01
B03 Carrier B, Slot 03

Figure 1-6. Expansion Interface Carrier/Slot Assignments

5. Using the hardware Configuration Layout record, assign circuit packs to port slots on all Port Assignment Records.
6. Identify how many ports are available on each type of circuit pack using Table 1-2. If a circuit pack contains less than eight ports, strike out (do not use) the unavailable slots on the Port Assignment Record associated with that circuit pack

   Some of the System forms you will later be completing require port information. When completing such a form, use Chapter 3 to determine the type of circuit pack that is required. Then, obtain the Port Assignment Record and select the next available vacant port on the appropriate circuit pack. Complete the following Port Assignment Record items as required:

Jack # — To be completed by the installation technician. Used to denote the physical location of the jack.

Extension Number — This information can be taken from data obtained using *DEFINITY Communications System Generic 1 and Generic 3 Planning and Configuration*, 555-230-600.

- Old — Enter the old extension number to be replaced
- New — Enter the new extension number

Bldg., Flr., Rm. — Enter the identifying information for the location of the voice terminal, data terminal, etc.

Voice Terminal or Equipment Type/Color — Enter the terminal or equipment information.

Voice Terminal Adjunct — Enter adjunct equipment associated with the terminal, (for example, speaker phone, headsets, and so on). This information can be taken from data obtained using *DEFINITY Communications System Generic 1 and Generic 3 Planning and Configuration*, 555-230-600.

Module — Enter MPDM, DTDM, MTDM, 702A Data Module Base (use with 7404D voice terminal), 703A DSU (use with 7406D voice terminal), 7400A, 7400B, Call Coverage, Feature, or Display module, as applicable.

Power — To be completed by the installation technician.

Blank — Use as necessary.

User Name/Use — Enter the name of the user or the feature name as appropriate, for example, SMDR. This information can be taken from data obtained using *DEFINITY Communications System Generic 1 and Generic 3 Planning and Configuration*, 555-230-600.

Once the preceding information has been entered on the Port Assignment Record, enter the port number on the System form you are completing. The port number consists of a port network number (1 = PPN, 2 = EPN 1, 3 = EPN 2), the letter assigned the carrier, and four numbers that consist of the slot number (01 to 20 depending on carrier type) and the port number (01 to 08 or 01 to 32). For example, A0208 is a port number for a single multi-carrier cabinet System (no EPN Cabinet) and designates the Control Carrier with a circuit pack mounted in slot 2 with port 08 assigned.

Step 3 — Complete Circuit Pack Forms — Multi-Carrier Cabinet (Account Team/Client)

NOTE:
The Circuit Pack forms do not have to be completed if the System cabinet is equipped with the circuit packs at the time of administration.

The Circuit Pack form allows the user 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. In order for any end-user equipment (voice terminals, data terminals, and so on) to be translated into the System, either a circuit pack must be physically inserted in the appropriate slot or be logically installed using the Circuit Pack form. The number of Circuit Pack forms and associated pages to be completed is dependent on the System configuration. For example, a multi-carrier Processor Port Network cabinet With Duplication requires one control carrier (use one circuit pack CARRIER 1A form), one duplicated control carrier (use one circuit pack CARRIER 1A form), and up to three port carriers (use three circuit pack CARRIER xy forms — one for each port carrier) for a total of five forms that must be completed. For a PPN cabinet, mark each circuit pack form as "PPN". When an Expansion Port Network is supported, the Expansion Control carrier requires one circuit pack CARRIER 2A form to be completed (one for EPN 1 and one for EPN 2) in addition to a circuit pack CARRIER xy form for each port carrier in the configuration. Mark the associated Circuit Pack forms as "EPN 1 ", or "EPN 2" as appropriate. Use the circuit pack code (TN number) when assigning the circuit packs to slots.

The Circuit Pack forms are shown in Screens 1-1 and 1-2. The information entered on the forms can be taken from the Port Assignment Record.

The Circuit Pack administration forms consist of three sets of five pages each. One set is used for each port network (PPN, EPN 1, EPN 2) with one page for each of the port carriers on the specified network. Page 1 is for Carrier A, Page 2 is for Carrier B, and so on Page 1 of the PPN has 14 circuit pack slots. Check the Control carrier J-number to be sure the physical slots exist for the circuit packs you are administering. When the form is administered, the System will not validate that the slot you are administering actually exists. The rest of the pages (Pages 2 through 5) have 20 circuit pack slots. The single-carrier cabinet system does not have 20 slots or an E Carrier. However, the form shows 20 slots and the page for the E Carrier is administrable. Do not administer slots or carriers that you do not physically have. The A Carriers of the EPNs have 19 slots, the rest of the carriers (B-E) have 20.

Page 1 of 5

CARRIER 1A

Slot	Code	Sfx	Name
01:	_____	_	_____
02:	_____	_	_____
03:	_____	_	_____
04:	_____	_	_____
05:	_____	_	_____
06:	_____	_	_____
07:	_____	_	_____
08:	_____	_	_____
09:	_____	_	_____
10:	_____	_	_____

'#' indicates circuit pack conflict

*Use slots 01-10 with J58890L-1
*or J58890M-1 Control Cabinet.
*Use slots 01-09 with J58890AH
*or J58890AJ Control Carrier.

Page 1 of 5

CARRIER 2A

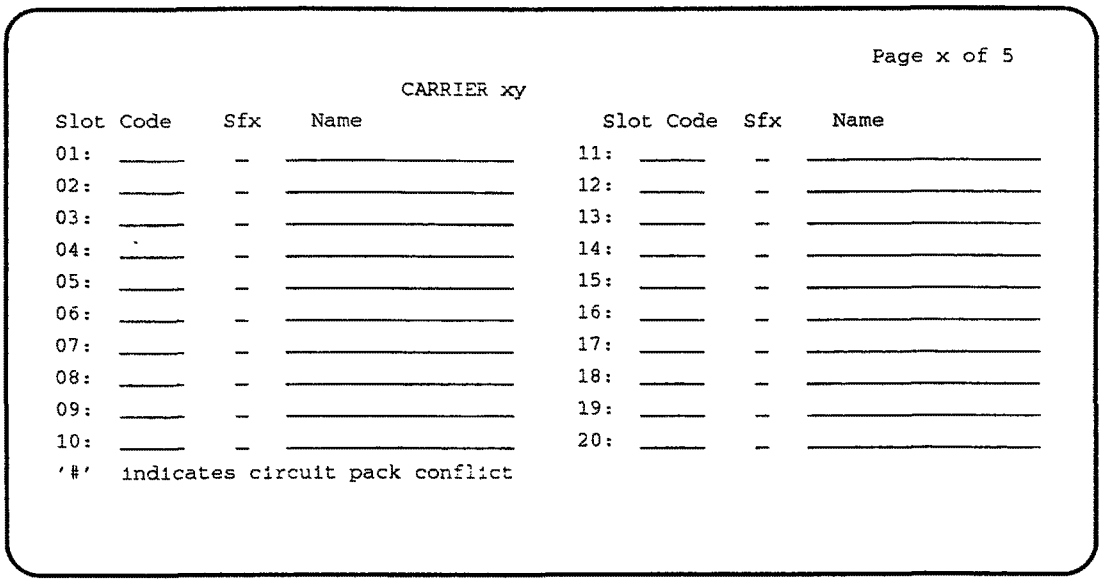
Slot	Code	Sfx	Name	Slot	Code	Sfx	Name
01:	_____	_	_____	11:	_____	_	_____
02:	_____	_	_____	12:	_____	_	_____
03:	_____	_	_____	13:	_____	_	_____
04:	_____	_	_____	14:	_____	_	_____
05:	_____	_	_____	15:	_____	_	_____
06:	_____	_	_____	16:	_____	_	_____
07:	_____	_	_____	17:	_____	_	_____
08:	_____	_	_____	18:	_____	_	_____
09:	_____	_	_____	19:	_____	_	_____
10:	_____	_	_____				

'#' indicates circuit pack conflict

* Use slots 01-17 with J58890N-1 control carrier.

(Continued on next page)

NOTE:
A "#" displayed beside a logically administered circuit pack name indicates a conflict between the administered name and the physical circuit pack mounted in that slot.



Page x of 5

CARRIER xy

Slot	Code	Sfx	Name	Slot	Code	Sfx	Name
01:	_____	_	_____	11:	_____	_	_____
02:	_____	_	_____	12:	_____	_	_____
03:	_____	_	_____	13:	_____	_	_____
04:	_____	_	_____	14:	_____	_	_____
05:	_____	_	_____	15:	_____	_	_____
06:	_____	_	_____	16:	_____	_	_____
07:	_____	_	_____	17:	_____	_	_____
08:	_____	_	_____	18:	_____	_	_____
09:	_____	_	_____	19:	_____	_	_____
10:	_____	_	_____	20:	_____	_	_____

'#' indicates circuit pack conflict

Screen 1-1. Circuit Pack Administration Forms

Implementation Note:

CARRIER xy: x = Port Network Number (1-3), y = Carrier Letter (A-E)

Step 4 — Required System Forms (Account Team/Client)

The remaining steps in the survey consist of instructions for completing System forms that are covered in Chapter 3, "System Features, Functions, and Services". 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.

The following forms are required in all Systems and should be completed in the order given. For the Dial Plan, Class of Restriction, and Class of Service features, review the associated feature description in Chapter 3, "System Features, Functions, and Services". Identify the fields on the form 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 fields on all form(s) as required.

- Dial Plan
- Class of Restriction (COR)
- Class of Service (COS)
- Feature Access Codes

- Feature-Related System Parameters
- System-Parameters Country-Options
- System-Parameters Customer-Options (not administrable by customer)
- System-Parameters Miscellaneous

NOTE:
Station Message Detail Recording (SMDR) can be provided on selected trunk groups. Talk with the customer to determine the trunk groups that should be marked for SMDR. This can be done concurrently with the next step.

Step 5 — Trunk Groups (Account Team)

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 6 — Optional Feature Software (Account Team)

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. Note that the following features are activated on the System-Parameters Customer-Options form, which is implemented during the installation of the System. Information associated with the implementation of the form is contained in *DEFINITY Communications System Generic 1 and Generic 3 Installation and Test*, 555-230-104. The form is not administrable by the customer.

- Abbreviated Dialing Enhanced List
- Adjunct/Switch Applications Interface (ASAI)
- ASAI Capability Groups
  - — Adjunct Call Control Group
  - — Adjunct Routing Group
  - — Event Notification Group
  - — Request Feature Group
  - — Set Value Group
- Authorization Codes
- Automatic Call Distribution (ACD)
- Automatic Route Selection (ARS)
- ARS/AAR Digit Conversion
- ARS/AAR Partitioning
- Basic Call Management System
- Call Work Codes
- Centralized Attendant Service (CAS) Branch
- CAS Main
- Distributed Communications System (DCS)
- Emergency Access to the Attendant
- Forced Entry of Account Codes
- Hospitality
- Hospitality Parameter Reduction

- ISDN-PRI
- Lookahead Interflow
- OCM-CPN/BN
- Private Networking (Automatic Alternate Routing)
- Service Observing
- Time of Day Routing
- Uniform Dial Plan (UDP)
- Vectoring (Basic)
- Vectoring (Prompting)

NOTE:
You cannot implement forms or fields on forms associated with an optional feature that is not provided (activated).

Step 7 — Remaining System Features and Services (Account Team/Client)

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 (also refer to Step 9 for a listing of group-related forms). Complete the fields on the duplicated forms as required. Refer to *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203, for a detailed description of each feature, when required.

Step 8 — End User Survey (Account Team/Client)

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 back to "Step 2 — Port Assignments" for information on assigning a port and obtaining an equivalent port number for entry on the station form.

Step 9 — Group Forms (Account Team/Client)

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
- Call Coverage
- Hunt Groups (see Hunting feature description)
- Intercom Groups — Automatic and Dial
- Pickup Groups
- Terminating Extension Group

Step 10 — Voice Terminals/BCTs (Account Team/Client)

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 1 and Generic 3 Console Operation*, 555-230-700, *DEFINITY Communications System Generic 1 and Generic 3 Voice Terminal Operation*, 555-230-701, and related User Instructions. If different nomenclature than that recommended is used, the related documentation for the System should be marked to reflect the changes, and that nomenclature should then be 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 11 — Review (Account Team/Client)

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. Review all features requiring hardware and ensure that a port assignment has been made on a Port Assignment Record for each port interface required, and that the associated port number has been correctly entered on the associated System and circuit pack administration forms.

Retain all completed forms for use during System initialization. The method used for determining circuit pack locations is the same method used at the factory. If there are differences, the System configuration, the Port Assignment Records, and the associated port assignments entered on the System forms must match before administering the System.

This completes the Communications Survey for a multi-carrier cabinet.

Single-Carrier Cabinet — Port Assignment Records

Identify in Table 1-3 the cabinet type(s) and the number of cabinets to be used in the System. Figures 1-7 through 1-9 show various single-carrier cabinet configurations. These are examples only and do not depict all possible configurations. For example, some configurations may require fewer port cabinets than are shown in the figures. Identify the type of cabinet (Control, Expansion, and Port) and number of each type in your System.

Table 1-3. Single-Carrier Cabinets

Cabinet Configurations	Number Cabinets	Port Circuit Pack Slots*
PPN Without Duplication	1	10
	2	28
	3	46
	4	64
PPN With Duplication	1	10
	2	20
	3	38
	4	56
EPN 1 or 2 Without Duplication	1	17
	2	35
	3	53
	4	71

* Number represents all universal port slots in carrier (that is, slots associated with Tone Clocks, Expansion Interface, and so on, are not excluded).

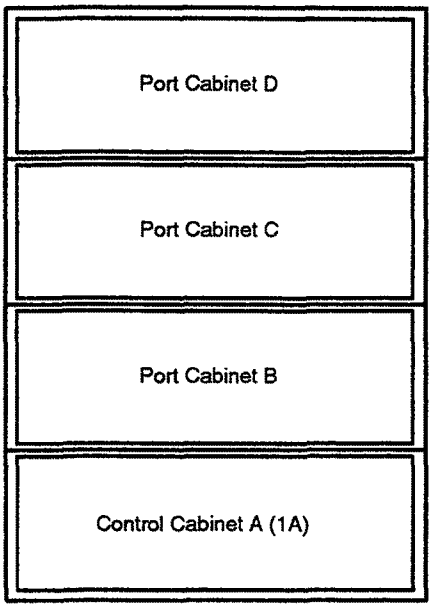


Figure 1-7. Four-Cabinet System — Front View

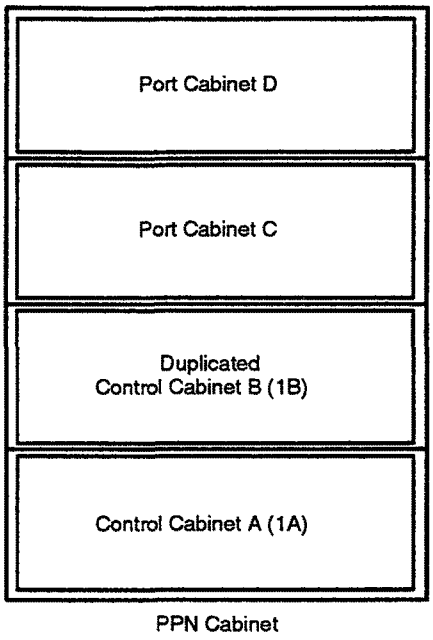


Figure 1-8. Four-Cabinet System — Front View

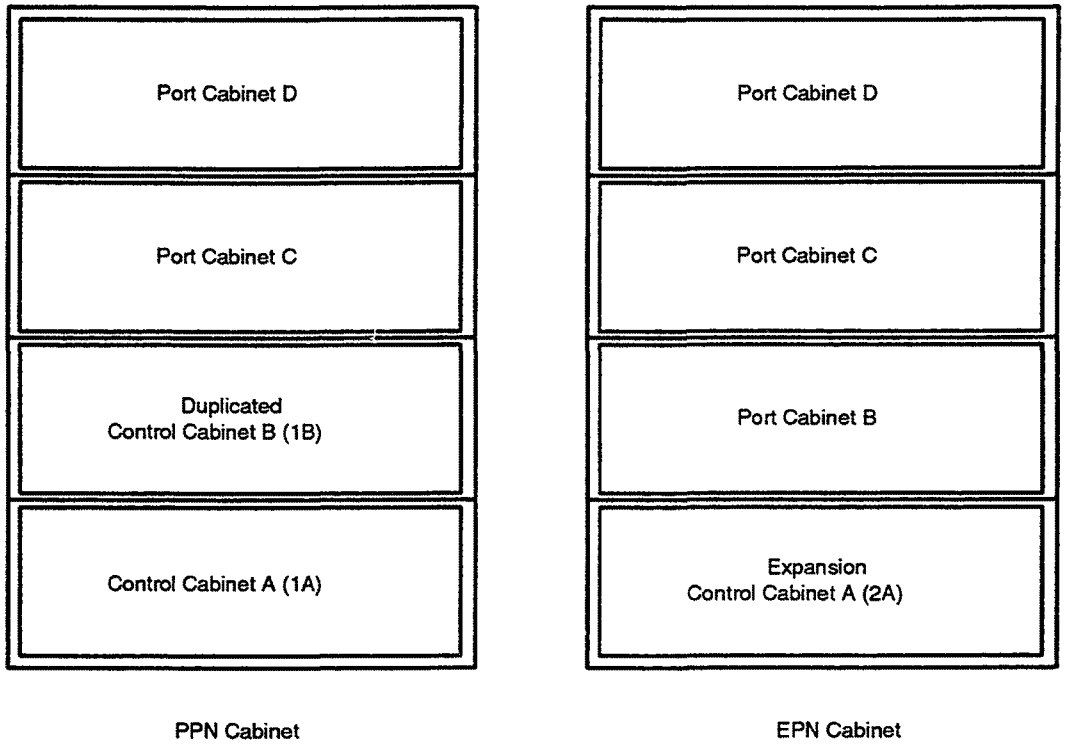


Figure 1-9. Four-Cabinet System — Front View

Remove the blank Port Assignment Record forms (Figures 1-4 and 1-5) and duplicate as many times as necessary to have enough pages for each type cabinet and associated circuit packs to be assigned in the System. A blank Port Assignment Record for eight ports (Figure 1-4) is required for all circuit packs that contain up to eight ports Each 8-port record provides assignment space for four slots on a cabinet. A blank Port Assignment Record for 32 ports (Figure 1-5) is required for each slot that will house circuit packs that contain more than eight ports, as in the, the TN722 DS1 Tie Trunk or TN746 Analog Line circuit pack, for example.

Obtain sets of blank records for all Control, Expansion, and Port cabinets to be used, then complete the following

1. With a set of records for a single-carrier cabinet — following the "CARRIER" entry at the top of the form, enter the applicable cabinet ID as follows:
   - Enter 1A for the Control Cabinet (J58890L-1) without the Duplication Option

- Enter 1B for the Control Cabinet (J58890M-1) with the Duplication Option.
- Enter 2A for the Expansion Control Cabinet (J58890N-1).
- Assign a letter (B, C, or D) to all records for each Port Cabinet (J58890H 1). Use the letter as noted on Figure 1-7, 1-8, or 1-9 for the Port Cabinet location in a multiple port cabinet configuration.

2. Following the "CABINET" entry at the top of the record, enter the applicable cabinet type as either PPN (Processor Port Network), EPN 1 (Expansion Port Network 1), or EPN 2 (Expansion Port Network 2).
3. Repeat the above steps and complete a set of records for each System cabinet.
4. Assign port circuit pack slot numbers on the sets of records as follows (refer to Table 1-4 for circuit pack port slot availability and associated notes):
   - For Control Cabinet 1A, begin with slot number 1 and number through 10.
   - For Control Cabinet 1B, begin with slot number 1 and number through 10.
   - For the Expansion Control Cabinet 2A, begin with slot 1 and number through 17.
   - All Port Cabinets (B, C, or D) slots should be numbered 1 through 18.

NOTE:
Table 1-4 shows the number of universal port circuit pack slots available on the various cabinets and the number of administrable ports available on each circuit pack type. This manual does not provide guidelines or procedures associated with the distribution and configuration of circuit packs across the port networks. Considerations based on communities of interest, shared resources, minimizing inter-port network traffic, and so on, are not covered in this manual. Obtain the hardware configuration layout from the factory for your system. The layout will identify the circuit pack mounting locations of each circuit pack for your system.

See appendix B, *Applications Notes*, to determine which circuit packs are recommended for installations outside of the United States of America.

Table 1-4. Single-Carrier Cabinet — Universal Port Slots and Associated Circuit Packs

Circuit Pack		Ports	Port Cabinet (J58890H-1)		Control Cabinet (J58890L-1)		Duplicated Control Cabinet (J58890M-1)		Expansion Control Cabinet (J58890N-1)	
Name	Code		Port Slot	Note	Port Slot	Note	Port Slot	Note	Port Slot	Note
Analog Line (8)	TN742	8	1-18	4	1-10	4	1-10	4	2-17	4
Analog Line (neon)	TN769	8	1-18	4	1-10	4	1-10	4	2-17	4
Analog Line (16)	TN746B	16	1-18	4	1-10	4	1-10	4	2-17	4
Announcement	TN750				1-10	7	1-10	7	2-17	7
Auxiliary Trunk	TN763C	4	1-18	4	1-10	4	1-10	4	2-17	4
Call Classifier	TN744		1-18		1-10		1-10		2-17	
CO Trunk	TN747B	8	1-18	4	1-10	4	1-10	4	2-17	4
Data Line	TN726B	8	1-18	4	1-10	4	1-10	4	2-17	4
DID Trunk	TN753	8	1-18	4	1-10	4	1-10	4	2-17	4
Digital Line	TN754B	8	1-18	4	1-10	4	1-10	4	2-17	4
DS1 Tie Trunk	TN722B	24	1-18	4						
DS1 Interface	TN767	24	1-18	4	1-10	4	1-10	4	2-17	4
Expansion Interface	TN776		2, 3	3	1, 2	3	1, 2	3	1, 2	6
Expansion Interface	TN570		2, 3	3	1, 2	3	1, 2	3	1, 2	9
Hybrid Line	TN762B	8	1-18	4	1-10	4	1-10	4	2-17	4
ISDN-BRI Line	TN556	12	1-18	4	1-10	4	1-10	4	2-17	4
Maintenance/Test	TN771B				1-10	8			2-17	8
MET Line	TN735	4	1-18	4	1-10	4	1-10	4	2-17	4
Pooled Modem	TN758	2	1-18	4	1-10	4	1-10	4	2-17	4
Power Unit	TN755B		18	4	10	4	10	4	17	4
Speech Synthesizer	TN725B	4	1-18	4	1-10	4	1-10	4	2-17	4
Tie Trunk	TN760C	4	1-18	4	1-10	4	1-10	4	2-17	4
Tone-Clock	TN768		1	5						
Tone-Clock (Stratum 3)	TN780		1	5						
Tone Detector	TN748C		1-18	2	1-10	4	1-10	6	2-17	4

Notes:

1. Required instead of TN768 when connecting to an external Statum 3 clock
2. Tone detector — one always required if the cabinet is the first or second Port Cabinet in the System The tone detector is not required if the cabinet is the third Port Cabinet in the System
3 Required when connecting to an EPN The TN776 Expansion Interface may be used when no ASAI functions are supported The TN570 is required for ASAI Refer to Figure 1-6 for the Expansion Interface carrier/slot assignments based on the system configuration
4. Provided as required
5 The TN768 Tone Clock is required in Cabinet B of an EPN with duplication The TN780 is required when connecting to an external Stratum 3 clock
6 One always required
7. Maximum of one per System Mount in the Control Cabinet when possible
8 One TN771B required for a duplicated system
9 Provide instead of TN776 when ASAI functions are supported

Port Cabinets B and C come equipped with a TN748C Tone Detector circuit pack in slot 1. These circuit packs may be installed in any slot on the cabinets, but it is recommended that they remain in their provided locations. No administration is required for the Tone Detector circuit packs.

5. Using the hardware Configuration Layout record, assign circuit packs to available port slots on all completed Port Assignment Records.
6. Determine how many ports are available on each type of circuit pack using Table 1-4. If a circuit pack contains less than eight ports, strike out (do not use) the unavailable slots on the Port Assignment Record associated with that circuit pack.

Some of the forms you will be completing require port information. When completing such a form, first determine the type circuit pack that is required. The type circuit pack for each feature, where required, is identified in Chapter 3, "System Features, Functions, and Services". Next, obtain the Port Assignment Record and select the next vacant port on the appropriate circuit pack. Then, complete the following Port Assignment Record items as required:

Jack # — To be completed by the installation technician. Used to denote the physical location of the jack.

Extension Number — This information can be taken from data obtained using *DEFINITY Communications System Generic 1 and Generic 3 Planning and Configuration*, 555-230-600.

- Old — Enter the old extension number to be replaced
- New — Enter the new extension number

Bldg., Flr., Rm. — Enter the identifying information for the location of the terminal or equipment.

Voice Terminal Type/Color — Enter the voice terminal information.

Voice Terminal Adjunct — Enter adjunct equipment associated with the terminal, for example, speakerphone, headsets, and so on. This information can be taken from data obtained using the *DEFINITY Communications System Generic 1 and Generic 3 Planning and Configuration*, 555-230-600.

Module — Enter MPDM, DTDM, MTDM, 702A Data Module base (use with 7404D voice terminal), 703A DSU (use with the 7406D voice terminal), 7400A, 7400B, Call Coverage, Feature, or Display module, as applicable.

Power — To be completed by the installation technician.

Blank — Use as necessary.

User name/use — Enter the name of the user or the feature name as appropriate, for example, SMDR. This information can be taken from data obtained using *DEFINITY Communications System Generic 1 and Generic 3 Planning and Configuration*, 555-230-600.

Once the preceding information has been entered on the Port Assignment Record, enter the port network number on the System form you are completing. The port number consists of a network number (1 = PPN cabinet, 2 = EPN 2 cabinet, 3 = EPN 3 cabinet), the letter assigned the cabinet, and four numbers that consist of the slot number (01 to 18) and the port number (01 to 08 or 01 to 32). A port number example for a single-cabinet System (Control Cabinet only) with a circuit pack mounted in slot 02 with port 08 assigned is A0208.

Step 3 — Complete Circuit Pack Forms — Single-Carrier Cabinet (Account Team/Client)

NOTE:
The Circuit Pack forms do not have to be completed if the System cabinet is equipped with the circuit packs at the time of administration.

The Circuit Pack forms allow the user 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 administered when the circuit packs have not yet been physically inserted in their appropriate slots. In order for any end-user equipment (voice terminals, data terminals, and so on) to be translated into the System, either a circuit pack must be physically inserted in the appropriate slot or be logically installed using the Circuit Pack form. The number of Circuit Pack forms and associated pages to be completed is dependent on the System configuration. For example, a Processor Port Network with Duplication requires one control cabinet (use one circuit pack CARRIER 1A form), one duplicated control cabinet (use one circuit pack CARRIERS 1A form), and up to two port cabinets (use two circuit pack CARRIER xy forms — one for each port cabinet). For a PPN cabinet, mark each Circuit Pack form as "PPN". In this example, four forms must be completed. When an Expansion Port Network (EPN) is supported, the Expansion Control Cabinet requires one circuit pack CARRIER 2A form to be completed in addition to a circuit pack CARRIER xy form for each port cabinet in the EPN configuration. Mark EPN Circuit Pack forms as "EPN 1" or "EPN 2" as appropriate. Use the circuit pack code (TN number) when assigning the circuit packs to slots.

The Circuit Pack forms are shown in Screens 1-1 and 1-2. The information entered on the form can be taken from the Port Assignment Record.

The Circuit Pack administration forms consist of three sets of five pages each. One set is used for each port network (PPN, EPN 1, EPN 2) with one page for each of the port carriers on the specified network Page 1 is for Carrier A, Page 2 is for Carrier B, and so on. Page 1 of the PPN has 14 circuit pack slots. Check the Control carrier J-number to be sure the physical slots exist for the circuit packs you are administering. When the form is administered, the System will not validate that the slot you are administering actually exists. The rest of the pages have 20 circuit pack slots. The single-carrier cabinet system does not have 20 slots or an E Carrier. However, the form shows 20 slots and the page for the E Carrier is administrable. Do not administer slots or carriers that you do not physically have. The A Carriers of the EPNs have 19 slots and the rest of the carriers (B-E) have 20.

International Installations

See appendix B, *Applications Notes*, for lists of the circuit packs appropriate for international installations

2. Administration Commands & Error Messages

Administration Commands and Error Messages

2

The following provides a description of the System's Command Line feature and a summary of the *administration* commands and associated error messages that support the feature. A user, via entry of a single command line on the System's administration terminal, 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 1 and Generic 3i Maintenance*, 555-204-105, Issue 5, for information associated with maintenance commands.
- Measurements — Used to obtain displays of measurement reports for trunk groups, hunt groups, attendants, and so on. Refer to *DEFINITY Communications System Generic 1 and Generic 3i System Reports*, 555-204-510, for information associated with measurement commands.
- System — Used to change passwords and administer the command authorization structure. Refer to *DEFINITY Global Communications System Generic 1 and Generic 3 System Management*, 555-230-500, for information associated with system commands.

You must be logged on the system via the administration terminal before an administration command can be entered. Procedures on how to log on and log off the system and descriptions of the various management tasks that can be performed are provided in *DEFINITY Global Communications System Generic 1 and Generic 3 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 (for example, "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 HELP) 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 action/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 (HELP) after entering the action word "add".

- abbreviated-dialing
- access-endpoint
- administered-connection
- attendant
- coverage
- data-module
- ds1
- hunt-group
- intercom-group
- modem-pool
- personal-CO-line
- pickup-group
- second-digit
- signaling-group
- station
- term-ext-group
- trunk-group
- vdn

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 HELP after entering the action word "change".

- aar
- abbreviated-dialing
- access-endpoint
- administered-connection
- alias
- alphanumeric-dial-table
- announcements
- ars
- attendant
- authorization-code
- circuit-packs
- communication-interface
- console-parameters
- cor
- cos
- coverage
- data-module
- dial-plan
- digit-absorption
- feature-access-codes
- hunt-group
- intercom-group
- intra-switch-smdr
- isdn
- ixc-code
- listed-directory-numbers
- measured
- modem-pool
- mst
- paging
- password
- permissions
- personal-CO-line
- pickup-group
- remote access
- report-scheduler
- rhnpa
- route-pattern
- second-digit
- signaling-group
- sit-treatment
- station
- synchronization
- system-parameters
- term-ext-group
- time-of-day
- toll
- trunk-group
- vdn
- vector

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 administration terminal. The following object words are available for use with the *display* command. They can be displayed by pressing HELP after entering the action word "display".

- aar
- abbreviated-dialing
- access-endpoint
- administered-connection
- alarms
- alias
- alphanumeric-dial-table
- announcements
- ars
- attendant
- authorization-code
- buttons-location-aca
- capacity
- circuit-pack
- communication-interface
- console-parameters
- cor
- cos
- coverage
- data-module
- dialplan
- digit-absorption
- disabled-tests
- ds1
- errors
- events
- feature-access-code
- hunt-group
- initcauses
- intercom-group
- intra-switch-smdr
- isdn
- ixc-codes
- listed-directory-numbers
- measured
- modem-pool
- mst
- paging
- permissions
- personal-CO-line
- pickup-group
- port
- remote-access
- rhnpa
- route-pattern
- second-digit
- signaling-group
- sit-treatment
- software
- station
- svn-button-location
- synchronization
- system-parameters
- term-ext-group
- time
- time-of-day
- toll
- trunk-group
- vdn
- vector

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 (HELP) after entering the action word "list".

- aar
- abbreviated-dialing
- aca-parameters
- access-end point
- administered-connection
- ars
- authorization-code
- bcms
- bridged-extensions
- configuration
- coverage
- data-module
- disabled-mos
- do-not-disturb
- emergency
- extension-type
- groups-of extension
- history
- hunt-group
- intercom-group
- isdn-testcall
- marked-ports
- modem-pool
- mst
- monitored-station
- measurements
- partitioned-group
- performance
- personal-CO-line
- pickup-group
- pms-down
- report scheduler
- route-pattern
- signaling-group
- station
- term-ext-group
- toll
- trunk-group
- vdn
- vector
- wakeup

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 HELP after entering the action word "remove".

- abbreviated-dialing
- access-endpoint
- administered-connection
- attendant
- coverage
- data-module
- ds1
- hunt-group
- intercom-group
- modem-pool
- personal-CO-line
- pickup-group
- report-scheduler
- second-digit
- signaling-group
- station
- term-ext-group
- trunk-group
- vdn

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 1 and Generic 3i Maintenance*, 555-204-105, Issue 5. The following object words are available for use with the *status* command. They can be displayed by pressing HELP after entering the action word "status".

- access-endpoint
- administered-connection
- attendant
- bri-port
- data-module
- interface
- isdn-testcall
- journal-link
- link
- mst
- packet-control
- pms-link
- processor
- signaling-group
- smdr-link
- sp-link
- station
- synchronization
- system
- trunk
- tsc-administered

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 (that is, pressing [RETURN] or [TAB]). 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, [HELP] 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 with the previously accepted keywords appended to it. If an error is encountered, an error message and a prompt requesting reentry of the keyword will be displayed.

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 [CANCEL] 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 message *xxxx is an ambiguous entry* is displayed and the list of keywords which partially matched the input is 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 message *xxxx is an invalid entry -- Please Press HELP* is displayed.

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, [HELP] 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 CANCEL 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 BACKSPACE 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 HELP 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 RETURN or TAB 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.

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 CANCEL 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 multi-line 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 *Please Wait* 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
- The system configuration does not require a command
- The command is a member of a set of commands which are being used by another user.

Administration Commands

Table 2-1 provides a summary of all administration commands. The summary is listed alphabetically by the system form or feature associated with the various commands. The complete command line is shown and consists of an action word, object word, and in several cases a qualifier word.

Table 2-1. Administration Commands

Form/Feature	Command Line (Note)		
	Action	Object	Qualifier
AAR	list	route-chosen	Enter dialed number, ['partition' (1-8)], ['print' or 'schedule']
AAR Analysis Table	change	aar analysis	Enter digits between 0-9, 'x' or 'X' (dialed string) ['part' 1-8]
	display	aar analysis	Enter digits between 0-9 'x' or 'X' (dialed string) ['part' 1-8] ['print' or 'schedule']
	list	aar analysis	[start dialed string] ['count' 1-2000] ['rp' 1-254 or r1-r32] ['part' 1-8] ['print' or 'schedule']
AAR Digit Conversion	change	aar digit-conversion	Enter digits between 0-9 'x' or 'X'
	display	aar digit-conversion	Enter digits between 0-9 'x' or 'X' ['print' or 'schedule']
	list	aar digit-conversion	Enter ['start' matching pattern] ['count' (1-300)] ['print' or 'schedule']
Abbreviated Dialing—7103A List	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 List	add	abbreviated-dialing group	1-100 (or 'next')
	change	abbreviated-dialing group	1-100
	display	abbreviated-dialing group	1-100 ['print' or 'schedule']
	list	abbreviated-dialing group	[xx] ('count' 1-100) ['print' or 'schedule']
	remove	abbreviated-dialing group	1-100
Abbreviated Dialing—Enhanced List	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
Abbreviated Dialing—Personal List	add	abbreviated-dialing personal	xxxx (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	xxxx(extension and 'count' 1-1600) ['print' or 'schedule']
Abbreviated Dialing—System List	add	abbreviated-dialing system	—
	change	abbreviated-dialing system	—
	display	abbreviated-dialing system	['print' or 'schedule']
	remove	abbreviated-dialing system	—
Access-Endpoint	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' 1-400] ['print' or 'schedule']

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

(Continued on next page)

Table 2-1. Administration Commands *(continued)*

Form/Feature	Command Line (Note)		
	Action	Object	Qualifier
Adjunct-Switch Application Interface	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' 1-1600) type ASAI ['print' or 'schedule']
	remove	station	xxxxx (extension number)
Administered Connection	add	administered-connection	1-128 (or 'next')
	change	administered-connection	1-128 (or 'next')
	display	administered-connection	1-128 (or 'next') ['print' or 'schedule']
	duplicate	administered-connection	1-128 (or 'next')
	remove	administered-connection	1-128 (or 'next')
	list	administered-connection	1-128 ['count' 1-128] ['print' or 'schedule']
Alias Station	change	alias station	—
	display	alias station	['print' or 'schedule']
Alphanumeric Dialing Table	change	alphanumeric-dial-table	—
	display	alphanumeric-dial-table	[print]
Announcements	change	announcements	—
	display	announcements	['print' or 'schedule']
	restore	announcements	—
	save	announcements	—
ARS	list	route-chosen	Enter dialed number, ['partition' (1-8)], ['print' or 'schedule']
ARS Analysis Table	change	ars analysis	Enter digits between 0-9, 'x' or 'X' (dialed string) ['part' 1-8] ['min' 1-23]
	display	ars analysis	Enter digits between 0-9, 'x' or 'X' (dialed string) ['part' 1-8] ['min' 1-23] ['print' or 'schedule']
	list	ars analysis	[start dialed string] ['count' 1-2000] ['rp' 1-254 or r1-r32] ['part' 1-8] ['print' or 'schedule']
ARS Digit Conversion	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' (1-300)] ['print' or 'schedule']
ARS Toll Table	change	ars toll	n:xxx (1-32:office code)
	display	ars toll	n:xxx (1-32:office code) ['print' or 'schedule']
Attendant Console	add	attendant	1-7
	change	attendant	1-7
	display	attendant	1-7 ['print' or 'schedule']
	remove	attendant	1-7
	status	attendant	1-7
Authorization Codes	change	authorization-code	auth(4-7 digit number)
	display	authorization-code	auth(4-7 digit number)
Automatic Circuit Assurance	list	aca-parameters	['print' or 'schedule']
	list	measurements-aca	['print' or 'schedule']
	display	buttons-location-aca	

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.

(Continued on next page)

Table 2-1. Administration Commands *(continued)*

Form/Feature	Command Line (Note)		
	Action	Object	Qualifier
Basic Call Management System	list	bcms agent	extension [time] [start time] [stop time] ['print' or 'schedule']
		bcms agent	extension [day] [start day] [stop day] ['print' or 'schedule']
		bcms split	[stop time] ['print' or 'schedule'] 1-99 (split number) [day] [start day] [stop day] ['print' or 'schedule']
		bcms system	[time] [start time] ['print' or 'schedule']
		bcms system	[day] [start day] ['print' or 'schedule']
		bcms trunk	1-99 (group number) [time] [start time] [stop time] ['print' or 'schedule']
		bcms trunk	1-99 (group number) [day] [start day] [stop day] ['print' or 'schedule']
Bridged Extensions	list	bridged-extensions	(enter assigned extension) ['print' or 'schedule']
Call Coverage Answer Group	add	coverage answer-group	1-200 (or 'next')
	change	coverage answer-group	1-200
	display	coverage answer-group	1-200 ['print' or 'schedule']
	list	coverage answer-group	['print' or 'schedule']
	remove	coverage answer-group	1-200
Call Coverage Path (without Hospitality Parameter Reduction Feature)	add	coverage path	1-600 (or 'next')
	change	coverage path	1-600
	display	coverage path	1-600 ['print' or 'schedule']
	list	coverage path	['print' or 'schedule']
	remove	coverage path	1-600
Call Coverage Path (with Hospitality Parameter Reduction Feature)	add	coverage path	1-5 (or 'next')
	change	coverage path	1-5
	display	coverage path	1-5 ['print' or 'schedule']
	list	coverage path	['print' or 'schedule']
	remove	coverage path	1-5
Call Vector	change	vector	[1-256]
	display	vector	[1-256] ['print' or 'schedule']
	list	vector	[1-256] ['count' 1-256] ['print' or 'schedule']
Capacity	display capacity	['print' or 'schedule']	
Circuit Pack	change	circuit-packs	['print' or 'schedule']
	display	circuit-packs	port network[1-3] ['print' or 'schedule']

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

(Continued on next page)

Table 2-1. Administration Commands *(continued)*

Form/Feature	Command Line (Note)		
	Action	Object	Qualifier
Class of Restriction	change	cor	0-63
	display	cor	0-63 ['print' or 'schedule']
	list	partitioned group	['print' or 'schedule']
Class of Service	change	cos	—
	display	cos	['print' or 'schedule']
Configuration	list	configuration all	['print' or 'schedule']
		configuration board	4 character [network(1-3)carrier(A-E) slot 1-20 ['print' or 'schedule']
		configuration stations	['print' or 'schedule']
		configuration trunks	['print' or 'schedule']
		configuration control	['print' or 'schedule']
		configuration carrier	2 character cabinet (1-3) carrier (A-E)
		port network	1 character [1-3]
		configuration software-vintage	[long] ['print' or 'schedule']
Communication Interface	change	communication-interface	links
Links:	change	communication-interface	processor channels
Interface Links	change	communication-interface	hop-channels
Processor Channel Assignment	display	communication-interface	links ['print' or 'schedule']
Hop Channel Assignment	display	communication-interface	processor channels ['print' or 'schedule']
	display	communication-interface	hop-channels ['print' or 'schedule']
	status	interface	A1/A2/B1/B2
	status	link	1-8 (1-8 for multi-carrier cabinet or 1-4 for single-carrier cabinet) ['print']
	status	processor-channel	1-64 (processor channel)
Console Parameters	change	console-parameters	—
	display	console-parameters	['print' or 'schedule']
Data Modules	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']
	list	groups-of-extension	xxxx (extension number) ['print' or 'schedule']
	remove	data-module	xxxx (extension number)
	status	data-module	xxxx (extension number)

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.

(Continued on next page)

Table 2-1. Administration Commands *(continued)*

Form/Feature	Command Line (Note)		
	Action	Object	Qualifier
Dial Plan Record	change display	dialplan dialplan	— ['print' or 'schedule']
Digit Absorption	change display	digit-absorption digit-absorption	0-4 0-4 ['print' or 'schedule']
Disabled MOs	list disabled-MOs	['print']	
Disabled Tests	display disabled-tests	['print']	
DS1 Circuit Pack	add change display list list remove	ds1 ds1 ds1 measurements ds1 measurements ds1-log ds1	[P]Css* [P]Css(board) [P]Css location location [P]Css
Events	display events	['print']	
Feature Access Codes	change display	feature-access-codes feature-access-codes	— ['print' or 'schedule']
History	list	history	['print' or 'schedule']
Hospitality-Related System-Parameters	change display	system-parameters hospitality system-parameters hospitality	— ['print' or 'schedule']
Hunt Groups (without Hospitality Parameter Reduction Feature)	add change display list remove	hunt-group hunt-group hunt-group hunt-group hunt-group	1-99 (or 'next') 1-99 1-99 ['print' or 'schedule'] ['print' or 'schedule'] 1-99
Hunt Groups (with Hospitality Parameter Reduction Feature)	add change display list remove	hunt-group hunt-group hunt-group hunt-group hunt-group	1-5 (or 'next') 1-5 1-5 ['print' or 'schedule'] ['print' or 'schedule'] 1-5
Intercom—Group	add change display list remove	intercom-group intercom-group intercom-group intercom-group intercom-group	1-32 (or 'next') 1-32 1-32 ['print' or 'schedule'] ['print' or 'schedule'] 1-32
Inter-Exchange Carrier Codes	change display	ixc-codes ixc-codes	— ['print' or 'schedule']
Intra-switch SMDR	change display intra-switch-smdr	intra-switch-smdr	
ISDN	change display list	isdn cpn-prefix isdn network-facilities isdn tsc-gateway isdn-testcall	['print' or 'schedule'] ['print' or 'schedule'] ['print'] ['print']

* [P] — part of qualifier representing pnn
C — part of qualifier representing carrier (A-F)
ss — part of qualifier representing slot number (01-20)

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

(Continued on next page)

Table 2-1. Administration Commands *(continued)*

Form/Feature	Command Line (Note)		
	Action	Object	Qualifier
Listed Directory Numbers	change display	listed-directory-numbers listed-directory-numbers	— ['print' or 'schedule']
Loudspeaker Paging and Code Calling Access	change display change display	paging loudspeaker paging loudspeaker paging code-calling-ids paging code-calling-ids	— ['print' or 'schedule'] — ['print' or 'schedule']
Marked Ports	list	marked-ports	['print']
Measured	change display	measured coverage measured principal	— ['print' or 'schedule']
Measurements	list	aca list list list list list list list list list list list list list list list list list list list list	['print' or 'schedule'] attendant-group call-rate call-summary cbc-trunk-group communications-links coverage-path ds1 ds1-log hunt-group lightly-use-trunk modem-pool occupancy outage-trunk principal route-pattern security-violations tdm-usage tone-receive trunk-group
Modem Pool Group	add change display list remove	modem-pool num modem-pool num modem-pool num modem-pool num modem-pool num	[1-5] [1-5] [1-5] ['print' or 'schedule'] ['print' or 'schedule'] [1-5]
MST	change display	mst mst	Enter ['default'] to reset defaults ['print' or 'schedule']
Network Facilities	change display	isdn network-facilities isdn network-facilities	 ['print' or 'schedule']

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.

Continued on next page)

Table 2-1. Administration Commands *(continued)*

Form/Feature	Command Line (Note)		
	Action	Object	Qualifier
Permissions	change	permission	Enter user login name
	display	permission	Enter user login name ['print' or 'schedule']
Personal CO Line Group	add	personal-co-line	1-40 (or 'next')
	change	personal-co-line	1-40
	display	personal-co-line	1-40 ['print' or 'schedule']
	list	personal-co-line	['print' or 'schedule']
	remove	personal-co-line	1-40
Pickup Groups (without Hospitality Parameter Reduction Feature)	add	pickup-group	1-800 (or 'next')
	change	pickup-group	1-800
	display	pickup-group	1-800 ['print' or 'schedule']
	list	pickup-group	['print' or 'schedule']
	remove	pickup-group	1-800
Pickup Groups (with Hospitality Parameter Reduction Feature)	add	pickup-group	1-5 (or 'next')
	change	pickup-group	1-5
	display	pickup-group	1-5 ['print' or 'schedule']
	list	pickup-group	['print' or 'schedule']
	remove	pickup-group	1-5
Ports	display	port	assigned port ['print' or 'schedule']
	list	port-network	1 or 2 (1 PPN, 2 EPN)
Property Management System	list	pms-down	['from' time 'to' time]
Remote Home Numbering Plan Area	change	rhnpa	Enter RHNPA and code n:xyy n(1-32) x(0-9) y(0-9) y(0-9) (Table No. 1-32:office code = code 000-999)
	display	rhnpa	Enter RHNPA and code n:xyy n(1-32), x(0-9) y(0-9) (Table No. 1-32:office code = code 000-999) ['print' or 'schedule']
Report Scheduler	change	report scheduler	1-50 [job identification number]
	list	report scheduler	['print' or 'schedule']
	remove	report scheduler	1-50 [job identification number]
Remote Access To An Internal Station	change	remote access	—
	display	remote access	['print' or 'schedule']
Routing Pattern	change	route-pattern	1-254
	display	route-pattern	1-254 ['print']
	list	route-pattern	Enter ['trunk' (1-99)] ['service'/feature name string] ['print' or 'schedule']
Security Violation Notification	clear	measurements security-violations	
	list	measurements security-violations	[print] or [schedule]
	monitor	security-violations	[print]
Second Digit Table	add	second-digit	Enter number (0-9)
	change	second-digit	Enter number (0-9)
	display	second-digit	Enter number (0-9)
	remove	second-digit	Enter number (0-9) ['print' or 'schedule']

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.

(Continued on next page)

Table 2-1. Administration Commands *(continued)*

Form/Feature	Command Line (Note)		
	Action	Object	Qualifier
Signaling Group	add	signaling-group	1-8 or 'next'
	change	signaling-group	1-8
	display	signaling-group	1-8 ['print' or 'schedule']
	list	signaling-group	1-8 ['print' or 'schedule']
	remove	signaling-group	1-8
Software Errors	display	software	['print']
Special Information Tones	change	sit-treatment	
	display	sit-treatment	['print' or 'schedule']
Stations	add	station	xxxx (extension number)(or 'next')
	change	station	xxxxx (extension number)
	display	station	xxxxx (extension number) ['print' or 'schedule']
	display	station	xxxxx 1-1600 ['print' or 'schedule']
	duplicate	station (extension) *	['count' 1-16][start extension] [board address] [one-ep]
	list	bridged-extension	xxxxx (extension number) ['print' or 'schedule']
	list	configuration stations	['print' or 'schedule']
	list	do-not-disturb group	['print' or 'schedule']
	list	do-not-disturb	start extension and 'count' ['print' or 'schedule']
	list	emergency	start and stop times ['print' or 'schedule']
	list	extension-type	[extension]['count' 1-1600]
	list	extension-type	[extension] 'count' [number] ['print']
	list	groups-of-extension	xxxx (extension number) ['print' or 'schedule']
	list	monitored-station	['start' extension] [count xxxxx] [print]
	list	station	[xxxxx]('count' 1-1600) ['print' or 'schedule']
	list	station	[xxxxx]('count' 1-1600) type ASAI ['print' or 'schedule']
	list	station	[xxxxx]('count' 1-1600) port ['print' or 'schedule']
	list	station	[extension] [type (station type)] [port 1-3 (port number)] ['count'(n)] ['print' or 'schedule']
	status	station	xxxxx (extension)

* 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.
'count' (1-16) — is the number of station forms to generate.

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.

(Continued on next page)

Table 2-1. Administration Commands *(continued)*

Form/Feature	Command Line (Note)		
	Action	Object	Qualifier
Stations (Continued)	list	wakeup activity	[print]
	list	wakeup incomplete	['from'<time>'to'<time>]
	list	wakeup requests	['from'<time>'to'<time>]
	list	wakeup summary	[print]
	list	wakeup station	extension
	list	wakeup sys-failure	[print]
	remove	station	xxxxx (extension number)
	status	synchronization	[print]
Synchronization Plan	change	synchronization	—
	display	synchronization	['print' or 'schedule']
System-Parameters	change	system-parameters country-options	—
	change	system-parameters features	—
	change	system-parameters miscellaneous	—
	change	system-parameters maintenance	—
	change	system-parameters multifrequency-signaling	—
	display	system-parameters country-options	['print' or 'schedule']
	display	system-parameters features	['print' or 'schedule']
	display	system-parameters maintenance	['print' or 'schedule']
	display	system-parameters miscellaneous	['print']
	display	system-parameters multifrequency-signaling	['print' or 'schedule']
	status	journal-link	pms-log/wakeup-log
	status	pms-link	[print]
	status	smdr-link	—
SVN Buttons	display	svn-button-location	['print']
Terminating Extension Group	add	term-ext-group	1-32 (or 'next')
	change	term-ext-group	1-32
	display	term-ext-group	1-32 ['print' or 'schedule']
	list	term-ext-group	['print' or 'schedule']
	remove	term-ext-group	1-32
Time	display	time	[print]
	display	time-of-day	1-8(plan number) ['print' or 'schedule']
	change	time-of-day	1-8
Toll Analysis	change	toll	Enter digits between 0-9, 'x', or 'X' ['min' 1-23]
	display	toll	Enter digits between 0-9, 'x' or 'X' [min 1-23] ['print' or 'schedule']
	list	toll all	['start' dialed-string] ['count' (1-1000)] [print]
	list	toll toll-list	['start' dialed-string] ['count' (1-1000)] [print]
	list	toll restricted-call	['start' dialed string] ['count' (1-1000)] [print]
	list	toll unrestricted-call	['start' dialed string] ['count' (1-1000)] [print]

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.

(Continued on next page)

Table 2-1. Administration Commands *(continued)*

Form/Feature	Command Line (Note)		
	Action	Object	Qualifier
Trunk Groups:			
Access	add *	trunk-group	1-99 (or 'next')
Advanced Private Line Termination	change	trunk-group	1-99 or TAC X...
	display	trunk-group	1-99 or TAC X...['print' or 'schedule']
Central Office	change	isdn	network facilities
Customer-Provided Equipment	display	isdn	network facilities
	display	isdn	cpn-prefix
Digital Multiplexed Interface	list	trunk-group	['print' or 'schedule']
	list	configuration trunks	['print' or 'schedule']
DIOD	remove	trunk-group	1-99 or TAC X
Direct Inward Dialing	remove	trunk-group	1-99 or TAC X
Foreign Exchange	change	isdn	cpn-prefix
ISDN-PRI	change	isdn	network facilities
Release	change	trunk-group tacg	yyy (1-3 digit trunk access code)
Tandem	remove	trunk-group tac	yyy (1-3 digit trunk access code)
Tie	display	trunk-group tac	yyy (1-3 digit trunk access code)
WATS	status	trunk	1-99 [1-99] (group/member number)
Vector	change	vector	1-256
	display	vector	1-256
	list	vector	[xxx] ('count' 1-256) ['print' or 'schedule']
VDN	add	vdn	xxxxx (extension number of VDN to be added)
	change	vdn	xxxxx (extension number of VDN to be changed)
	display	vdn	xxxxx (extension number of VDN to be displayed) ['print' or 'schedule']
	remove	vdn	xxxxx (extension number of VDN to be removed)
	list	vdn	xxxxx (extension number of VDN to be listed) ('count' 1-500) ['print' or 'schedule']

* With the Hospitality Parameter Reduction Feature, only 50 trunk groups can be added.

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.

Error Messages

The following is an alphabetical listing and description of the error messages associated with administration. An error message may be displayed at any time during use of the administration terminal as the result of an improper input command, incorrect input data, exceeding a range, not specifying data in fields that require input, and so on. In some cases, HELP can be pressed following an error message to obtain an on-screen help message associated with the current operation. The following descriptions provide an additional aid that can be used in the process of resolving error messages.

In many cases, when an error message is displayed, the data being entered as part of the input command is displayed at the beginning of the message. This data is not included in the following listings. For example, if the error message "39 Invalid toll list reference number" is displayed, locate the message "Invalid toll list reference number" for a description of the message.

If an error message is not clear or you require additional help to resolve the message, proceed as follows:

1. Press HELP to obtain an associated help message. Valid field entries, command line entries, and so on, can be displayed.
2. Refer to the error message in the following listing for an additional description of the message.
3. Consult the form instructions provided elsewhere in this manual for a description of the form and each field on the form.
4. Consult your System Administrator.

Note that the following does not include error listings associated with System forms not covered in this manual (for example, the Maintenance-Related System-Parameters form). When administering forms of this type, consult the appropriate manual for associated form and field descriptions. The Maintenance-Related System-Parameters form is covered in *DEFINITY Communications System Generic 1 and Generic 3 Installation and Test*, 555-230-104.

NOTE:
Error message descriptions associated with features not currently covered in this manual such as Call Associated Temporary Signaling Connections (CA-TSCs) and Non-Call Associated TSCs (NCA-TSCs) are marked as "Reserved for future use". The features and associated error message descriptions will be provided in a future release of this manual.

Table 2-2. System Error Messages

Error Message	Description
# sign must be at the end of the digits	On the AAR/ARS Digit Conversion form—If the Replacement String field entry contains a # sign, it must be at the end of a digit string
ARS Partitioning and either ARS or Private Networking must be activated	The ARS Partitioning and either the ARS or Private Networking features must be enabled on the System-Parameters Customer Options form before associated forms and fields on forms can be administered.
ARS and either Private Networking or Uniform Dial Plan must be activated	The ARS feature and either the Private Networking or Uniform Dial Plan features must be enabled on the System-Parameters Customer Options form before associated forms and fields on forms can be administered.
ARS/AAR Digit Conversion feature not assigned	The ARS/AAR Digit Conversion feature must be enabled on the System-Parameters Customer Options form before associated forms and fields on forms can be administered.
ARS/AAR Partitioning feature not assigned	The ARS/AAR Partitioning feature must be enabled on the System-Parameters Customer Options form before associated forms and fields on forms can be administered
ASAI Interface feature not assigned	The ASAI Interface feature must be enabled on the System-Parameters Customer Options form before associated forms and fields on forms can be administered.
ASAI Routing capability and/or Vectoring (Basic) feature not assigned	On the Call Vector form, the ASAI Routing or Basic fields must be enabled before the associated Call Vector command can be entered on the form.
	The ASAI and/or Vectoring (Basic) feature must be enabled on the System-Parameters Customer Options form before associated forms and fields on forms can be administered.
Abbreviated Dialing Enhanced List feature not assigned	The Abbreviated Dialing—Enhanced List feature must be enabled on the System-Parameters Customer Options form before associated forms and fields on forms can be administered.
Abbreviated dialing index invalid	Press HELP to obtain a list of valid entries or consult the Abbreviated Dialing form coverage in Chapter 5 for additional information.
Absorption list entries mixed; chose from Group I or Group II	On the Digit Absorption form—For the Absorption Treatment Assignment fields, all choices for the digits 0 through 9 must be taken from either Group I or Group II, but not both.
Access, dmi-mos, sddn, tandem, and tie are not valid for a CBC trunk group	On the ISDN-PRI Trunk Group form—The Service/Feature field entry (Page 2) cannot be "access", "dmi-mos", "sddn", "tandem", or "tie" for Service Type field entry (Page 1) of "cbc"

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Activation times within the same day must be unique	On the ISDN-PRI Trunk Group form—The Act Time field entry (Pages 4 through 11) must be unique for each entry associated with a given day of the week
Add primary DS1 as NFAS trunk board or remove its ports from trunk groups	On the Signaling Group form—Changing the Associated Signaling field entry from "y" (FAS) to "n" (NFAS) requires that the Trunk Brd and associated Interface Id fields be completed. The Trunk Brd entries cannot be ports associated with a DS1 that is used in a FAS Signaling Group. In addition, the Trunk Brd entries must include the DS1 circuit pack assigned the Primary D-Channel or trunk ports associated with the DS1 must be removed from trunk groups
Adjunct Call Control Group feature not assigned	The Adjunct Call Control Group option must be enabled on the System-Parameters Customer Options form before associated forms and fields on forms can be administered.
Adjunct Routing Group feature not assigned	The Adjunct Routing Group option must be enabled on the System-Parameters Customer Options form before associated forms and fields on forms can be administered.
Adjunct controlled splits must be "ucd"	On the Hunt Group form—When the Controlling Adjunct field entry is "bx.25", or "asai", the Group Type field entry must be "ucd".
Administered NCA-TSC duplicately assigned; please select another	On the gateway form, the signaling group and administered NCA-TSC pair have been duplicately assigned.
Administered NCA-TSC not assigned; please select another	On the gateway form, an attempt was made to use an NCA-TSC which has not been administered.
Administered NCA-TSC not used for gateway; please select another	On the gateway form, an attempt was made which is to use an NCA-TSC which is not used for gateway application.
Administered codes must be removed if length is decreased	On the Feature-Related System-Parameters form—The Authorization Code Length field entry cannot be reduced if there are AC codes of a greater length currently administered on the Authorization Codes form. You must remove or reduce the length of the AC codes first.
Administration of Called Number requires Called Len	On the ISDN-PRI Trunk Group form—If the Called Len field has an entry (Page 2), its associated Called Number field must have an entry
Agents in group must be removed from adjunct controlled agent table	On the Hunt Group form—You cannot remove agent extensions from the hunt group until the extensions are logged into another hunt group or are removed from the Adjunct Controlled Agent Table.
All administered connection numbers used; cannot assign next number	Displayed when using the "add administered-connection" command Indicates that the System maximum for administered connections (128) has been reached

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
All ports are assigned	Assign a port on another circuit pack of the same type or function.
An assigned ASAI/BRI link extension must be specified	On the Call Vector form—For an "adjunct" command entered on the form, you must complete the routing link extension field
An assigned announcement extension must be specified	Enter a valid announcement extension. Enter the "display announcements" command, if required, to display the administered announcement extensions
An assigned data module extension must be specified	Enter an administered data module extension. Enter the "list data-module" command, if required, to list assigned extensions
An assigned extension or attendant (0) must be specified	Enter a valid extension number or enter "0" for the attendant.
An assigned station or individual attendant extension must be specified	Enter an assigned station extension or enter "0" for the attendant. Enter the "list station" command, if required, to list assigned extensions
Announcement Delay must be specified	On the Hunt Group form—If the First or Second Announcement field(s) has an entry, then their associated First or Second Announcement Delay fields must also have an entry.
Announcement data module already exists	The Recorded Announcement Data Module form (associated with the TN750 Announcement circuit pack) has already been administered
Assignment of ISDN-BRI extensions on data extension buttons not allowed	Because one button transfer to data is not allowed for ISDN-BRI, data extension buttons are not allowed for ISDN-BRI data extensions
At least 1 zone must be specified for all-zones data assignment	On the Loudspeaker Paging Access form—Assign at least 1 zone.
Attendant cannot be specified for this field	On the Dial Plan form—A First Digit Table entry of "0" is not a valid entry for this field. "0" is reserved as the first digit for the attendant.
AUDIX™ Extension cannot be blank if message is Remote AUDIX	On the Hunt Group form—If the Message Center field entry is "rem-audix", then the AUDIX Extension field must have an entry.
AUDIX application previously assigned in Processor Channel form	On the Processor Channel Assignments form—Only one link and associated channel can be assigned to AUDIX
AUDIX application previously assigned in another Signal Group	(Reserved for future use)
Authorization Code cannot begin with a 1	On the Authorization Codes form—The AC field entry cannot begin with a "1".

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Authorization Codes feature not assigned	The Authorization Codes feature must be enabled on the System-Parameters Customer Options form before associated forms and fields on forms can be administered
Automatic Call Distribution (ACD) feature not assigned	The ACD feature must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered
Automatic Route Selection (ARS) feature not assigned	The ARS feature must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered.
Available message sizes are 260, 256, 244, and 128	On the ISDN-PRI Trunk Group form—The Max Message Size to Send field must be set to either "260", "256", "244", or "128"
BCMS agents exceed maximum - remove excess before changing measured value	On the Hunt Group form—If the Measured field has an entry of "external", "internal", or "both", remove appropriate agents before changing the Measurement Interval field on the Feature-Related System Parameters form.
BRI: B-channel data not allowed on multipoint port	ISDN-BRI supports 2 B-channels. Because the system does not allow call blocking, only 2 objects (2 voice, 2 data, 1 voice and 1 data, and 1 integrated voice/data) may be administered per port Because there is a user already assigned on this port, the endpoint being administered can only be a stand-alone voice or stand-alone data endpoint
BRI: Default SPID not unique on port; please select another extension	This applies to the duplicate station command which allows entering of extensions If a particular extension being assigned was not used in the system as an extension but the number has been assigned as a SPID of a ISDN-BRI endpoint, this extension may not be used.
BRI: Fixed TEI "partner"; please select another port.	Fixed TEI sets are not supported in multipoint configuration. Since there is a fixed TEI endpoint administered on this port, this port may not be used in multipoint configuration.
BRI: Fixed TEI not allowed on multipoint port	Fixed TEI sets are not supported in multipoint configuration. Because there is a user already assigned on this port, the endpoint being administered must be an automatic TEI endpoint
BRI: No B-channels available; please select another port.	ISDN-BRI supports 2 B-channels. Because the system does not allow call blocking, only 2 objects (2 voice, 2 data, 1 voice and 1 data, and 1 integrated voice/data) may be administered per port This message indicates that both B-channels were already allocated on this port to 1 integrated voice/data endpoint, which uses one B-channel for voice and one for data

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
BRI: Non SPID "partner"; please select another port	SPIDs are required so that endpoints configured in multipoint configuration can be identified Since there is an endpoint without a SPID administered on this port, this port may not be used in multipoint configuration.
BRI: SPID must be assigned on multipoint port	SPIDs are required so that endpoints configured in multipoint configuration can be identified. Because there is a user already assigned on this port, the endpoint being administered must have SPID initialization capability.
BRI: SPID must be unique on a port	SPIDs are required so that endpoints configured in multipoint configuration can be identified. Therefore, SPIDs must be different for all endpoints on the same port.
BRI: Service SPID and any other SPID on the system cannot be same	All SPIDs assigned to the endpoints must be different from the Service SPID
BRI: Two users already assigned to this port; please select another	ISDN-BRI supports up to two endpoints per port. This message indicates that either 2 voice endpoints, 2 data endpoints, or 1 voice and 1 data endpoint are already assigned on this port.
Band number out of range	On the Routing Pattern form—The Band field entry must be within the range of 0 through 255
Barrier code must be "none" for blank barrier code length	On the Remote Access form—If the Barrier Code Length field has no entry, the first Barrier Code field must have an entry of "none".
Basic Call Management System (BCMS) feature not assigned	The BCMS Measurements feature must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered.
Board suffix associated with this port incompatible with Abandoned Call Search	The Abandoned Call Search feature requires trunk port assignments on a TN747B Central Office Trunk circuit pack.
Both Idle Appearance Preference and Auto Answer cannot be y(es)	On a Station form—The Auto Answer and Idle Appearance Preference fields cannot both be administered as "y".
Bridged appearances must be removed before changing from an analog station type	Remove "abrdg-appr" feature buttons from other voice terminals that point to this terminal before changing the Type field entry.
Bridged appearances must be removed before changing to an analog station type	Remove "brdg-appr" feature buttons from other voice terminals that point to this terminal before changing the Type field entry.
Bridged appearances must be removed before removal	Remove all bridged appearance feature buttons from other voice terminals that point to this terminal before removing the station

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Busyout MIS before adding/changing/removing measured object	The CMS must be "busied-out" before the associated object can be added, changed, or removed (use the command "busyout link _" if appropriate)
Busyout MIS before adding/removing a VDN	The CMS must be "busied-out" before the associated object can be added, changed, or removed (use the command "busyout link _" if appropriate).
Button type does not meet min or max requirements	On the Station/Attendant Console form—The feature button administration is not valid Consult the Voice Terminal—General coverage in Chapter 6 for feature button characteristics and descriptions
Button type invalid for a display module	On the Station/Attendant Console form—Assign only display-type feature buttons on display module forms Consult the specific Voice Terminal coverage in Chapter 6 for a list of valid display-type feature buttons
Button type invalid for station without a display module	On the Station form—Do not assign a display-type button on a station without a display Consult the specific Voice Terminal coverage in Chapter 6 for a list of valid feature buttons.
Button type must be call appearance	On the Station Form—Only call appearance buttons can be administered in this field
Button type not allowed on this station type or module	On the Station form—The feature button type is not valid for this station type. Consult the specific Voice Terminal coverage in Chapter 6 for a list of valid feature buttons.
COR must be specified	Enter an appropriate COR in the range of 0 through 95
CPN prefix must be 10 digits for attendant extension	On the CPN Prefix form—The CPN Prefix administered for the attendant must be 10 digits in length.
Call Work Codes feature not assigned	The Call Work Codes feature must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered.
Call appearance button type not allowed	On the Station/Attendant Console form—A call appearance button cannot be administered in this field.
Called Len cannot be less than length of Called Number	On the ISDN-PRI Trunk Group form—The Called Len field entry (Page 2) cannot be less than the number of digits in the associated Called Number field.
Can only accept codeset 6 or 7	On the ISDN-PRI Trunk Group form—The Display, TCM, Lookahead Codeset field entry can only be a "6" or a "7".

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Can only modify name when assigned to an active Administered Connection	On the Access Endpoints form—The Name field can only be modified if the Access Endpoint is involved in an active administered connection (i.e., the AE is assigned to an Originator or a Destination field on an Administered Connection form and the connection is active).
Cannot administer 64K-data if the DS1 has ZCS or RBS	On the Access Endpoints (AE) form—The Communications Type field entry cannot be "64k-data" unless the DS1 circuit pack assigned the Port field has its Zero Code Suppression field set to "zcs" or its Signaling Mode field set to "robbed-bit".
Cannot administer Announcement Delay without Announcement Extension	On the Hunt Group form—The First or Second Announcement Delay fields cannot be administered unless their associated First or Second Announcement Extension fields have an entry.
Cannot administer an ASAI station with a data module	On the Station form—You cannot administer a data module form when the Set Type field entry is "asai".
Cannot assign port 24; it is reserved for signaling channel	On the associated DSI Circuit Pack form—If the Signaling Mode field entry is "isdn-pri" or "common-chan", the circuit pack's 24th channel is reserved for the signaling channel (i.e., D-Channel) and cannot be assigned as a port interface.
Cannot be entered if BRI/ASAI endpoints are administered	This is a Maintenance-Related System Parameters form error. Consult *DEFINITY Communications System Generic 1 and Generic 3 Installation and Test*, 555-230-104, for additional information.
Cannot be entered if packet-control is installed	This is a Maintenance-Related System Parameters form error. Consult *DEFINITY Communications System Generic 1 and Generic 3 Installation and Test*, 555-230-104. for additional information.
Cannot bridge onto an analog station	On the Station form—You cannot assign a "brdg-appr" feature button that points to an analog station. Either enter an appropriate extension number for the "brdg-appr" button or assign an "abrdg-appr" button that points to the analog station.
Cannot change Measured field while changing Controlling Adjunct field	On the Hunt Group form—After changing the Measured field entry, submit the form Then, change the Controlling Adjunct field entry.
Cannot change group type if group is assigned	On the Modem Pool Group form—The Group Type field cannot be changed until other fields on the form associated with the current Group Type are also changed.
Cannot change permissions for the specified login	You cannot change the permissions associated with the specified login. Consult the System Administrator for assistance.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Cannot change the specified permission	*You cannot change the permissions. Consult the System Administrator for assistance.*
Cannot change while port installed	The field entry cannot be changed if any associated DS1 circuit pack ports are administered in the System
Cannot change. Data module extension assumed for this field	The current field entry must be an assigned data module extension.
Cannot delete circuit pack that is physically inserted	Remove the circuit pack from the carrier Then, using the "change circuit-packs" command, delete the circuit pack from the carrier slot.
Cannot display tone-clock board TDM bus port	You cannot display the non-administrable TN768 Tone Clock Use the "status" command if required.
Cannot display tone-clock board tone generator port	You cannot display the non-administrable TN768 Tone Clock. Use the "status" command if required.
Cannot enable Recurring Second Announcement without Announcement Extension	On the Hunt Group form—Complete the Second Announcement Extension and Second Announcement Delay fields as appropriate.
Cannot enable both ASAI Interface and OCM-SID/ANI features	The System supports the use of one of these features at a time but not both.
Cannot enable both CAS and IAS	On the Console Parameters form—The CAS field entry must be "none" if the IAS (Branch) entry is "y" If the CAS field entry is "main" or "branch", the IAS (Branch) field entry must be "n".
Cannot go to same step	On the Call Vector form—Do not reference the current step number when using a "goto step" command
Cannot go to same vector	On the Call Vector form—Do not reference the current vector number when using a "goto vector" command.
Cannot go to undefined step	On the Call Vector form—Do not reference an unassigned step (i.e., step that does not have an associated command) when using a "goto step" command

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Cannot have dial access for isdn-pri trunks with this service type	On the ISDN-PRI Trunk Group form—The Dial Access field entry can only be "y" if the Service Type field entry is "access", "tandem", "tie", "dmi-mos", or blank.
Cannot have more than one audix application	Signal Group form—(Reserved for future use)
Cannot hop a link to itself	On the Hop Channel Assignment form—A link number can only be hopped to a different link number. (i.e., A Link/Chan pair can only be hopped to a different Link/Chan pair.)
Cannot mix this FAC with longer dial code	The first digit and number of digits in the FAC must agree with the First Digit Table on the System's Dial plan form.
Cannot remove synchronization source	A DS1 circuit pack cannot be removed from a carrier slot that has been administered as a Primary or Secondary synchronization source on the Synchronization Plan form.
Cannot remove while port installed	You must remove all associated port assignments before the circuit pack can be removed.
Cannot remove/change - stations administered to alias set type	You cannot remove the station if the station type (e.g., 7434D) is currently entered on the Enhanced Terminal Administration form and is associated with an Alias Set Type.
Cannot remove; ext assigned as trunk group incoming destination	On the Trunk Group form—Delete the extension from the Incoming Destination field if appropriate. Then remove the extension.
Cannot remove; ext assigned as trunk group night destination	On the Trunk Group form—Delete the extension from the Night Service and Night fields if appropriate. Then remove the extension.
Cannot remove; extension assigned on system parameters features form	Remove the extension from extension-type fields on the Feature-Related System Parameters form if appropriate. Then remove extension.
Cannot remove; extension assigned on system parameters hospitality form	Remove the extension from extension-type fields on the Hospitality-Related System Parameters form if appropriate, then remove extension.
Cannot remove; extension is part of an administered connection	Remove extension from the Administered Connection form if appropriate. Then remove the extension.
Cannot use same extension for PMS and printers	On the Hospitality-Related System Parameters form—The Extension of PMS field entry must be different than the Extension of PMS Log Printer or Extension of Journal/Schedule Printer field entries.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Cannot use the predefined name	On the Network Facilities Access form—The Name field entry cannot be the same or a subset of another Service/Feature entry already defined on the form
SMDR ext cannot be same as PMS or Journal/Log Printer ext	On the Feature-Related System Parameters form—The SMDR Primary and Secondary Output Destination field entries cannot be the same as the Extension of PMS Log Printer and Extension of Journal/Schedule Printer field entries on the Hospitality-Related System Parameters form.
Centralized Attendant Service (CAS) Branch feature not assigned	The CAS (Main) feature must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered
Centralized Attendant Service (CAS) Main feature not assigned	The Centralized Attendant Service (Branch) feature must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered.
Change not allowed; must remove and add	Station/Attendant Console form—A Data Module extension cannot be changed once it has been submitted. The data module must be removed and then added back with the correct extension.
Character invalid for this button type	On the Station/Attendant Console form—Enter appropriate data for the feature button type. Refer to the Voice Terminal—General coverage provided in Chapter 5 for feature button description and characteristics
Check links assignment form! Must assign ISDN to this link	On the Processor Channel Assignments form—Review all ISDN assignments and note associated link numbers.
Circuit Pack previously assigned; please select another	All ports on the circuit pack have been assigned. Administer ports on another circuit pack of the same type or the same functionality
Circuit pack can only be administered in slot labeled EXPNSN INTRFC	On the Circuit Pack Administration form—The TN570 or TN776 Expansion Interface circuit pack can only be administered in certain carrier slots Refer to the Expansion Interface Carrier/Slot Assignments figure in Chapter 1 for carrier/slot information.
Circuit pack is wrong type	The port administered is not correct for the associated function. For example, when using an "add ds1" command, the Location field entry on the DS1 form must be a port that is associated with an administered DS1 circuit pack
Circuit pack must be installed first	Either physically install the circuit pack in the appropriate carrier slot or administer the circuit pack on the Circuit Pack administration form
Cleared alarm notification requires alarm origination	This is a Maintenance-Related System Parameters form error. Consult *DEFINITY Communications System Generic 1 and Generic 3 Installation and Test*, 555-230-104, for additional information
Code length invalid	Input appropriate code length. Press (HELP) for a listing of valid entries or an associated help message

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Code/Suffix does not match physically inserted circuit pack	On the Circuit Pack Administration form—Ensure that the Code, Sfx, and Name field entries agree with the circuit packs installed in the associated carrier slots.
Combined # of Local & Remote TGS buttons on feature buttons exceeds maximum	On the Attendant Console form—The combined number of Local and Remote TGS buttons that are administered on Page 2 of the form must not exceed 12.
Communication type and port type inconsistent	On the Access Endpoints form—The Port field entry must be consistent with the Communication Type field entry For example, if the Communication Type field entry is "56k-data" or "64k-data", the Port entry must be a DS1 circuit pack port.
Corresponding abbreviated dialing list not assigned	The Abbreviated Dialing List type entered (e.g., personal, group, etc.,) is not administered in the System.
Count cannot be blank, if 'Starting Extension' specified	On the command line, if you specify a starting extension, you must specify a count number.
Coverage and display modules cannot be specified on the same station	On the 7405D or 7434D Station form—Either the Display field entry can be "y" or the Coverage Module field entry can be "y", but not both
Coverage point extension must be a station	Enter a coverage point extension number that is assigned to a station.
Current password must be specified	Enter the appropriate password Contact the System Administrator for assistance
D-Channel has to be on the 24th port	On the Signaling Group form—The port number associated with the Primary and Secondary D-Channel field entries must be "24".
DCS requires Uniform Dialing Plan to be activated	The Uniform Dialing Plan feature must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered
DMI-BOS requires common-chan signaling	On the DS1 Circuit Pack form—If the DMI-BOS field entry is "y", the Signaling Mode field entry must be "common-chan".
DS-1/isdn circuit is required	On the ISDN-PRI Trunk Group form—The Port field entries must be DS1 circuit pack ports
DS1 signaling mode must be common-chan	On the DS1 Circuit Pack form—For alternate voice and data applications, the Signaling Mode field must be "common-chan".

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
DS1 signaling mode must be robbed-bit	On the DS1 Circuit Pack form—For voice tie trunk applications, the Signaling Mode field must be "robbed-bit".
Data extension buttons not allowed on BRI set types	Because one button transfer to data is not allowed for ISDN-BRI, data extension buttons are not allowed on ISDN-BRI set types.
Data extension group member(s) must be removed first	Remove all associated Data Extension buttons from Station/Attendant Console forms before the Data Module can be removed or the Data Module's Type field can be changed.
Data Extension must be removed from hunt group(s) before removal.	Specific to data extensions. This error message is similar to the error message "Extension must be removed from hunt group(s) before removal."
Del cannot be greater than Called Len	On the ISDN-PRI form—The Del field entry (Page 2) cannot be greater than the associated Called Len field entry
Del, Insert, SID/ANI, or Night Serv field must be specified	On the ISDN-PRI Trunk Group form—If a Service/Feature is specified (Page 2) an associated field (i.e., Del, Insert, Per Call CPN/BN, or Night Serv) must be specified
Destination digits duplicately assigned	(Reserved for future use)
Destination must begin with a valid FAC, TAC, or extension	On the Administered Connection form—The Destination field entry must begin with a valid FAC, TAC, or extension number.
Dial code out of range	Enter a valid Abbreviated Dialing dial code. Press (HELP) for a list of valid entries or an associated help message
Dial type invalid for length or first digit	On the Dial Plan form—The First Digit Table entry is incorrect. Consult the Dial Plan form coverage in Chapter 5 for a list of valid entries.
Dialed string not assigned to any list	On the Toll Analysis form—Assign at least one list to the Dialed Sting entry.
Digit Insertion and Deletion not allowed for auto/auto trunks	On the Trunk Group form—The Digit Treatment field must be blank for a Trunk Type field entry of "auto/auto".
Direction cannot be two-way for RLT trunk group	On the Release Link Trunk Group form—The Direction field entry cannot be "two-way".

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Disable link for the primary D-Channel board first	On the Interface Links form—For the appropriate link number, set the Enable field to "n". Then remove or change the Signaling Group as required.
Disable link for the secondary D-Channel board first	On the Interface Links form—For the appropriate link number, set the Enable field to "n". Then remove or change the Signaling Group as required.
Disable the link for the previously used board first	On the Interace Links form—Disable the link (set Enable field to "n") associated with the previously used circuit pack. Then change the Signaling Group.
Disable the link for this board first	On the Interace Links form—Disable the link (set Enable field to "n") associated with this circuit pack. Then change the Signaling Group.
Disconnect time must be specified	Enter the appropriate time. Press (HELP) for a list of valid entries or an associated help message
Display module and display cartridge cannot be specified on same station	On the 7406D Station form—Enter "y" in either the Display field or the Display Cartridge field, but not both.
Distributed Communication Service (DCS) feature not assigned	The DCS feature must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered
Duplicate Alpha-name; please press HELP key	On the Alphanumeric Dialing Table form—Each Alpha name field must have a unique entry.
Duplicate IXC access numbers are not allowed	Enter a unique IXC access code, the current entry is already assigned.
Duplicate MACHINE ID for same application not allowed	On the Processor Channel Assignments form—The Machine-ID field entry cannot be entered more than once for the same Appl. field entry.
Duplicate Service/Feature name is not allowed	On the ISDN-PRI Trunk Group form—Duplicate Service/Feature field entries (Page 2) are not allowed.
Duplicate TAC	On the Loudspeaker Paging Access form—The TAC field entry must be unique for each TAC field entry on the form

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Duplicate abbreviated dialing list entry	Each Abbreviated Dialing list reference must be unique.
Duplicate board	On the Modem Pool Group form—Each Circuit Pack Location field entry for an integrated modem pool group must be unique.
Duplicate board destination not allowed	On the Processor Interface Data Module form(s)—The Physical Channel field entry must be unique (i.e., used only once) for all Processor Interface Data Module assignments.
Duplicate button	On the Station form—Enter a unique button type The current attempted entry is already assigned this station.
Duplicate destination digits not allowed	Enter a unique destination number. Press (HELP) for a list of valid entries or an associated help message
Duplicate entries on the screen	On the AAR/ARS Analysis and Toll Analysis forms—Each Dialed String and associated Min/Max field entry must be unique.
Duplicate entry is not allowed	Enter a unique value or assignment. The current attempted entry already exists. Press (HELP) for a list of valid entries or an associated help message
Duplicate ext length and ext code	On the CPN Prefix Table form—Each pair of Ext Len and Ext Code field entries must be unique
Duplicate extension	Enter a unique extension number. The current attempted entry is already assigned.
Duplicate facility type and facility coding are not allowed	On the Network Facilities form—Duplicate Facility Type and Coding field entries are not allowed Make each Facility Type and associated Coding field entry unique.
Duplicate link for ISDN is not allowed	On the Processor Channel Assignment form—The Appl. field entry of 'isdn" can only be associated with one link number.
Duplicate link/channel pair not allowed	On the Processor Channel Assignment form—The Interface Link/Chan pair entries cannot be duplicated Each Link/Chan pair entry must be unique.
Duplicate members	Enter a non-assigned member The current attempted entry is already assigned
Duplicate of this application type not allowed	On the Processor Channel Assignments form—Certain applications (e.g., "audix") can only be entered once in the Appl. fields on the form

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Duplicate port	On the Modem Pool Group form—The Circuit Pack Location field entry must not be duplicated in the associated fields on the form.
EIA port previously assigned	On the Feature-Related System Parameters form—The EIA port has already been assigned to another function. Enter an appropriate data module extension instead. (Note that the data module must first be administered in the System before assigning its extension number.)
Emergency Access to the Attendant feature not assigned	The Emergency Access to Attendant feature must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered.
End time must be later than start time	Reenter an End Time that is later in time than the Start Time.
Entries for same first digit cannot follow a TAC or AAR/ARS FAC	On the Dial Plan form—A TAC is assigned the same first digit as the dial type you have just entered. The dial type can have the same first digit as the TAC as long as its length is not greater the the TAC's length.
Entry already exists in the table	Duplicate entries are not allowed. The current attempted entry already exists in the table (not displayed on the current screen).
Entry contains an Alpha-name argument that is too long	On the Alphanumeric Dialing Table—A Mapped String field entry contains an Alpha name like string that is greater than eight characters. Reduce the string to eight or less characters.
Entry contains an Alpha-name that is not administered	On the Alphanumeric Dialing Table form—An Alpha name has been specified in a Mapped String, and the Alpha name has not been entered on the form. Remove name or add Alpha name to the table.
Entry creates a cycle	On the Call Coverage Path form—The Next Path Number field entry cannot refer to another coverage path already in the coverage path string (i.e., Coverage Path 1 with Next Path Number of "2", then Coverage Path 2 with Next Path Number of "1". This creates a loop.)
Entry exceeds the limit of 4 linked paths	On the Call Coverage Path forms—You cannot have more than four coverage paths associated with a call.
Entry exists in another partition with different call type	On the AAR/ARS Analysis form—The entry must not be assigned on another AAR/ARS Analysis form associated with a different PGN.
Entry must be all digits	Reenter the data as all digits in the range 0 through 9.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Entry must be all digits or "all"	Reenter the data as all digits in the range 0 through 9 or enter "all".
Entry must be all digits, "user", or "none"	Reenter the data as all digits in the range 0 through 9 or enter "user" or "none".
Entry must be all digits, *, #, p(pause), w(wait), or m(mark)	On the Administered Connection form—The Destination field entry must be all digits and can include the "*", "#", " p", " w", or " m" characters. No other entries are allowed.
Entry must be an even number	Reenter the data as an even number.
Entry must be blank for gateway application	(Reserved for future use)
Entry must be blank if application is not DCS, AUDIX, or OCM	On the Process Channel Assignments form—The field must be blank for APL field entries of other than "dcs", "audix", or "ocm".
Entry must be digits, #, or blank	Reenter the data as either all digits, "#", or leave blank
Entry must be in range 1-8 if application is AUDIX	Reenter the data in the range 1 through 8 for AUDIX applications.
Entry must be multiple of 5	Reenter the data as a multiple of five (e g., 5, 10, 15, etc,)
Entry must contain only alphanumeric characters	Reenter the data as alphanumeric characters only (e.g , space character not allowed).
Entry must start with an alphabetic character	Reenter the data with the first character an alpha character in the range A through Z.
Entry too long	Reenter the data. Press HELP for a listing of valid field entries or an associated help message
Event Notification Group feature not assigned	The Event Notification Group option must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered.
Exceeds level of Alpha-name referencing	On the Alphanumeric Dialing Table form—An Alpha name is specified in a Mapped string, and the specified Alpha name's Mapped string contains a reference to the Alpha name. Delete one of the Alpha name references
Expected number of digits must be greater than number of digits absorbed	On a DID Trunk Group form—With a Digit Treatment field entry of "absorption", the Expected Digits field entry must be greater than the number of digits absorbed

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Ext code inconsistent with First Digit table	On the CPN Prefix Table form—The Ext Code field entry must be in agreement with the System's Dial Plan form. Enter an Ext Code that agrees with the Dial Plan.
Ext length inconsistent with First Digit table	On the CPN Prefix Table form—The Ext Len field entry must agree with the length of extension numbers assigned on the System's Dial Plan form.
Ext length must be '1' for the attendant extension	On the CPN Prefix Table form—The Ext Len field entry must be "1" when the associated Ext Code field entry is "0".
Ext length plus number of CPN Prefix digits must be 10 or greater	On the CPN Prefix Table form—The Ext Len field entry plus the number of digits entered in the associated CPN Prefix field must be 10 or greater
Extension assigned but wrong type for the group	Enter the appropriate extension number that is associated with the group or field (e.g., announcement extension, night service extension, hunt group extension, etc.). Prefixed extensions are not allowed.
Extension assigned to an object other than a station	Enter a valid station extension number.
Extension assigned to invalid data module type	On the Administered Connection form—The Originator and Destination fields cannot be assigned an extension number that is assigned a Netcon, Processor Interface, or Recorded Announcement Data Module.
Extension assigned to object other than access endpoint or data module	On the Administered Connection form—The Originator and Destination field entries must be extension numbers assigned to access endpoints or MPTM/MTDM data modules only.
Extension does not have personal list assigned	An Abbreviated Dialing Personal List cannot be referenced in an Abbreviated Dialing List 1, 2, or 3 field if the Personal List is not assigned in the System. Administer the Personal List first, then enter the reference.
Extension must be an off switch (UDP) extension	On the Hunt Group form—If the Message Center field entry is "rem-audix", the AUDIX Extension field entry must be a Uniform Dial Plan (UDP) extension number.
Extension must be different from this station extension	Reenter the extension number. Do not use the number assigned this station.
Extension must be removed from hunt group(s) before removal	On an associated Hunt Group form(s)—Remove the extension from all hunt groups where it is assigned as a group member. Then remove the extension.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Extension must be removed from vector(s) before removal	On an associated Call Vector form(s)—Remove all references to the extension from all call vector commands. Then remove the extension
Extension not assigned	Enter an extension number that agrees with the System's Dial Plan form.
Extension not assigned for intercom dial code	Enter an extension number assigned the appropriate Intercom Group. Assigned extensions can be displayed using the command "display intercom-group (1-32)".
Extension previously assigned; please select another	Enter a valid extension that agrees with the System's Dial Plan form and that is not already assigned an object.
Extensions defined only as "pextension" in dialplan cannot be specified	On the CPN Prefix Table form—The CPN Prefix field entry cannot be an extension defined only as a "pextension" (prefixed extension) on the System's Dial Plan form.
FAC invalid; please check dialplan	Enter a FAC that agrees with the System's Dial Plan form. The FAC's first digit and length must agree with the Dial Plan's First Digit Table assignments for FACs.
FRL invalid	Enter a FRL number in the range of 0 through 7.
FRL must not be blank	Enter an appropriate FRL number in the range of 1 through 7.
FRLs must not decrease going down the list	Enter an appropriate FRL number that is larger numerically than the previous entry.
Fas D-channel may not be on an nfas signaled board	On the Signaling Group form—Reassign the Primary D-Channel port assignment to the same DS1 circuit pack associated with the B-Channels (data channels)
Fas signaled board may not be in nfas signaling group	On the Signaling Group form—Reassign the Primary D-Channel port assignment to a DS1 circuit pack not already assigned to a Non-Facility Associated Signaling Group (i e., Associated Signaling field entry = "n")
Feature and Data modules cannot be specified on the same station	On the 7405D Station form—The Data Module field entry and the Feature Module field entry cannot both be "y" If "y" is entered in one of the fields, then "n" must be entered in the other
Feature not activated in the system	The associated feature must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Field cannot be blank	Enter appropriate data in the field. Press HELP for a list of valid entries or an associated help message.
Field must be blank for normal PMS Protocol Mode	The associated field entry must be blank when the PMS Protocol Mode field entry on the Hospitality-Related System Parameters form is "normal".
Field must be blank for BX25 application	The associated field entry must be blank for bx.25 applications (OCM-CPN/BN applications for example).
Field must be blank for ISDN application	On the Processor Channel Assignments form—The Remote Proc Chan field entry must be blank when the associated Appl. field entry is "isdn".
Field must be blank on systems with this control carrier type	Remove all data from the associated field.
Field must be enabled since port type is DS1	Enter "y" in the associated field for DS1 circuit pack applications
Field must be set to yes for ISDN protocol	Enter "y" in the associated field for ISDN applications.
Fifteen Digit Account Codes not assigned	On the Feature-Related System Parameters form—Complete the SMDR Account Code Length field entry to define the length of all account codes.
First Digit Table is inconsistent with the Plan Length	On the Dial Plan form—The length of the extension assigned in the First Digit Table for the first digit of any PBX code in the Uniform Dial Plan (Pages 2-6) or the length of any "pextension" does not match the Plan Length field entry.
First digit has assignment; remove objects with this first digit	On the Dial Plan form—The first digit field cannot be changed until all references to this digit have been removed. For example, if digit 7 is assigned to a TAC and you want to change the digit assignment to something else, all items using a TAC of 7 must be removed before the digit assignment can be changed.
Fixed tei must be set to 'y' for ASAI stations	On an ASAI Interface form (Station form with Type field = "asai")—The Fixed TEI field entry must be "y".
For call type 'ars', 'haar', or 'hatd', routing pattern should be blank	On the AAR Analysis form—The Route Pat field entry must be blank for associated Call Type field entries of "ars", "haar", or "hatd"
Forced Entry of Account Codes not assigned	The Forced Entry of Account Codes feature must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Format invalid	On the Intercom Group form—The DC field entry cannot be a "0" or begin with a "0". The entry must be all digits in the range 1 through 9.
	On the Station form—When assigning an "auto-icom" (Automatic Intercom) feature button, the DC (dial code) entry must be in agreement with the dial codes assigned to the associated Intercom Group
Group COR must be specified	Enter an appropriate COR in the range of 0 through 95.
Group direction invalid	On a Release Link Trunk Group form—The Direction field entry must be either "outgoing" for a CAS branch location or "incoming" for a CAS main location.
	On a WATS Trunk Group form—The Direction field entry must be either "incoming" or "outgoing"
Group extension must be specified	Enter an extension number associated with the group
Group full; cannot add new members	Either remove members from the group before adding new members or create a new group
Group members must be deleted before removing group	Remove all members from the group, then remove the group.
Group members must be removed before changing to adjunct controlled	Assign hunt group members to the Adjunct Controlled Agent Table if appropriate and/or remove members from the hunt group, then change the ACD field to "y" (if not already "y") and set the Controlling Adjunct field to "bx 25" or "asai" as required.
Group not assigned	Enter an appropriate assigned group number or assign a new group and then reference the new group number.
Group number for this button invalid	Enter an appropriate group number If required, use the "list" or "display" command to display group assignments.
Group number invalid	Enter an appropriate group number. If required, use the "list" or "display" command to display group assignments
Group number must be all digits	Reenter the group number (must be within the range of valid group numbers for the group type).
Group number out of range	Reenter the group number (must be within the range of valid group numbers for the group type)

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Group type for this button invalid	On the Station form—For a UCD/DDD "in-call-id" (Incoming Call ID) feature button, the Type field entry must be "c" for coverage or "h" for a UCD/DDC group.
Group type invalid	Reenter the appropriate Group Type data. Press HELP for a list of valid entries or an associated help message.
Hold button required	On the Attendant Console form—A Hold button is required. The form cannot be submitted unless a Hold button is assigned on the form.
Hospitality Parameter Reduction requires Hospitality to be activated	The Hospitality feature must be enabled on the System Parameters Customer Options form before the Hospitality Parameter Reduction and associated forms and fields on forms can be administered.
Hospitality feature not assigned	The Hospitality feature must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered
Hot line feature requires KYBD dialing capability	The Data Hot Line feature requires the user to press the <BREAK> key. This requires a data terminal and associated keyboard.
Hunt group cannot be an ACD split if message is Remote AUDIX	On the Hunt Group form—Enter "msa" or "audix" in the Message Center field.
Hunt group cannot have a Queue if message is Remote AUDIX	On the Hunt Group form—Enter "n" in the Queue field when the Message Center field entry is "rem-audix".
Hunt group or split not administered	Reenter the hunt group number. Do not enter a hunt group or split number that is not administered.
Hunt group or split not designated for messaging	On the Call Vector form—When using a Messaging command to designate a hunt group or split for leaving messages, the Message Center field on the Hunt Group form must be administered as "msa", "rem-audix", or "audix".
Hunt group or split not vector controlled	On the Call Vector form—When a Check or Queue command is used, enter a hunt group or split number whose Vector field is set to "y".
Hunt night service buttons must be removed before removal	All "hunt-ns" feature buttons assigned to stations and attendant consoles must be removed from the station and attendant console forms before the associated hunt group can be removed.
ID and Local PBX ID must match	On the Dial Plan form—When the LCL field entry (Page 2-6) is "y", the associated ID and the Local PBX ID (Page 1) entries must be the same

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
ISDN-PRI and Vectoring (Basic) must be assigned	The ISDN-PRI and Vectoring (Basic) features must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered
ISDN-PRI feature not assigned	The ISDN-PRI feature must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered.
IXC for non-ISDN trunk groups should be entered in Inserted Digits field	On the Routing Pattern form—The IXC value for non-ISDN-PRI trunk groups must be entered in the Inserted Digits field.
IXC number must be three digits	On the Routing Pattern form—The IXC field entry must be the last three digits of a 5-digit Inter-Exchange Carrier code (10XXX)
Identifier invalid	Reenter the data. Press HELP for a list of valid entries or an associated help message.
Identifier not assigned	Reenter an assigned number. The extension, hunt group, PCOL Group, trunk group, etc, number does not exist.
Identifier previously assigned; please select another	Enter an unassigned number. The number just entered is already assigned an object
Idle Appearance Preference must be n(o) for 7401D	On the 7410D Station form—The Idle Appearance Preference field entry must be "n".
If 'active' is yes, 'busy' must be yes	Enter "y" in the associated busy field when the active field entry is "y".
Intercom dial code not assigned for extension	On the Station form—The DC (dial code) entered for an "auto-icom" feature button is not assigned on the associated Intercom Group form.
Interface IDs are duplicately assigned	On the Signaling Group form—An Interface ID field entry cannot be entered in another Interface ID field
Invalid Authorization Code	On the Authorization Codes form—The AC field entry must be a 4- to 7-digit code and agree with the Authorization Code Length field entry on the Feature-Related System Parameters form.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Invalid Group	Reenter the group number. Press (HELP) for a list of valid entries or an associated help message.
Invalid IXC access number—must be 10XXX, 9501XXX or NXXXXXX	On the Inter-Exchange Carrier Codes form—The IXC Access Number field entry must be in the form 10XXX, 9501XXX, or NXXXXXX.
Invalid area code	Enter a valid area code in the form NXX where N is any digit 2-9 and X is any digit 0 through 9.
254 Invalid class of restriction	Enter the appropriate COR in the range of 0 through 95.
Invalid count	The count number entered on the command line is incorrect, reenter the command. Refer to the administration commands coverage in Chapter 2 for additional information
Invalid destination	Reenter the data. Consult the appropriate form instructions in Chapter 4 or Chapter 5 for additional information.
Invalid digit insertion string	On the Routing Pattern form—In the Inserted Digits field, enter up to 36 digits to be inserted. Press (HELP) for an associated help message.
Invalid Entry	Reenter the data. Press (HELP) for an associated help message.
Invalid Entry—please press the HELP key	Reenter the data. Press (HELP) for a list of valid entries or an associated help message
Invalid facility restriction level	Enter a valid FRL in the range 0 through 7.
Invalid number of digits deleted	On the Routing Pattern form—The No. Del Digits field entry can be from 0 through 18 or blank.
Invalid partitioned group number	The Partitioned Group Number (PGN) must be in the range 1 through 8. Each PGN is defined using appropriate Class of Restriction forms.
Invalid: please check the Dial Plan	Reenter the number. Ensure that your entry is in agreement with the System's Dial Plan.
Invalid prefix mark	On the Routing Pattern form—The Prefix Mark field entry must be in the range 0 through 3
Invalid routing pattern	Enter a valid routing pattern number in the range 1 through 254.
Invalid toll list reference number	Enter a valid toll list number in the range 1 through 32.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Invalid trunk group number	*Enter a valid trunk group number in the range 1 through 99.*
Is not an isdn-pri trunk group; please select another	On the Signaling Group form—(Reserved for future use)
Length of dialed string cannot exceed total minimum	The length of the Dialed String entry must be less than or equal to the associated Min field entry.
Length of ext code greater than ext length	On the CPN Prefix Table form—The Ext Code field entry cannot be greater than the associated Ext Len field entry.
Link must be assigned to a processor or hop channel first	Assign the interface link on the Processor Channel Assignments or Hop Channel Assignments form before completing current entry.
Link/channel pair assigned to hop-channel	Enter an appropriate link/channel pair not currently assigned to a hop channel.
Link/channel pair assigned to processor channel	On the Hop Channel Assignments form—Do not assign Link/Channel pairs if already assigned on the Processor Channel Assignments form.
List number out of range	On the Station/Attendant Console form—When administering an Abbreviated Dialing feature button, the associated list number entry must be in the range of 1 through 3.
Local PBX ID not specified; please check dialplan	On the Administered Connection form—The Auto Restoration field entry cannot be "y" unless the Local PBX ID field entry on the System's Dial Plan form has an entry in the range of 1 through 63.
Local PBX Id Multiply Assigned	On the Dial Plan form—Two identical PBX IDs (Pages 2-6) are entered and associated entries in the LCL fields are different
	On the Dial Plan form—Entry in two LCL fields (Pages 2-6) is "y" and the associated PBX IDs field entries are different
Local extension duplicately assigned; please select another	Reenter an unassigned extension number.
Long Holding Time must be 0 for SDDN service type	On the ISDN-PRI Trunk Group form—If the Service Type field entry is "sddn", then the Long Holding Time field entry must be "0".
Lookahead Interflow feature not assigned	The Lookahead Interflow feature must be enabled on the System Parameters Customer Options form before associated forms and fields on forms can be administered.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
MIM support must be set to 'n' for ASAI stations	On the ASAI Interface form (station form with Type field = "asai")—The MIN Support field entry must be "n".
Maintenance extension must be administered from active netcon/procr-intf form	The Maintenance Extension field must be administered on the appropriate Processor Interface or Netcon Data Module form.
Max# Chan cannot exceed total number of trunk members	On the ISDN-PRI Trunk Group form—The Max# Chan field entry (Page 3) cannot be greater than the total number of trunk members (Pages 5-11).
Max# Chan minus Min# Chan exceeds total members minus sum of Min# Chan	On the ISDN-PRI Trunk Group form—The Max# Chan field entry (Page 3) minus the associated Min# Chan field entry must not exceed the total number of trunk members minus the sum of the Min# Chan entries.
Maximum number of attendants with this type has already been assigned	On the Attendant Console forms—Only one form can have a Console Type field entry of "principal". Also, only one as "night-only" or "day/night".
Maximum number of bridged appearances for principal already assigned	On the Station/Attendant Console form—The bridged appearance feature button cannot be assigned the extension number just entered. The extension is currently assigned the maximum number of bridged appearances.
Maximum number of groups previously entered; cannot add new groups	The maximum number of this type of group have already been assigned. You cannot enter a group of the same type unless you remove a current group.
Maximum number of reports scheduled; cannot schedule new report	When using the report scheduler command, the maximum number of reports to be scheduled cannot exceed 50.
Message waiting button can only be last button	When administering a 7302H station, the message waiting lamp must be administered to Button Assignments button number 5
Message(s) waiting; please delete message(s) first	A LWC Message Waiting feature button or associated station cannot be removed if the station has a message waiting. Delete all messages that are waiting, then remove the button and/or station.
Min# Chan cannot be greater than Max# Chan	On the ISDN-PRI Trunk Group form—The Min# Chan field entry cannot be greater than its associated Max # Chan field entry.
Min/Max ranges overlap—Duplicate entries on the screen	Two Dialed String field entries are the same but their associated Min/Max field entries overlap other entries on the current display screen.
Min/Max ranges overlap—Entry already exists in the table	Two Dialed String field entries are the same but their associated Min/Max field entries overlap other entries in the table (not on the current display screen).

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Minimum value exceeds maximum value	The Min field entry must be equal to or less than its associated Max field entry.
Missing port pair member	On the Modem Pool Group form—For each combined modem pool group to be assigned, enter one analog port assignment in an Analog field and one digital port assignment in the associated Digital field
Modem-pool option(s) must be specified	On the Modem Pool Group form—Complete all appropriate fields for the type of modem pool being administered. Refer to the Modem Pool Group form instructions in Chapter 5 for additional information.
Modules must be removed before station type can be changed	On the Station form—Remove all modules and associated administration data from the station, then change the Type field entry.
Must add this trunk board to a Sig Grp before assigning this ISDN-PRI port	On the ISDN-PRI Trunk Group form—A DS1 trunk port cannot be assigned if the DS1 is associated with a Non-Facility Associated Signaling Group but not yet administered in a Trunk Brd field on the form. Enter the DS1 port assignment on the Signaling Group Trunk Brd field first, then enter port assignments on the trunk group.
Must administer CAS Branch on console-parameters form	On the Release Link Trunk Group form—The Direction field entry can only be "outgoing" if the CAS field entry on the Console Parameters form in "branch".
Must administer CAS Main on console-parameters form	On the Release Link Trunk Group form—The Direction field entry can only be "incoming" if the CAS field entry on the Console Parameters form is "main".
Must administer DS-1 circuit pack first	A DS1 port cannot be assigned until the DS1 circuit pack is physically installed or administered using the Circuit Pack Administration form.
Must administer a station DM through its related station	A Data Module to be associated with a station must be administered on a page provided with the station form.
Must administer an adjunct controlled split before accessing agents	After an Adjunct Controlled Agent Table has been administered in the System, at least one Hunt Group form must have its Controlling Adjunct field entry set to "bx 25"
Must assign interface ID for each trunk board	On the Signaling Group form—When the Associated Signaling field entry is "n" (Non-Facility Associated Signaling), an Interface ID field entry is required with each completed Trunk Brd field entry on the form.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Must assign queue (at least 1) for RLT trunk group	On the Release Link Trunk Group form—The Queue Length field entry must be at least "1" or greater.
Must assign signaling group number for this port since no default value found	On the ISDN-PRI Trunk Group form—The Sig Group field entry (Pages 5-11) for each port assigned must contain an entry. If a DS1 interface appears in one and only one Signaling Group, then the signaling group number will appear as a default in the Sig Group field for any trunk port on that interface. This value cannot be changed until another DS1 circuit pack is added for another Signaling Group. If a DSI circuit pack is assigned to more than one Signaling Group, then no defaults will appear in the Sig Group field.
Must bridge onto an analog station	On a Station/Attendant Console form—When administering an "abrdg-appr" feature button, the associated Ext field entry must be the extension number assigned the analog station to be bridged.
Must busyout PMS before changing or removing extension	The PMS must not be active when changing or removing the extension. Busy out PMS first, then change or remove the extension.
Must disable administered NCA-TSC before changing parameters	On the signaling group forms, set the enable field for NCA-TSCs to "n" before changing NCA-TSC parameters.
Must disable administered NCA-TSC before removing	On the signaling group forms, set the enable field for NCA-TSCs to "n" before removing NCA-TSC.
Must disable all administered NCA-TSCs before changing Service/Feature	On the signaling group forms, set the enable field for NCA-TSCs to "n" before changing Service/Feature.
Must disable associated communication link before change/removal	The Interface Link must be busied out before a "change communications-interface link" command can be issued. On the Interface Links form, set the appropriate Enable field entry to "n" to busy out the link.
Must disable communication link associated with this DS1 board first	The Interface Link must be busied out before the associated object or DS1 port can be changed or removed. On the Interface Links form, set the appropriate Enable field entry to "n" to busy out the link.
Must have at least one entry for each day	On the Time of Day Routing form—There must be at least one Act Time and associated PGN field entry for each day on the form The System defaults are "00:00" and "1", respectively, for each day.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Must have normal button for display module	On the Station form—A "normal" display-type feature button must be assigned if the station is administered with a display module.
Must install TN780 circuit pack for stratum 3 synchronization	On the Synchronization Plan form—If the Stratum field entry is "3", a TN780 Tone/Clock circuit must be installed in the System.
Must install circuit pack before installing equipment	The associated circuit pack must be physically installed and/or administered using the Circuit Pack administration form.
Must not reference its own Alpha-name	On the Alphanumeric Dialing Table—A Mapped String field entry contains a reference to its associated Alpha-name field entry. Change the Alpha-name reference in the Mapped String.
Must remove 7103A abbreviated dialing list before changing the set type	On the 7103A Station form—Remove "7103A" from the Abbreviated Dialing List 1, 2, or 3 fields before changing the Type field entry.
Must remove DS1 parameters	On the DS1 Circuit Pack form—Remove appropriate entries from associated fields on the form before removing the circuit pack
Must remove Secondary D-Channel field before changing fas-nfas type	On the Signaling Group form—If the Associated Signaling field entry is to be changed from "n" (NFAS) to "y" (FAS), the secondary D-Channel field entry must be deleted first.
Must remove administered NCA-TSCs before removing signaling group	Remove any administered NCA-TSCs from the signalling group before removing the signaling group
Must remove all members before changing trunk group type to/from ISDN-PRI	On the Trunk Group form—Remove all trunk port assignments before changing the Group Type field entry on Page 1 of the form.
Must remove associated Sig Grp entry on Trunk Group form first	On the ISDN-PRI Trunk Group form—The Signaling Group number (1-8) must be removed from the Sig Grp fields on Pages 5-11 of the form before the Signaling Group can be removed.
Must remove associated ports from trunk group first	On the Trunk Group form—Before a Signaling Group can be removed, all DS1 port assignments associated with the Signaling Group's Primary and Secondary D-Channel must first be removed from the trunk group.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Must remove button 31 or set data module to "n"	Similar to the above error message except that it refers to button 31 of the 7507D set. Applies to ISDN-BRI 7507D set when attempting to change to this set type from other sets when button 31 is assigned and data module is optioned "y". Button 31 on 7507D set is reserved as a fixed data button if data module is optioned as "y". Button 31 of the 7507D set normally appears as feature button "21:" of 7405D set However on 7407D set it appears as button "31."
Must remove button 7 or set data module to "n"	Applies to ISDN-BRI 7505D and 7506D sets when attempting to change to these sets from other sets when button 7 is assigned and data module is optioned "y". Button 7 on 7505D and 7506D sets is reserved as a fixed data button if data module is optioned as "y".
Must remove entry from ISDN TSC Gateway form first	Before removing a gateway entry from processor channel form, remove associated entry from ISDN TSC gateway form first Also, before removing NCS-TSC entry with application "gateway" from the signaling group form, remove associated entry from ISDN TSC gateway form first
Must remove entry from Signaling Group form first	A DS1 circuit pack cannot be removed if the 24th channel is administered as a D-Channel on a Signaling Group form.
	A DS1 circuit pack cannot be removed if an associated port is administered in a Trunk Brd field on an NFAS Signaling Group form.
Must remove extensions dependent on this "pextension" first	On the Dial Plan form—The extensions assigned as "pextensions" must be removed from all object (e.g., stations, hunt groups, etc.) before the associated entry on the First Digit Table can be changed.
Must remove installed equipment before changing circuit pack type	Remove circuit pack and associated interface hardware and wiring from the associated port slot before changing the circuit pack type for that slot.
Must remove the 24th port from trunk group first	On the Signaling Group form—If a DS1 circuit pack is to be assigned a D-Channel and the 24th port is currently assigned on a trunk group form, the port must be removed from the trunk group or another DS1 must be assigned as the D-Channel.
Must remove this DS1 board from communication links form first	On the Interface Links form—Remove the DS1 from the appropriate Destination Brd field before the circuit pack can be removed.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Must remove trunk boards before removing signaling group	On the Signaling Group form—The Trunk Brd and associated Interface ID field entries must be removed before removing the Signaling Group.
Must select an ISDN-PRI trunk group to establish TSC	When allowing TSCs on the Routing Pattern form for a preference, the specified trunk group must be of the isdn-pri trunk type.
Must set IXC to blank on Routing Pattern form first	On the Routing Pattern form—The IXC field entries must be blank before the Grp. No. field can be changed to a non-ISDN trunk group number.
Must set TSC request to none on Routing Pattern form first	When removing an ISDN trunk group or changing from ISDN trunk group type to non-ISDN type, set TSC request to "none" on associated routing pattern preference
Must set to high for ISDN application	On the Processor Channel Assignments form—An Appl. field entry of "isdn" requires that the associated Priority field entry be "h".
Must specify at least one speed between LOW and 19200	On the Modem Pool Group form—When the Group Type field entry is "combined", the Speed field must have one speed specified.
Must use administered DS1 circuit pack	A DS1 port cannot be assigned until the DS1 circuit pack is physically installed and/or administered using the Circuit Pack Administration form.
Name format must be: [Last, First M] or [First M Last] */	On the Station form—The Name field entry must be in the format indicated. This format is required for use by the Integrated Directory feature.
Neither Service Observing nor ACD features assigned	The Service Observing and ACD features must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered
New and reentered passwords do not match	The changed password has been entered incorrectly. Reenter the new password.
New password must be specified	A new password is required when changing passwords. Enter your new password. For additional assistance, contact your System Administrator.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Night Service must be blank for SDDN service type	On the ISDN-PRI Trunk Group form—The Night Service field entry must be blank when the associated Service/Feature field entry is "sddn".
Night-serv button required	On the Attendant Console form—At least one Night Service feature button must be administered.
No TSC assigned	A TSC index that was not administered has been specified in a maintenance command.
No Night Destination has been administered for this hunt group	On the Station from—A "hunt-ns" (Night Service) feature button has been assigned a hunt group that does not have its respective Night Service Destination field completed.
No Night Destination has been administered for this trunk group	On the Station from—A "trunk-ns" (Night Service) feature button has been assigned a trunk group that does not have its Night Service field completed.
No adjunct controlled split similarly measured to move members to	On the Hunt Group form—You cannot remove the last Adjunct Controlled split if there are entries on the Adjunct Controlled Agents Table form.
No available extensions in the system	All available extension numbers have been assigned. The System maximum is 3500 of which 1600 can be phantom extensions. Also check the System Dial Plan form for complete assignment of all possible extension numbers.
No call appearance buttons have been assigned	On the Station form—Assign at least two call appearance feature buttons to multi-appearance voice terminals.
No data in the system to list	Indicates that the object in a list command (e.g., hunt group, coverage group, etc.) is not assigned in the System.
No space available to add data	The entry has exceeded System limitations for the associated object. Either enter new data or condense or remove current data to make room for the addition.
Number of BCMS measured agents exceeds maximum	The number of measured agents entered exceeds the System maximum of 200.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Number of BCMS measured agents per split exceeds maximum	The number of measured agents entered in a split exceeds the maximum of 30.
Number of BCMS measured hunt groups exceeds maximum	The number of measured hunt groups entered exceed the maximum of 99.
Number of BCMS measured trunk groups exceeds maximum	The number of measured trunk groups entered exceed the maximum of 32.
Number of local-tgs buttons on feature buttons exceeds maximum	On the Attendant Console form—The maximum number of "local-tgs" buttons that can be assigned on Page 2 of the form is 12. The combination of "local-tgs" and "remote-tgs" buttons assigned on Page 2 cannot exceed 12.
Number of playing cycles must be specified	On the Loudspeaker Paging Access form—The Code Calling Playing Cycles field (Page 1) must be completed if the associated Code Calling fields on the form have been completed.
Number of remote-tgs buttons on feature buttons exceeds maximum	On the Attendant Console form—The maximum number of "remote-tgs" buttons that can be assigned on Page 2 of the form is 12. The combination of "local-tgs" and "remote-tgs" buttons assigned on Page 2 cannot exceed 12.
Number string may not run into an Alpha-name string	On the Alphanumeric Dialing Table form—A Mapped String field entry contains a Number String that includes an Alpha-name type string. Remove the Alpha-name type string.
OCM-SID/ANI feature not assigned	The OCM-CPN/BN feature must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered
Object in use; please try later	The associated object must be busied-out or be idle before it can be changed or removed.
Object type and port type inconsistent	Administer the appropriate circuit pack type and port for the object being interfaced. For example, do not administer an Analog circuit pack port where a DS1 Circuit pack is required Or, do not administer port number 12 if the associated circuit pack has just eight ports.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
One or more ports already assigned; please select another board	Administer another unused circuit pack of the same type or functionality
Only one 'audix' or 'rem-audix' message allowed in system	On the Hunt Group form—Administer the appropriate entry in the Message Center field.
Only one abbreviated dialing list entry may be 7103A	On the Station form—Only one Abbreviated Dialing List (1, 2, or 3) can have an entry of "7103A".
Only one day may be specified for deferred reports	When using a schedule qualifier on a command line, the deferred print interval may only be printed once at some later time.
Only one personal list may be specified	Only one Abbreviated Dial List (1, 2, 3) on the form being administered can have an entry of "p".
Originator and destination cannot be the same	On the Administered Connection form—The Originator and Destination field entries cannot both be the same.
PBX Code Multiply Assigned	On the Dial Plan form—On Pages 2 through 6 of the form (Uniform Dial Plan), the Code field entry and associated RNX field entry must be different than any other Code/RNX entry on the form. Do not assign two or more RNXs to the same Code field entry.
PBX Code inconsistent with First Digit Table	On the Dial Plan form—An extension must be assigned on the First Digit Table for the first digit of all PBX Codes entered on the Uniform Dialing Plan (Pages 2-6)
PBX ID defined as local on dialplan form	On the Feature-Related System Parameters form—If the ACA Enabled field is "y" and the ACA Referral calls field is set to "remote", the ACA Remote PBX Identification field must not contain the local PBX ID (defined on the System's Dial Plan form).
PBX ID duplicately assigned; please select another	On the Signaling Group form—The Interface ID field entry must not be entered more than once on the form.
PBX ID must be blank if service type is not access, dmi-mos, tandem, or tie	On the ISDN-PRI Trunk Group form—The PBX ID field entry (Page 2) must be blank if the Service Type field entry (Page 1) is not "access", "dmi-mos", "tandem", or "tie".

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
PBX ID must be unique for DCS across Dial Plan, Sig Grp, and Proc Chan forms	The far-end PBX-ID entered on the Uniform Dial Plan (Dial Plan ID field on Pages 2-6) must be used on associated Processor Channel Assignment forms (Machine ID field) and NFAS Signaling Group forms (Interface ID field) when in a DCS configuration and referring to the same far-end PBX.
Packet bus is not activated, check system-parameters maintenance form	The Packet Bus option must be enabled on the Maintenance-Related System Parameters form before associated forms and fields on forms can be administered. Information concerning this form is provided in *DEFINITY Communications System Generic 1 and Generic 3 Installation and Test*, 555-230-104
Password incorrect	Reenter the correct password Contact the System Administrator if required.
Path does not exists	On the form being administered, the Call Coverage Path Group number being referenced has not been administered in the System.
Pattern number invalid	Enter a valid routing pattern number in the range 1 through 254.
Permission to change password denied	Your login does not allow you to change the password. Contact the System Administrator if required.
Personal List is not assigned	The referenced Abbreviated Dialing Personal List is not administered in the System
Personal List previously assigned	The referenced Abbreviated Dialing Personal List has already been administered in the System.
Personal list must be removed before removal	Remove the Abbreviated Dialing Personal List reference from all Station, Attendant Console, Data Module, etc., forms, then remove the station.
Personal list requires one digit dial code	Enter Abbreviated Dialing Personal List number 1, 2, or 3.
Pextension with other definitions for same first digit not allowed	On the Dial Plan form—When a pextension (prefixed extension) is administered on the First Digit Table, no other dial type (e.g., extension, tac, fac, etc) or "pextension" can be entered on the same row on the table.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Physical channel previously assigned; please select another	The physical channel (Processor Interface port) has already been assigned. Enter an interface port not currently assigned.
Points must be specified consecutively, starting with Point1	On the Call Coverage Paths form—The Point 1, 2, and 3 field entries must be assigned sequentially beginning with Point 1.
Port Circuit must be 01-04 for installed circuit-pack type	Assign ports 01 through 04 only for the circuit pack type installed in the referenced location.
Port Circuit must be 01-08 for installed circuit-pack type	Assign ports 01 through 08 only for the circuit pack type installed in the referenced location.
Port Circuit must be 01-12 for installed circuit-pack type	Assign ports 01 through 12 only for the circuit pack type installed in the referenced location.
Port Circuit must be 01-16 for installed circuit-pack type	Assign ports 01 through 16 only for the circuit pack type installed in the referenced location.
Port Circuit must be 01-24 for installed circuit-pack type	Assign ports 01 through 24 only for the circuit pack type installed in the referenced location.
Port has been marked bad; please select another	Assign another unused port on the circuit pack or assign a port on another circuit pack of the same type or functionality.
Port must be specified	On the Loudspeaker Paging Access form—A port must be assigned to each Loudspeaker Paging zone to be used.
Port previously assigned; please select another	Assign another unused port on the circuit pack or assign a port on another circuit pack of the same type or functionality.
Pos-busy button required	On the Attendant Console form—A "pos-busy" (Position Busy) feature button must be administered on the form.
Primary & Secondary D-Channels have different DS1 parameters	On the Signaling Group form—Certain level 1 and level 2 DS1 circuit pack parameters must be the same when used for Primary and Secondary D-Channels in the same Signaling Group.
Primary D-Channel can not be empty	On the Signaling Group form—The Primary D-Channel field must have an entry.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Primary/Secondary Output Layout must be either unformatted or expanded	On the Feature-Related System Parameters form—Assign "unformatted" or "expanded" to the Primary and Secondary Output Layout fields as appropriate to obtain SMDR records for NCA-TSCs and CA-TSCs.
Principal's extension must be specified	On station forms, specify the principal's extension during bridged appearance button administration.
Principal's call appearance button must be specified	On station forms, specify the principal's call appearance button number during bridged appearance button administration.
Private Networking feature not assigned	The Private Networking feature must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.
Processor channel duplicately assigned	Enter an unused processor channel number
Processor channel not assigned; please select another	The referenced processor channel number has not been administered on the Processor Channel Assignments form.
Processor channel not used for gateway; please select another	On the ISDN TSC gateway form, the specified processor channel is not a gateway application.
Product Id must be all digits	On the Maintenance-Related System Parameters form—The Product ID field entry must be all digits Information concerning this form is provided in *DEFINITY Communications System Generic 1 and Generic 3 Installation and Test*, 555-230-104
Product Id must start with a 1	On the Maintenance-Related System Parameters form—The Product ID field entry must start with a "1". Information concerning this form is provided in *DEFINITY Communications System Generic 1 and Generic 3 Installation and Test*, 555-230-104.
Queue Length must be 0 for SDDN service type	On the ISDN-PRI Trunk Group form—The Queue Length field entry must be "0" if the Service Type field entry is "sddn".
Queue Warning Port must be specified since Queue Warning Threshold specified	On the Hunt Group form—If the Calls Warning Threshold field has an entry, the Calls Warning Port field must have an entry.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Queue length total exceeds limit	Enter a Queue Length that is within the range specified for the field Press (HELP) for a listing of valid inputs or an associated help message.
RNX assigned incorrectly	On the Dial Plan form—The RNX field entries on Pages 2 through 6 must be in the form; R = 2-9, N = 2-9, X = 0-9.
	Two identical RNXs on the Uniform Dial Plan are the same length and the first digits of the associated PBX codes are different.
	Two identical RNXs with values entered in the associated LCL fields that are different.
	Two identical RNXs with associated ID field entries (non-blank) and associated PBX ID field entries that are different.
Receive Answer Supervision must be no for incoming trunk groups	On the Trunk Group form—If the Direction field entry is "incoming", enter "n" in the Receive Answer Supervision field.
Reentered password must be specified	Reenter your new password a second time, otherwise, it will not be changed.
Remote PBX ID assigned to ACA on system-parameters features form	On the Feature-Related System Parameters form—The ACA Remote PBX Identification field entry must not be the same as the Local PBX ID field entry on the Dial Plan form.
Remove associated D-Channels from signaling group first	Before changing fields on a DS1 circuit pack form or removing the circuit pack, all associated D-Channel assignments on Signaling Group forms must be removed.
Remove associated trunk boards from signaling group first	Before removing a DS1 circuit pack or changing the Signaling Mode field entry on a DS1 Circuit Pack form to "robbed-bit" or "common-chan", associated DS1 assignments must be removed from NFAS Signaling Group forms.
Remove codes starting with "1" before setting cancellation symbol to "1"	On the Feature-Related System Parameters form—The Authorization Code Cancellation Symbol field cannot be set to a "1" until AC field entries on the Authorization Codes form that begin with a "1" are removed.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Remove trunk boards not containing Primary D-channel before changing to fas	On the Signaling Group form—The Associated Signaling field entry cannot be changed from "n" (NFAS) to "y" (FAS) until all Trunk Brd field entries are removed.
Request Feature Group feature not assigned	The Request Feature Group option must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.
Required abbreviated dialing list not assigned	On a Station's Data Module form—Any attempt to administer the Abbreviated Dialing Dial Code field requires that the Abbreviated Dialing List 1 field must have an entry
Required data not specified	Reenter valid data. Press (HELP) for a listing of valid entries or an associated help message.
Required data not specified; or clear respective Alpha-name	On the Alphanumeric Dialing Table form—An Alpha name has been assigned and its associated Mapped String field is blank. Complete the Mapped String field or remove the Alpha name field entry.
Required data not specified; or clear respective Mapped String	On the Alphanumeric Dialing Table form—A Mapped String has been assigned and its associated Alpha name field is blank. Complete the Alpha name field entry or remove the Mapped String.
Requires TN722B or TN767 circuit pack	On the DS1 Circuit Pack form—The DMI-BOS field entry cannot be "y" unless a TN722B or TN767 circuit pack is installed and/or administered.
Requires TN767 circuit pack	On the DS1 Circuit Pack form—The Signaling Mode field entry cannot be "isdn-ext" or "isdn-pri" unless a TN767 circuit pack is installed and/or administered.
Requires the TN777 Network Control board	Install a TN777 Network Control circuit pack
SAI/PROTOCOL data module must be assigned before enabling link	Add a Processor Interface Data Module (form instructions in Chapter 5), then enable the associated link on the Interface Links form.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Scheduling table must be administered when scheduled method is selected	On the ISDN-PRI Trunk Group form—If the Scheduled field entry (Page 4) is "y", the scheduling table fields (i.e., Act Time and Plan #) must have at least one entry.
Secondary source requires primary synchronization source	On the Synchronization Plan form—The Primary field must be administered before the Secondary field.
Security code invalid	Enter a valid 4-digit security code (used to support the Demand Print Messages function and the retrieval of messages via speech synthesis).
Select one scheduling method	On the ISDN-PRI Trunk Group form—When the Service Type field entry is "cbc" (Page 1) and the Usage Allocation field entry is "y" (Page 4), the Fixed field entry must be "y".
Service Observing feature not assigned	The Service Observing feature must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.
Service Point Identifier previously assigned	On the system maintenance form, the specified Service Point Identifier value has already been assigned.
Service type does not match on first page	On the ISDN-PRI Trunk Group form—When the Service Type field entry on Page 1 is not "cbc", the Service/Feature field entries on Page 2 must match the Service Type entry on Page 1.
Service/Feature must be removed from NSF form before removal/change	The Network Facilities form is a display-only type form. Administration must be performed by the Customer Services Support Organization.
Service/Feature must be removed from Routing Pattern form before removal/change	On the Routing Pattern form—The Service/Feature field entries associated with an ISDN-PRI trunk group must be removed from all Routing Pattern forms before the trunk group's Group Type field can be changed or the trunk group removed.
Service/Feature must be removed from TRUNK GROUP form before removal/change	On the ISDN-PRI Trunk Group form—The Service/Feature field entries must be removed before the trunk group's Group Type field can be changed or the trunk group removed.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Service/Feature only valid for CBC trunk groups	On the Routing Pattern form—If the Service/Feature field is assigned an entry, the associated ISDN-PRI Trunk Group form must have its Service Type field entry set to "cbc".
Set Value Group feature not assigned	The Set Value Group option must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.
Signaling Group not assigned. Please select another.	The Signaling Group is not administered in the System. Either add the Signaling Group or enter an administered Signaling Group number.
Signaling field on DS-1 form must have ISDN-PRI type	On the DS1 Circuit Pack form—The Signaling Mode field entry must be "isdn-pri" or "isdn-ext".
Signaling mode of this board has to be ISDN-PRI	On the Signaling Group form—The DS1 Interface assigned to the Primary and Secondary D-Channel field must have its Signaling Mode field on the DS1 circuit pack form set to "isdn-pri" or "isdn-ext". Administer the DS1 accordingly.
Signaling mode of this board has to be ISDN-PRI or ISDN-EXT	On the Signaling Group form—When the Associated Signaling field entry is "n" (NFAS), the DS1 circuit pack assigned Trunk Brd fields on the form must have its Signaling Mode field set to "isdn-pri" or "isdn-ext". Administer the DS1 Circuit Pack form accordingly.
Specified service must be removed from routing patterns using this trunk group	On the ISDN-PRI Trunk Group form—When the Service Type field entry is not "cbc", associated Routing Patterns using the trunk group cannot have their Service/Feature field administered [(field(s) must be blank)].
Specify the BCC for at least one class to y(es)	On the Routing Pattern form—For each ISDN-PRI trunk group assigned, at least one associated BCC field entry (Page 2) must be set to "y".
Speed invalid with default mode set to "async"; please press help	This only applies to the 7500B Data Module. When the default mode is set to "sync", valid speeds include 56K and 64K. These are not valid when the default mode is set back to "async".

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Station can only be assigned to 1 pickup group	Do not assign the station's extension to more than one Call Pickup Group.
Station must be removed and re-added to change set type to or from ASAI	Remove the station using the "remove station XXXXX" command. Then, re-add the station and administer the Type field as "asai".
Station must be removed before station type can be changed	Remove the station using the "remove station XXXXX" command Then, re-add the station and administer the Type field as required
Station must be removed from ICOM group(s) before removal	On the Intercom Group form—Remove the station's extension number from the appropriate form and then remove the station.
Station must be removed from all groups before removal	Remove the station's extension number from all groups (e.g., Intercom, Hunt, TEG, Call Coverage, etc.,), then remove the station.
Station must be removed from code calling list before removal	On the Loudspeaker Paging Access form—Remove the station's extension number from the Code Calling IDs Ext field, then remove the station.
Station must be removed from cov-ans group(s) before removal	On the Call Coverage Answer Group form(s)—Remove the station's extension number from the Ext field, then remove the station
Station must be removed from coverage path before removal	On the Coverage Paths form—Remove the station's extension number from a Coverage Point (Point 1, 2, 3) field, then remove the station.
Station must be removed from pickup group before removal	On the Pickup Groups form—Remove the station's extension number from the Ext field, then remove the station.
Station must be removed from term-ext group(s) before removal	On the Terminating Extension Group form—Remove the station's extension number from the Ext field, then remove the station.
Station must have a 7103A abbreviated dialing list	On the 7103A Station form—Enter "7103A" in the Abbreviated Dialing List 1, 2, or 3 field.
Suffix must be B-Z or blank	On the Circuit Pack Administration form—Enter a suffix code (B-Z) in the Sfx field. The code should match the code on the installed circuit pack.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Sum of Min# Chan exceeds total number of trunk members	On the ISDN-PRI trunk Group form—The Min# Chan field entry (Page 3) must be less than the total number of channels (trunk members) in the trunk group.
Synchronization sources must be in same port network	On the Synchronization Plan form—The Primary and Secondary field references must be located in the same Port Network (1-3)
System Printer ext cannot be same as PMS or Journal/Log Printer ext	On the Feature-Related System Parameters form—The Printer Extension field entry (Page 4) must be different than the Extension of the PMS Log Printer and Extension of Journal/Schedule Printer field entries on the Hospitality-Related System Parameters form
System limit of 10 CBC trunk groups has been reached	On the ISDN-PRI Trunk Group form—The Service Type field entry cannot be "cbc" because the System's maximum of 10 CBC trunk groups have already been assigned.
System limit of 1000 entries has been reached	The combined entries in the System's HNPA and RHNPA Tables is set at 1000 entries
System limit of 288 Incoming Call Handling entries has been reached	On the ISDN-PRI Trunk Group form—The Incoming Call Handling Table (Page 2) cannot have more than 288 entries.
System must be taken out of night service before removal/change	The System must be taken out of Night Service before associated fields on forms can be changed or an object removed.
System or group list requires two digit dial code	Enter an appropriate Abbreviated Dialing 2-digit dial code. A 2-digit code is required when referencing System and Group lists.
System resource limit has been reached	The System's allocated memory space that is shared between AAR/ARS Analysis Tables, AAR/ARS Digit Conversion Tables, and the Toll Analysis Table has been filled. New assignments cannot be made unless current assignments are removed.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
TAC assigned	Enter a new Trunk Access Code that agrees with the System's Dial Plan.
TAC invalid; please check dialplan	The Trunk Access Code (TAC) first digit does not agree with the first digit assigned TACs on the Systems Dial Plan form.
TAC must be specified	On the Loudspeaker Paging Access form—A TAC must be specified for each Voice Paging or Code Calling port assigned.
TN Code of a circuit pack can not be blank	On the Circuit Pack Administration form—Enter the complete circuit pack code when administering a circuit pack. Enter "TN" plus three digits to complete the entry.
The maximum number of ASAI endpoints is already administered	Up to eight ASAI Link Interfaces may be administered in the System.
The maximum number of ISDN-BRI endpoints is already administered	The maximum number of 1000 ISDN-BRI endpoints has already been administered. This includes both voice, integrated voice/data, data endpoints, and ASAI endpoints.
The maximum number of data modules is already administered	The maximum number of data modules that can be administered has been reached.
The maximum number of stations is already administered	Up to 1600 stations can be administered. In addition, up to 1600 phantom extensions can be administered (Administration Without Hardware feature).
This D-Channel is duplicately assigned Please select another.	On the Signaling Group form—A D-Channel port cannot be assigned to more than one Signaling Group, no matter if it is assigned as a Primary or Secondary D-Channel port.
This Trunk Board does not belong to this Signaling Group	On the ISDN-PRI Trunk Group form—The Sig Grp field entry (Pages 5-11) is not associated with the Port entry (i.e., the Port field entry is not associated with the referenced Signaling Group on the respective Signaling Group form).
This field cannot be assigned to this port and board; please enter blank	On the Trunk Group form—The Mode, Type, and Answer Delay fields on the trunk member assignments pages require that associated Port assignments be a TN722, TN760B, or TN767 circuit pack type.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
This field cannot be blank for RLT applications	On the Release Link Trunk Group form—When the Group Type field entry is "rlt", the Incoming Destination field must have an entry.
This set type has a fixed normal button	This applies to the 8510D and 8520D ISDN-BRI sets. These sets have a fixed normal button which is automatically administered.
This station extension must be specified	On the Station form—The Extension field associated with this form must be completed The extension number entered must agree with the System's Dial Plan form.
Time of Day Routing Feature not assigned	The Time of Day Routing feature must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered
Timeout must be specified	On the Loudspeaker Paging Access form—The Voice Paging Timeout field must have an entry.
Toll Restriction not allowed with automatic trunks	On the Trunk Group form—The Toll Restricted field entry must be "n" for automatic trunks.
Total Min minus length of dialed string must be greater than or equal to 3	On the AAR/ARS Analysis form—For those entries associated with a Route Pat (Routing Pattern) field entry of "r1-r32" (RHNPA translations required), the total Min field entry minus length of the Dialed String entry must be greater than or equal to 3.
Total number of CA-TSCs over the system limit	On the signaling group form, the specified number of CA-TSCs exceeded the system limit.
Total number of NCA-TSCs over the system limit	On the signaling group form, the specified number of NCS-TSCs exceeded the system limit.
Total number of administered NCA-TSCs over the system limit	On the signaling group form, an attempt was made to administer a greater number of NCA-TSCs then is supported by the system.
Total number of entries has reached the limit	The maximum allowable entries for this field has been reached. You must remove a current entry before a new entry can be assigned

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Total number of permanent NCA-TSCs must be <= to Max Num of NCA-TSCs	On the signaling group form, total number of administered permanent NCA-TSCs must be less than or equal to the maximum number of NCA-TSCs specified on Page 1.
Total number of permanent TSCs must be less than this value	(Reserved for future use)
Total number of permanent TSCs must be less than the maximum number of NCA-TSCs to allow for as-needed TSCs	On the signaling group form, to allow for as needed TSCs, the total number of permanent TSCs must be less than the maximum number of NCA-TSCs.
Trunk Type must be ground-start to enable Abandoned Call Search	On the Trunk Group form—The Abandoned Call Search field entry cannot be "y" if the Trunk Type field entry is other than "ground-start".
Trunk board is duplicately assigned	The circuit pack port has already been assigned. Assign another circuit pack port of the same type or functionality.
Trunk group in a routing pattern—Cannot change to incoming	On the Trunk Group form—You cannot change the Direction field entry to "incoming" if the trunk group is assigned on a Routing Pattern form. Remove the trunk group from the routing pattern, then change the Direction field
Trunk group must be removed from all routing patterns before removal	Remove the trunk group from all routing patterns, then remove the trunk group.
Trunk night service buttons must be removed before removal	On the Station form—Remove all Trunk Night Service feature buttons that point to this trunk group. Then, remove the trunk group.
Trunk type must be specified first	On the Trunk Group form—Complete the Group Type field entry.
UDP extension must be local	Enter a local UDP extension that agrees with the System's Dial Plan form.
UDP inconsistent with AUDIX Extension in remote AUDIX hunt group	On the Hunt Group form—The AUDIX Extension field entry (field only displayed if the Message Center field entry on the form is "rem-audix"), is not in agreement with UDP extensions entered on the System's Dial Plan form
Uniform Dialing Plan feature is not assigned	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.

(Continued on next page)

Table 2-2. System Error Messages *(continued)*

Error Message	Description
Unique entry cannot be selected -- enter more digits or '#' sign	*When using the AAR/ARS "list route-chosen" command, the* Dialed Number string (part of input command) is incomplete or must end with a # symbol
Usage Allocation Schedule Plan is not administered	On the ISDN-PRI Trunk Group form—If the Fixed Field entry is "y", the Allocation Plan Number field must be assigned a number (1 through 3)
Use printable characters only	Do not enter space-bar characters or other non-printable characters.
Vectoring (Basic) feature not assigned	The Vectoring (Basic) feature must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.
Vectoring (Prompting) feature not assigned	The Vectoring (Prompting) feature must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.
Voice Paging and/or Code Calling data must be specified	On the Loudspeaker Paging Access form—Complete at least one Voice Paging or Code Calling TAC/COR pair assignment.
Warning Threshold must be less than or equal to Queue Length	On the Hunt Group form—The Calls Warning Threshold field entry must be less than the Queue Length field entry.
Warning Threshold must be specified since Warning Port specified	On the Hunt Group form—If the Calls Warning Port field has an entry, the associated Calls Warning Threshold field must have an entry.
X not supported for sets with data modules	On the Station form—The Port field cannot have an "x" as a valid entry (supports the Administration Without Hardware feature) if a Data Module is assigned to the station.
X not supported for this object	On the Access Endpoint form—An "x" is not a valid Port field entry. An "x" is permitted as the Port field entry on certain Station forms in support of the Administration Without Hardware feature.
X not supported for this set type	An "x" is not a valid entry in the Port field on this form. An "x" is permitted as the Port field entry on certain Station forms in support of the Administration Without Hardware feature.

3. System Features, Functions, and Services

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 Blank forms book (555-230-652B).

This chapter does not attempt to discuss any feature in detail. Refer to *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203, 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 next table. 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.

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

(Continued on next page)

VM	NS	SM	DM	TM	H	AH	Feature Name
x							Call Coverage
x							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	Centralized Attendant Service (CAS)
x							Class of Restriction
x							Class of Service
x						x	Code Calling Access
x							Conference — Attendant*
x							Conference — Terminal*
x							Consult
x							Coverage Callback
x							Coverage Incoming Call Identification
		x					Customer-Provided Equipment Alarm
			x			x	Data Call Setup
			x				Data Hot Line
			x				Data Privacy
			x				Data Restriction
			x			x	Data-Only Off-Premises Extensions
	x						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*

(Continued on next page)

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

(Continued on next page)

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

(Continued on next page)

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

(Continued on next page)

VM	NS	SM	DM	TM	H	AH	Feature Name
	x						Temporary Signaling Connection (TSC)
x							Terminating Extension Group
x							Through Dialing*
	x						Time of Day Routing
x							Timed Reminder
x							Touch-Tone Dialing*
x							Transfer*
x							Trunk Flash
x							Trunk Group Busy/Warning Indicators
							To Attendant
x							Trunk Identification By Attendant
x							Trunk-to-Trunk Transfer
x						x	Uniform Call Distribution
	x					x	Uniform Dialing Plan
x						x	Voice Message Retrieval
x						x	Voice Terminal Display
	x					x	World Class Routing

7400A/7400B+ Data Module

The 7400A/7400B+ data modules connect data terminal equipment (DTE) (for example, a PC) or data communications equipment (DCE) (for example, a modem) to the ISDN network. These data modules support EIA RS232D and RS-366 Automatic Calling Unit interface. When configured as an asynchronous DCE, the modules support data rates of 300, 1200, 2400, 4800, 9600, and 19200 bps.

The 7400A/7400B+ have no voice functions, and can be configured in the following ways:

- Asynchronous DCE

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

- Asynchronous DTE (used for modem pooling)

  up to 19200 bps

The 7400A/7400B+ be stand-alone or in a multiple-mount housing.

Asynchronous Data Module (ADM)

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 that 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)	5-76
ARS Analysis	Partitioned Group Number	4-11
AAR Analysis	Partitioned Group Number	4-3
Time of Day Routing	All	4-85

- Class of Restriction Form — Assign a Partitioned Group Number (1-8) 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 — Complete one form for each PGN as required. Note that 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 #)
Central Office Trunk Group	Abandoned Call Search	4-131
Foreign Exchange Trunk Group	Abandoned Call Search	4-184
WATS Trunk Group	Abandoned Call Search	4-282

- 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 touch-tone digit input 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 AD List 2 Access Code AD List 3 Access Code Program Access Code	5-128
Abbreviated Dialing 7103A Button Assignment	All	5-17
Station (multi-appearance)	AD List 1 AD List 2 AD List 3 Button/Feature Button Assignments -AD Buttons Hot Line Destination-AD List Number (if applicable)	5-235
Console Parameters	List 1, 2, 3	5-83
Attendant Console	Feature Button Assignments -AD Buttons	5-38
Abbreviated Dialing System List	All	5-14
Abbreviated Dialing Group List	All	5-8
Abbreviated Dialing Personal List	All	5-11
Abbreviated Dialing Enhanced List	All	5-3
Data Line Data Module	List1:	5-90
Feature-Related System Parameters	Off-Premises Tone Detect Timeout Interval	5-133
Miscellaneous System Parameters	Network Feedback w/o Tone Outpulse w/o Tone	5-178

- 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.

- Abbreviated Dialing 7103A Button Assignment Form — Complete all fields of the 7103A list if the System uses 7103A Fixed Feature Voice Terminals.
- Station Forms — Assign lists to voice terminal's Abbreviated Dialing field. On multi-appearance 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 multi-appearance 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 lists to Console Parameters Abbreviated Dialing field.
- Attendant Console Form — Assign abbreviated dialing list button to attendant console.
- Abbreviated Dialing System List Form — Establish a System List. Complete all fields.
- Abbreviated Dialing Group List Form — Establish Group Lists. Contact personnel who will use 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. Complete all fields.
- Abbreviated Dialing Personal List Form — Establish Personal Lists. Users can program their own Personal List once the list is in the System via the System's administration terminal. Complete all fields.
- Abbreviated Dialing Enhanced List Form — Establish an Enhanced List. Complete all fields. (Note that the Abbreviated Dialing Enhanced List option must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.)

- 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 (5-25 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.
- Miscelleous System Parameters Form — Indicate whether the system should outpulse digits without receiving dial tone from the far-end and whether the system should provide audible feedback to the caller while the system attempts to detect dial tone.

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 #)
Access Trunk Group	All	4-94

- Access Trunk Group 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 TN722B, TN760C, or TN767 circuit pack for each trunk to be assigned in the Access Trunk Group. 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 4 ESS™ 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 originating endpoint and the AC must be administered on the same DEFINITY Generic 3i switch.

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 maximum number of trunks (including access endpoints) that can be administered is 400.

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.

The maximum number of ACs that can be administered is 128.

Note that 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

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

Form	Field	Form Instructions (Page #)
Data Module	All	5-89
Circuit Pack (trunks)	All	5-75
Access Endpoint	All	5-20
Trunk Group	All	
ISDN-PRI		4-200 4-67
Tie		4-261
COR	All	5-76
COS	All	5-81
Dial Plan	Local PBX ID	5-118
Administered Connection	All	5-28
Station (multi-appearance)	Button/Feature Button Assignments -ac-alarm	5-235
Attendant Console	Feature Button Assignments -ac-alarm	5-38

- Data Module Form — Complete the appropriate Data Module forms (for example, MPDM or MTDM) if the AC involves one or two local data modules.
- Trunk Circuit Pack 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 Chapter 1. These circuit packs must be assigned before the port field on the Access Endpoint form can be completed.
- Access Endpoint Connection 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 class of restrictions (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 PBX ID 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 that 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 "ac-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).
- TN754B Digital Line circuit pack connections including:
  - MPDM (700A, 700D), MTDM (700B, 700C, 700E)
  - 7400A or 7400B Data Module
  - 7401D 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, or Spanish on attendant consoles and voice terminals equipped with 40-character displays. The display message language is administered for each attendant console and properly equipped voice terminal (that is, voice terminals equipped with 40-character displays).

Administration

To administer the Administrable Language Display feature, the following forms must be completed.

Form	Field	Form Instructions (Page #)
Attendant Console	Display Language	5-38
Voice Terminals (7404D, 7405D, 7406D, 7407D, 7434D, 7506D, 7507D, 8510D, 8520D) and AUDIX, CallMaster, 510 PT, 515 BCT, and PCs	Display Language	5-298

- Attendant Console Form — Specify the language in which you want call display messages presented on the attendant console. Choices are English, French, Italian, and Spanish. 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, and Spanish. The 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

None.

Administrable Timers

Some trunk and system timers are administrable. 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 sec.
- **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. It will appear for CO, FX, WATS, and DID trunk group types. 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).
- **Glare** — Defines the minimum time between sending an outgoing seizure and receiving a seizure acknowledgement. If seizure acknowledgement 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. This timer is not supported on the TN760D.
- **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 a 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. This timer is not supported on the TN760D.
- **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 sec. This timer is not supported on the TN760D.
- **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.

  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 sec. This timer is not supported on the TN760D.

- **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, as on System 75 IR1V1 and System 75 IR1V2.

  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 acknowledgement of a CO or Tie trunk and the outpulsing of digits. For trunks which do not provide seizure acknowledgement, 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 UK, 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. This timer is not supported on the TN760D.

- **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. This timer is not supported on the TN760D.
- **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 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 minimum make and break timings for DTMF signaling also vary widely between countries.

  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.

The USA default is 60 ms and of the Dial Make Timer shall be 40 ms when 10 pps is administered. These timers are administrable per Tie and CO trunk group.

The timers will only be tested at the following settings: 60/40, 65/35, 70/30, and 35/15.

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 is administrable in System 75 IR1V2.

  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 senderized 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 senderized 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 of this timer shall be 10 seconds.

  For tie trunks, whether answer supervision is expected is administrable per trunk group. This timer is not supported on the TN760D.

- **PPM** (Periodical 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 100 ms to 25500 ms in increments of 100 ms. The default is 1500 ms.

- **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 200 ms 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 Seizure 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 acknowledgement 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 acknowledgement 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 secondary alerting, 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, in 1 second intervals, with the default being 10 seconds.

- **Attendant No Answer** — Monitors the time a call to the attendant can remain unanswered before the delay threshold count is incremented. This feature is required for Italian type approval. Although the Italian requirement is for a 20 second interval, the timer will be administrable for flexibility.

  This timer begins timing when a call is directed to the attendant group, whether it goes into the queue or directly to an attendant. 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 in increments of 1 second, and is administrable per System. The default is 20 sec.

- **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 administrable per System from 10 sec. to 1024 sec. in increments of 1 sec. The default is 10 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 sec. to 1024 sec. in increments of 1 sec. 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.

- **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.

- **No Answer Timeout** — This is an attendant console timer that controls the amount of time a call to the attendant can remain unanswered without incrementing the delay threshold count.

- **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 sec.

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

- **Wait Answer Supervision** — This is a 50-second time 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.

- **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. On on-hook that lasts for an interval that lies between the two boundries will be considered a flash by the switch.

- **Disconnect Timing** — This timer controls the number of seconds an on-hook must last bor 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 (for example, 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 PBX from 3 seconds to 9 seconds in increments of 1 second. The default is 3 sec.

  ⇒ 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 sec.

  ⇒ 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	4-88
Console Parameters (Attendant Timers)	Timer fields	5-83
Miscellaneous Parameters (Call Timers)	Timer fields	5-178

- Trunk Group Form — Assign timer values as outlined in the description for each timer above.

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 by use of 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.

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.

The use of this feature is limited to analog, Digital Communications System (DCP) (7400D series of terminals), and hybrid terminal types.

NOTE:
This feature is not supported on ISDN-BRI stations or ISDN-BRI data modules.

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 forms or sections of forms must be completed:

Form	Field	Form Instructions (Page #)
Station (Analog)	Port	5-235
Station (Hybrid)	Port	5-235
Station (DCP)	Port	5-235

- Station Forms — Enter an "X" in the Port field to indicate that there is no hardware associated with the station administration. Complete the remaining fields on the station form as required per the station type.

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 #)
APLT Trunk Group	All	4-113

- APLT Trunk Group 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 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 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 Automatic Call Distribution Features	5-128
Hunt Groups	Forced Stroke Count or Call Work Code	5-153
Station (multi-appearance)	Button/Feature Button Assignments -manual-in -auto-in -aux-work -after-call -assist -release -work code -stroke-cnt	5-235
Stations	Auto Answer	5-257
Attendant Console	Feature Button Assignments -after-call -assist -auto-in -aux-work -manual-in -release -work code -stroke-cnt Auto Answer	5-38

- 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. Note that the Call Work Codes option must be enabled on the System-Parameters Customer-Options form before the Forced Stroke Count field can be enabled

- Station Forms — Assign Agent Call Handling feature buttons to multi-appearance stations as needed. Enter "y" in the Auto Answer field if an incoming call is to be automatically answered by an ACD agent.
- Attendant Console Form — Assign Agent Call Handling feature buttons to the Attendant Console as needed. Enter "y" in the Auto Answer field if an incoming call is to be automatically answered without any action (no button presses) by the attendant.

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+%0000" 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	5-34

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

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.

A System can have as many as 15 consoles in operation at any time. A daytime console can double as a night console, or a sixteenth console can be provided. If a sixteenth console is provided, it must be classified as night-only and cannot operate when the other 15 operate.

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	5-83
Attendant Console	All	5-38

- 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 -act-tr-grp -deact-tr-g -local-tgs -remote-tgs	5-38
Trunk Group Access APLT CO CPE DMI-BOS FX ISDN-PRI RLT Tandem Tie WATS	Busy Threshold	4-88

- 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 that 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)	5-38

- 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 (1-12) -DTGS Buttons (local-tgs)	5-38

- 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 (1-6) if using the Basic Attendant Console (301A1). 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	5-38

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

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. 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 conferenced with, an attendant.

Administration

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

Form	Field	Form Instructions (Page #)
Attendant Console	Feature Button Assignments	5-38

- 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.

Attendant Intrusion

Attendant Intrusion (Call Offer) allows an attendant to intrude on an existing call. The attendant can then add a new call or offer a message to this intruded call. Upon releasing from the intruded call, the attendant's source party (if it exists) is Call Waiting at the intruded party. The intruded party must be an analog voice terminal for Call Waiting to be allowed.

NOTE:
If there is a Call Waiting call at the intruded party, the source party (split from the attendant) cannot wait at the intruded party.

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

Administration

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

Form	Field	Form Instructions (Page #)
Attendant Console	Feature Button Assignments	5-38

- 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 to override call diversion features (for example, Call Forwarding, Send All Calls, 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.

Administration

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

Form	Field	Form Instructions (Page #)
Attendant Console	Feature Button Assignments	5-38

- *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 to the Attendant Group** — 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 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 to the Attendant Group** — A station may either dial the attendant access code or access the attendant group through the Manual Origination Calls Feature.

- **Attendant Group Call over a CO Trunk** — 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.

- **Attendant Group Call over a DID Trunk** — Identical to the previous category except that a DID trunk is involved.

- **Attendant Group call over a Tie Trunk** — 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.

- **Attendant Redirected Call** — A call initially assigned to one attendant, but subsequently reassigned to the group because the position has become busy.

- **Attendant 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.
- **Interposition Call** — 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, for example, ACA Calls.

Administration

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

Form	Field	Form Instructions (Page #)
Console Parameters	All	5-83
Feature-Related System Parameters	All	5-133

- 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

Audio Information Exchange (AUDIX) Interface

Provides a communications link between the System and AUDIX. AUDIX allows both System users and outside callers to write, 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. In addition, an AUDIX R1V2 (or later release) is required.

  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 an ACD and CMS. For those Systems not equipped with an 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).
  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 3i Global Feature Description*, 555-230-203, 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 (Modular Processor Data Module or Modular Trunk Data Module) or by the Processor Interface jack located on the back of the Control Cabinet.

Administration — AUDIX Interface

To implement the AUDIX interface in a non-DCS configuration, the following form(s) or sections of the form(s) must be completed. Figure 3-1 shows an example interface using either an MPDM or an MTDM. Figure 3-2 shows a typical interface using the Processor Interface jack located on the back of the Control Cabinet. Screens 3-1 through 3-12 show typical completed forms for the two configurations.

Form	Field	Form Instructions (Page #)
Processor Interface Data Module	All (for one AUDIX link)	5-113
Interface Links	All (for one AUDIX link)	5-167
Processor Channel Assignment	All (for one AUDIX link)	5-190
Modular Processor Data Module	All	5-106
or		
Modular Trunk Data Module		5-106
Station — 2500 Form	All (for AUDIX voice port)	5-271
(up to 32 forms may be assigned depending on AUDIX size)		
Recorded Announcements	All	5-194
Feature Access Codes	Transfer Into AUDIX	5-128
Hunt Groups	All (as required)	5-153

Form	Field	Form Instructions (Page #)
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	5-235
Class of Service	Call Fwd-All Calls	5-81
Call Coverage Paths	All	5-61

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.

- Processor Interface Data Module 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.

- 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.

  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. 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.

- Modular Processor Data Module (MPDM) or Modular Trunk Data Module 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 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.

- 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".
- 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.
  - Enter "y" in the ACD field if AUDIX is to be an ACD split; otherwise enter "n".

- — Enter the destination (extension, attendant) where calls to the ACD split will go when in the Night Service mode.
- — 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 ten 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 "y" in the Measured by MIS field if AUDIX traffic measurements are to be provided by ACD CMS.
- — 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.

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), the following form(s) or sections of the form(s) must be completed Figure 3-3 shows an example of AUDIX in a DCS arrangement. Associated instructions and form entries unique to the DCS arrangement are shown. Other switch translations (hunt groups, stations, links, and so on) are assigned using the previous AUDIX Interface instructions. Also note that all 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 covered in the DCS section.

Form	Field	Form Instructions (Page #)
Dial Plan (all switches)	(as required)	5-118
Processor Channel Assignments (host and remote switch)	(as required)	5-190
Hop Channel Assignments (host switch)	(as required)	5-146
Hunt Groups (host and remote switches)	All	5-153
Call Coverage Paths (host and remote switches)	All	5-61

- Dial Plan Form — The dial plan must be a Uniform Dial Plan and include the host switch AUDIX extension in the dial plan. One extension number should be assigned (on all switches) to access AUDIX.
- Processor Channel Assignments Form (remote switch) — Assign the link number and associated field entries including the host switch AUDIX Machine ID for the DCS AUDIX connection. (See Figure 3-3 and associated instructions.)
- Hop Channel Assignment Form (host switch) — Assign the Interface Link numbers and associated channel numbers to each remote switch. Enter the priority as "h" (high). (See Figure 3-3 and associated instructions.)
- Hunt Groups Form (remote switch) — Assign a remote AUDIX hunt group containing host switch AUDIX extension number. Complete all fields, including the following:
  - — Message Center: Enter "rem-audix".
  - — AUDIX Extension: Enter host switch AUDIX extension number.
  - — COR: Enter same COR as assigned on the host AUDIX hunt group.
- Call Coverage Paths Form (remote switch) — Enter the remote AUDIX hunt group number in the "Point 1:, 2:, or 3:" field. It is recommended but not required that the AUDIX be the last point on a call coverage path.

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

Figure 3-4 shows an example of an AUDIX in a DCS Over ISDN-PRI D-Channel arrangement. Administration associated with the figure is provided.

To implement the AUDIX interface via ISDN-PRI D-Channel in a DCS configuration the following form(s) or sections of the form(s) must be completed. Other switch translations (hunt groups, stations, links, host switch connections to AUDIX, and so on) are assigned using the previous AUDIX Interface instructions. Also note that all 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.

Form	Field	Form Instructions (Page #)
Dial Plan (all switches)	(as required)	5-118
AAR Analysis	All	4-3
Signaling Group	All	4-80
ISDN Trunk Group	Used For DCS DCS Signaling PBX ID	
Routing Pattern	Trunk Group # FRL Del	4-76
ISDN TSC Gateway Channel Assignments	Sig Group Adm'd NCA TSC Index Processor Channel Application	4-69
Hunt Groups (host and remote switches)	All	5-153
Call Coverage Paths (host and remote switches)	All	5-61

- Dial Plan Form — The dial plan must be a Uniform Dial Plan and include the host switch AUDIX extension in the dial plan. One extension number should be assigned (on all switches) to access AUDIX. All far-end switches RNXs, PBX IDs, and so on, must be entered on the Uniform Dial Plan section of the form.
- AAR Analysis Form — Complete the Dialed String, Min/Max, Route Pat, and Call Type entries required to communicate with each switch in the network.
- ISDN-PRI Trunk Group Form — With a Group Type of "isdn-pri", insure that the Used for DCS field entry is "y", the DCS Signaling field entry is "d-chan", and the PBX ID field entry is completed to identify the remote PBX in the network that the switch will be communicating with.

- Routing Pattern Form — Enter the above ISDN-PRI trunk group in a routing pattern and complete associated FRL and Del fields.
- ISDN-PRI TSC Gateway Assignments Form — Complete the appropriate fields on the form if the switch is to act as a gateway between a switch that supports the ISDN-PRI D-Channel DCS AUDIX feature and a PBX administered as a traditional DCS AUDIX using BX.25 data channels for communication.
- Hunt Groups Form (remote switch) — Assign a remote AUDIX hunt group containing host switch AUDIX extension number. Complete all fields, including the following:
  - — Message Center. Enter "rem-audix".
  - — AUDIX Extension: Enter host switch AUDIX extension number.
  - — COR: Enter same COR as assigned on the host AUDIX hunt group
- Call Coverage Paths Form (remote switch) — Enter the remote AUDIX hunt group number in the "Point 1:, 2:, or 3:" field. It is recommended but not required that the AUDIX be the last point on a call coverage path.

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 or may be connected directly to the System via the Processor Interface jack located on the back of the Control Cabinet. 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.

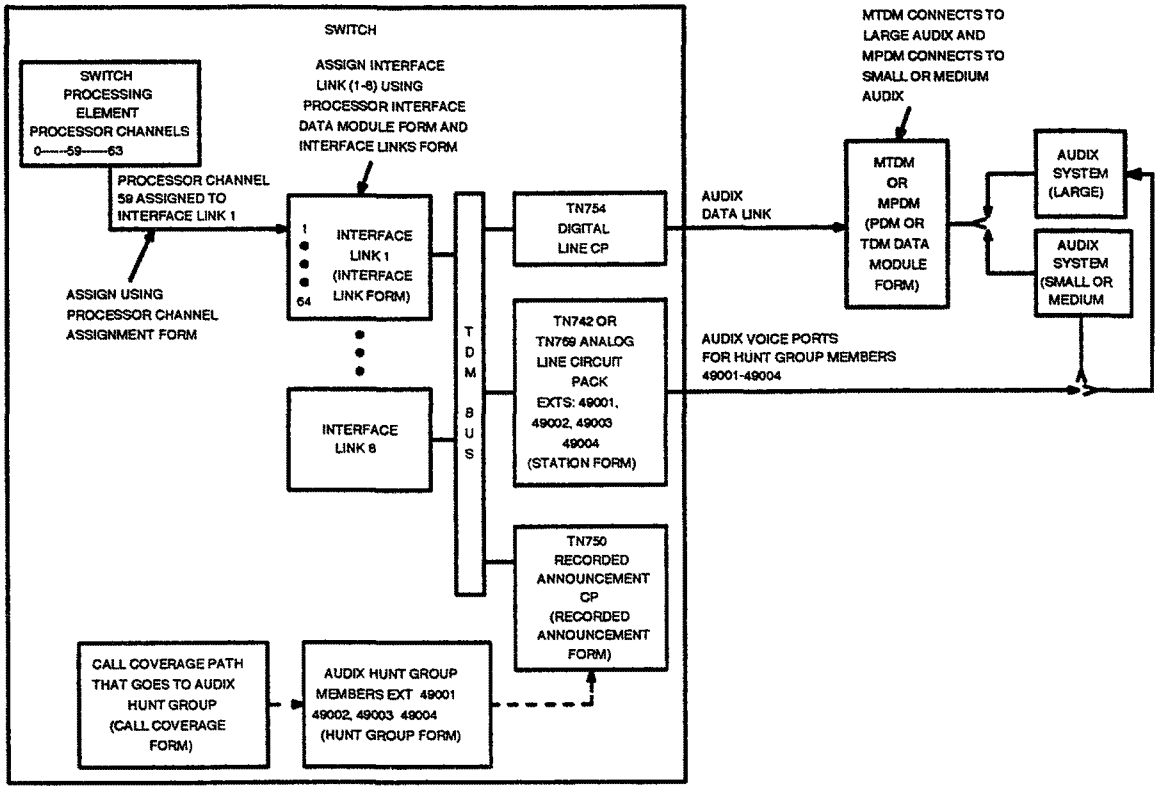


Figure 3-1. Typical AUDIX Connections Using an MPDM or MTDM Interface

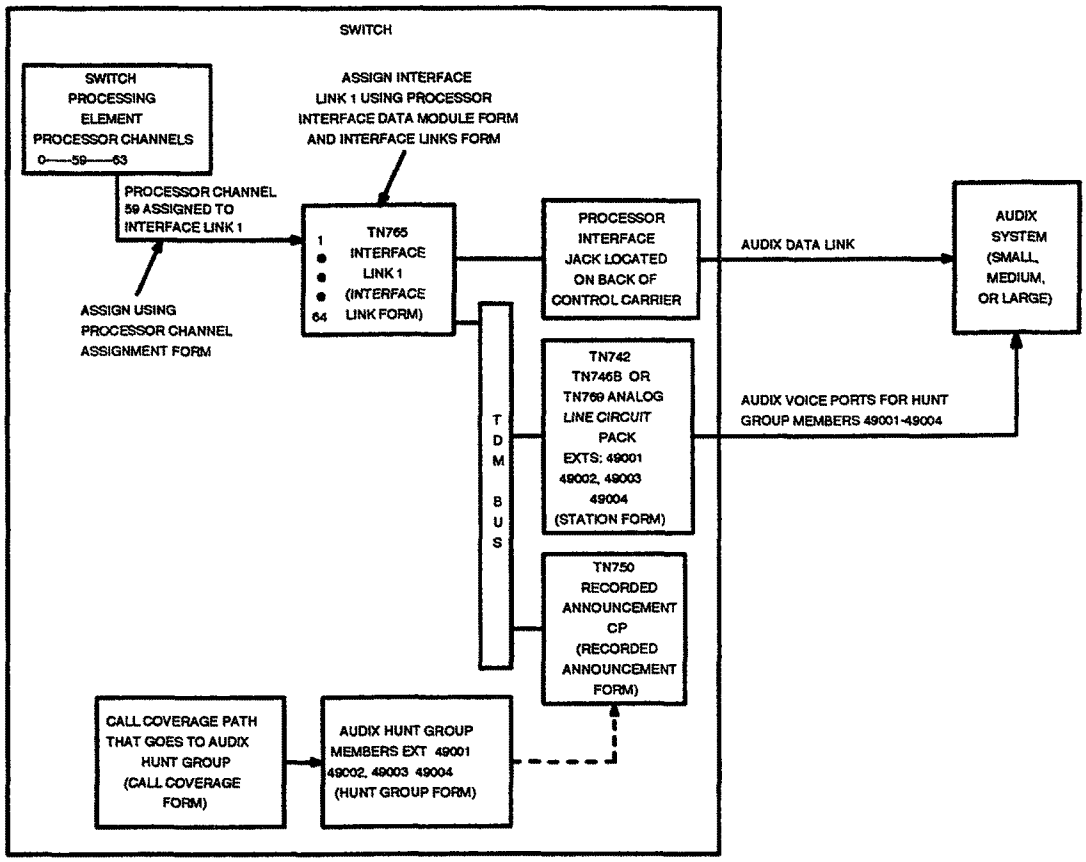


Figure 3-2. Typical AUDIX Connections Using the Control Cabinet Processor Interface Jack

```
                                                              Page 1 of 1
                              DATA MODULE
     Data Extension: 48000          Type: pdm          Physical Channel: 04__
               Name: AUDIX_____     COS: 1_                       COR: 1_
ABBREVIATED DIALING
  List1: _____
```

Screen 3-1. Typical MPDM/MTDM Data Module Form — Used to Assign AUDIX Interface Link

```
                                                              Page 1 of 1
                              DATA MODULE
     Data Extension: 48000          Type: procr-inf    Physical Channel: 01__
               Name: AUDIX_____     COS: 1_                       COR: 1_
ABBREVIATED DIALING
  List1: _____
```

Screen 3-2. Typical Processor Interface Data Module Forms — Used to Assign AUDIX Interface Link

```
                                                              Page 1 of 1
                              INTERFACE LINKS
Link  Enable   Est      PI                 Destination        DTE/
               Conn     Ext      Prot      Digits    Brd      DCE     Identification
 1:     n       _      _____    BX.25     _____     ____     DTE     _____________
 2:     n       _      _____    BX.25     _____     ____     DTE     _____________
 3:     n       _      _____    BX.25     _____     ____     DTE     _____________
 4:     y       y      48000    BX.25     49005     ____     DTE     AUDIX_LINK____
```

Screen 3-3. Typical Interface Links Form Used with MPDM Connection (MPDM assigned Ext. 49005)

```
                                                              Page 1 of 1
                              INTERFACE LINKS
Link  Enable   Est      PI                    Destination        DTE/
               Conn     Ext      Prot         Digits    Brd      DCE     Identification
 1:     y       y      48000    BX.25        e1a__     ____     DTE     AUDIX_LINK____
 2:     n       _      _____    BX.25        _____     ____     DTE     ______________
 3:     n       _      _____    BX.25        _____     ____     DTE     ______________
 4:     n       _      _____    BX.25        _____     ____     DTE     ______________
```

Screen 3-4. Typical Interface Links Form Used with Processor Interface Jack Connection

```
                                                              Page 1 of 1
                              DATA MODULE
     Data Extension: 49005          Type: pdm_________          Port : C0508
               Name: AUDIX-PDM_____   COS: 1_                    COR: 1_
      Connected to: dte                        Remote Loop-Around Test: n_
ABBREVIATED DIALING
  List1: ____________
```

Screen 3-5. Typical Modular Processor Data Module Form — Used to Assign an MPDM Interface Connection

```
                                                              Page 4 of 4
                        PROCESSOR CHANNEL ASSIGNMENT
     Proc                    Interface                    Remote
     Chan   Appl.      Link  Chan      Priority    Proc Chan      Machine-ID
     49:    _______    _     __        ____        __             __
     50:    _______    _     __        ____        __             __
                              •
                              •
                              •
                              •
                              •
     59:    AUDIX_     4     01        __h_        _1             _1
     60:    _______    _     __        ____        __             __
```

Screen 3-6. Typical Processor Channel Assignment Form — Used to Assign Processor Channel 59 To AUDIX

```
                                                              Page 4 of 4
                        PROCESSOR CHANNEL ASSIGNMENT
Proc                          Interface                        Remote
Chan    Appl.          Link   Chan      Priority    Proc Chan      Machine-ID
49:     _______        _      __        ____        __             __
50:     _______        _      __        ____        __             __
                                  •
                                  •
                                  •
                                  •
                                  •
59:     AUDIX_         1      __        __h_        _1             _1
```

Screen 3-7. Typical Processor Channel Assignment Form — Used to Assign Processor Channel 59 to AUDIX When Using the Processor Interface Jack Connection

```
                                                              Page 1 of 1
                                  STATION
Extension: 49001
     Type: 2500                 Lock Messages: n              COR: 1
     Port: D1501                Security Code: ____           COS: 1
     Name: AUDIX                Coverage Path: ___          Tests? n
FEATURE OPTIONS
        LWC Reception? audix                  Coverage Message Retrieval? y
                                                        Auto Answer? n
       LWC Activation? y                              Data Restriction? y
Redirect Notification? n                        Call Waiting Indication? n
```

Screen 3-8. Typical 2500 Voice Terminal Form — AUDIX Voice Port Extension 49001

```
                                                              Page 1 of 6
                                    HUNT GROUP
Group Number: _4                    Group Extension: 48123   Group Type: ucd_
      Group Name: AUDIX_____________  Coverage Path: ___          COR: 1_
   Security Code: _____             Message Center: audix        ACD? y
           Queue? y       Night Service Destination: _____      Vector? n
ISDN Caller Disp: _________
                  Measured? y                  Supervisor Extension: _____
       Priority On Intraflow? n                    Inflow Threshold: ___
         Controlling Adjunct? none
                Queue Length: 4
     Calls Warning Threshold: ___                  Calls Warning Port: _____
      Time Warning Threshold: ___                   Time Warning Port: _____
        First Ann. Extension: 48999   First Announcement Delay (sec): __2
Second Announcement Extension: _____  Second Announcement Delay (sec): ___
Second Announcement Recurring: n
                     Forced Entry of Stroke Count or Call Work Code? n
```

Screen 3-9. Typical Hunt Group Form — Used to Assign AUDIX Hunt Group and Associated AUDIX Voice Ports

```
                                                              Page 2 of 6
                              HUNT GROUP
Group Number: 4_              Group Extension: 48123          Group Type: ucd
Group Member Assignments
         Ext      Name                              Ext      Name
      1: 49001 Audix-M Port 1
      2: 49002 Audix-M Port 2
      3: 49003 Audix-M Port 3
      4: 49004 Audix-M Port 4
```

Screen 3-10. Typical Hunt Group Form — Used to Assign AUDIX Hunt Group and Associated AUDIX Voice Ports (Contd)

```
                                                              Page  1 of  1
                          COVERAGE PATH
                   Coverage Path Number: 1
                       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
    SAC/Go to Cover?            y               y
COVERAGE POINTS
                  Point1: 48345                  Point3: 48123
                  Point2: 48350
```

Screen 3-11. Typical Call Coverage Paths Form (AUDIX Assigned to Coverage Point 3)

```
                                                              Page 1 of 4
                          ANNOUNCEMENTS
    Ext.  Type       COR  Name              Queue
1:  _____ _________  _   ________________
2:  48999 integrated 1   AUDIX ANN          n          Protect? y Board: C02
3:  _____ _________  _   ________________    _
4:  _____ _________  _   ________________    _
```

Screen 3-12. Typical Recorded Announcements Form — Used to Assign an AUDIX Announcement

Figure 3-3 shows an AUDIX in a DCS Network arrangement consisting of three switches. Associated Hop Channel and Processor Channel Assignments forms for each switch is provided in addition to related AUDIX translations. The AUDIX translations *are not* part of the System translations but are presented here for a better understanding of the System.

Translation assignments on AUDIX and each switch must be coordinated to ensure proper operation. It is recommended that Interface *Channel* numbers associated with each logical link match AUDIX port numbers on all forms. This helps in coordinating assignments and aids in troubleshooting. The following guidelines must be observed when making assignments:

Processor Channel Assignments Form

1. The entry in the Remote Processor *Channel* field must agree with associated AUDIX port fields (on AUDIX).

   For example, as shown on Figure 3-3, the association of each switch to an AUDIX port is shown on the AUDIX Translations form where Switches 2, 9, and 10 are associated with AUDIX ports 3, 2, and 1, respectively. Also note that the interface to each switches processor is via Switch Port (that is, Processor Channel) 59. As a result of this association, the Remote Processor *Channel* entries on switches 2, 9, and 10 Processor Channel Assignments forms for Processor Channel 59 are 3, 2, and 1, respectively.

2. Machine IDs entered on the form must agree with the AUDIX field entry on the AUDIX Data Link form (on AUDIX — form not shown). Typically, with just one AUDIX, this entry is "1".

Hop Channel Assignments Form

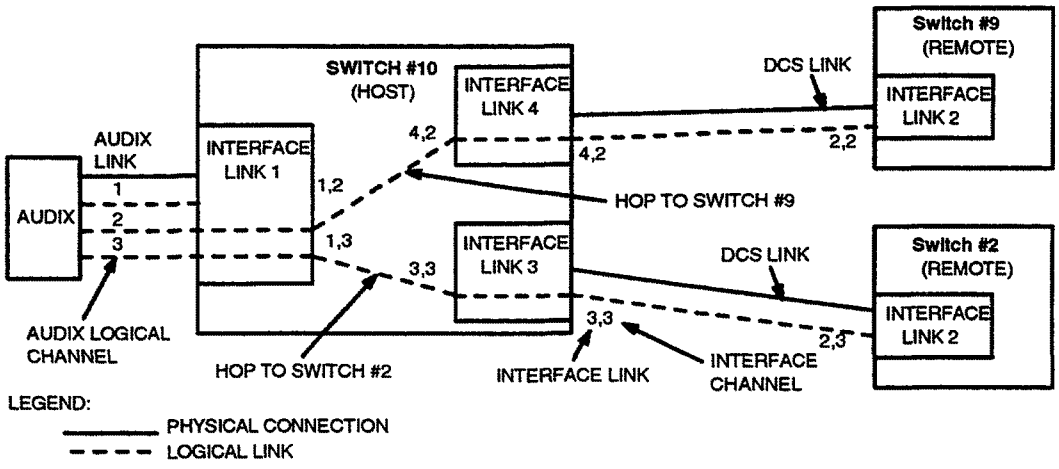
Interface Link *Channel* entries used to show the host switch interface to AUDIX must agree with related AUDIX logical channels (on AUDIX).

For example, as shown on Figure 3-3, Interface Link 1, Channel 2 (1,2) is shown logically connected to AUDIX logical channel 2. This becomes part of the first line entry on the Hop Channel Assignments form as shown. A similar situation is shown for Interface Link 1, Channel 3 (1,3) which is entered on the second line of the form. The remaining entries on the Hop Channel Assignments form complete the hop connection to Switch #9 and Switch #2.

Hop Channel and Processor Channel Assignments Forms

Interface Link *Channel* assignments between switches must agree.

For example, as shown on Figure 3-3, Interface Channel 2 is shown associated with the logical link from Switch #10 to Switch #9. Channel 2 is then entered on Switch #10's Hop Channel Assignments form and on Switch #9's Processor Channel Assignments form. A similar situation is shown for Interface Channel 3 to Switch #2.



AUDIX TRANSLATIONS

(Not Part of System Translations)

Switch #	Audix Port	Switch port	Logical Channel	Data Link
2	3	59	3	1
9	2	59	2	1
	1	59	1	1

SWITCH #10 TRANSLATIONS

Processor Channel Assignments Form

Proc Chan	Interface Link	Interface Chan	Priority	Remote Proc Chan	Appl	MACHINE ID
59:	1	1	h	1	audix	1

Hop Channel Assignments Form

Link/Chan	Link/Chan	Priority	
1 2	4 2	h	(Must Agree With Far-End Switch's Interface Channel Number)
		h	(Hop to Switch #9)
1 3	3 3		(Hop To Switch #2)
			(Must Agree With Associated Audix Logical Channel Numbers)

SWITCH #9 TRANSLATIONS

Processor Channel Assignments Form

Proc Chan	Interface Link	Interface Chan	Priority	Remote Proc Chan	Appl	MACHINE ID
59:	2	2	h	2	audix	1

SWITCH #2 TRANSLATIONS

Processor Channel Assignments Form

Proc Chan	Interface Link	Interface Chan	Priority	Remote Proc Chan	Appl	MACHINE ID
59:	2	3	h	3	audix	1

Figure 3-3. Typical AUDIX in a DCS Network via BX.25— Hop Channel and Processor Channel Assignments

Figure 3-4 is an example of the ISDN-PRI D-Channel DCS AUDIX configuration in a D-Channel DCS network with two switches (PBX A and PBX B). The administration for this configuration is provided following the figure.

PBX A is the Host Switch, and AUDIX messages between the AUDIX and PBX A is transported via BX.25 (link 1, channel 1). This connectivity is the same as the one in the traditional DCS AUDIX configuration. The ISDN AUDIX Gateway (link 1, channel 2 / TSC signaling group 5, index 2) is used in the Host Switch to pass AUDIX messages between the AUDIX and PBX B.

In PBX B, the Remote Switch, AUDIX messages are transported via an administered NCA-TSC (TSC signaling group 4, index 2).

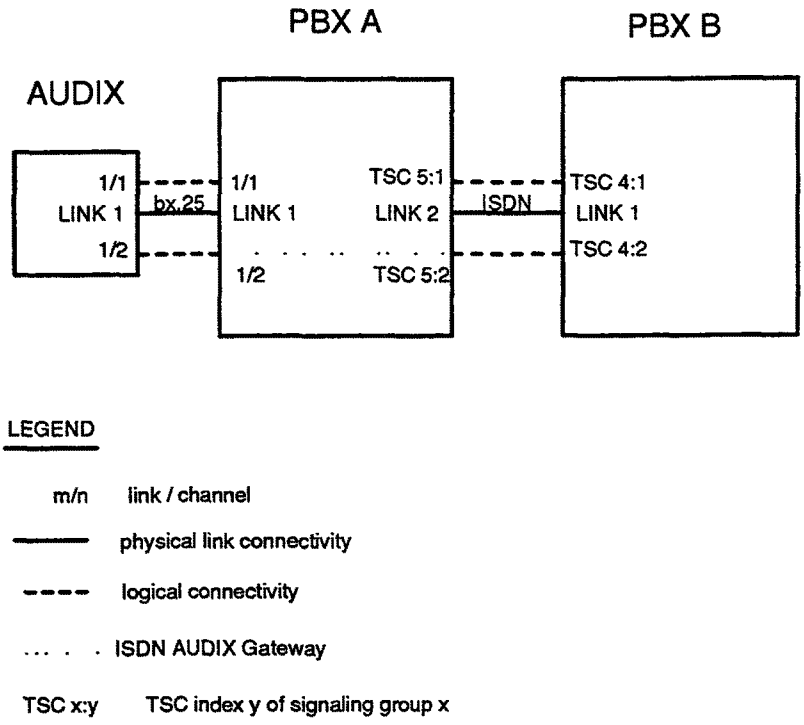


Figure 3-4. ISDN-PRI D-Channel DCS AUDIX Messaging

Administration associated with Figure 3-4 is as follows:

1. **For AUDIX (not part of switch translations):**

AUDIX Translations				
Switch Number	**AUDIX Port**	**Switch Port ***	**Logical Channel**	**Data Link**
1	1	59	1	1
2	2	60	2	1

* Switch Port refers to the processor channel that is used for AUDIX in the PBX.

2. **For PBX A (PBX ID 1):**

Dialplan Form						
First Page			**Second Page**			
Start Dig.	**Len**	**Usage**	**CODE**	**Local**	**RNX**	**PBX ID.**
4	4	ext	4	y	221	1
5	4	ext	5	n	222	2

AAR Analysis Table			
Dialed String	**Min/Max**	**Route Pattern**	**Call Type**
221	7/7	-	aar
222	7/7	2	aar

Signaling Group Form (signaling group 5 page 2)						
TSC Index	**Local Ext.**	**Enabled**	**Establish**	**Dest. Ext.**	**Far-end Machine-ID**	**Appl.**
1	4900	y	near-end	5900	2	dcs
2	4901	y	near-end	5901	-	gateway

Trunk Group Form				
Group #	**Grp Type**	**Used for DCS?**	**DCS Signaling**	**PBX ID**
3	isdn-pri	y	d-chan	2

Routing Pattern Form			
Routing Pattern #	**Trunk Group #**	**FRL**	**Del**
2	3	0	3

Gateway Channel Form			
Signaling Group	TSC Index	Processor Channel	Application
5	2	60	audix

Processor Channel Form					
Proc. Channel	Application	Inter. Link	Channel	Remote Proc. Channel	Machine ID
59	audix	1	1	1	1
60	gateway	1	2	2	-

3. **For PBX B (PBX ID 2):**

Dialplan Form						
First Page			Second Page			
Start Dig.	Len	Usage	CODE	Local	RNX	PBX ID.
4	4	ext	4	n	221	1
5	4	ext	5	y	222	2

AAR Analysis Table			
Dialed String	Min/Max	Route Pattern	Call Type
221	7/7	2	aar
222	7/7	-	haar

Signaling Group Form (signaling group 4 page 2)						
TSC Index	Local Ext.	Enabled	Establish	Dest. Ext.	Far-end Machine-ID	Appl.
1	5900	y	far-end	4900	1	dcs
2	5901	y	far-end	4901	1	audix

Trunk Group Form				
Group #	Grp Type	Used for DCS?	DCS Signaling	PBX ID
2	isdn-pri	y	d-chan	1

Routing Pattern Form			
Routing Pattern #	Trunk Group #	FRL	Del
2	2	0	3

Support of DEFINITY AUDIX TN566 Multi-function Circuit Pack

Allows an AUDIX system (TN566 Multi-Function Circuit Pack) to reside in a switch carrier to provide voice messaging capabilities. The AUDIX TN566 circuit pack is recognized and supported by the switch software. Although the AUDIX TN566 circuit pack physically connects to the switch through a single slot in the backplane, its width occupies 5 contiguous slots. Therefore, the *list configuration all* command (described in detail in *DEFINITY Generic 1 and Generic 3i Maintenance*, 555-204-105) provides an accurate assessment of system configuration by displaying all five slots as being used by the AUDIX TN566 circuit pack.

For more information on DEFINITY AUDIX, 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.

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

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

Form	Field	Form Instructions (Page #)
Authorization Codes	AC, COR	5-57
Feature-Related System Parameters	Authorization Code Enabled	5-133
	Authorization Code Length	
	Authorization Code Cancellation Symbol	
	Attendant Time Out Flag	
Station	COR	5-235
Class of Restriction	FRL	5-76
Routing Patterns	Trunk Group Number	4-76
	FRL	
Remote Access	Authorization Code	5-199
	Remote Access Dial Tone	
Trunk Groups:	Auth Code	
Access		4-94
APLT		4-113
CO		4-131
FX		4-184
ISDN-PRI		4-200 4-67
Tie		4-261
WATS		4-282

- 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 10-second delay before entering the authorization code.
  - 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 that 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."

Authorization Code Examples

The following provides three examples of typical Authorization Codes assignments.

Example 1. Establish a group of users who must dial an authorization code in order to make outside calls. The client has ARS and the Authorization Codes feature. The forms and fields are administered as follows:

- Feature-Related System Parameters Form

Authorization Codes Enabled	y
Authorization Code Length	7
Authorization Code Cancellation Symbol	1
Attendant Timeout Flag	n

- Voice Terminal Forms

  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 (zero) to users with a COR of 49.

- Routing Patterns 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 (that is, a "1" is outpulsed to indicate a toll call). 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

  NOTE:
  FRLs do not need to be in ascending order.

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 (as previously described). Unrestricted users will simply dial the ARS code followed by the desired number.

Refer to *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203, 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	7XXXX
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-XXXX) followed by the barrier code (4444) After you hear recall dial tone, enter the authorization code, for example, the 7-digit station extension number (957-ZZZZ), 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

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 #)
Dial Plan	All	5-118
Class of Restriction	FRL	5-76
	Partitioned Group Number	
	Time of Day Plan Number	
Feature Access Codes	AAR Access Code	5-128
Toll Analysis (If crossover to ARS)	Dialed String	5-225
	Max/Min	
	RCL	
	UCL (1-10)	
	Toll List	
AAR Analysis	All	4-3
AAR Digit Conversion	All	4-16
Routing Patterns	All	4-76
Remote Home Number Plan Area	All	4-74
Time of Day Routing (optional)	All	4-85
Feature-Related System Parameters	AAR/ARS Dial Tone Required	5-133

- 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 "

- Toll Analysis — Complete the Dialed String, Min/Max, Toll List, RCL, and UCL fields to control outgoing call access. This is only required if an AAR call crosses over to become an ARS call via the Call Type field entry on the AAR Analysis form being administered as "ars" or by entries on the AAR Digit Conversion form.
- AAR Analysis Form — Complete all fields as required. The form allows for the mapping of customer dialed numbers to routing patterns. This form replaces the RNX Translation Table from the previous release of the System.
- 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.
- Remote 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.

Complete 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 Routing Pattern Form

Make assignments as required for the following fields:

- **Pattern Number** — Enter a Pattern Number 1 through 254.
- **Grp No.** — Enter the desired trunk group number 1 through 99.
- **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 Prefix digit 4 will always 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 (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 11) 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 (RHNPA) 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 RHNPA Table forms available. Select the proper RHNPA Table form(s) and make assignments as required for the following fields:

- **RHNPA 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 (1 through 254) 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 RHNPA 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.

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), is used to generate various reports on the status of ACD agents, splits, and trunks.

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

ACD is implemented using the features or functions listed below. These features can be used singularly or in combination with each other. The features are listed alphabetically below and associated administration instructions are provided with each feature's coverage (this chapter).

- Abandoned Call Search
- Agent Call Handling
  - Call Work Codes
  - Stroke Counts
  - Forced Entry of Stroke Counts
- Attendant Console
- Call Management System
- Call Vectoring
- Central Office Trunk Group
- Class of Restriction
- Foreign Exchange Trunk Group
- Hunting
- Intraflow and Interflow
- Lookahead Interflow
- Queue Status Indications
- Recorded Announcements
- Service Observing
- Stations
- Wide Area Telecommunications Service Trunk Group

Figure 3-5 provides an example of an ACD arrangement.

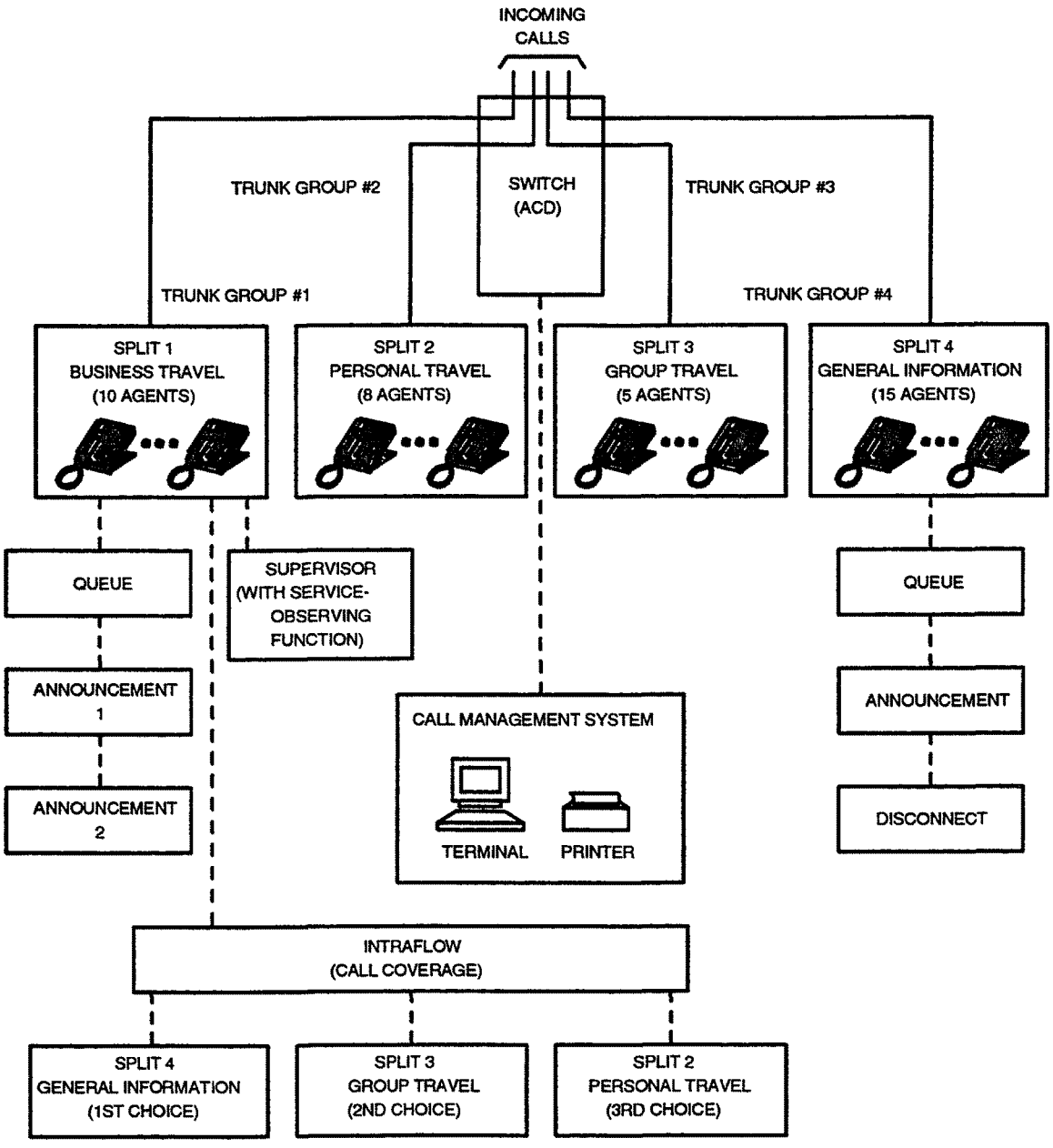


Figure 3-5. Typical Automatic Call Distribution Arrangement

Administration

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: CO FX Tie WATS	Incoming Destination	4-88
Attendant Console	Headset, Auto Answer	5-38
Station	Headset, Auto Answer	5-257
Hunt Groups	ACD	5-153
Feature-Related System Parameters	ACD Log-In Identification Length	5-133

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

- Attendant Console Form — Enter "y" in the Headset and Auto Answer fields.
- Station Forms — If required, enter "y" in the Headset and Auto Answer fields. Assign voice terminals, as required, including the CALLMASTER™ digital voice terminal.
- Hunt Groups Form — Complete fields that apply when ACD field is set to "y".
- 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 access ACD.

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 21C-49 indicator lamp may be used as a queue warning level 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 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.

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 that Automatic Callback is not functional for call 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)	5-133
Feature Access Codes	Automatic Callback Activation/Deactivation	5-128
Station (multi-appearance)	Button/Feature Button Assignments -auto-cback	5-235
Class of Service	Auto Callback (0-15)	5-81

- 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.

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 ACA Referral Calls ACA Referral Destination ACA Short Holding Time Originating Extension ACA Long Holding Time Originating Extension ACA Remote PBX Identification	5-133
Attendant Console	Feature Button Assignments -aca-call	5-38
Trunk Groups:	ACA Assignment Short Holding Threshold Long Holding Time Short Holding Time	
Access		4-94
APLT		4-113
CO		4-131
CPE		4-147
DMI-BOS		4-152
FX		4-184
ISDN-PRI		4-200 4-67
RLT		4-224
Tandem		4-241
Tie		4-261
WATS		4-282
Station (multi-appearance)	Button/Feature Button Assignments -aca-call	5-235

- 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 PBX Identification, when ACA referral is specified as "remote."
- Attendant Console Form — 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.

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 the referral destination is not a display-equipped voice terminal.

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	5-76
	Partitioned Group Number	
	Time of Day Plan Number	
Dial Plan	Area Code	5-118
	ARS Prefix 1 Required	
Feature Access Codes	Automatic Route Selection (ARS) Access Code	5-128
Toll Analysis	Dialed String	5-225
	Max/Min	
	RCL	
	UCL (1-10)	
	Toll List	
ARS Analysis	All	4-11
ARS Digit Conversion	All	4-16
Routing Patterns	All	4-76
Remote Home Numbering Plan Area (RHNPA)	All	4-74
ARS Toll Table	All	4-20
Time of Day Routing	All	4-85
Feature-Related System Parameters	AAR/ARS Dial Tone Required	5-133

- 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 & 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 Partioning, 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 outpulsed 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** — Assign "fac" (Feature Access Code) as the Identification for the Digit 9.

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 (see example form which follows discussion):

- **Pattern Number** — Enter a Pattern Number 1 through 254.
- **Grp No.** — Enter the desired trunk group number 1 through 99.
- **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 HNPA.

4 Indicates that Prefix digit 4 will always 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 (see next entry).

- **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 when this trunk group is selected for use within this pattern.
- **Inserted Digits** — Enter the actual digits (0 through 36) to be inserted. The digits may be divided into groups separated by a wait for dial tone separator. "Wait" takes two digit places. The "," is used for pause, "+" for the second dial tone, and "%" for end-to-end signaling.

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. Code 919.
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.

```
                                                              Page 1 of 1
                                   Pattern Number: __
Pattern Assignments (Enter Up To 6)
    Grp.    FRL  NPA     Prefix   Toll    No. Del     Inserted                IXC
    No.                    Mark    List    Digits      Digits
1.  ___     _    ___       _       _       _         ____________________    ___
2.  ___     _    ___       _       _       _         ____________________    ___
3.  ___     _    ___       _       _       _         ____________________    ___
4.  ___     _    ___       _       _       _         ____________________    ___
5.  ___     _    ___       _       _       _         ____________________    ___
6.  ___     _    ___       _       _       _         ____________________    ___
    BCC Value              CA-TSC            Service/Feature
    0  1  2  3  4   TSC     Request
1.  _  _  _  _  _    _      ________          ____________________  Band: ___
2.  _  _  _  _  _    _      ________          ____________________  Band: ___
3.  _  _  _  _  _    _      ________          ____________________  Band: ___
4.  _  _  _  _  _    _      ________          ____________________  Band: ___
5.  _  _  _  _  _    _      ________          ____________________  Band: ___
6.  _  _  _  _  _    _      ________          ____________________  Band: ___
```

Screen 3-13. Routing Pattern Form (Page 1 of 1)

Implementation Note:

The IXC, BCC Value, TSC, CA-TSC Request and Service/Feature fields are only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

The Band field is only displayed if the Service/Feature field is "outwats-band".

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 (1 through 254). An associated Call Type field for each Dialed String entry is used to identify the call type (for example, international, operator assisted, FNPA, HNPA, and so on).

Completing 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 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 ten 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 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. Note that 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 -Auto-wkup	5-235
Attendant Console	Feature Button Assignments -Auto-wkup	5-38
Class of Service	Console Perms	5-81
Feature Access Codes	Announcement Access Code	5-128
Feature Access Codes for Hospitality Features	Automatic Wakeup Call Access Code Voice Do Not Disturb Access Code Verify Wakeup Announcement Code	5-128
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 Time of Scheduled Wakeup Activity Report Time of Scheduled Wakeup Summary Report Routing Extension on Unavailable Voice Synthesis	5-148

- Station Forms — Assign an "auto-wkup" button to 510, 515, or 7400 series voice terminal equipped with a display.
- Attendant Console Form — Assign an "auto-wkup" button to the attendant console.
- 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 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 which must be on the same TN763C Auxiliary circuit pack.

Basic Call Management System

Basic Call Management System (BCMS) provides a subset of the 3B Call Management System (CMS) applications within the System's digital switch. BCMS provides real-time and historical reports which assists in the management of individual agents, Automatic Call Distribution (ACD) splits, and trunk groups.

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

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

Form	Field	Form Instructions (Page #)
Hunt/Trunk Groups	Measured BCMS Acceptable Service Level	5-153
VDN	Measured BCMS Acceptable Service Level	5-231
Feature-Related System Parameters	BCMS Parameters -Measurement Interval	5-133

- Hunt/Trunk Group and VDN Forms — Assign the Measured field on the Hunt Group and Trunk Group 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).

  On the Hunt Group and VDN forms, if the contents of the Measured field is internal or both, then the BCMS Acceptable Level field appears. This field specifies the number of seconds within which a BCMS call should be handled to be considered acceptable.

- 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.

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	5-235

- 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	5-235

- 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 #)
510D	All	5-279
515 BCT	All	5-279
Data Line Data Module	All	5-90

Hardware Requirements

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

- 510D Form — Requires a port on a TN754B Digital Line circuit pack.
- 515 BCT Form — Requires a port on a TN754B Digital Line circuit pack.
- Data Line Data Module Form — 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 that 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	5-38
Station (multi-appearance) (this feature is best utilized on a display-equipped voice terminal)	Button/Feature Button Assignments -verify	5-235

- Attendant Console Form — Assign a "Verify" button.
- Station Forms — Assign a "Verify" button per multi-appearance voice terminal.

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/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/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

To implement this feature, the following form(s) or sections of the form(s) must be completed. Note that 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 #)
ISDN-PRI Trunk Group	Service Type Usage Alloc	4-200 4-67
Routing Patterns	IXC Service/Feature Band	4-76

- ISDN-PRI Trunk Group Form — Enter "cbc" in the Service Type field (up to ten 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 for trunk group hardware requirements).

Call Coverage

Provides automatic redirection of certain calls to alternate answering positions in a Call Coverage path. Note that a Vector Directory Number cannot be administered as a Coverage Point.

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 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 #)
Call Coverage Answer Group	All	5-59
Call Coverage Paths	All	5-61
Feature-Related System Parameters	Coverage — Don't Answer Interval For Subsequent Redirection (rings) Coverage — Caller Response Inter- val (seconds) Keep Held SBA at Coverage Point	5-133
Feature Access Codes	Send All Calls Activation and Deac- tivation Transfer into AUDIX	5-128

Form	Field	Form Instructions (Page #)
Hunt Groups	All	5-153
Terminating Extension Group	All	5-223
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:__)	5-257
Station (multi-appearance) (covering user — the one to whom the call redirects)	Button/Feature Button Assignments -consult -cov-cback -send-calls (Type:__Grp:__)	5-235
Station (multi-appearance) (where users will place calls that can redirect to coverage)	Button/Feature Button Assignments -goto-cover	5-235
Trunk Group	Internal Alert	4-87
APLT		4-113
Tie		4-261

- 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 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 that 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 ICI 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 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 Deac-tivation	5-128
Station (multi-appearance)	Redirection Notification	5-235
	Button/Feature Button Assignments -call-fwd	
Class of Service	Call Forwarding (0-15)	5-81

- 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.

Guidelines for Trunk Timer Administration

On outgoing CO trunks, calls forwarded to off-premises locations may be dropped if the following timers are not set correctly:

- **Short Interdigit Timer** (Miscellaneous System Parameters screens) — This timer should be shorter than the Answer Supervision Timeout or Outgoing End of Dial Timer (CO trunk screens).

- **Off-Premises Tone-Detection Timeout** (Feature-Related System Parameters screens) — This timer should be no longer than the Answer Supervision Timeout or the Outgoing End of Dial Timer (CO trunk screens).
- **Unanswered DID Call Timer** (Miscellaneous System Parameters screens) — This timer should be twice as long as the Answer Supervision Timeout (CO trunk screens).

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) data and VDN 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 3-5 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 part:

- 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 #)
Processor Interface Data Module	All (for one CMS link)	5-113
Interface Links	All (for one CMS link)	5-167
Processor Channel Assignment	All (for one CMS link)	5-190
Modular Processor Data Module	All	5-106
Hunt Groups	Measured By MIS	5-153

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

- Interface Links Form — Complete all fields on the form for one link, as required. Assign a link from the Processor Interface circuit pack for CMS. 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. 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 CMS interface. Enter the CMS link number from the Interface Links Form.
- Modular Processor Data Module Form — Complete all fields as required.
- Hunt Groups Form — Complete the form that applies when Measured By MIS is answered either "external" or "both". The Release 3 CMS (required for G1.2) can measure up to 99 hunt groups if required. Measured hunt group numbers do not have to begin with "1" as required with previous releases of the CMS.

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 TN754B Digital Line circuit pack and a Modular Processor Data Module (MPDM). Each auxiliary queue warning lamp requires one port on a TN742, TN746B, or TN769 Analog Line circuit pack. A 21C-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.

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	5-128
Feature-Related System Parameters	Call Park Timeout Interval (minutes)	5-133
Station (multi-appearance)	Button/Feature Button Assignments -call-park	5-235
Console Parameters	Common Shared Extensions- (all fields)	5-83

- 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	Call Pickup Access Code	5-128
Pickup Groups	All	5-188
Station (multi-appearance)	Button/Feature Button Assignments -call-pkup	5-235

- Feature Access Codes Form — Complete Call Pickup Access Code field.
- Pickup Groups Form — Establish pickup groups.
- Station Forms — Assign Call Pickup (call-pkup) buttons to voice terminals, if desired.

Hardware Requirements

None.

Call Prompting

Provides flexible call handling based on information (for example, 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 is 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 which 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 3i Global Feature Description*, 555-230-203, for detailed information on the Call Prompting and Call Vector features.

Administration

To implement this feature, the following form(s) or section(s) of forms must be completed. Note that 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.

Form	Field	Form Instructions (Page #)
Vector Directory Number	All	5-231
Hunt Groups	Vector	5-153
Call Vector	All	5-68
Station (multi-appearance)	Button/Feature Button Assignments - callr-info	5-235
Attendant Console	Feature Button Assignments -callr-info	5-38

- **Vector Directory Number Form** — Complete a VDN form for each Call Vector to be defined. Up to 500 VDNs may be administered in the System.

- **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. 256 Call Vector forms are available for administration in the System.
- **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
- An external announcement facility (analog announcements). Note that 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. Up to a maximum of 10 TN744s are allowed in the System. Note that the TN744s are not to be used as general TTRs. Other TTRs (that is, TN748C) 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 a vector is to be used with BRI sets, then it is recommended that either of the following steps be executed *before* collecting digits: a) an announcement step OR b) "wait time 2 sec with ringback".

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). 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 15 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 four primary ways that a VDN can be used to access a vector are as 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.

Refer to *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203, or *DEFINITY Communications System Generic 3 Call Vectoring Guide*, 555-230-520, for a complete description of Call Vectoring and associated features. The guide supplement (555-230-591) contains G3i Global information.

Administration

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	5-231
Hunt Group	Vector	5-153
Call Vector	All	5-68
Trunk Groups	Incoming Destination	
Access	Night Service	4-94
APLT	Trunk Member (Night)	4-113
CO		4-131
DID		4-166
DMI		4-152
FX		4-184
ISDN-PRI		4-200 4-67
RLT		
Tie		4-261
Tandem		4-241
WATS		4-282
Feature-Related System Parameters	Music/Tone-On-Hold	5-133

- **Vector Directory Number Form** — Complete a VDN form for each Call Vector to be defined. Up to 500 VDNs and 256 Call Vectors may be administered in the System.
- **Hunt Group Form** — Enter "y" in the Vector field in each Hunt Group and Split (that is, ACD Hunt Group) to be vector controlled.
- **Call Vector Form** — Complete a Call Vector form for each Call Vector to be defined Up to 256 Call Vectors may be administered in the System.

- **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 field. This is required for the "Wait With Music" Call Vector command.

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
- An external announcement facility (analog announcements). Note that each analog announcement requires a port on a TN742, TN746B, or TN769 Analog Line circuit pack.

  Music source connected to a port on a TN763C Auxiliary Trunk circuit pack.

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	5-235

- 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.

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

Form	Field	Form Instructions (Page #)
ISDN-PRI Trunk Group	All fields including "Per Call CPN/BN"	4-200 4-67

- ISDN-PRI Trunk Group — 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.

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 3-6). 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.

NOTE:
For more detailed information on CallVisor ASAI, refer to *DEFINITY CallVisor ASAI Protocol Reference*, 555-230-221, and *DEFINITY CallVisor ASAI Technical Reference*, 555-230-220.

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 is transmitted across the interface.
- The adjunct can manipulate active calls in which the adjunct is not a party on the calls (that is, 3rd 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.
- The adjunct can query the switch for information associated with a particular item.

When the System is configured with an Expansion Port Network (with or without duplication), it is recommended that the ASAI resources home on the switch's Processor Port Network.

ASAI Feature Administration

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" instead. 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", and "logout".
- 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 3-1. Automatically Enabled ASAI Capabilities

Capability	Adjunct Call Control Group	Adjunct Routing Group	Domain Control Group	Event Notif. Group	Request Feature Group	Set Value Group
Call Ended Capability	X					
Event Reports	X		X	X		
Agent Logout			X			
Alerting	X		X	X		
Answered	X		X			
Busy	X		X	X		
Call Ended Event (FAC message)				X		
Call Initiated			X			
Call Offered to Domain				X		
Call Redirected			X	X		
Call Conferenced	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		
Request Feature					X	
Notification Request				X		
Notification Cancel				X		
Notification Ended				X		
Route End		X				
Route Request		X				
Route Select		X				
Set Value						X
Stop Call Notification				X		

(Continued on next page)

Table 3-1. 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 Make Call Proceed	X					
Third Party Merge	X		X			
Third Party Reconnect	X		X			
Third Party Relinquish Control	X		X	X		
Third Party Selective Hold	X		X			
Third Party Selective Drop	X		X			
Third Party Take Control	X			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 1 and Generic 3i Maintenance*, 555-204-105, Issue 5.

NOTE:
The Hunt Group, Vector, Special Information Tones, Class of Service, and Trunk Group forms may also require administration when implementing ASAI.

Note that the following provides information on assigning an ASAI link only. Refer to specific adjunct feature coverage (that is, 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 that the System can have either the ICM feature (using the ASAI) or the Outbound Call Management — Calling Party Number/Billing Number feature (using a BX.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 1 and Generic 3 Installation and Test*, 555-230-104, Issue 4i.

To implement the CallVisor ASAI link, the following form must be completed:

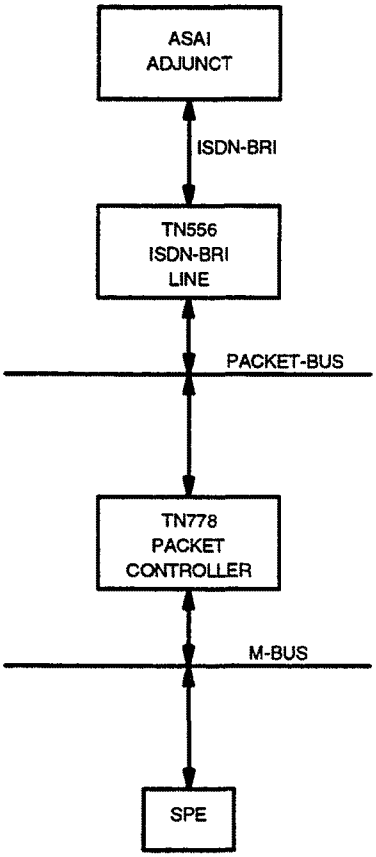
Form	Field	Form Instructions (Page #)
Station	Extension Type XID Fixed TEI TEI MIM Support CRV Length	5-235

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 3-6. 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 #)
Central Office Trunk Group	All	4-131
Digit Absorption	All	5-126
DS1	All	5-126

- Central Office Trunk Group 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.

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 DS1 Interface circuit pack is required for each CO trunk to be assigned. A TN747B provides eight ports and a TN767 provides 24 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

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	5-38
Console Parameters	CAS RLT Trunk Group Number CAS Back-Up Ext Timed Reminder on Hold Return Call Timeout (sec)	5-83
Station (multi-appearance)	Button/Feature Button Assignments -cas-backup -flash -trunk name -night serv	5-235
Release Link Trunk Group	All	4-224
Feature Access Codes	CAS Remote Hold Access Code	5-128

- 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 that 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.
- Release Link Trunk Group 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.

Screens 3-14 and 3-15 show typical Console Parameters and RLT Trunk Group forms, respectively, for a CAS Main location. Screens 3-16 and 3-17 show typical Console Parameters and RLT Trunk Group forms, respectively, for a CAS Branch location.

```
                              CONSOLE PARAMETERS                Page 1 of 3
        Attendant Group Name: CAS
                         COS: 1                                      COR: 1
      Calls in Queue Warning: 2                    Attendant Lockout? n
       Ext Alert Port (TAAS):
                         CAS: main
                                                Night Service Act. Ext.:
                IAS (Branch)? n                 IAS Tie Trunk Group No.:
        IAS Att. Access Code:
                                             DID-LDN Only to LDN Night Ext? n
 TIMING
  Time Reminder on Hold (sec): 60        Return Call Timeout (sec): 60
  Time in Queue Warning (sec):
INCOMING CALL REMINDERS
       No Answer Timeout (sec):          Alerting (sec):

ABBREVIATED DIALING
     List1:                    List2:                    List3:

                    COMMON SHARED EXTENSIONS
   Starting Extension: 1900           Count: 4
```

Screen 3-14. Typical CAS Main Console Parameters Form

```
                                                                  Page 1
                                  TRUNK GROUP

Group Number: xx                    Group Type: rlt           SMDR Reports? y
  Group Name: RLT_BRANCH                  COR: 1                      TAC: 74
   Direction: incoming       Outgoing Display? n     Trunk Signaling Type:
                               Busy Threshold: 99          Night Service:1234
Queue Length: 40                                    Incoming Destination:  0

TRUNK PARAMETERS
   Trunk Type (in/out):delay/delay       Incoming Rotary Timeout(sec): 5
    Outgoing Dial Type: tone                        Incoming Dial Type: tone
                                                     Sig Bit Inversion: none
    Incoming Dial Tone? y

     Disconnect Supervision? y
 Answer Supervision Timeout: 10            Receive Answer Supervision? n
```

Screen 3-15. Typical CAS Main Release Link Trunk Group Form

```
                              CONSOLE PARAMETERS                Page 1 of 3
        Attendant Group Name: CAS-1
                         COS: 1                                      COR: 1
      Calls in Queue Warning: 2                    Attendant Lockout? n
       Ext Alert Port (TAAS):
                         CAS: branch
                                                Night Service Act. Ext.:
               IAS (Branch)? n                  IAS Tie Trunk Group No.:
       IAS Att. Access Code:
                                          DID-LDN Only to LDN Night Ext?  n
   TIMING
    Time Reminder on Hold (sec): 60       Return Call Timeout (sec):  60
    Time in Queue Warning (sec):
  INCOMING CALL REMINDERS
       No Answer Timeout (sec):           Alerting (sec):

  ABBREVIATED DIALING
       List1:                    List2:                    List3:

                     COMMON SHARED EXTENSIONS
    Starting Extension: 5600           Count: 4
```

Screen 3-16. Typical CAS Branch Console Parameters Form

```
                                                                  Page 1
                                TRUNK GROUP

Group Number: 10                  Group Type: rlt          SMDR Reports? n
  Group Name: OPERATOR                    COR: 1                    TAC: 80
   Direction: outgoing      Outgoing Display? y     Trunk Signaling Type:
                              Busy Threshold: 60           Night Service:
Queue Length:10                                   Incoming Destination:

TRUNK PARAMETERS
   Trunk Type (in/out): delay/delay      Incoming Rotary Timeout(sec): 5
    Outgoing Dial Type: tone                        Incoming Dial Type: tone
                                                     Sig Bit Inversion: none
    Incoming Dial Tone? y
     Disconnect Supervision? y
 Answer Supervision Timeout: 10            Receive Answer Supervision? n
```

Screen 3-17. Typical CAS Branch Release Link Trunk Group Form

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. Systems may have only 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	5-76
Attendant Console	COR	5-38
Authorization Codes	COR	5-57
Console Parameters	COR	5-83
Hunt Groups	COR	5-153
Loudspeaker Paging and Code Calling Access	COR (1-9, all)	5-174
MPDM/MTDM Data Module	COR	5-106
Netcon Data Module	COR	5-110
Processor Interface Data Module	COR	5-113
Recorded Announcement Data Module	COR	5-116
Station	COR	5-235
Remote Access	COR (Barrier Code)	5-199
Terminating Extension Group	COR	5-223
Trunk Groups	COR	4-87
Vector Directory Number	COR	5-231

- Class of Restriction Form — Complete appropriate fields.
- Complete the "COR" fields for the following forms:
  - — Attendant Console
  - — Authorization Codes
  - — Console Parameters
  - — Data Modules (includes MPDM, MTDM, Recorded Announcement, Data Line, Netcon, 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)
- — 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)
- WATS
- 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 in order 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	1
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 which 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 1 and Generic 3i Feature Description*, 555-230-201, 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	5-81
Attendant Console	COS	5-38
Console Parameters	COS	5-83
MPDM/MTDM Data Module	COS	5-106
Processor Interface Data Module	COS	5-113
Netcon Data Module	COS	5-110
Recorded Announcement Data Module	COS	5-116
Data Line Data Module	COS	5-90
Station	COS	5-235
Remote Access	COS	5-199

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)	5-174

- 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	5-235

- 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	5-235

- 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·__)	5-235

- 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 1 and Generic 3 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 #)
CPE Trunk Group	All	4-147

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 Trunk Operation

On analog CO and FX trunks, cut-through operation allows a call to bypass PBX supervision and obtain dial tone directly from the CO. When the caller dials the TAC of a CO or FX trunk that has been administered for cut-through operation, the caller receives dial-tone directly from the CO where the trunk terminates. After the caller receives dial tone, the digits the caller dials are outpulsed over the connecting trunk as DTMF or rotary signals, depending upon how the Outgoing Dial Type field has been administered. In addition, the PBX collects the outgoing digits, determines whether the call is a toll-call (and whether the caller has toll-call permission), records the call in SMDR, and updates the caller's display, if appropriate.

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 (CO/FX)	Cut-through? Outgoing Dial Type	4-131 4-184

- Trunk Group Form —
  - — Enter "co" or "fx" in the Trunk Type field.
  - — Enter "y" in the Cut-through field to obtain cut-through operation when the caller dials a TAC.
  - — Enter "tone" or "rotary" in the Outgoing Dial Type field.

Hardware Requirements

None.

D-Channel Backup

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 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.

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 which 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 less 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.

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 Origination Access Code	5-128
Station (multi-appearance)	Button/Feature Button Assignments -data-ext (Ext:__)	5-235
Data Module MPDM/MTDM Data Line	All	5-106
Modem Pool Group	Circuit Pack Assignments (1-32 for External Modem Pools; 1-16 for Integrated Modem Pools)	5-184

- 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.

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 Data Line	All	5-106
Modem Pool Group	Circuit Pack Assignments (1-32 for External Modem Pool; 1-16 for Integrated Modem Pools)	5-184

- Data Module Form — Complete an MPDM/MTDM or Data Line Data Module 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. When administered in multipoint (passive bus) configuration, a port may be shared by up to two endpoints which 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 a MTDM when using the combined Modem Pooling feature.
  - **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.
  - **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 ADM (Asynchronous Data Module) 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. See also 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

Provides for automatic nondial placement of a data call to an endpoint when the originator goes off-hook.

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	All	5-3
Station	Data Module form AD List Special Dialing Option Hot Line Destination AD Dial Code	 5-235
Data Modules: Data Line Processor Interface MPDM, MTDM Netcon	AD List1: Special Dialing Option AD Dial Code	5-89

- 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 (for example, "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 (for example, "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.

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
- Data service unit associated with a private data line or the digital data system
- Data set
- Data terminal
- Local host computer
- Message 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)
- Station Message Detail Recording (SMDR) output device
- System Printer
- 3270 type data modules

Figure 3-7 shows typical data module connections to the System.

Administration

To implement data modules the following forms must be completed.

Form	Field	Form Instructions (Page #)
MPDM/MTDM	All	5-106
Recorded Announcement Data Module	All	5-116
Processor Interface Data Module	All	5-113
Data Line Data Module	All	5-90
Netcon Data Module	All	5-110

- MPDM/MTDM Data Module Form
  - — 700A — Complete one MPDM/MTDM Data Module form for each PDM-700A to be assigned. PDM-700A provides an interface to a Message Server Adjunct (MSA), SMDR output device, an on-premises administration terminal, data terminal, or a local host computer.
  - — 700B — Complete one MPDM/MTDM Data Module form for each TDM-700B to be assigned. A TDM-700B provides an interface to an SMDR output device, a data set, or a data service unit associated with a private data line or the Digital Data System (DDS).
  - — 700C — Complete one MPDM/MTDM Data Module form for each TDM-700C to be assigned. The TDM-700C functions the same as a TDM-700B.
  - — 700D — Complete one MPDM/MTDM Data Module form for each PDM-700D to be assigned. The PDM-700D functions similar to the PDM-700A. The MPDM can support a variety of data interface requirements. It provides V.35, EIA 232C, or RS-449 interfaces and an Automatic Calling Unit (ACU) RS-366 interface.
  - — 700E — Complete one MPDM/MTDM Data Module form for each TDM-700E to be assigned. The MTDM is a multipurpose data module configured to provide digital switch interface to support trunk data requirements.
  - — 7400A — Complete on MPDM/MTDM Data Module form for each 7400A Data Module to be assigned. The 7400A may be used as a replacement for an MTDM in support of the combined Modem Pooling feature

- — 7400B — Instructions for administering a 7400B data module are provided in the appropriate voice terminal (that is, 7400D series, CALLMASTER digital voice terminal) coverage provided in Chapter 5.
- — 7500D — Instructions for administering a 7500D data module are provided in the appropriate voice terminal (that is, 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 is used with the Netcon Channel form that 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 — 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/Message 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.
  - — Outbound Call Management (OCM) System (maximum of one)
  - — ISDN Gateway Adjunct (maximum of one) — Supports the Station Identification/ Automatic Number Identification (SID/ANI) feature

  ⇒ NOTE:
  Not all maximums can be achieved at the same time. Either the OCM or ISDN Gateway Adjunct interface can be supported in the System, but not both.

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 is 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.
- Netcon Data Module Form — 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 (SMDR) — 1 port
2. Maintenance Circuit Pack (RMATS, local Manager I, and remote Manager I) — 4 ports
3. Netcon Channels (BCMS, Remote Manager I, and so on) — 4 ports

Software Path:
1. Terminal User ID's (TUI's) — 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)
PPN Manager I Terminal Port	No	Yes (1)
EPN Manager I Terminal Port	No	Yes (1)
Remote Manager I	Yes (2)	Yes (2)
BCMS Terminal	Yes (2)	Yes (2)
INADS	No	Yes (6)
SMDR - DCE Port	No	No
SMDR - 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.

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).

* Registered trademark of International Business Machines Corporation

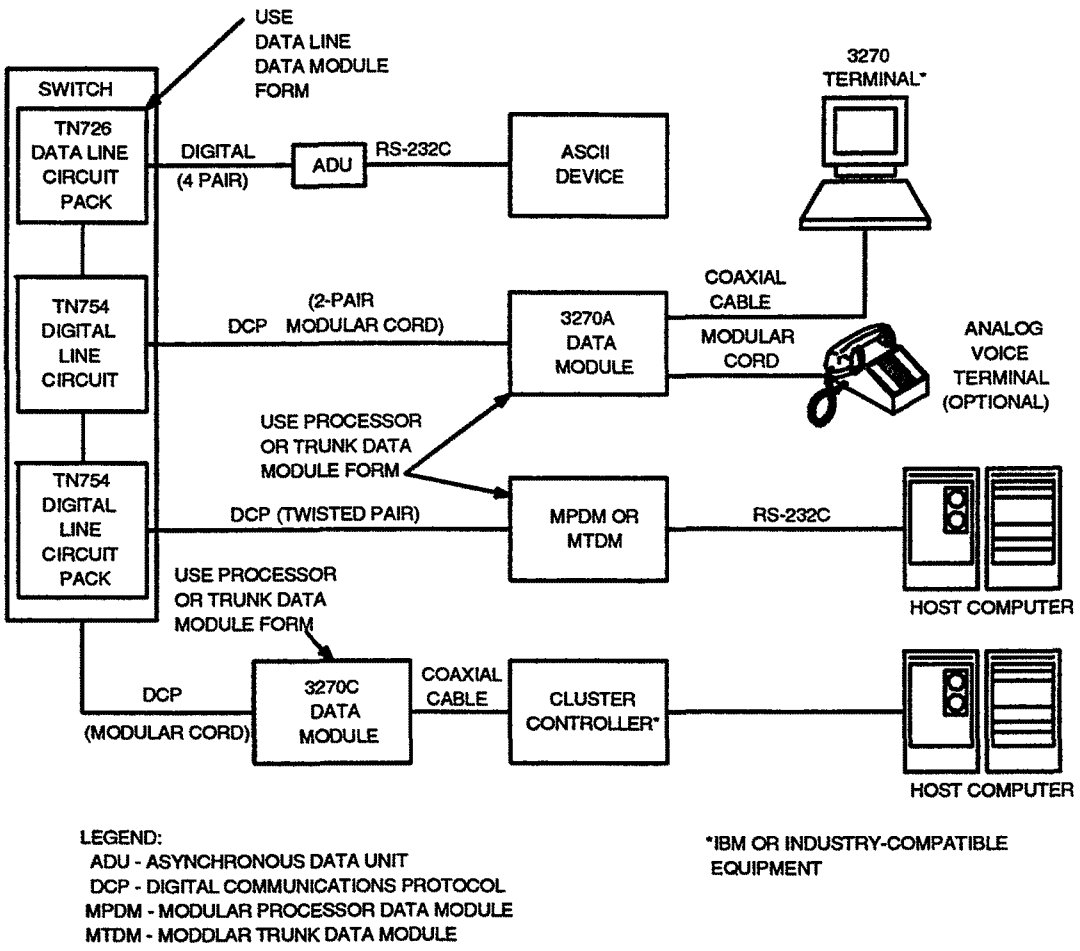


Figure 3-7. Typical Data Module Connections

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 #)
MPDM/MTDM Data Module	All	5-106

- 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 which 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	5-128
Class of Service	Data Privacy (0-15)	5-81

- 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 which 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	5-235
Trunk Groups:	Data Restriction	
Access		4-94
APLT		4-113
CO		4-131
CPE		4-147
DID		4-166
FX		4-184
ISDN-PRI		4-200 4-67
RLT		4-224
Tandem		4-241
Tie		4-261
WATS		4-282

- 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

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

Form	Field	Form Instructions (Page #)
Tie Trunk Group (DCS TG)	Outgoing Display	4-261

- Tie Trunk Group 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.

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.

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 -act-tr-grp -deact-tr-g -remote-tgs	5-38

- 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.

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.

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	Display Module Button Assignments	5-38

- Attendant Console Form — Assign up to eight buttons in the Display Module Button Assignment field 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.

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 that automatic callback calls do not apply for 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	5-133
Feature Access Codes	Automatic Callback Activation Automatic Callback Deactivation	5-128
Station (multi-appearance)	Button/Feature Button Assignments -auto-cback	5-235
Class of Service	Automatic Callback (0-15)	5-81

- 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.

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

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 Referral Calls	5-133
Attendant Console	Feature Button Assignments -aca call	5-38
Station (multi-appearance)	Button/Feature Button Assignments -aca call	5-235
Tie Trunk Group	ACA Assignment	4-261

- 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 PBX identification must also be entered. The remote PBX ID is the same PBX code 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.
- Tie Trunk Group 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.

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.

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	5-38
Station (multi-appearance)	Button/Feature Button Assignments -verify	5-235

- 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.

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 that 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

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 Call Forwarding Deactivation	5-128
Station	Redirect Notification Button/Feature Button Assignments -call-fwd	5-235
Class of Service	Call Fwd-All Calls (0-15)	5-81

- 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.

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

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	5-133
	Stations With System-wide Message Retrieval Permission	
Feature Access Codes	LWC Message Retrieval Lock	5-128
	LWC Message Retrieval Unlock	
	LWC Send A Message	
	LWC Cancel A Message	
Station	LWC Reception	5-235
	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 -cov-msg-rt -delete-msg -next -lwc-cancel -call-disp -lwc-store -aut-msg-wt (Ext.__)	5-38

- 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.

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 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 re-establish 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.

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

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

Note that 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 the manual for related instructions.

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)	4-80
ISDN TSC Gateway Channel Assignments	All	4-69
ISDN PRI Trunk Group (Page 2 of form)	Used for DCS? PBX ID DCS Signaling NCA TSC Signaling Group	4-200 4-67
Routing Patterns	TSC CA-TSC Request	4-76
Processor Channel Assignment	Appl	5-190
Feature-Related Sys Parms	Record TSCs for SMDR	5-133

- 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. Valid entries are 0 through 256. Default is 0.
  - Max number of CA TSC — Specifies the maximum number of CA-TSCs that will be supported in the Signaling Group. Valid entries are 0 through 400. 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.

    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", "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.
- ISDN Trunk Group 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 "PBX ID" and DCS Signaling" appear.
  - PBX ID (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. Valid entries are "1" through "8" or blank. 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 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. The Gateway PBX number MUST not be used in this field if the destination PBX is an ISDN DCS PBX.

Example of an Integrated DCS Network

Figure 3-8 shows an example of an integrated DCS network configuration. PBXs A, B, C, E, and F are PBXs which do not support the DCS over ISDN-PRI D-Channel feature. PBXs D, G, and H are PBXs which support the DCS over ISDN-PRI D-Channel feature. PBX D acts as an **ISDN DCS Gateway Node** for PBXs A, B, and C to transport DCS messages to and/or from PBXs on the other side of the AT&T network. PBX G acts as an **ISDN DCS Gateway Node** for PBXs E and F to transport DCS messages to and/or from PBXs on the other side of the AT&T network as well as to/from PBX H.

The DCS configuration between PBXs A, B, C, and D, as well as between PBXs E and F, is a traditional DCS network. That means they are interconnected with tie trunks and separate BX.25 data links[1]. The tie trunks are used for voice communication while the BX.25 data links are used to transport supplementary call and feature control information. DCS messages may **hop/tandem**[2] through one PBX to another PBX in a traditional DCS network.

PBXs D, G, and H are interconnected with ISDN-PRI facilities which include B-channels and D-Channels. The voice communication will be carried by B-channels while the control information will be carried by D-Channels. DCS messages exchanged in these PBXs are ISDN DCS messages. ISDN DCS messages from PBX D to PBX H are tandemed by PBX G.

1. These tie trunks or the BX.25 data links could be ISDN-PRI B-channels
2. A DCS message may be hopped/tandemed to another PBX in a **traditional DCS network** depending on the DCS feature and the DCS network configuration

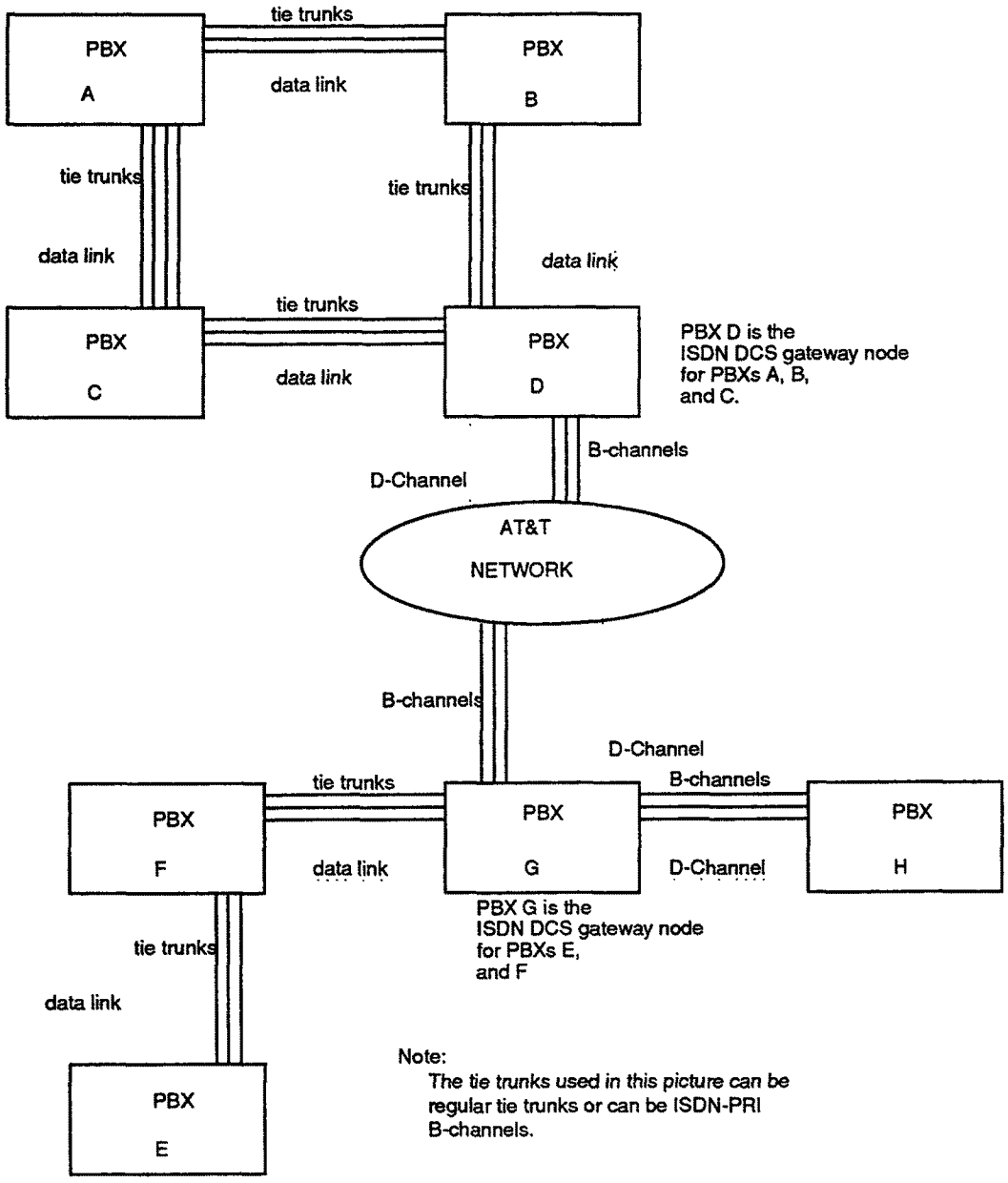


Figure 3-8. An Integrated DCS Network

Figure 3-9 shows typical NCA-TSCs and Data Link connections in an Integrated DCS network.

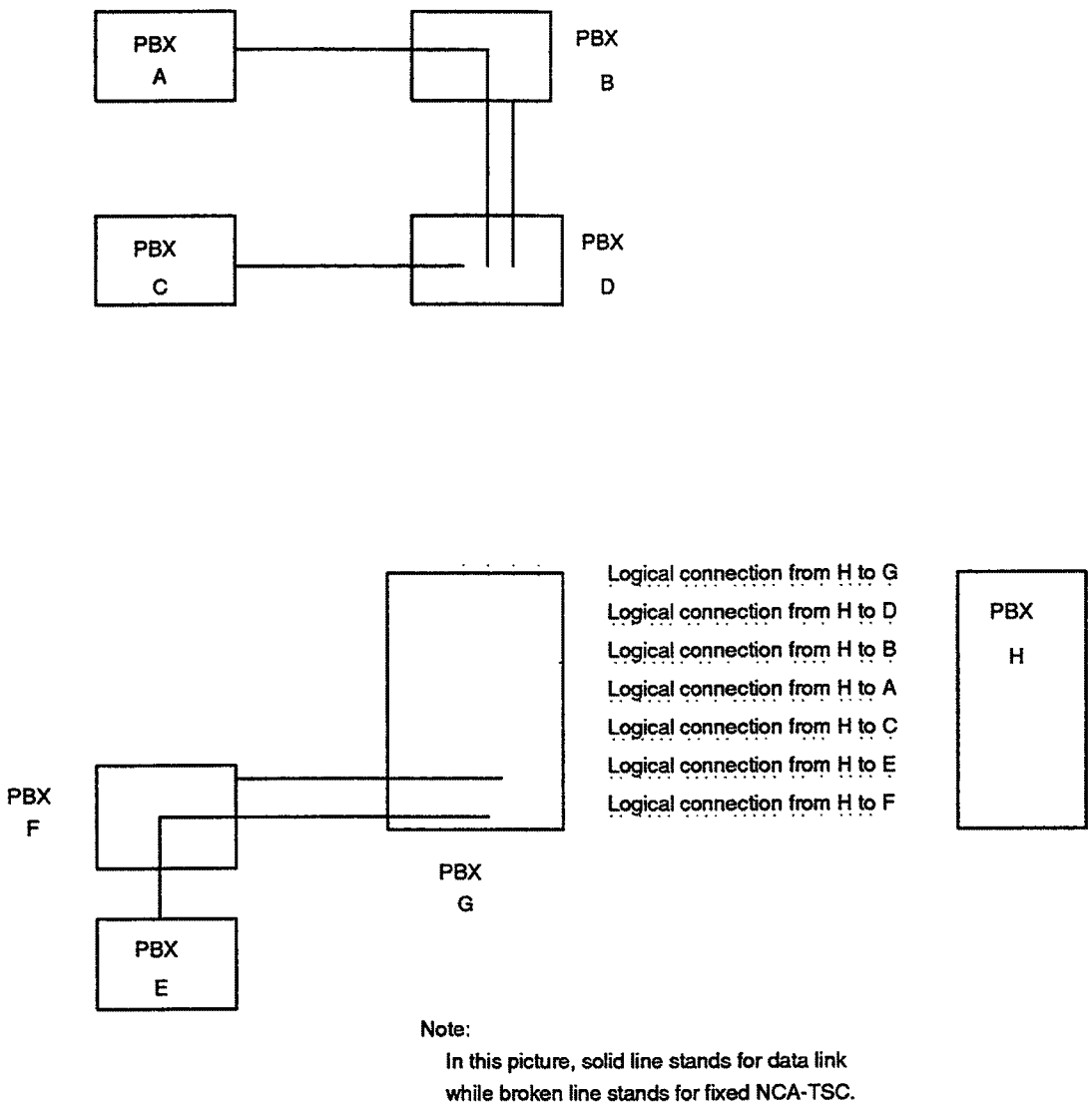


Figure 3-9. NCA-TSC and Related Data Link Assignments From PBX H To Other PBXs

Table 3-2 shows the logical connections required for PBX H to other PBXs in the integrated DCS network shown in Figure 3-9.

Table 3-2. Example Integrated DCS Network NCA-TSC/Data Link Connections

From PBX	To PBX	Logical Connection
H	A	An administered NCA-TSC from PBX H to PBX D which then connects to a logical channel from PBX D to PBX A which is hopped through PBX B.
H	B	An administered NCA-TSC from PBX H to PBX D which then connects to a logical channel from PBX D to PBX B.
H	C	An administered NCA-TSC from PBX H to PBX D which then connects to a logical channel from PBX D to PBX C.
H	D	An administered NCA-TSC from PBX H to PBX D.
H	E	An administered NCA-TSC from PBX H to PBX G which then connects to a logical channel from PBX G to PBX E which is hopped through PBX F.
H	F	An administered NCA-TSC from PBX H to PBX G which then connects to a logical channel from PBX G to PBX F.
H	G	An administered NCA-TSC from PBX H to PBX G.

From PBX H, a separate administered NCA-TSC connection is needed to every other PBX in the Integrated DCS network. If the terminating PBX is not a PBX that supports the DCS over ISDN-PRI D-Channel feature then the administered NCA-TSC is terminated at the appropriate ISDN DCS gateway node and a gateway channel is administered on the gateway node to complete the connection.

All other PBXs in the Integrated DCS network will have the similar link configuration.

Example DCS Network Configuration

Figure 3-10 provides an example of a traditional DCS Network configuration. PBXs 1, 2, and 3 are TSC Capable PBXs that support DCS over ISDN PRI D-Channel. PBXs 4 and 5 do not support DCS over ISDN PRI D-Channel, but use traditional DCS. Solid lines represent administered NCA-TSCs, dotted lines represent gateway channels and hop channels, and dashed lines represent SCI links.

- Notation
  - 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.

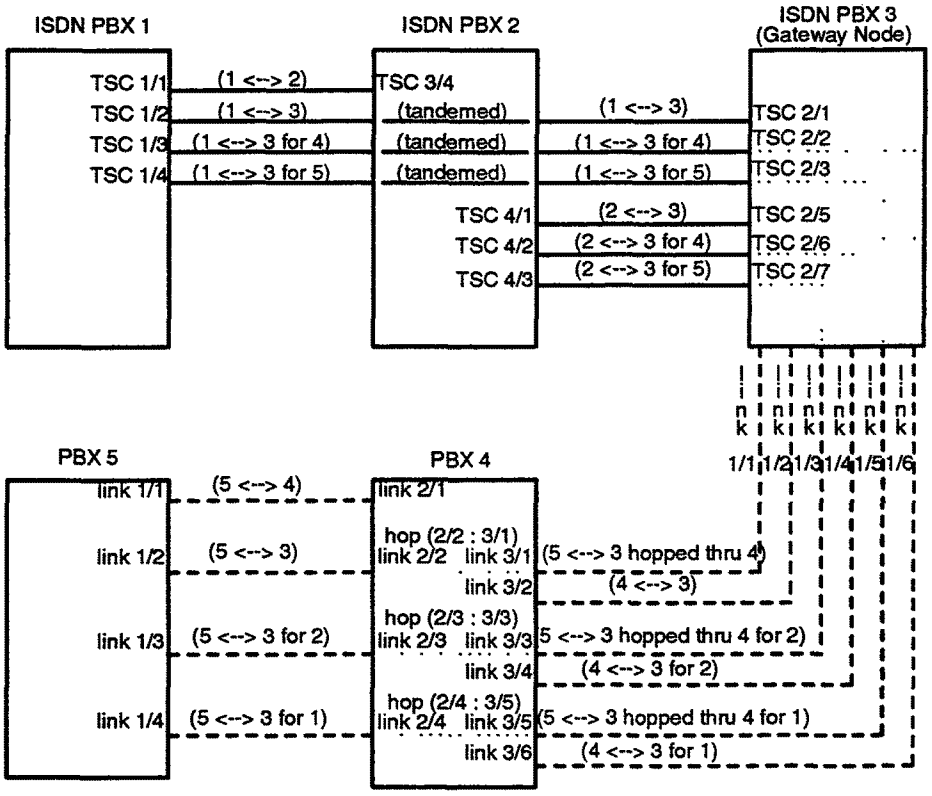


Figure 3-10. Sample DCS Network Configuration

NOTE:
In the above figure, PBXs 1, 2, and 3 support TSCs. PBXs 4 and 5 do not support TSCs.

Administration Example

It should be noted that the following administration is not intended to be complete but merely to aid in the understanding of Figure 3-10. Refer to the various screen forms elsewhere in the manual for specific information related to the referenced forms and fields on forms

The following describes the administration necessary to configure the DCS Network shown in Figure 3-10. For administered NCA-TSC administration, all the administered NCA-TSCs are assumed to be enabled and the establishment strategy is assumed to be in accordance with one of the first three examples presented in the following tables.

An entry of NA on the Processor Channel Assignments form means that field will be left blank.

- Assumptions:
  - — Extensions in the range 2000 through 2999 terminate at PBX 1
  - — Extensions in the range 3000 through 3999 terminate at PBX 2
  - — Extensions in the range 4000 through 4999 terminate at PBX 3

Administration for PBX 1

- Administered NCA-TSC Administration:

Signaling Group 1				
Admin. TSC Index	**Local Ext.**	**Dest. Digits**	**Far End PBX ID**	**Notes**
1	2000	3000	2	A. NCA-TSC PBX 1<-->PBX 2
2	2001	4000	3	A. NCA-TSC PBX 1<-->PBX 3
3	2002	4001	4	Use Node 3 as a gateway to PBX 4
4	2003	4002	5	Use Node 3 as a gateway to PBX 5

Administration for PBX 2

- Administered NCA-TSC Administration:

Signaling Group 4				
A. TSC Index	**Local Ext.**	**Dest. Digits**	**Far End PBX ID**	**Notes**
1	3001	4003	3	A. NCA-TSC PBX 2<-->PBX 3
2	3002	4004	4	Use Node 3 as a gateway to PBX 4
3	3003	4005	5	Use Node 3 as a gateway to PBX 5
Signaling Group 3				
A. TSC Index	**Local Ext.**	**Dest. Digits**	**Far End PBX ID**	**Notes**
4	3000	2000	1	A. NCA-TSC PBX 2<-->PBX 1

Administration for PBX 3 (Gateway PBX)

- Administered NCA-TSC Administration:

Signaling Group 2				
A. TSC Index	**Local Ext.**	**Dest. Digits**	**Far End PBX ID**	**Notes**
1	4000	2001	1	A. NCA-TSC PBX 3<-->PBX 1
2	4001	2002	gateway	Gateway Channel from PBX 1 to PBX 4
3	4002	2003	gateway	Gateway Channel from PBX 1 to PBX 5
5	4003	3001	2	A. NCA-TSC PBX 2<-->PBX 3
6	4004	3002	gateway	Gateway Channel from PBX 2 to PBX 4
7	4005	3003	gateway	Gateway Channel from PBX 2 to PBX 5

- Gateway Channel Administration :

Sig. Group	Administered TSC Index	Processor Channel	Application
2	2	10	dcs
2	3	9	dcs
2	6	8	dcs
2	7	7	dcs

- Processor Channel Administration :

Proc. Channel	Application	Int. Link	Channel	Remote Proc. Channel	PBX ID
5	dcs	1	1	5	5
6	dcs	1	2	6	4
7	gateway	1	3	7	NA
8	gateway	1	4	8	NA
9	gateway	1	5	9	NA
10	gateway	1	6	10	NA

Administration for PBX 4

- Processor Channel Administration:

Proc. Channel	Application	Int. Link	Channel	Remote Proc. Channel	PBX ID
6	dcs	3	2	6	3
8	dcs	3	4	8	2
10	dcs	3	6	10	1
11	dcs	2	1	11	5

- Hop Channel Administration:

Link	Channel	Link	Channel
3	1	2	2
3	3	2	3
3	5	2	4

Administration for PBX 5:

- Processor Channel Administration

Proc. Channel	Application	Int. Link	Channel	Remote Proc. Channel	PBX ID
5	dcs	1	2	5	3
7	dcs	1	3	7	2
9	dcs	1	4	9	1
11	dcs	1	1	11	4

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.

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 Button Assignments (1-6) for 301A Basic or (1-12) for the 302A Enhanced Attendant Console.	5-38
Trunk Groups:	Busy Threshold	
Access		4-94
APLT		4-113
CO		4-131
CPE		4-147
DMI-BOS		4-152
FX		4-184
ISDN-PRI		4-200 4-67
RLT		4-224
Tandem		4-241
Tie		4-261
WATS		4-282

- 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.

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).

For the AT command interface supported by the 7400A 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 Data Module	All Special Dialing Option Abbreviated Dialing List AD Dial Code	5-3

- 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 that 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 his/her 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	5-235
Station	Security Code	5-257
Feature Access Codes	Print Messages Access Codes	5-128

- 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 Message Server Adjunct (MSA) such as a 3B2 equipped with appropriate Message Server software and associated printers. Refer to the Message 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	5-118

- Dial Plan Form — Enter the local area code and whether or not a digit 1 is required to indicate a long distance call. Identify if a Uniform Dial Plan is to be used and complete all First Digit Table entries as required.
- If the Uniform Dial Plan (UDP) option is used, enter the number of digits in the plan (4 or 5), PBX Codes, Local/Remote Indicator, RNXs for all switches, and all PBX IDs.

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.

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.

Implementation of the switch for non-ISDN-PRI type calls can be accomplished in several ways. Note that 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 (for example, 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 #)
DID Trunk Group	All	4-166
Hunt Group	All	5-153
or		
Station (phantom extension)	All	5-235
or		
Terminating Extension Group	All	5-223
Call Coverage Paths	All	5-61

- DID Trunk Group 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 #)
Tie Trunk Group	All	4-261
Hunt Group	All	5-153
or		
Station (phantom extension)	All	5-235
or		
Terminating Extension Group	All	5-223
Call Coverage Paths	All	5-61

- Tie Trunk Group 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 — Administer same as for DID trunk group above.
- Station Form — This form can be administered as the interim extension instead of the Hunt Group form. Administer same as for DID trunk group above.
- Terminating Extension Group Form — This form can be administered as the interim extension instead of the Hunt Group form. Administer same as for DID trunk group above.
- Call Coverage Paths Form — Administer same as for DID trunk group above.

Implementation Summary

The recorded announcements that a caller hears for the various methods of DNIS implementation are as 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.

Measurements

When the interim extension is an ACD split, measurement of DNIS calls can be made. The CMS for example, pegs all calls which 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. In order 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.

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 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, TN722B or TN767 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

Instructions for administering the DS1/DMI interface to the System are provided in 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	4-58
DMI-BOS Trunk Group	All	4-152
ISDN-PRI Trunk Group	All	4-200 4-67
Synchronization Plan	All	5-206

- DS1 Circuit Pack Form — Complete all fields. Assign ports for each trunk member to be assigned on the associated Trunk Group form.
- DMI-BOS Trunk Group Form — Complete all fields as required when using Bit-Oriented Signaling.
- ISDN-PRI Trunk Group 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 TN722B or TN767 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.

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 DATAPHONE® II data set, or a Local Area Data Set.

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	5-194
Recorded Announcement Data Module	All	5-116
Call Coverage Paths	All	5-61
Hunt Groups	All	5-153
Trunk Groups:	Incoming Destination Night Service	
Access		4-94
APLT		4-113
CO		4-131
DMI-BOS		4-152
FX		4-184
ISDN-PRI		4-200 4-67
RLT		4-224
Tandem		4-241
Tie		4-261
WATS		4-282

- Recorded Announcements Form — Assign recorded announcement extension numbers, if used.
- Recorded Announcement Data Module Form — Complete all fields.
- 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.

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 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 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 TN76C Auxiliary Trunk circuit pack is 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.

Administration

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

Form	Field	Form Instructions (Page #)
Direct Inward Dialing Trunk Group	All	4-166

- Direct Inward Dialing Trunk Group 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.

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)

NOTE:
The TN429 DIOD trunk circuit pack is used in Japan to provide a communication link between a public local exchange and a G3i. DIOD is a combination of the DID feature and the CO feature. The Japanese require that both calling operations be merged on the same trunk.

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. 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)

NOTE:
When the TN429 is administered, only loop-start is allowed to be entered as its trunk type.

Administration

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

Form	Field	Form Instructions (Page #)
Direct Inward and Outward Dialing	All	4-166

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	5-118
Trunk Groups: FX WATS	All	 4-184 4-282

- 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 DS1 Interface circuit pack for each trunk to be assigned in the trunk group. Each TN747B provides eight ports and each TN767 provides 24 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 U.S., 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.

The Disconnect Supervision feature adds a new Disconnect Supervision field to the trunk group forms.

Administration

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

Form	Field	Form Instructions (Page #)
Trunk Groups:	Disconnect Supervision	
Access		4-94
APLT		4-113
Central Office		4-131
CPE		4-147
DMI-BOS		4-152
DID		4-166
DIOD		4-174
FX		4-184
ISDN-PRI		4-200 4-67
PCOL		4-216
Release Link		4-224
Tandem		4-241
Tie		4-261
WATS		4-282

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	5-257
Station	Redirect Notification	5-257
Misc Sys Parms	Internal/External/Priority Call (ringing patterns)	5-178

- 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).

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 an example of connecting three switches in a DCS configuration using voice tie trunks and DS1 signaling, refer to the Distributed Communications System coverage in Chapter 4. Examples of completed forms are also provided.

For detailed information on DCS, refer to *AT&T Network and Data Services Reference Manual*, 555-025-201 Issue 4, and *AT&T System 75 Application Notes — Distributed Communications System*, 555-209-003.

Administration

The Distributed Communications System (DCS) option must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered. In addition, when required, the Uniform Dial Plan option must also be enabled.

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	5-118
Tie Trunk Group	All	4-261
ISDN-PRI Trunk Group	All	4-200 4-67
Routing Patterns	All	4-76
DS1 Circuit Pack	All	4-58
Synchronization Plan	All	5-206
Netcon Data Module	All	5-110
Processor Interface Data Module	All	5-113
Processor Channel Assignment	All Proc Chan fields to be assigned DCS	5-190
Interface Links	Interface Links (assign DCS links)	5-167
Hop Channel Assignments	(as required)	5-146

- 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.

- Tie Trunk Group 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 only 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.
- ISDN-PRI Trunk Group Form — Used to provide voice and data paths. Assign Service Type field as "tie", "tandem", or "access" as appropriate.
- Routing Patterns Form — Assign routing patterns.
- DS1 Circuit Pack Form — Complete form. This form must be completed if the tie trunk is used for DCS signaling
- Synchronization Plan Form — Complete 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.
- Netcon Data Module Form — Assign Netcon physical channels as required.
- Processor Interface Data Module Form — Assign up to eight interface links using eight Processor Interface Data Module forms Note that the single-carrier cabinet System has just four links (01 through 04) available for assignment. The interface links are assigned by entering a physical channel number from 01 through 08 in the Physical Channel field One Processor Interface Data Module form must be completed for each interface link.
- Processor Channel Assignment Form — Enter the DCS link numbers and then assign associated channel numbers to each link. Complete all fields of the form as required.
- Interface Links Form — Assign the DCS link numbers 1 through 8 for a multi-carrier cabinet System as required. Assign Link 1 if the Processor Interface jack (located on the back of the Control Cabinet) is used for the DCS interface to the switch. Assign links 1 through 4 for a single-carrier cabinet System as required. Complete all fields on the form as required. Enter a TAC or extension number in the Destination field when used to route DCS signaling data.
- 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.

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	5-38
Station (multi-appearance)	Button/Feature Button Assignments -dn-dst -ext-dn-dst -grp-dn-dst	5-235
Feature Access Codes for Hospitality Features	Voice Do Not Disturb Access Code	5-128
Feature-Related System Parameters	Controlled Termination Restriction (Do Not Disturb)	5-133

- Attendant Console Form — Assign do not disturb feature buttons.
- Station Forms — Assign dn-dst, ext-dn-dst, and grp-dn-dst feature buttons as required to appropriate voice terminals.
- 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	4-58
Trunk Group		
Access	All	4-94
APLT	All	4-113
DMI-BOS	All	4-152
ISDN-PRI	All	4-200 4-67
RLT	All	4-224
Tandem	All	4-241
Tie		4-261
Synchronization Plan	All	5-206

- 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.
- 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 TN767 DS1 circuit pack must be used when supporting ISDN-PRI services. One TN722B or TN767 DS1 Tie Trunk circuit pack is required for every 24 DS1 tie trunks when using Robbed Bit Signaling or for every 23 trunks when using Common Channel or ISDN-PRI signaling. If ISDN-PRI signaling is used, a TN765 Processor Interface circuit pack is required in addition to the TN767 DS1 circuit pack A TN768 Tone Clock circuit pack is required to provide synchronization for the DS1 tie trunks.

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 3-11 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 -data-ext (Ext:__)	5-235
Data Line Data Module	All	5-90

- Station Forms — Assign Data Extension (data-ext) buttons to multi-appearance voice terminals.
- Data Line Data Module Form — Assign a vacant port 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.
- 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.

- Parity — All choices of parity (even, odd, mark, or space) can be selected.
- 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 — 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
- 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.

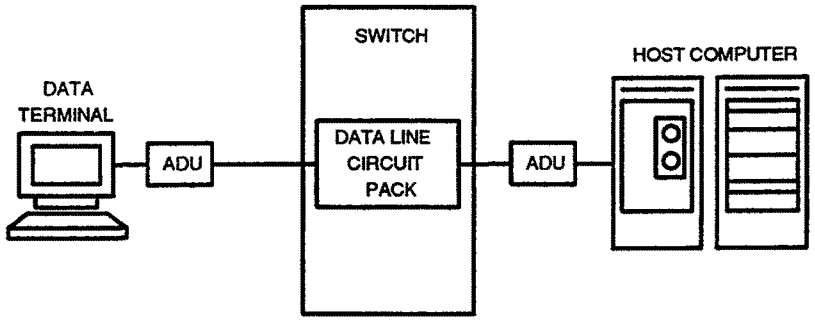


Figure 3-11. Typical EIA Interface

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	Off-Hook Alert	5-81
Feature-Related System Parameters	Reserved Slots for Attendant Priority Queue	5-133
	Time Before Off-Hook Alert	
	Emergency Access Redirection Extension	
Hospitality-Related System Parameters	Time of Scheduled	5-148
	Emergency Access Activity Report	
	Extension of Journal/Schedule Printer	
Attendant Console	Feature Button Assignments -em-acc-att	5-38
Feature Access Codes for Hospitality Features	Emergency Access To Attendant Access Code	5-128

- 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).
- 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

Administration

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

Form	Field	Form Instructions (Page #)
Miscellaneous-Related System Parameters	Enhanced DCS Enabled? Apply Intercept Locally? Enforce PNT-to-PNT Restrictions?	5-178

- Miscellaneous-Related System Parameters Form — Enter "y" in the Enhanced DCS Enabled? field (page 2 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

See *Distributed Communications System.*

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 (that is, 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 (that is, analog, DCP, hybrid) must match the protocol used by the terminal to which it is mapped. For example DCP type terminals (that is, 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	5-32

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 only 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 back-up 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

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 31st channel. For those channels that have a D-Channel Backup, D-Channel pairs must be allocated.

- Define Signaling Groups (1 to 8). 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 3-12.

    Note that 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/Non-FAS and/or D-Channel Backup, the following form must be completed:

Form	Field	Form Instructions (Page #)
Signaling Group	All	4-80

- Signaling Group Form — Up to eight Signaling Groups (that is, forms) can be assigned. Complete all fields as required.

Note that 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.

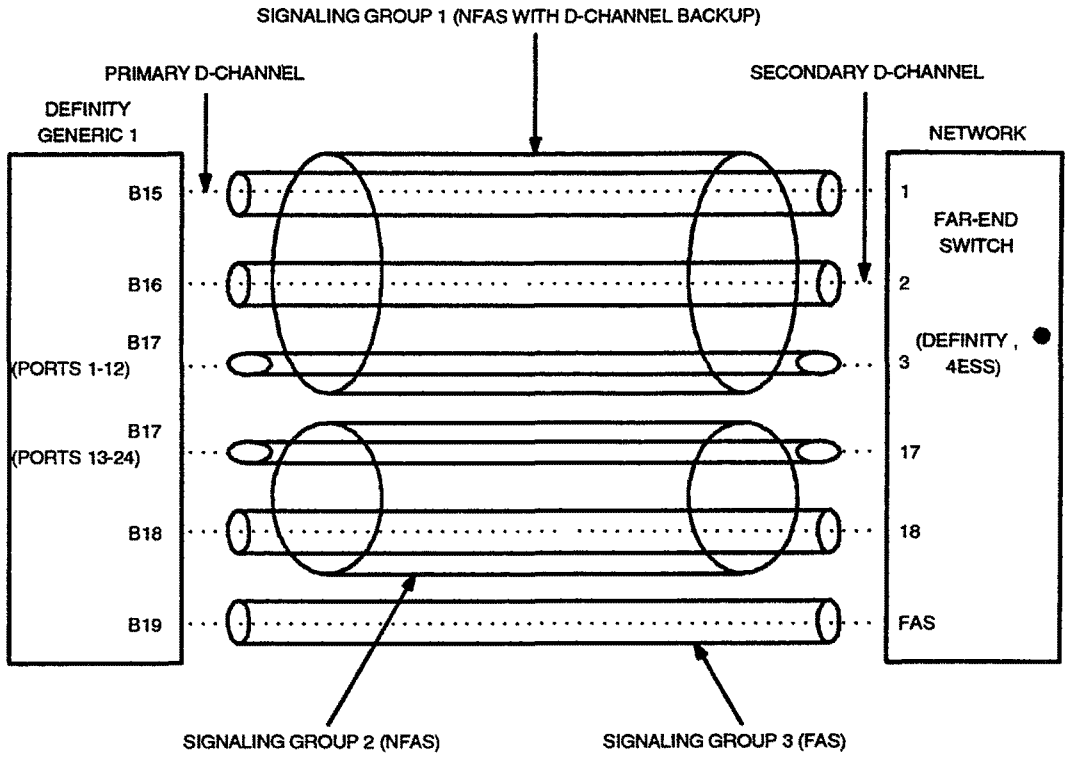


Figure 3-12. Example FAS/NFAS Interface Configurations With Interface IDs

The following examples describe the DS1 interface configuration shown in Figure 3-12 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.

For each DS1 circuit pack, the Signaling Mode must be specified. 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 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                              Name: _______________
      Bit Rate: 2.048                               Line Coding: b8zs
Signaling Mode: isdn-ext Framing Mode: esf

                       MAINTENANCE PARAMETERS
Slip Detection? n              Remote Loop-Around Test? n
```

Screen 3-18. 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          Max number of NCA TSC: 0
                       Primary D-Channel: 1B1524       Max number of CA TSC: 0
                     Secondary D-Channel: 1B1624  Trunk Group for NCA TSC: __
        Trunk Group for Channel Selection: _____
```

Screen 3-19. Signaling Group Form (Group 1)— D-Channel Backup, Three DS1 Interfaces

Signaling Group Form (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 3-20. 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 3-21. Signaling Group Form (Group 3)— Facility Associated Signaling

Note in the three previous 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 DSI 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.

```
GROUP MEMBER ASSIGNMENTS                                  Page 3 of 9
     Port          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 3-22. 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.
- 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.

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 that 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 -busy-ind	5-235
Attendant Console	Feature Button Assignments -busy-ind	5-38

- 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	5-76
Routing Patterns	FRL (0-7)	4-76

- 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.

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 call can be listed in any order within the Routing Pattern. Up to six 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 the first-choice route. 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.

A 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. 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 SMDR 15-digit account codes are used, the FRL field in the SMDR record is overwritten.

The following is an example of how FRLs can be assigned:

- **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 U.S.A., using WATS only.
- **FRL5** — FRL4 plus the calls to all the U.S.A., 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	5-128
Class of Restriction	Facility Access Trunk Test	5-76
Station (multi-appearance)	Button/Feature Button Assignments -trk-ac-alm	5-235

- 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.

Forced Entry of Account Codes

Requires users to dial an account code when making certain types of outgoing calls.

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 #)
Feature-Related System Parameters	Forced Entry of Account Codes for Calls Marked on Toll Analysis Form SMDR Account Code Length	5-133
Toll Analysis	Dialed String, Min, Max, SMDR FEAC	5-225

- Feature-Related System Parameters Form — Enter "y" in the Forced Entry of Account Codes For Calls Marked on Toll Analysis field to indicate that an account code must be entered when making a call. Complete the SMDR 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 SMDR 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	5-76
Call Originating Facility (station, data module, etc.)	COR	
Toll Analysis	Dialed String, Min, Max, SMDR FEAC	5-225

- 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, and so on, 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 SMDR 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	5-76
Trunk Group	COR	4-87

- 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 #)
Foreign Exchange Trunk Group	All	4-184
Digit Absorption	All	5-126

- Foreign Exchange Trunk Group 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 TN767 DS1 Interface circuit pack for each trunk to be assigned. A TN747B provides eight ports and a TN767 provides 24 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 3i Global Feature Description*, 555-230-203, for more information.

Administration

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	4-76
Trunk Group	BCC	
Access		4-94
CO		4-131
FX		4-184
ISDN-PRI		4-200 4-67
Tandem		4-241
Tie		4-261

- 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 that Go to Cover cannot be activated for calls placed to a Vector Directory Number 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 -goto-cover	5-235

- 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	Answer Hold-Unhold	5-128

- Feature Access Codes Form — Assign an access code to the Answer Hold-Unhold field.

Hardware Requirements

None.

Hold, System-Wide Automatic

System-wide Automatic Hold allows attendants and Multi-Function station set users to alternate easily between calls by merely selecting call appearances. For example, 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, this same action drops 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 #)
Miscellaneous-Related System Parameters	Auto Hold	5-178

- Miscellaneous-Related System Parameters Form — Enable System-Wide Auto Hold by entering "y" in the Auto Hold field.

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 Table 3-3. The Standard or Current Package and reduced (New Package) and associated maximums with each parameter are shown.

Table 3-3. Hospitality Parameter Reduction

Parameter	Standard Package	Reduced Package
Trunks	400	50
Hunt Groups	99	5
Pickup Groups	400	5
Call Coverage Paths	600	5

Administration

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	5-257
	Abbreviated Dialing (List 1, 2, 3)	
Abbreviated Dialing 7103A List	Dial Code (hot line destination)	5-17
Abbreviated Dialing System List	Dial Code (hot line destination)	5-14
Abbreviated Dialing Group List	Dial Code (hot line destination)	5-8
Abbreviated Dialing Personal List	Dial Code (hot line destination)	5-11
Abbreviated Dialing Enhanced List	Dial code (hot line destination)	5-3
Data Modules	Special Dialing Option	
Data Line	Hot Line Destination AD List	5-90
MPDM/MTDM		5-106
Netcon		5-110
Processor Interface		5-113

- 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, 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. 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 3rd party call capabilities, route the call accordingly. Or, for example, the adjunct can perform a data base 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

The Automatic Call Distribution, 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 Adjunct/Switch Applications Interface features (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 section(s) of forms must be completed:

Form	Field	Form Instructions (Page #)
Trunk Group (ISDN-PRI)	Per Call CPN/BN	4-200 4-67
Hunt Groups	Group Type Message Center ACD Queue Queue Length First Announcement Delay	5-153
Class of Restriction	Direct Agent Calling	5-76
Call Vector	All	5-68
Station (agent stations)	All	

- Trunk Group 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 controlled by the ICM adjunct. Specific entries are:
  - Group Type — "ucd" is usually preferred.
  - Message Center — "none" is typical entry.
  - ACD — Enter "y".
  - Queue — Enter "y".
  - Queue Length — Assign a short Queue Length.
  - First Announcement Delay — Entering "O" implements Forced First Announcement (not recommended for ICM).
- COR Form — 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, insure 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	5-118
Attendant Console	Extension and Name	5-38
Console Parameters	COR and COS	5-83

- 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 Coverage and 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 3-13 provides a typical ISN interface connection to the System using a port on a TN726B Data Line circuit pack.

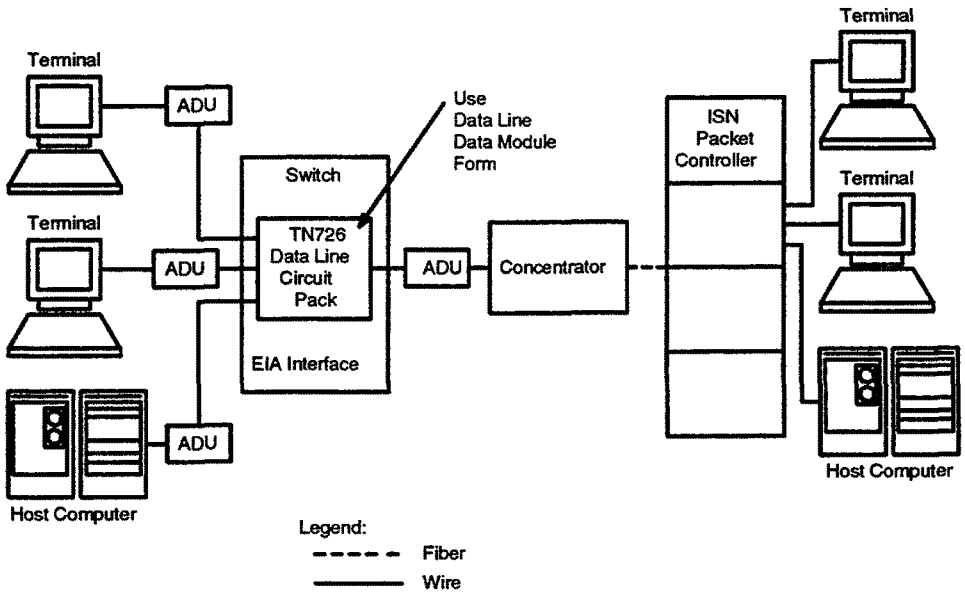


Figure 3-13. Typical ISN Connection to the System

Administration

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

Form	Field	Form Instructions (Page #)
Data Line Data Module	All	5-90

- Data Line 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.

One TN726B Data Line circuit pack is required for each eight ISN interfaces.

Integrated Directory

Allows internal System users with display-equipped terminals to access the System data base, 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 that 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	5-257
Attendant Console	Feature/Display Button Assignments -directory -next -call-disp	5-38
7404D Voice Terminal (Associated Data Module Form)	All	5-298

- 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 field if a 7404D Messaging Cartridge is attached to the voice terminal. Complete an associated 7404D Data Line Data Module form.
- 7404D Station Form — Assign a "y" to the Data Module field if a 7404D Messaging Cartridge is attached to the voice terminal. Complete an associated 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 which 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 "endpoints" 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 transport 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, DEFINITY Generic 3i — Global 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 the Asynchronous Data Module (ADM). The 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.

The system can support a maximum of 800 data modules. This value includes both ISDN-BRI and DCP data modules.

Administration

The Packet Bus Activated field must be set to "yes" on the Maintenance-Related System Parameters form before ISDN-BRI station forms can be administered.

The ADM is 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 #)
Maintenance-Related System Parameters	Packet Bus Activated	
Station (7500 series)	All	5-346
Station (8500 series)	All	5-346

NOTE:
The Maintenance-Related System Parameters Form is a maintenance form. For more information, refer to *DEFINITY Communications System Generic 1 and Generic 3i Maintenance*, 555-230-105, Issue 5.

- Maintenance-Related System Parameters Form — Enter "yes" in the Packet Bus activated field to enable to Packet Control circuit pack.
- Station Form (7505D, 7506D, and 7505D) — Complete all fields.
- Station Form (8505D) — Complete all fields.
- 7500B 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 TN778 Packet Control circuit pack which provides the interface to the LAN (packet) bus on S75 R1V5, for establishing the signaling connectivity.
- 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 7500B 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 "7500B Data Module", "Asynchronous Data Module, " and "Data Modules" sections in this chapter and to the "7500B 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 (this Chapter).

Administration

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	4-58
Signaling Group	All	4-80
Synchronization Plan	All	5-206
Processor Interface Data Module	All	5-113
Interface Links	All	5-167
Processor Channel Assignment	All	5-190
ISDN-PRI Trunk Group	All	4-200 4-67
CPN Prefix Table	All	4-41
Routing Patterns	All	4-76
Hunt Groups	ISDN Caller Display	5-153
Terminating Extension Group	ISDN Caller Display	5-223

- 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 it's 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 Assignments 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.*)
- ISDN-PRI Trunk Group 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 an intercept tone or 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 that 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 Controlled Restrictions	5-133
Recorded Announcements	Port Assignments (1-128)	5-194

- Feature-Related System Parameters Form — Complete the following fields:
  - DID/Tie/ISDN Intercept Treatment — This entry (extension number or 0 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	Group Member Assignments	5-165
Station (multi-appearance)	Button/Feature Button Assignments -auto-icom (Grp:__ DC:__)	5-235

- Intercom Groups Form — Complete intercom-dial fields.
- 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	5-165
Station (multi-appearance)	Button/Feature Button Assignments -dial-icom (Grp:__)	5-235

- Intercom Groups Form — Establish intercom groups.
- 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.

International Toll/Code Restriction

For International systems, USA Toll and Code Restriction features will work as in standard G1.1 systems only if both the public network dialing plan and the CPE follow the North American Numbering Plan (that is, 7- and 10-digit dialing and other USA-specific restrictions). If the switch has a North American Numbering Plan but the CO doesn't, then the system administrator should proceed as described in the two methods outlined below.

The use of the USA Toll Restriction feature requires that long-distance and operator-assisted calls begin with a "1" or a "0". The USA Toll Restriction feature is implemented by administering CO and FX trunk groups as toll restricted and then administering certain COR codes as toll restricted. Finally, stations assigned the COR whose calls are routed over the trunk groups are prevented from placing "1" or "0" calls unless the dialed digits are on the system's "Allowed Calls List". As a result of using another dial plan, USA Toll Restriction cannot be implemented when long-distance and operator-assisted calls begin with digits other than "1" or "0", respectively. (However, if the switch is being used in a country that doesn't use "1" or "0" as the first digits of toll calls, it is still possible for the switch to perform a kind of toll restriction using the two methods described below.)

The USA Code Restriction feature denies the calling party completion of outgoing calls to destinations whose numbers have selected initial three digits (within the local calling area), special service, and area codes. Code Restriction applies when a code restricted user (controlled by COR) accesses a CO or FX trunk group whose Restriction field is set to "code". The system then checks appropriate Code Restriction tables to determine if the call will be allowed or sent to intercept. These Code Restriction tables can be for local calling areas (called HNPAs in standard G1.1 Systems) or for long-distance calling areas (called FNPAs or Foreign Numbering Plan Areas or FNPAs in standard G1.1 Systems). Code Restricted calls are routed over CO or FX trunks which require 7- or 10-digit dialing strings. As a result, the USA Code Restriction feature cannot be implemented in systems with 3-, 5-, 6-, or 8-digit dial plans, for example, because the trunk group requires 7- or 10-digit dialing.

The information above explains how the built-in USA Code Restriction feature can be used only if you are in a country that uses 7- or 10-digit dial plans similar to the USA. But in other countries, you can create practically the same kind of calling restrictions by one of the following two methods. Method 1 below describes a way to implement call restrictions and Method 2 describes a way to implement the handling of special numbers (such as USA service codes 411 and 811).

Method 1 Calling restrictions can be implemented using ARS and Facility Restriction Levels. Translations should be implemented primarily using entries in the ARS FNPA table (for long-distance areas). While the meanings of the various dial plan entries may change from location to location, the basic format should remain intact. Restriction is accomplished by using the Facility Restriction Levels for the various ARS Routing Patterns. ARS and FRLs are described in their own sections in this chapter. Call processing can be controlled as follows:

- Local Calls — Route calls based on the first three dialed numbers using the ARS HNPA table.
- National Toll Calls — Generally of the format 0NX...X. These calls route via the ARS FNPA table, entry 001 (labeled "Operator Assist" in the standard manual). At locations where 01X...X translations are required, ARS FNPA entry 012 should be set to the same pattern as entry 001.
- International Toll Calls — Generally of the format 00NX...X. These route by the ARS FNPA table entry 003 (labeled "IXC Operator Assist" in the standard manual). At locations where 000/001 call routing is required, where 00 is used by itself for international access and sometimes followed by a "1" (country code for USA and Canada), then the ARS FNPA entry 004 should be set to the same pattern as entry 003.

  ARS FNPA entry 000 and 002 should also be set to the same pattern as entry 003 to prevent unauthorized access to toll facilities.

Method 2 When using special numbers such as service codes, the numbers should be translated using Privileged Abbreviated Dialing lists as described in the "Abbreviated Dialing" section of this chapter or by defining empty Hunt Groups and forwarding calls to those groups to the appropriate outside numbers.

Inter-PBX Attendant Calls

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 Trunk Group (Main)	Incoming Destination	4-261
Console Parameters (Branch)	IAS (Branch)	5-83
	IAS Tie Trunk Group No.	
	IAS Att. Access Code	
Tie Trunk Group (Branch)	All	4-261

- Tie Trunk Group 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."
- Tie Trunk Group Form (Branch) — Requires a tie trunk group connected to the CAS 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 or TN767 DS1 Tie Trunk circuit pack for each tie trunk to be assigned.

Intra-switch SMDR

NOTE:
This section describes the implementation of the Intra-switch SMDR feature. For administrative information on Station Message Detail Recording (SMDR), "Station Message Detail Recording (SMDR)" section in this chapter.

An administrable option that allows SMDR records to be generated for some internal calls. Interactions exist with the administration of group/member/VDN recording on SMDR records.

For an Intra-switch SMDR record to be generated, one of the stations involved in a call must have been optioned for the Intra-switch SMDR call. Intra-switch will or will not generate a record based on the DIALED number (assuming the originator is not intra-switch optioned), but the number which is actually displayed in the dialed number field will be determined by the administration of group/member/VDN information.

Some calls may look like intra-switch SMDR calls, but will result in trunk calls. For example, a call from a station to a VDN (Vector Directory Number) will end up an outgoing call on trunk T1. Such calls will not generate Intra-switch SMDR records.

Administration

To implement the Intra-switch SMDR feature, the following form must be completed.

Form	Field	Form Instructions (Page #)
Intra-switch SMDR	All	5-205
Feature-Related System Parameters	Intra-switch SMDR	5-133

The Intra-switch SMDR form has 100 fields. Allowed extensions on the form must correspond to Terminating Extension Groups (TEGs), stations, data modules, VDNs, or hunt groups. Attendants are not allowed to be optioned on the Intra-switch SMDR form. To add the Intra-switch feature to an extension, add the extension to the form. The *change intra-switch-smdr* and *display intra-switch-smdr* commands are supported for this feature.

NOTE:
The Intra-switch SMDR 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

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	5-133
Hunt Groups	Inflow Threshold Priority on Intraflow	5-153
Call Coverage Paths	Don't Answer Busy Number of Rings	5-61

- 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.
- 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 that a call will remain in the queue before no more calls will be accepted by the queue.
- Call Coverage Paths Form — Complete the Coverage Criteria Busy and Don't Answer fields for both inside and outside calls. Assign the Number of Rings field to the rings that will occur at an agent's terminal before an unanswered call is redirected to the first coverage point.

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	5-128
Station (multi-appearance)	Button/Feature Button Assignments -last-numb	5-235
Attendant Console	Feature Button Assignments -last-numb	5-38

- 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. Note that the LWC messages cannot be stored, canceled, or retrieved for Vector Directory Number extensions.

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	Max. Number Of Messages Per Station	5-133
	Stations With System-Wide Message Retrieval Permission	
Station	LWC Reception	5-257
	LWC Activation	
	Button/Feature/Button Assignments	
	-lwc-store	
	-lwc-cancel	
	-aut-msg-wt (Ext:__)	
	-call-disp	
	-msg-retr	
	-next	
	-delete-msg	
	-lwc-lock	
	-cov-msg-rt	
Attendant Console	Feature Button Assignments	5-38
	-lwc-store	
	-lwc-cancel	
	-delete-msg	
	-next	
	-call-disp	
	-aut-msg-wt (Ext:__)	
Feature Access Codes	LWC Message Retrieval Lock	5-128
	LWC Message Retrieval Unlock	
	LWC Send A Message	
	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

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 and the sending switch has the option to initiate lookahead interflow to an alternate backup location.

Note that the receiving switch must have the Call Vectoring and the Lookahead Interflow features active also. 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

To implement this feature, the following forms or sections of forms must be completed:

NOTE:
Refer to the Call Vectoring feature coverage in this Chapter for associated Call Vectoring administration information

Form	Field	Form Instructions (Page #)
Trunk Group (ISDN-PRI)	-Display, TCM, Lookahead Codeset -Outgoing Display	4-200 4-67
CPN Prefix Table	-Ext Len -Ext Code -CPN Prefix	4-41

- 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". For switches that can receive the information in either codeset 6 or 7. Default is "6".

For those System's 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 which 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

The following provides administration guidelines for Loudspeaker Paging Access feature and for administering a PagePac[3] paging system. In addition to or instead of the System's Loudspeaker Paging Access feature, a PagePac paging system can be used.

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 which 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)	Button/Feature Button Assignments	5-235
Attendant Console	DTGS Select or Feature Button Assignments	5-38
Loudspeaker Paging and Code Calling Access	All	5-174

3. Trademark of Harris Corporation Dracon Division

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	Call Park Timeout Interval	5-133
	Deluxe Paging and Call Park Timeout to Originator	
Dial Plan	First/Second Digit Table	5-118
Console Parameters	Common Shared Extensions	5-83
Class of Service	Console Permission	5-81

- 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 3 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 *DEFINITY Communications System Generic 1 and Generic 3i Wiring*, 555-204-111.

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 #)
CPE Trunk Group	All	4-147
Feature-Related System Parameters	Call Park Timeout Interval	5-133
Dial Plan	First/Second Digit Table	5-118
Console Parameters	Common Shared Extensions	5-83
Class of Service	Console Permission	5-81

- CPE Trunk Group 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 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 *DEFINITY Communications System Generic 1 and Generic 3i Wiring*, 555-204-111.

- 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 3 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 with System 75 or DEFINITY Generic 3:

- 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 talkback 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 his or her location and receives a call, an incoming call can be answered and then parked by another user. The user dials the Loudspeaker Paging access code and upon receiving Dial tone dials the extension that the call is to be parked on. 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.

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)	Button/Feature Button Assignments	5-235
Attendant Console	DTGS Select or Feature Button Assignments	5-38
Loudspeaker Paging and Code Calling Access	All	5-174
Feature-Related System Parameters	Call Park Timeout Interval	5-133
	Deluxe Paging and Call Park Timeout to Originator	
Dial Plan	First Digit Table	5-118
Console Parameters	Common Shared Extensions	5-83
Class of Service	Console Permission	5-81

- 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 Call Park 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 3 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 *DEFINITY Communications System Generic 1 and Generic 3i Wiring*, 555-204-111.

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	5-235

- 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)	5-14
Abbreviated Dialing Group List	Dial Code (attendant)	5-8
Abbreviated Dialing Personal List	Dial Code (attendant)	5-11
Station (single-line)	Abbreviated Dialing-List 1, 2, or 3	5-235
	Hot Line Destination-AD List	

- 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 that 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)	5-235

- Station Forms — Assign Manual Signal buttons as required to the voice terminal.

Hardware Requirements

None.

Message Server Interface

The Message 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 3-14 shows a Message Server interface to the System. The SCI Link connectivity (Control Path) is provided via either a MPDM (distance between the System and Message Server less than 5000 feet) or via LADs and an associated MTDM (for distances greater than 5000 feet). The EIA connectivity (data path) can be implemented via one of the three options shown.

Administration

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

Form	Field	Form Instructions (Page #)
SCI Link Connection		
Processor Interface Data Module	All	5-113
Processor Channel Assignment	All	5-190
Interface Links	All (for one MS link)	5-167
MPDM/MTDM	All	5-106
Feature-Related System Parameters	Message Server Adjunct (MSA) Connected	5-133
EIA Connection		
MPDM	All	5-106
Other		
Hunt Groups	All	5-153
Station	All	

- **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

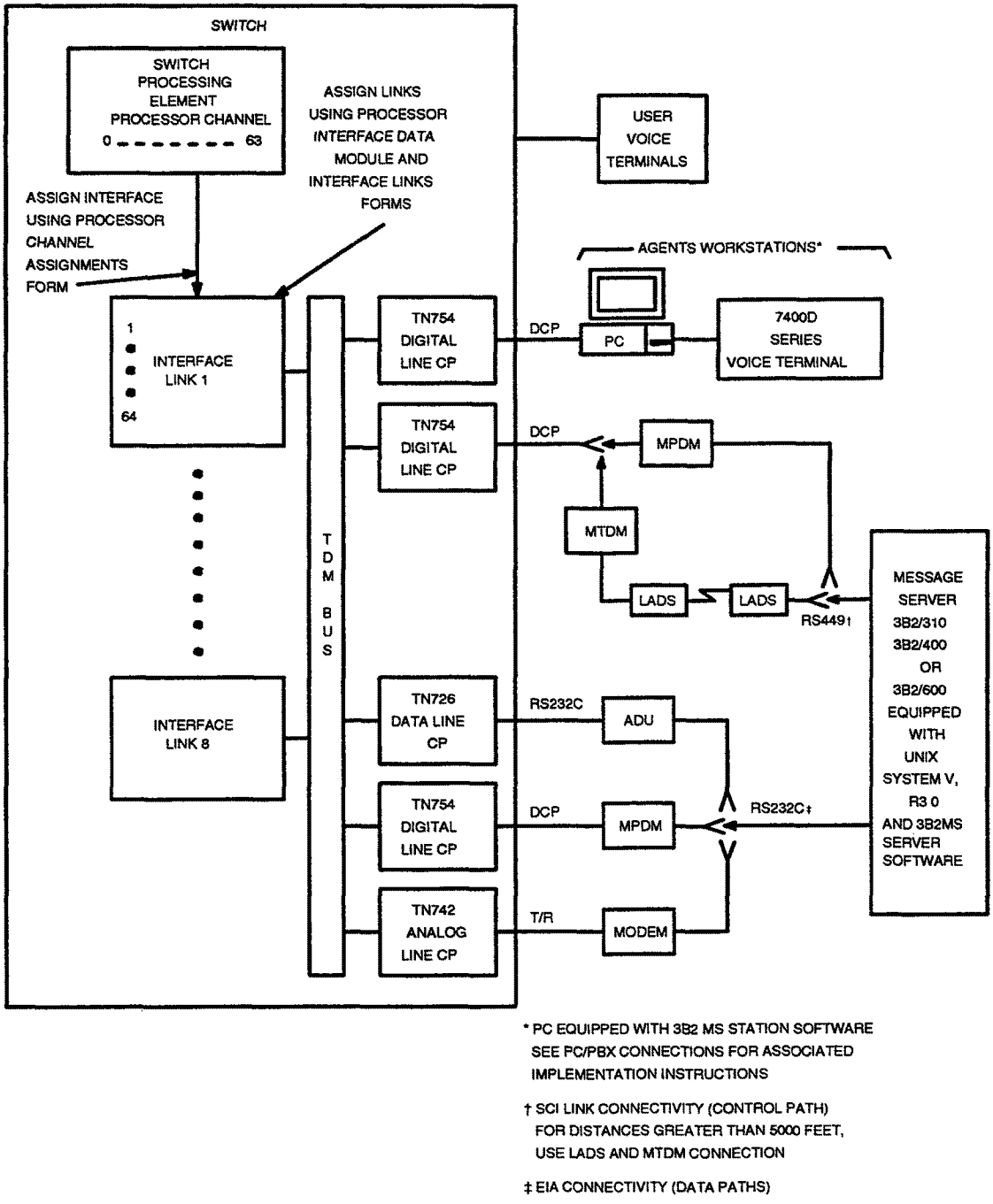


Figure 3-14. Typical Message Server Interface Connections

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 3-15 for an example of integrated and combined modem pooling. Additional information on Modem Pooling is available in *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203, 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	5-184
Feature Access Codes	Data Origination Access Code	5-128
MPDM/MTDM	All	5-106

- Modem Pool Group Form — Complete all fields. Up to five Modem Pool Groups may be administered.
- 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	5-184
Feature Access Codes	Data Origination Access Code	5-128

- Modem Pool Group Form — Complete all fields. Up to five Modem Pool Groups may be administered.
- 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.

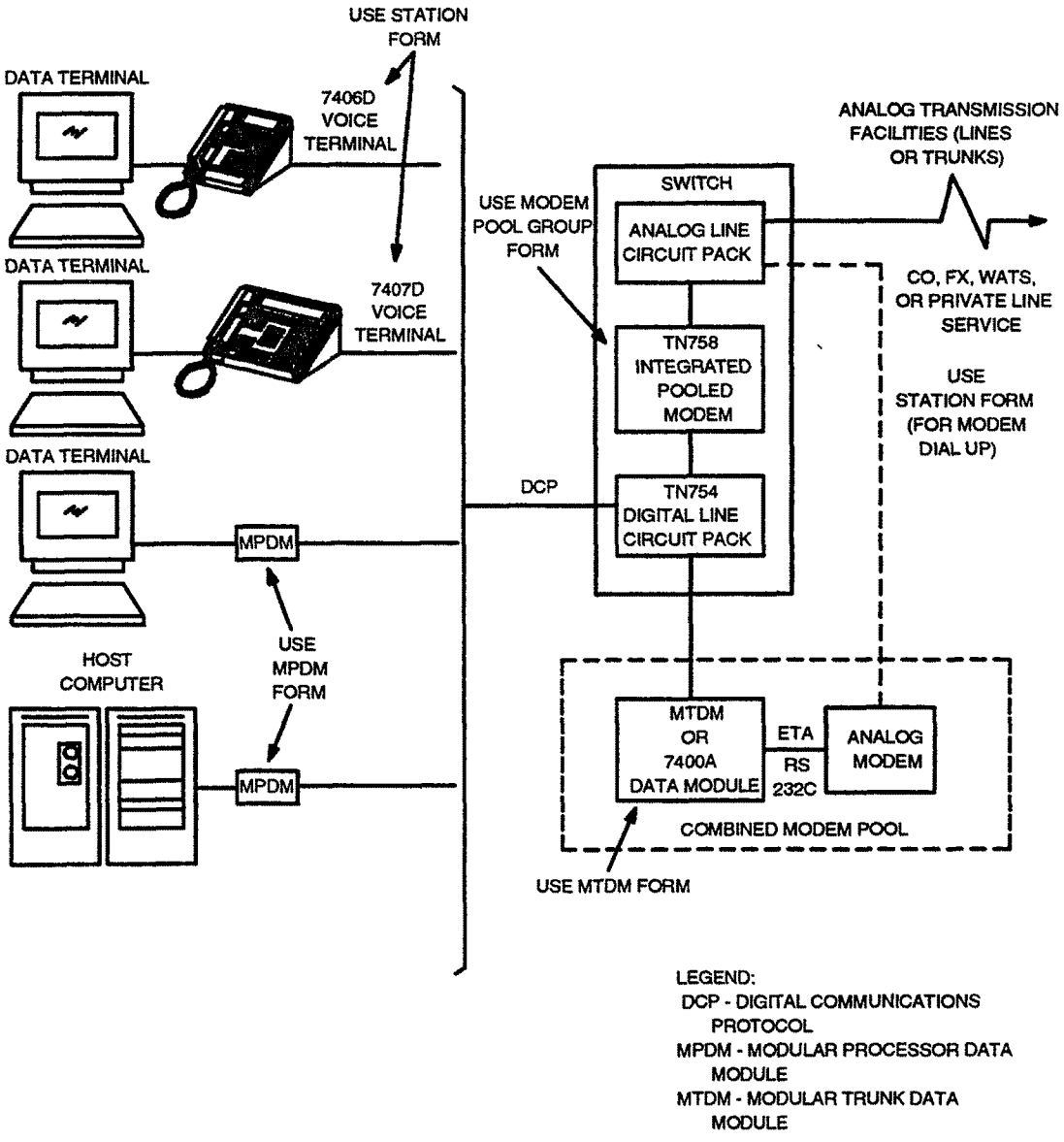


Figure 3-15. Typical Integrated and Combined Modem Pooling Arrangement

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	5-235

- Station Forms — Complete Idle Appearance Preference field.

Hardware Requirements

None.

Multiple Call Handling

Enhances the Automatic Call Distribution (ACD) feature by allowing ACD agents to service multiple ACD calls at the same time. With Multiple Call Handling (MCH), one call can be put on hold while the agent services other calls.

Multiple Call Handling is provided on an ACD split basis. When an agent places an ACD call on hold, another ACD call will not be routed to the agent until the agent becomes available to receive the call by pressing the Auto-In or Manual-In button.

Multiple Call Handling can be made available to ACD agents with multi-appearance voice terminals and to attendant consoles. The feature is not available to the agents who use analog voice terminals or to those who are adjunct-controlled agents. Adjunct-controlled agents' stations are "locked-up" from the agent. Thus, the agent cannot use any of the buttons on the voice station nor put a call on hold or answer another ACD call. *An agent may process multiple calls that are originated from ASAI adjunct computers only if the agent is neither an adjunct-controlled nor a vector-controlled agent.*

NOTE:
An agent can only log into one Multiple Call Handling split at a time. This means that an agent cannot log into a non-MCH split while he/she is still logged into an MCH split. An agent may be a member of many MCH and non-MCH splits; however, he/she cannot log into more than one split if the split is an MCH split.

Multiple Call Handling agent positions must be equipped with queue status lamps so that the agent will have an indication of calls waiting in the queue to be answered.

The maximum number of simultaneous ACD calls that an agent can handle is the number of incoming non-restricted call appearances assigned on the agent's station.

Administration

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 form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Hunt Group	ACD Controlling Adjunct Multiple Call Handling	5-153
Station (multi-appearance)	Button/Feature Button Assignments	5-235

- Hunt Group Form — To enable the Multiple Call Handling feature for a hunt group (ACD Split), insure that the ACD field entry is "y", the Controlling Adjunct field entry is "none" or "asai" (as appropriate), and the Multiple Call Handling field entry is "y". Note that the as required Multiple Call Handling field is only displayed when the ACD entry is "y" and the Controlling Adjunct entry is "none" or "asai".
- Station Form — Assign a NQC (q-calls) and OQT (q-time) 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.

Agent Position must be equipped with one of the following:

- Multibutton Electronic Telephone (MET set)
- Hybrid Set (7300 series)
- Digital Sets (7400D Series except 7401D)
- 510 BCT
- CALLMASTER (602A)

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 #)
CO Trunk Group	Incoming Destination	4-131
FX Trunk Group	Incoming Destination	4-184
Listed Directory Numbers	All	5-172

- 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.

Music-on-Hold Access

Provides music, tone or silence to a party whose call is on hold, waiting in queue, parked, or on a trunk call that is being transferred. The music lets the waiting party know that the connection is still in effect.

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	Music/Tone On Hold Music Port Music (or Silence) on Transferred Trunk Calls	5-133
Trunk Group CPE	All	4-147

- Feature-Related System Parameters Form — Complete Music on Hold Port and the Music (or Silence) on Transferred Trunk Calls fields.
- Customer Provided Equipment (CPE) Trunk Group Form — Complete all fields as required to assign auxiliary trunk ports to interface with a customer provided music source.

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. Also, a 36A voice coupler is required if the music source is not FCC registered (provides an interface and System protection for the music source). See *DEFINITY Communications System Generic 1 and Generic 3i Wiring*, 555-204-111, 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, pre-arranged 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 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	5-148

- 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 (1-600), or leave blank for no coverage.

  In the Milliseconds Before PMS Link Acknowledgement Timeout field, enter the maximum time the System will wait for an acknowledgement from the PMS that a transmitted message was received (100-1000 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.

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 (MS/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		4-94
APLT		4-113
ISDN-PRI		4-200 4-67
Tandem		4-241
Tie		4-261
Class of Restriction	Advanced Private Line Termination	5-76
Feature Access Codes	Automatic Alternate Routing Access Code	5-128
Station	COR	5-235

- 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.
- 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 or TN767 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 #)
CO Trunk Group	All	4-131
DID Trunk Group	All	4-166
FX Trunk Group	All	4-184
ISDN-PRI	All	4-200 4-67
WATS Trunk Group	All	4-282

- Complete all Trunk Group Forms used for Public Network Access.

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 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 -hunt-ns	5-235
Attendant Console	Feature Button Assignments -hunt-ns	5-38

- 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.

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	5-38

- 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	5-172
Trunk Groups:	Night Service	
Access		4-94
APLT		4-113
CO		4-131
DMI-BOS		4-152
FX		4-184
ISDN-PRI		4-200 4-67
RLT		4-224
Tandem		4-241
Tie		4-261
WATS		4-282
Hunt Groups	Night Service Destination	5-153
Attendant Console	Feature Button Assignments -hunt-ns -trunk-ns	5-38
Station (multi-appearance)	Button/Feature Button Assignments -night-ser -hunt-ns -trunk-ns	5-235

- Listed Directory Numbers (LDN) Form — Enter Night Destination extension that will receive LDN DID 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:	Night Service (blank)	
Access		4-94
APLT		4-113
CO		4-131
CPE		4-147
DMI-BOS		4-152
FX		4-184
ISDN-PRI		4-200 4-67
RLT		4-224
Tandem		4-241
Tie		4-261
WATS		4-282
Feature Access Codes	Trunk Answer Any Station Access Code	5-38
Console Parameters	Ext Alert Port (TAAS)	5-83

- 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	5-235
Attendant Console	Feature Button Assignments -trunk-ns	5-38
Listed Directory Numbers	Night Destination	5-172

- 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.

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 3i Global Feature Description*, 555-230-203, for cabling distance information for the various voice terminal types.

Administration

Voice terminal types that may be administered as OPS are: 500, 2500, 7101, 7102A, 7103A, and 7104A. These Off-Premises Stations are administered similar to on-premises voice terminals. Refer to the appropriate voice terminal form for additional information.

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 DS1 Tie Trunk circuit pack for each interface to be provided. **Do not** assign an OPS port on a 16-port TN746B Analog Line circuit pack. Note that the use of a Message Waiting Indicator lamp on an OPS is not supported.

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	All	4-216
Station (multi-appearance)	Button/Feature Button Assignments -per-COline (Grp:__) -aut-msg-wt (Ext:____)	5-235

- 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. A maximum of 40 PCOLs can be assigned in the System.

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 3-16 shows a typical 7400D series voice terminal PC/PBX workstation connection and Figure 3-17 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	5-370

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**

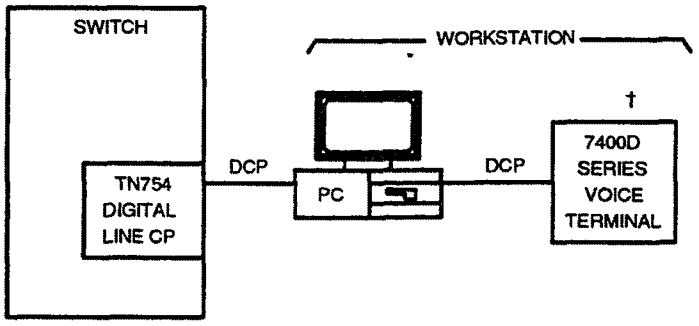
  Provides Package 1 services plus additional features (such as call log, higher file transfer rates, and the ability to take notes on a call). Hardware requirements include: PC equipped with a DCP card and a 7400D series voice terminal. Package 3 provides an integrated voice and data workstation that 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.

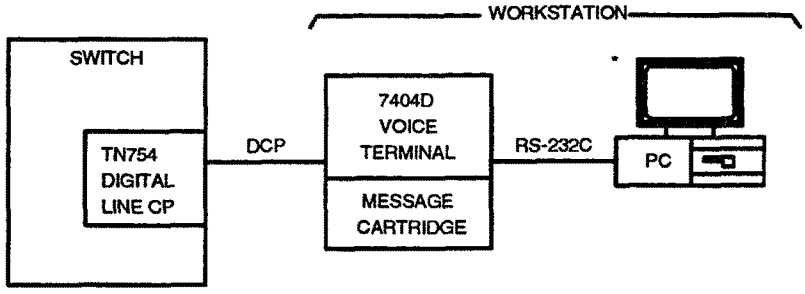
For additional PC/PBX user information, refer to *AT&T PC/PBX Connection Package 3 User's Guide,* 555-016-703. A complete set of documents is available as *AT&T PC/PBX Connection Release 3 Documentation Set,* 555-016-715.



* PC MUST BE EQUIPPED WITH DCP CARD AND APPROPRIATE PC/PBX SOFTWARE

† 7401D, 7403D, 7404D (WITH OUT MESSAGE CARTRIDGE), 7405D, 7406D, OR 7407D VOICE TERMINAL

Figure 3-16. Typical 7400D Series Voice Terminal PC/PBX Connections



* PC MUST BE EQUIPPED WITH APPROPRIATE PC/PBX SOFTWARE

Figure 3-17. 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 #)
7303S Voice Terminal	Personalized Ringing Pattern	5-291
7305S Voice Terminal	Personalized Ringing Pattern	5-291
7404D Voice Terminal	Personalized Ringing Pattern	5-298
7406D Voice Terminal	Personalized Ringing Pattern	5-321
7407D Voice Terminal	Personalized Ringing Pattern	5-321
7434D Voice Terminal	Personalized Ringing Pattern	5-336
CALLMASTER Digital Voice Terminal	Personalized Ringing Pattern	5-362

- Voice Terminal Forms — Complete Personalized Ringing Pattern field for each 7303S, 7305S, 7404D, 7406D, 7407D, 7434D, and CALLMASTER digital voice terminal.

NOTE:
The 7103A, 7404D, 7406D, 7407D, 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.

Priority Calling

Provides a special form of call alerting between internal voice terminal users. The called voice terminal user receives a distinctive 3-burst 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	5-128
Class of Service	Priority Calling	5-81
Attendant Console	Feature Button Assignments -priority	5-38
Station (multi-appearance)	Button/Feature Button Assignments -priority	5-235

- 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.

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	5-83

- 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	5-235

- 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.

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	5-81
Hospitality-Related System Parameters	All	5-148
Attendant Console	Feature Button Assignments -mwn-act -mwn-deact -check-in -check-out	5-38
Feature Access Codes	Hospitality Features	5-128
Station (multi-appearance) (Front Desk Terminal)	Button/Feature Button Assignments -mwn-act -mwn-deact -check-in -check-out	5-235
Netcon Data Module	All	5-110
Modular Processor Data Module	All	5-106
Data Line Data Module	All	5-90

- 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.

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.

Administration

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

Form	Field	Form Instructions (Page #)
Miscellaneous-Related System Parameters	Pull Transfer	5-178
Station—7405D Form (up to 32 forms may be assigned depending on AUDIX size)	All (for AUDIX voice port)	5-309

- Miscellaneous-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. Choices are "y" and "n". The default is "n".
- Station Form—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 based on time in queue and number of calls in queue. 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.

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	5-153
Station (multi-appearance)	Button/Feature Button Assignments -q-calls -q-time	5-235
Attendant Console	Feature Button Assignments -atd-qcalls -atd-qtime	5-38

- Hunt Groups Form — Assign the number of calls that can queue before the System flashes the queue status buttons and the Auxiliary Warning lamp assigned to the split.
  - — Assign the time a call can remain in the queue before the System flashes the queue status buttons and the Auxiliary Warning lamp assigned to the split
  - — Assign ports for the external Auxiliary Warning lamps.
- Station Forms — Assign calls and time buttons.
- 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 21C-49 lamp may be used as an auxiliary queue Warning lamp.

R2 MFC

Multifrequency compelled (MFC) signaling is a dual tone signaling scheme used in many countries outside the United States. 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. This version permits a great deal of signaling flexibility so that the signaling needs of still unforeseen communities may be accommodated.

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; while the switch where the call is answered is the destination switch. With R2 MFC, the origination switch creates *forward* signals; while 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	
	digit	-->	
	<--	A.3	End of Dial
Group II	II.2	-->	
	<--	B.x	Group B

Group I Signals

Group I signals are a basic set of forward signals generated by the originating switch. Group I signals are as follows:

drop

If this MFC tone is received from the CO, the disconnect sequence is initiated by PBX and the call is dropped

ignored

If this MFC tone is received from the CO, the tone is acknowledged by a corresponding tone (that is, A.1, etc) 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.

digits from 1 to 10

The signals from group I.1 to I.10 are reserved for address digits from 0 to 9.

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. It is used only on DID calls.

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.

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.

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.

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

On a DOD call, the PBX sends this signal to the CO as an indication that there are no more digits to be sent. This signal is used instead of the end-of-ani signal in certain countries.

Group II Signals

Group II signals are a more elaborate set of forward signals generated by the originating switch. Group II signals are as follows: *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.

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-attd

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.

drop

If this MFC tone is received from the CO, the disconnect sequence is initiated by PBX and the call is dropped.

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.

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.

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 are as follows:

next-digit

This tone is sent to request the next digit. The tone is used on both DID calls and 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.

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.

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.

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

congestion

On DOD calls, this tone is sent from the CO to indicate that the CO is experiencing 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.

On DID calls, when the incoming interdigit timer expires, the PBX sents this signal to the CO in the pulse mode. It sends the signal to the CO in the compelled mode in respond to a *send-congestion* (group I) signal.

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.

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.

drop

If this MFC tone is sent, the disconnect sequence is initiated by the receiving switch.

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 are as follows:

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.

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. *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. See Appendix B for the messages that have been assigned to particular MFC codes in different countries.

Administration

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

Form	Field	Form Instructions (Page #)
System Parameters Customer Options	Multifrequency Signaling	5-214
System Parameters Multifrequency	All	5-216

- System Parameters Customer Options Form — Enable multifrequency signaling by entering "y" in the "Multifrequency Signaling?" field.

- System Parameters Multifrequency Signaling Form — Administer multifrequency signaling by setting some PBX parameters (like related timers and loss/gain ratios) and assigning a message to each identifying code (like assigning "free" to B.6).

Hardware Requirements

To implement R2 MFC, a TN744 circuit board, vintage 7 or greater, is required.

Recall

Many common analog station sets provide a timed, 100 msec, switchhook flash. For such a phone to operate with the Definity switch, it must use touch-tone (DTMF) signaling and be administered on the station form as a 2500 set with the Switchhook Flash field set to "y".

Form	Field	Form Instructions (Page #)
Station	Switchhook Flash	5-271

Recorded Announcements

Allows up to 128 analog or integrated announcements or any desired combination of both. Integrated announcements are assigned on the TN750 Announcement circuit pack. The analog announcements are assigned on the TN742, TN746B, or TN769 Analog Line circuit pack which is connected to external recording or playback equipment.

Announcement administration allows the assignment of an extension to an announcement device at an analog port or to an announcement on an integrated announcement board. A recorded message may be accessed by dialing the extension assigned the announcement on the Recorded Announcement form. References to a particular announcement extensions may be found on: 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).

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	5-194
Recorded Announcement Data Module	All	5-194
Netcon Data Module	All	5-110
Trunk Groups:	Incoming Destination	
CO		4-131
DMI-BOS		4-152
FX		4-184
WATS		4-282
Feature-Related System Parameters	DID Intercept Treatment	5-133
Feature Access Codes	Announcement Access Code	5-128
Call Coverage Paths	Point1, Point2, Point3	5-61
Hunt Groups	First and Second Announcement Extensions	5-153
Station	COS	5-257

- 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 (store/restore to/from tape) of TN750 recorded announcements.
- 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. To make, change, listen to, or delete an announcement, the user then:
  - Dials the announcement access code, plus the extension number. Then:
    - Dials "1" to record an announcement (new or over an existing announcement).
    - Dials "2" to listen to an announcement.
    - Dials "3" to delete an announcement.

Hardware Requirements

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

Each analog announcement to be provided requires a port on a TN742, TN746B, or TN769 Analog Line circuit pack. The analog 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 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 #)
CPE Trunk Group	All fields if the trunk group is not assigned, or assign trunk port for digital switch interface.	4-147
or 2500 Voice Terminal	All	5-271

- CPE Trunk Group 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.

Release Link Trunk Group

A Release Link Trunk Group is used to implement the Centralized Attendant Service feature.

Administration

To assign a Release Link Trunk Group, the following form must be completed.

Form	Field	Form Instructions (Page #)
Release Link Trunk Group	All	4-224

- Release Link Trunk Group 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 milliseconds.

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 or TN767 circuit pack for each trunk to be assigned in the Trunk Group. A TN722B or TN767 provides 24 ports.

Remote Access

Permits authorized callers using the public network to access the System and then use its features and services.

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	5-199
Trunk Groups:	Incoming Destination	
CO	Night Service	4-131
FX		4-184
ISDN-PRI		4-200 4-67
WATS		4-282
DID	All	4-166

- 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.
- 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.

Hardware Requirements

None.

Remote Administration

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.

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 #)
Netcon Data Module	All	5-110
Data Line Data Module	All	5-90
Hunt Groups	Group Extension	5-153
	Group Members Assignments	

Off-Premises Remote Administration

Form	Field	Form Instructions (Page #)
Netcon Data Module	All	5-110
Data Line Data Module	All	5-90
Hunt Groups	Group Extension	5-153
	Group Members Assignments	
Modem Pool Group	All	5-184
Trunk Group (DID System):		
DID Trunk Group	All	4-166
or		
CO Trunk Group	All	4-131
Trunk Group (Non-DID System):		
-CO Trunk Group	All	4-131

- Netcon Data Module Form — Complete all appropriate fields. Provides a data channel for the Manager I terminal interface.
- 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).
- 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 Manager I (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 Manager I (for example, *list config all [sched]*). Up to a maximum of 50 individual reports can be scheduled.

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 #)
Netcon Data Module	All	5-110
MPDM/MTDM Data Module	All	5-106
Feature-Related System Parameters	System Printer Parameters Printer Extension EIA Device Bit Rate Lines per Page	5-133

Report Scheduler/System Printer Connected to DCE Jack on the Control Carrier:

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	System Printer Parameters Printer Extension EIA Device Bit Rate Lines per Page	5-133

Report Scheduler/System Printer Connected To Data Line Circuit Pack via Asynchronous Data Unit (ADU):

Form	Field	Form Instructions (Page #)
Data Line Data Module	All	5-90
Netcon Data Module	All	5-110
Feature-Related System Parameters	System Printer Parameters Printer Extension EIA Device Bit Rate Lines per Page	5-133

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.
- 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), EIA Device Bit Rate (1200, 2400, 4800, 9600), and Lines per Page (24-132 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"), EIA Device Bit Rate (1200, 2400, 4800, 9600), and Lines per Page (24-132 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 Chapter 1. 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.
- Feature-Related System Parameters Form — Complete the Printer Extension (enter valid extension), EIA Device Bit Rate (1200, 2400, 4800, 9600), and Lines per Page (24-132 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 Manager I, the SMDR 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 475 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 that 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 Flow Chart 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 SMDR 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	5-225
	Min/Max	
	RCL	
	UCL (1-10)	
Class of Restriction	RCL	5-76
	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	5-128
	Group Control Restrict Activation and Deactivation	
Feature-Related System Parameters	Controlled Outward Restriction Intercept Treatment	5-133
	Controlled Termination Restriction (Do Not Disturb)	
	Controlled Station-to-Station Restriction	

- 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 pre-selected 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 pre-selected 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 that 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
Class of Restriction	All	5-76
Station	COR	5-235
Remote Access	COR	5-199
Hunt Groups	COR	5-153
Terminating Extension Group	COR	5-223
Trunk Groups:	COR	
Access		4-94
APLT		4-113
CO		4-131
CPE		4-147
DMI-BOS		4-152
DID		4-166
FX		4-184
RLT		4-224
Tandem		4-241
Tie		4-261
WATS		4-282
Vector Directory Number	COR	5-231

- 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. Note that 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	5-76
Trunk Groups:	COR	
Access		4-94
APLT		4-113
CO		4-131
CPE		4-147
DMI-BOS		4-152
FX		4-184
ISDN-PRI		4-200 4-67
RLT		4-224
Tandem		4-241
Tie		4-261
WATS		4-282
Station	COR	5-235

- 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 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 which 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 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 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, then the Toll Analysis Form is *not* used. Instead, if the first non-absorbed digit is either "0" or "1" and the caller is toll restricted, the call is denied.

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	5-225
Class of Restriction	All	5-76
Console Parameters	COR	5-83
Station	COR	5-235
Data Line Data Module	COR	5-90
Attendant Console	COR	5-38
Trunk Group (CO)	Toll Restricted	4-131
or		
Trunk Group (FX)	Toll Restricted	4-184
Digit Absorption	All	5-126

- 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.
- Foreign Exchange and Central Office Trunk Group 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 that 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	Called Party Restriction (Inward)	5-76
Station	COR	5-235

- 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 that 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	Called Party Restriction (Manual)	5-76
Station	COR	5-257

- 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 that 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	5-76 5-257

- 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 that 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	Calling Party Restriction (Outward)	5-76
Station	COR	5-257

- 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 — 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 that 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	Called Party Restriction (Termination)	5-76
Station	COR	5-235

- 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:	Queue Length	
Access		4-94
APLT		4-113
CO		4-131
CPE		4-147
DMI-BOS		4-152
FX		4-184
ISDN-PRI		4-200 4-67
RLT		4-224
Tandem		4-241
Tie		4-261
WATS		4-282
Feature-Related System Parameters	Automatic Callback-No Answer Timeout Interval	5-133
Feature Access Codes	Automatic Callback Activation/ Deactivation	5-128
Station (multi-appearance)	Buttons/Feature Button Assignments -auto-cback	5-235

- 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 (3-burst ringing), Intercom ringing, and Manual Signaling ringing will ring at the voice terminal. 1-burst, 2-burst, 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	5-235

- 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 Manager I or SAT-PC 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 thirty 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 sixteen 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 5 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 Generic 1 and Generic 3i System Reports*, 555-204-510.

Status Report

The Security Violations Status Report provides current status information for invalid Manager I or SAT-PC login or Remote Access (barrier code) attempts. Invalid Manager I or SAT-PC 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 the Security Violation Notification 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	5-133
Station (multi-appearance)	Button/Feature Button Assignments (lsvn-call) (rsvn-call)	5-235

- Feature-Related — Complete all appropriate Security Violation Notification Parameters on Page 5 of the form.

After completing Page 5 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 Manager 1 or SAT-PC 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 (for example, 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	5-128
Station (multi-appearance)	Button/Feature Button Assignments -send-calls	5-235
Call Coverage Paths	All	5-61

- 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. While observing a call, the specified user can toggle between a listen-only and a listen/talk connection to the call. Note that 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 with 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	Service Observing	5-76
Feature-Related System Parameters	Service Observing Warning Tone	5-133
Station (multi-appearance)	Button/Feature Button Assignment -serv-obsrv	5-235
Attendant Console	Feature Button Assignments -serv-obsrv	5-38

- 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	5-118

Hardware Requirements

None.

Software Defined Data Network

Software Defined Data Network (SDDN) provides virtual private line connectivity via the AT&T switched network (4 ESS 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 non-signaling 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 Generic 3i Global Feature Description*, 555-230-203. 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 which 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 which must remain operational in the event of a network failure.
- Have multiple end-point destinations (require serial or non-simultaneous 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 (this Chapter) for administration information and associated hardware requirements.

Station Message Detail Recording (SMDR)

NOTE:
This section deals with Station Message Detail Recording (SMDR). For information on the Intra-switch SMDR feature, refer to the "Intra-switch SMDR" section in this chapter.

Records detailed call information on all incoming and outgoing calls on specified trunk groups and sends this information to a SMDR output device. Internal calls are not recorded. The SMDR 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 3-18 provides typical System SMDR connections and Figure 3-19 provides typical SMDR connections to a 3B2 Message Server adjunct.

Administration

The System forms listed in the first table that follows must be completed to assign SMDR. In addition, depending on the SMDR output device connection to the digital switch, System forms as listed in either the second, third, fourth, or fifth table must also be completed.

Form	Field	Form Instructions (Page #)
Trunk Groups:	SMDR Reports	
Access	Answer Supervision Timeout	4-94
APLT		4-113
CO		4-131
CPE		4-147
DMI-BOS		4-152
DID		4-166
FX		4-184
RLT		4-224
Tandem		4-241
Tie		4-261
WATS		4-282
Personal Central Office Line Groups (PCOLGs)	SMDR Reports	4-216
Loudspeaker Paging and Code Calling Access	SMDR	5-174
Feature-Related System Parameters	SMDR Parameters (all fields)	5-133
Inter-Exchange Carrier (IXC) Codes	All	5-170
Feature Access Codes	SMDR Account Code Access Code	5-128

SMDR Output Device Connected To MPDM/MTDM:

Form	Field	Form Instructions (Page #)
Netcon Data Module	All	5-110
MPDM/MTDM Data Module	All	5-106

SMDR Output Device Connected To Message Server Adjunct:

Form	Field	Form Instructions (Page #)
Processor Interface Data Module	All	5-113
MPDM/MTDM Data Module	All	5-106
Processor Channel Assignment	All	5-190
Interface Links	All	5-167

SMDR Output Device Connected to DCE Jack on the Control Carrier

Form	Field	Form Instructions (Page #)
Feature-Related System Parameters	EIA Device Bit Rate Primary Output Layout Secondary Output Layout Primary/Secondary Output Extension	5-133

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

Form	Field	Form Instructions (Page #)
Data Line Data Module	All	5-90
Netcon Data Module	All	5-110

SMDR 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.	5-184
Station-2500 type	All	5-235

- Trunk Group Forms — Complete SMDR 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.
- Personal Central Office Line Groups Form — Complete SMDR Reports field.
- Loudspeaker Paging and Code Calling Access Form — Complete SMDR field.
- Feature-Related System Parameters Form — Complete all SMDR Parameters fields as required.
- Inter-Exchange Carrier (IXC) Codes Form — Assign IXC codes where applicable to allow identification of the IXC on the SMDR report. If no carriers are specified, the SMDR record will contain a "0" in the IXC code field on the SMDR printout.
- Feature Access Codes Form — Complete SMDR Account Code Access Code field.

Complete the following forms if the SMDR output device is connected to 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 SMDR output device to the switch.
- 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 SMDR output device to a port on a TN754B Digital Line circuit pack.

Complete the following forms if the SMDR output device is connected to a Message Server Adjunct:

- Processor Interface Data Module Form— 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 SMDR 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 SMDR output device.
- Interface Links Form — Complete required fields to assign the SMDR output device interface link.

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

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

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

- Netcon Data Module Form— 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 SMDR output devices and is the preferred method. A Data Line circuit pack must be assigned using the Circuit Pack Administration form as described in Chapter 1. Up to eight ports are provided. A Z3A Asynchronous Data Unit (ADU) is required at the SMDR output device.

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

- Modem Pool Group Form — Complete all fields. Do not fill out this form if the SMDR 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

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 SMDR 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 SMDR output device is a Printer, AT&T TELESEER® SMDR Unit.
- A Modular Trunk Data Module (MTDM) must be connected to a port on a TN754B Digital Line circuit pack if the SMDR output device is a Host Computer or a 94A Local Storage Unit (LSU).
- If the SMDR 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 SMDR output device is connected to a Data Line Data Module, a TN726B Data Line circuit pack is required.
- If the SMDR output device is connected to the DCE jack on the back of the Control Carrier, the appropriate 50-foot cable is required.

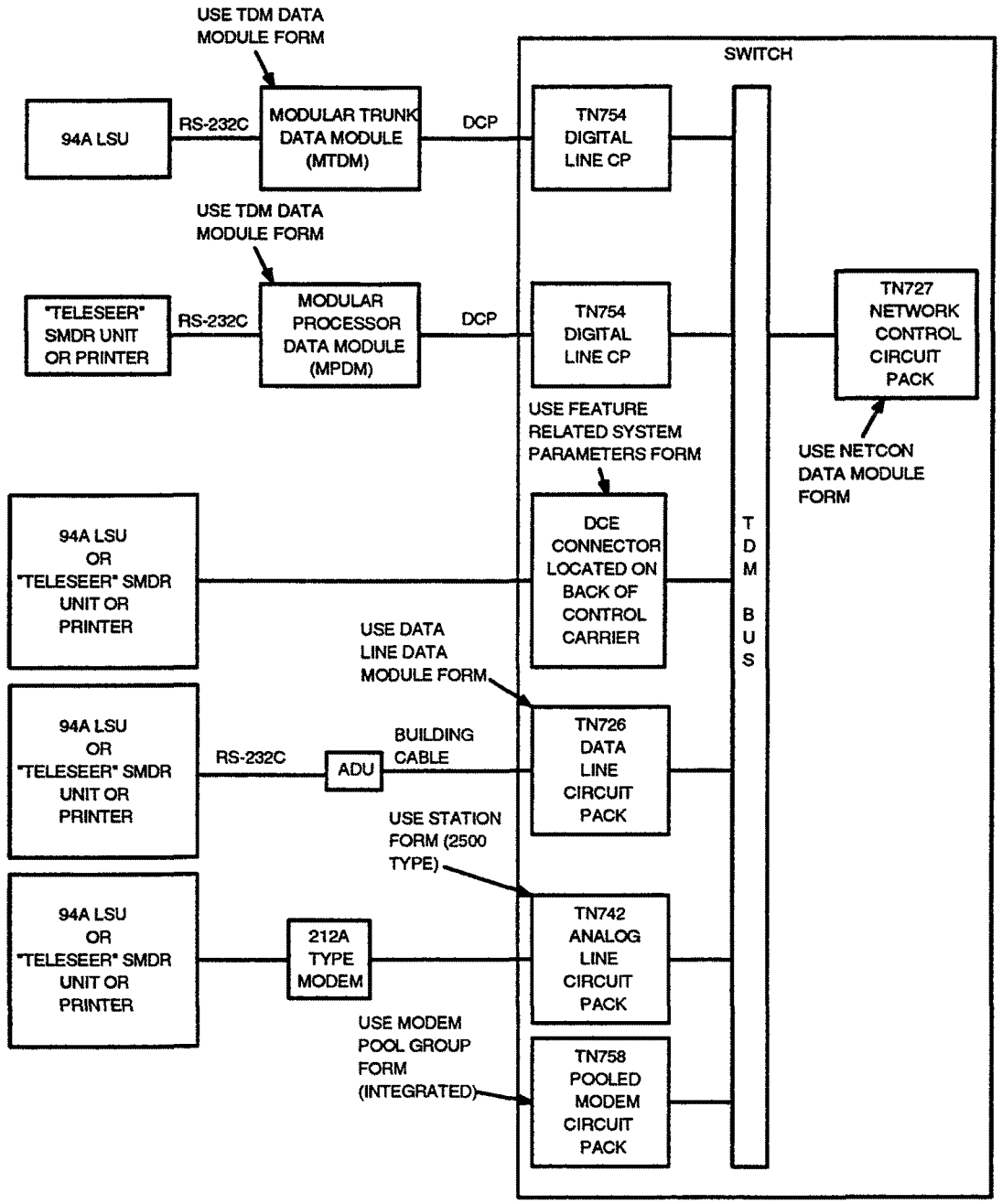


Figure 3-18. Typical SMDR Connections

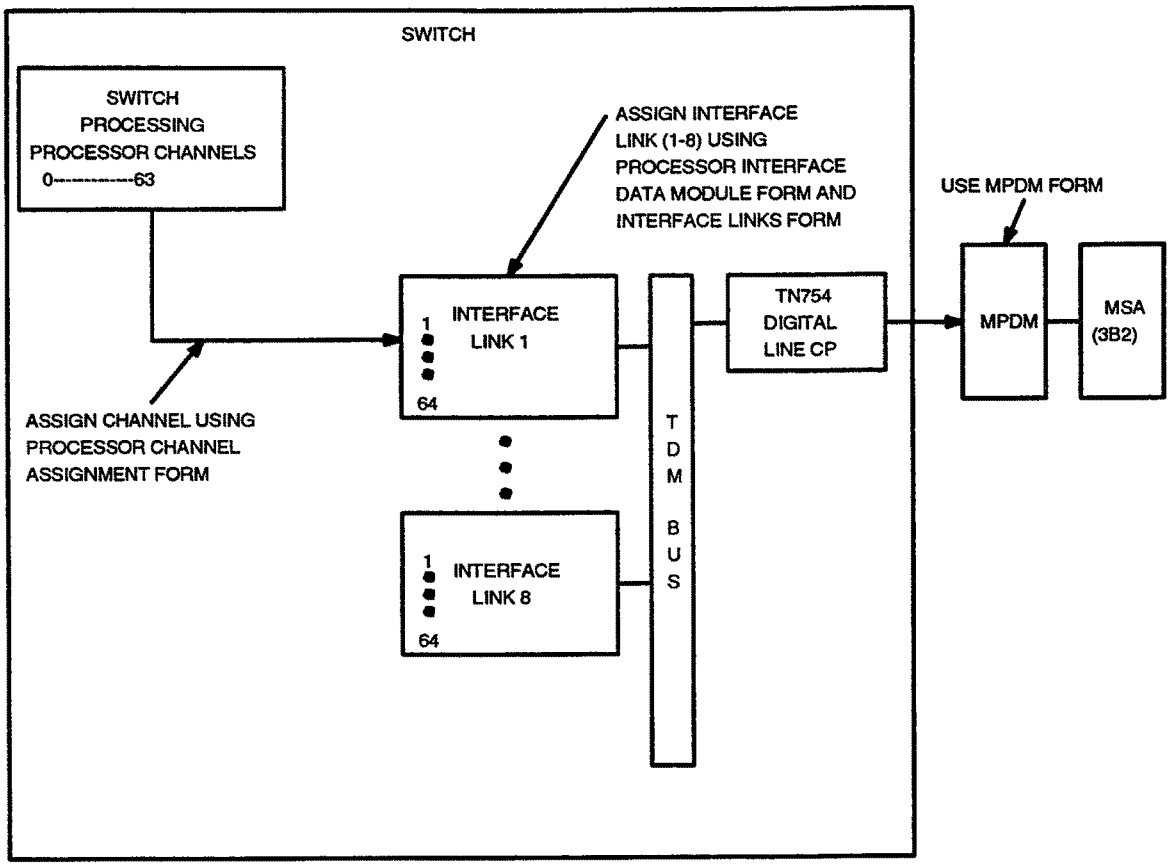


Figure 3-19. Typical SMDR Connections to a 3B2 Message Server Adjunct

Station Message Detail Recording — Account Code Dialing

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

Note that the Forced Entry of Account Codes feature is covered elsewhere in this Chapter.

Administration

To implement SMDR Account Code Dialing, the following form(s) or sections of the form(s) must be completed.

Form	Field	Form Instructions (Page #)
Feature Access Codes	SMDR Account Code Access Code	5-128
Feature-Related System Parameters	SMDR Account Code Length	5-133

- Feature Access Codes Form — Assign an appropriate access code to the SMDR Account Code Access Code field (system default is *6).
- Feature-Related System Parameters Form — Complete SMDR Account Code Length field.

Hardware Requirements

None.

Station Message Detail Recording — Enhancements for Periodic Pulse Metering (PPM)

Uses pulses transmitted over the trunk line from the serving CO at periodic intervals during the course of the outgoing call to determine call charges. Each pulse has an intrinsic value; at the end of the call, the sum of the pulses represents the charges for the call. The more expensive the call, the faster the sending rate of the pulses becomes.

The TN465 Loop Start CO Trunk circuit pack is capable of detecting 16-kHz PPM pulses. 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. In order to ensure that delayed PPM data is received, the Outgoing Glare Guard Timer on the trunk group should be adjusted accordingly. Once the trunk circuit has collected the PPM count, the SMDR output may be either an International TELESEER or International Printer record. Each of the records has a format to include PPM pulse count information.

Administration:

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

Form	Field	Form Instructions (Page #)
CO	PPM	4-131
DIOD		4-174
FX		4-184
PCOL		4-216
WATS		4-282

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 TN 438B CO Loop Start Trunk circuit packs support PPM pulse detection over associated trunks assigned to CO, FX, WATS, and PCOL Groups.

Station Message Detail Recording — Privacy

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

Administration

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

Form	Field	Form Instructions (Page #)
Station	SMDR Privacy	5-235
(all)		
Feature-Related System Parameters	Privacy — Digits to Hide	5-133

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	4-76
Feature-Related System Parameters	Off Premises Tone Detect Timeout Interval	5-133

- 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 #)
Tandem Trunk Group	All	4-241

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, TN760C, or TN767 circuit pack for each trunk to be assigned in the Access Trunk Group. A TN760B provides four ports. A TN722B or TN767 provides 24 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	All	5-223
Station (multi-appearance)	Button/Feature Button Assignments -term-x-gr (Grp:___) -exclusion -send-term (Grp:___) -aut-msg-wt (Ext:___) Bridged Call Alerting	5-235

- 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.

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 4 ESS switch to support MEGACOM servicw, 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 #)
Tie Trunk Group	All	4-261

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, TN760B, or TN767 circuit pack for each trunk to be assigned in the Trunk Group. A TN760B provides four ports. A TN722B or TN767 provides 24 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 assign a Tie Trunk Group, the following form must be completed.

Form	Field	Form Instructions (Page #)
Time of Day Routing	All	4-85
ARS Analysis	All	4-20
AAR Analysis	All	4-3
Class of Restriction	Time of Day Plan Number	5-76
Station (multi-appearance) (7400D series equipped with a display)	Button/Feature Button Assignments -man-overid -clk-overid	5-235
Attendant Console	Feature Button Assignments -man-overid -clk-overid	5-38

- 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.
- 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.

Timed Reminder

Automatically alerts the attendant after a predetermined time for the following types of calls:

- Extended calls waiting to be answered or waiting to be connected to a busy single-line voice terminal
- One-party incoming calls placed on hold on the console
- Incoming calls answered by a voice terminal user, but which are unanswered after being transferred.

The Timed Reminder feature is not available for calls placed, transferred, or extended to a Vector Directory Number (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 #)
Console Parameters	Timed Reminder On Hold Return Call Timeout	5-83

- Console Parameters Form — Complete Timed Reminder on Hold and Return Call Timeout fields.

Hardware Requirements

None.

Trunk Flash

Enables PBX stations to access customized services provided by a far end (for example, Central Office). To use this feature, the following conditions must be met:

- The trunk group must be enabled for the Trunk Flash feature. Generic 3i 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. The trunk group types may be "co", "fx", and/or "wats".

  NOTE:
  The Trunk Flash feature is not available on Personal Central Office Lines (PCOL).

- The Trunk Flash (Flash) button on selected multifunction voice terminals (stations) must be administered.

  NOTE:
  The Trunk Flash (Flash) button is not available on analog voice terminals or attendant consoles.

- 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.

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	5-264
10 Button		
20 Button		
30 Button		
Station (multi-appearance)	All	
7303S		5-291
7305S		5-291
7309H		5-291
7401D		5-298
7403D		5-298
7404D		5-298
7405D		5-309
7406D		5-321
7407D		5-321
7434D		5-336
"CALLMASTER" Terminal (602A1)		5-362
Station (Terminals)		5-279
515BCT		
Trunk Group		
CO	All	4-131
FX	All	4-184
WATS	All	4-282

*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.
- 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	5-38
Trunk Groups:	Busy Threshold	
Access		4-94
APLT		4-113
CO		4-131
CPE		4-147
DMI-BOS		4-152
FX		4-184
ISDN-PRI	4-200 4-67	
RLT		4-224
Tandem		4-241
Tie		4-261
WATS		4-282

- 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	5-38
7400D Series Voice Terminals	Button/Feature Button Assignments -trk-id	5-235

- Attendant Console Form — Assign a Trunk ID button.
- Station Forms — Assign a Trunk ID feature button to stations equipped with a display or have an associated data terminal providing voice terminal displays.

Hardware Requirements

None.

Trunk Groups

Up to a maximum of 99 trunk groups can be assigned in the System. Each trunk group can have up to 99 trunks. The maximum number of trunks that can be assigned in the System is 400.

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)
- Foreign Exchange (FX)
- Integrated Services Digital Network-Primary Rate Interface (ISDN-PRI)
- Personal Central Office Line (PCOL)
- Release Link
- 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	5-133

- 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	5-194
Recorded Announcement Data Module	All	5-194
Call Coverage Paths	All	5-61
Hunt Groups	All	5-153
Trunk Groups:	Incoming Destination Night Service	
Access		4-94
APLT		4-113
CO		4-131
DMI-BOS		4-152
FX		4-184
ISDN-PRI		4-200 4-67
RLT		4-224
Tandem		4-241
Tie		4-261
WATS		4-282

- Recorded Announcements Form — Assign recorded announcement extension numbers, if used.
- Recorded Announcement Data Module Form — Complete all fields.
- 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.

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 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 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 is 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

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 via 4- or 5-digit dialing. The Uniform Dial Plan (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.

Administration

The optional Uniform Dial Plan feature must be enabled on the System-Parameters Customer-Options form before associated forms and fields on forms can be administered.

Note that UDP calls cannot "crossover" to Automatic Route Selection by assigning "ars" as the Call Type on the AAR Analysis form (Chapter 4). A UDP call must be routed using AAR facilities only.

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	5-118
AAR Analysis	All	4-3
Routing Patterns	All (AAR & ARS)	4-76

- Dial Plan Form — Assign a "y" in the Uniform Dialing Plan field. Specify four or five digits. Also, complete pages containing PBX codes.
- AAR Analysis — Complete appropriate fields as described under Automatic Alternate Routing (AAR).
- Routing Patterns Form — Complete appropriate fields as described under Automatic Alternate Routing (AAR).

Hardware Requirements

None.

Visually Impaired Attendant Service (VIAS)

Provides voice feedback in either Italian or British English to a visually impaired attendant. 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		5-38
Feature Button Assignments	VIAS Act/Deact Console stat display stat last oper last voice mess direct trunk group	5-38

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

None.

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.

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	LWC Message Retrieval Lock LWC Message Retrieval Unlock Voice Coverage Message Retrieval Access Code Voice Principal Message Retrieval Access Code	5-128
Feature-Related System Parameters	Stations With System-Wide Retrieval Permission	5-133
Station	Security Code	5-235

- 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 a TN725 Speech Synthesizer circuit pack. No additional software is required.

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 #)
7400D Series Voice Terminal	Data Module Display	5-298

- 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.

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 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 — 10-, 20-, or 30-MET Voice Terminal	All	5-264
Station — 500 Voice Terminal	All	5-271
Station — 510D Personal Terminal	All	5-279
Station — 515 BCT	All	5-279
Station — 2500 Voice Terminal	All	5-271
Station — 7101A Voice Terminal	All	5-271
Station — 7102A Voice Terminal	All	5-271
Station — 7103A Voice Terminal	All	5-271
Station — 7104A Voice Terminal	All	5-271
Station — 7303S	All	5-291
Station — 7305S	All	5-291
Station — 7309H Voice Terminal	All	5-291
Station — 7401D Voice Terminal	All	5-298
Station — 7403D Voice Terminal	All	5-298
Station — 7404D Voice Terminal	All	5-298
Station — 7405D Voice Terminal	All	5-309
Station — 7406D Voice Terminal	All	5-321
Station — 7407D Voice Terminal	All	5-321
Station — 7410D Voice Terminal	All	5-331
Station — 7434D Voice Terminal	All	5-336
Station — 7505D Voice Terminal	All	5-346
Station — 7506D Voice Terminal	All	5-346
Station — 7507D Voice Terminal	All	5-346
Station — 8503D Voice Terminal	All	5-346
Station — 8510D Voice Terminal	All	5-346
Station — 8520D Voice Terminal	All	5-346
Station — 602A1 CALLMASTER Digital Voice Terminal	All	5-362

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, 7403D, 7404D, 7405D, 7406D, 7407D, 7410D, 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, 7403D, 7404D, 7405D, 7406D, 7407D, 7410D, 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 75 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 #)
WATS Trunk Group	All	4-282

- WATS Trunk Group 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 DS1 Interface circuit pack is required for each WATS trunk to be assigned. A TN747 provides eight ports and a TN767 provides 24 ports.

4. Forms for Network Features and Services

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 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.

The forms included in this chapter are those forms that are primarily dedicated to networking and do not include multi-use forms that support other functional areas such as voice or data management. All other forms required to implement the System, including those multi-use forms (e.g., Dial Plan, Feature Access Codes) that support networking and voice and data management, are included in "Chapter 5. Forms for System Features and Services".

Refer to "Chapter 3. System Features, Functions, and Services" 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.

AAR Analysis Table

Used to administer the AAR Analysis Table. The form allows for the mapping of 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 (i.e., AAR or UDP) feature must be enabled on the System-Parameters Customer-Options form before associated AAR forms can be administered.

Administration Commands

The following administration commands can be used to access the AAS Analysis Table form. In some cases, just the most commonly used commands are shown. Refer to Administration Commands and Error Messages (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 0-9, 'x' or 'X' (dialed string) ['part' 1-8]
display	aar analysis	Enter digits between 0-9, 'x' or 'X' (dialed string) ['part' 1-8] ['print' or 'schedule']
list	aar analysis	[start dialed string] ['count' 1-2000] ['rp' 1-254 or r1-r32] ['part' 1-8] ['print' or 'schedule']
list	aar 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.

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 utilized. 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 the Percent Full field display indicates that the System memory resources are in jeopardy of becoming full (i.e., 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** — When completing a paper form, enter the PGN to be associated with this table. Valid entries are 1-8. Default is "1".

- **Dialed String** — Enter the dialed string of significant digits. Up to 18 characters maximum consisting of the digits 0-9 are allowed. A wild card 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 0-9, "x", "X", or leave blank. Default is blank.

  Note that 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 AAS 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 wild card 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.

  Digit length is only checked if exact matches on more than one string are found using inter-digit timecost.

  As an example of Dialed String entries and associated Min and Max field entries (fields described below), RNXs 200-299 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. Valid entries are 0-23, or leave blank. Default is blank.
- **Max** — Enter the maximum number of digits that can be used to validate and route the call. Valid entries are 0-23, or leave blank. Default is blank.

  NOTE:
  If two identical dialed strings are administered, the Min and Max fields allow the system to discriminate between them. To tell the difference between them, the system uses the dialed number length. For example, the system would use the Min and Max fields to discriminate between the following two dialed strings:

	Min	Max
482	6	8
482	9	9

  In this case, no overlap is allowed between the field lengths to avoid ambiguity.

- **Route Pat** (Routing Pattern) — Enter the routing pattern number (1-254) on a pointer to an associated Remote Home Number Plan Area (RHNPA) form (r1-r32) to be used to route the call once all identifying digits have been received. Valid entries are 1-254, r1-r32, or leave blank. Default is blank.

- **Call Type** — Valid call types are as follows (default is a blank field):

CALL TYPE	DESCRIPTION
aar	Regular aar call
ars	Crossover to ARS call
attd	Attendant (indicates that the call will be terminated locally to the attendant)
haar	Home ETN address (indicates that the call should be terminated locally on the home switch instead of routing to another ETN node. If the location code is deleted from the dialed number, then the remaining digits are used to route the call to a local extension.)
hatd	Indicates that the AAR call should be terminated locally to the attendant group.
iaar	International AAR call
uaar	Unknown AAR call

Table 4-1 provides a listing of the AAR Analysis default translations.

Table 4-1. AAR Analysis Default Translations

Dialed String	Total Digits		Route Pattern	Call Type
	Min.	Max.		
0	1	23		ars
1	4	23		ars
2	7	7	254	aar
3	7	7	254	aar
4	7	7	254	aar
5	7	7	254	aar
6	7	7	254	aar
7	7	7	254	aar
8	7	7	254	aar
9	7	7	254	aar
X11	3	3		ars

AAR Analysis Table

Partitioned Group Number: 1 Percent Full:___

Dialed String	Total Min	Total Max	Route Pat	Call Type	Dialed String	Total Min	Total Max	Route Pat	Call Type

AAR Analysis Table Form

AAR Digit Conversion Table

Used to convert private network numbers to public network 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 eventually route the call via the ARS feature (by specifying the call type "ars" in the AAR Analysis table). 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. The modified string represents an alternative equivalent address and results in the call being routed according to the modified string. If the AAR Access Code is dialed, this table is accessed during call processing. Up to 300 entries in software can be shared between this table and the ARS Digit Conversion table.

The AAR Digit Conversion feature enhances the capabilities of the AAR feature so that outgoing public network calls and private network calls can be changed to private or public network destinations. The calls are then routed via the AAR feature.

Note that 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 AAS Digit Conversion Table form. In some cases, just the most commonly used commands are shown. Refer to Administration Commands and Error Messages (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 0-9 'x' or 'X'
display	aar digit-conversion	Enter digits between 0-9 'x' or 'X' ['print' or 'schedule']
list	aar digit-conversion	Enter ['start' matching pattern] ['count' (1-300)] ['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.

Note that when the form is accessed via the display (change, etc.) command, the entries are sorted separately in the order of the matching pattern. Specific digits are sorted before the wild card character "x" or "X".

- **Percent Full** — 3-character display-only field. Displays the percentage of the System's memory resources that have been utilized. 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 the Percent Full field display indicated that the System memory resources are in jeopardy of becoming full (i.e., 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 0-9 and wild card character "x" or "X" which is used to match any digit in the range of 0-9. If a Prefix Digit is required for 10-digit DDD numbers, then the Prefix Digit "1" 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.

- **Replacement String** — Enter a 1- to 18-digit string which will replace the matched portion of the dialed number. The string may contain the digits 0 through 9, a # character, or be blank (i.e., no entry). The # character, when used, must be at the end of the digit string and is used to signify end of dialing.

  Note that 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 ARS/AAR features.

AAR Digit Conversion Table

Percent Full: _

Matching Pattern	Replacement String	Matching Pattern	Replacement String

AAR Digit Conversion Table Form

ARS Analysis Table

Used to administer the ARS Analysis Table. The form allows for the mapping of customer dialed numbers (dialed strings) to routing patterns, using up to 18 digits. The ARS Analysis Table and the ARS Digit Conversion Table (coverage follows) replaces the ARS FNPA & HNPA Tables that were used in the previous release of the System.

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 and Error Messages (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' 1-23]
display	ars analysis	Enter digits between 0-9, 'x' or 'X' (dialed string) ['part' 1-8] ['min' 1-23] ['print' or 'schedule']
list	ars analysis	[start-dialed string] ['count' 1-2000 ['rp' 1-254 or r1-r32] ['part' 1-8] ['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

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 utilized. 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 (i.e., 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. Valid entries are 1-8. Default is "1".
- **Dialed String** — Enter the dialed string of significant digits. Up to 18 characters maximum consisting of the digits 0-9 are allowed. A wild card 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 0-9, x, X, or leave blank. Default is blank.

  Note that 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 wild card 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. Valid entries are 1-23. Default is blank.
- **Max** — Enter the maximum number of digits needed to validate and route the call. Valid entries are 1-23. Default is blank.

  NOTE:
  If two identical dialed strings are administered, the Min and Max fields allow the system to discriminate between them. To tell the difference between them, the system uses the dialed number length. For example, the system would use the Min and Max fields to discriminate between the following two dialed strings:

	Min	Max
482	6	8
482	9	9

In this case, no overlap is allowed between the field lengths to avoid ambiguity.

- **Route Pat**(Routing Pattern) — Enter the routing pattern number (1-254), a pointer to an associated Remote Home Number Plan Area (RHNPA) form (r1-r32) to be used to route the call once all identifying digits have been received, or "ign". The "ign" entry when used causes the associated Dialed String entry to be ignored and the search to continue for the next match. This is used typically for home NPA calls where some callers dial 10-digits and others dial 7-digits. For example, if "201" is the Dialed String entry (min/max = 10/10, Route Pat = ign, and Call Type = fnpa), and the number dialed is 201-957-1234; the 201, when matched by the search routine is ignored and the table is researched using 9571234. Valid entries for this field are 1-254, r1-r32, ign, or leave blank. Default is blank.
- **Call Type** — Valid call types are:

  ⇒ NOTE:
  For all international call types except "iop" or "int", this field must be "unk".

Call Type	Description
fnpa	10-digit call (11 digits with Prefix Digit "1")
hnpa	7-digit call
int	international
iop	international operator
op	operator
svc	service
natl	domestic call not using No. American Dial Plan
unk	unknown call not using No. American Dial Plan

Default is a blank field.

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
	Min.	Max.		
0	1	1		op
0	11	11		op
00	2	2		op
00	12	12		op
01	10	23		iop
010	3	3		iop
011	10	23		int
1	11	11		fnpa
10XXX	5	5		op
10XXX0	6	6		op
10XXX0	16	16		op
10XXX00	7	7		op
10XXX00	17	17		op
10XXX01	15	23		iop
10XXX010	8	8		iop
10XXX011	15	23		int
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
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 (0-9)

ARS Analysis Table

Partitioned Group Number: 1 Percent Full:___

Dialed String	Total Min	Total Max	Route Pat	Call Type	Dialed String	Min	Max	Route Pat	Call Type
10	3	3	7	natl	078	9	9	4	natl
15	6	6	8	natl	0	9	9	4	natl
12	4	4	2	natl	016	9	9	5	natl
13	4	4	2	natl	04;	9	9	5	natl
17	4	4	2	natl	07	9	10	5	natl
6	7	7	2	natl	016251	9	9	6	natl
7	7	7	2	natl	03	9	9	6	natl
8	7	7	2	natl	00;	3	23	9	int
9	7	7	2	natl	00	3	23	1	int
11	6	6	3	natl		—	—	—	—
1	6	6	3	natl		—	—	—	—
2	7	7	2	natl		—	—	—	—
3	7	7	2	natl		—	—	—	—
4	7	7	2	natl		—	—	—	—
5	7	7	2	natl		—	—	—	—

ARS Analysis Table Form

Implementation Notes: The above screen is an example for Brussels, Belguim. The table below is also applicable to installations in Belguim in that it provides for dial tone detection (+) for all calls and second dial tone detection (insert +00+) for international calls (starting digits 00). The table also shows the use of a variety of FRLs to restrict access to certain zones in Belguim and throughout the world.

Routing Pattern	Group	FRL	No.Digits Deleted	Inserted Digits
1	32	7	2	+00+
9	32	6	2	+00+
2 thru 8	32	1 thru 5		+

ARS Digit Conversion Table

Used to convert public network numbers (ARS) to private network numbers (AAR). 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 routed according to the modified string. If the ARS Access Code is dialed, this table is accessed during call processing. Up to 300 entries in software can be shared between this table and the AAR Digit Conversion Table.

The ARS Digit Conversion feature enhances the capabilities of the ARS feature so that private network calls can be changed to private or public network destinations. The calls are then routed via the AAR feature.

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 and Error Messages (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 'schedul
list	ars digit-conversion	Enter ['start' matching pattern] ['count' (1-300)] ['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.

Note that 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 wild card character "x" or "X".

- **Percent Full** — 3-character display-only field. Displays the percentage of the System's memory resources that have been utilized. 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 the Percent Full field display indicated that the System memory resources are in jeopardy of becoming full (i.e., 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 0-9 and wild card character "x" or "X" which is used to match any digit in the range of 0-9. If a Prefix Digit is required for 10-digit DDD numbers, then the Prefix Digit "1" 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.

- **Replacement String** — Enter a 1- to 18-digit string which will replace the matched portion of the dialed number. The string may contain the digits 0 through 9, a # character, or be blank (i.e., no entry). The # character, when used, must be at the end of the digit string and is used to signify end of dialing.

  Note that 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 ARS feature.

⇒ NOTE:
Any match in digit conversion takes precedence over any match in analysis even if there is a better digit analysis match.

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. ARS/AAR Digit Conversion Examples

Operation	Actual Digits Dialed	Matching Pattern	Replacement String	Modified Address	Notes
DDD Call to ETN	9-1-303-538-1345	1-303-538	362	362-1345	Routing pattern associated with AAR analysis will be selected.
Terminating local DDD call to an internal station	1-201-957-5567 or 957-5567	1-201-957-5 or 957-5	222-5	222-5567	Call terminated to Home RNX 222, Extension 5567 (if 4 digit dial plan).
Unauthorized call to intercept	9-1-212-976	1-XXX-976	#	(blank)	# Signifies the end of dialing. All calls to CO code 976 are blocked.
International Calls to Attendant	9-011-91-672530	011-91	222-0111#	222-0111	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.

NOTE:
The dialed digits are matched to the Matching Pattern that most closely matches the dialed number (referred to as 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. In addition, an exact match is made on entries of the same number of digits in cases where wild card characters (Xs) are used. For example, if 411 is dialed and the table has Matching Pattern entries of 411 and X11, the match is on the 411 entry.

ARS Digit Conversion Table

Percent Full:

Matching Pattern	Replacement String	Matching Pattern	Replacement String

ARS Digit Conversion Table Form

ARS Toll Table

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 nontoll calls.

The form is used to assign Toll Tables as required for ARS. 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 and Error Messages (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 (1-32:office code)
display	ars toll	n:xxx (1-32:office code) ['print' or 'schedule']

* Brackets [ ] indicate the qualifier is optional

Form Instructions

Make assignments as required for the following fields on the form:

- **ARS TOLL TABLE** — Enter the Toll Table number from 1-32. Up to eight forms may be required for each table, one for each hundreds block, 2-9.
- **OFFICE CODES** — Enter a hundreds block, that is, 200-299 through 900-999. 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 (System default).

Page 1 of 1

ARS TOLL TABLE: __

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

ARS Toll Table Form (Page 1 of 1)

Automatic Alternate Routing

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 using ARS analysis.

The network of PBXs interconnected with private line facilities that utilize 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 desirable 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.

Automatic Alternate Routing can access the same trunk groups and share the same 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.

Note that the method used to administer AAR in the previous releases of the DEFINITY Generic 3i System has been changed with this release. The AAR

RNX Translation Table has two new forms (AAR Analysis and AAR Digit Conversion). Now, a more flexible private networking arrangement is supported that allows a better interworking with DEFINITY Communications System Generic 3i and other systems. The System can now be administered to include RN, RNXX, and RXX dial plans, where R = 2-9, N = 2-9, and X = 0-9.

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 RNX and the extension number is a 4-digit number in the XXXX format (along with limitations that the UDP/DCS number cannot start with a "0"). For other destinations, ETN addresses are not limited to the 7-digit RNX format. ETN addresses can be administered as 5, 6, or 7 digits in length and the AAR location codes (PBX codes) of the format RN, RX, XX, RNX, RXX, XXX, and RNXX 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:
The Private Networking option on the System-Parameters Customer-Options form must be enabled before associated AAR forms can be administered.

- AAR Analysis Table
- AAR Digit Conversion Table
- Remote Home Number Plan Area (form information provided in the ARS 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 is described.

Figure 4-1 (see Automatic Route Selection feature description) is 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/AAR Partitioning
- Time of Day Routing
- ARS/AAR Digit Conversion

Immediately following the flow diagram is a summary of each of the forms (Figure 4-2) and the parameters that may be administered on the forms. Use this summary as a "quick reference" when you need an overview of just what is on each form.

Following this introduction are detailed instructions for completing each unique AAR form. Refer to the Automatic Route Selection feature description for instructions on forms that are shared between the two features (i.e., Remote Home Numbering Plan Area, Time of Day Routing, and Routing Patterns).

As shown on Figure 4-1, an AAR call begins with the dialing of an AAR access code (typically 8). If the facility (e.g., 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 as shown on the figure. 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 in Matching Pattern fields on the AAR Digit Conversion form. If a match occurs, a new number from the Replace field on the form is used to route the call via ARS analysis. 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 (1-8, 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 (1-8).

- ARS Partitioning Enabled and TDR Enabled.

  The Time of Day Plan Number of the calling party (1-8, administered via COR assignment to station) is used to make the choice of a Time of Day (TOD) Routing form of the same number (1-8). On the form, a Plan Number (1-8) is identified based on the day and time of day. This Plan Number is used to select an ARS Analysis Table form with a PGN of the same number (1-8).

- 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 if no match is found in AAR digit conversion. Each dialed string entry on the form is associated with a routing pattern and a call type (e.g., aar, ars, attendant, etc.). Refer to Table 4-3 in the AAR Analysis Table information for default translations associated with typical dialed strings.

If the Call Type field on the Analysis form for a digit string is "ars", call processing crosses over to ARS as shown on Figure 4-1 and the call is processed as an ARS call. If the Call Type is not "ars" the call is processed based on the Call Type entry. Certain calls may be directed to the attendant or to an attendant group if required by proper administration of the Call Type field. Refer to the AAR Analysis Table information for the various Call Type options available.

For regular AAR calls, if Remote Home Numbering Plan Area (RHNPA) translations are required for certain dialed strings, "r1" through "r32" is entered in the appropriate Routing Pattern field on the AAR Analysis Table form. The RHNPA form is used for translating 3-digit codes in the range 000-999. 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 RHNPA table (1-32) for further translations.

If the AAR Analysis table points to an RHNPA table, the next three dialed digits are compared with 3-digit codes in the selected RHNPA table. Each code on the table may have an administered reference to a routing pattern number (1-254).

The Routing Pattern form is used to route a call over one of six possible trunk groups. Up to 254 Routing Patterns may be assigned in the System. Based on entries on the form, up to 18 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 outpulsed (includes special symbols "+", "%", "#", "*", and ","). 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 (i e., trunk port) available in the selected trunk group. With all checks complete and okay, digits are outpulsed 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 private 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 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
- Overflowing to DDD
- Placing an IDDD call via AAR

Automatic Route Selection

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 based on a customer-specified order and typically the least expensive) available at the time the call is placed. ARS provides a choice of up to six routes for any given public network call. The following types of trunk groups 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 predefined geographic areas at a rate based on expected usage.

For the following discussion:

- Area Code = NPA = NIX (where N = 2-9, I = 0 or 1, X = 0-9)
- Central Office (CO) Code = NXX (where N = 2-9, X =0-9) or NIX (see Area Code)
- Foreign Number Plan Area (FNPA) Code — see Area Code
- Home Number Plan Area (HNPA) Code — see Area Code
- Partitioned Group Number (PGN) = 1-8
- Service Codes = X11 (where X = 0-9)

Note that the method used to administer ARS in the previous release of the DEFINITY Generic 3i System has been changed with this release. The ARS HNPA and FNPA Tables and Ten-Digit to Seven-Digit Conversion forms that were previously used have been replaced with two new forms (ARS 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 wild card capability on the forms that allows, for example, routing by exchange, across all area codes (e.g., 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 inter-exchange 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 (also requires PNA or UDP)
- Remote Home Numbering Plan Area (RHNPA)
- 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 is described. In addition, dialing patterns such as operator dialed calls, prefix 1 Direct Distance Dialing (DDD) calls, special service calls, international calls, and inter-exchange carrier calls are described.

Figure 4-2 is 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 flow chart 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/AAR Partitioning
- Time of Day Routing
- ARS/AAR Digit Conversion

Immediately following the flow diagram is a summary of each of the forms (Figure 2) and the parameters that may be administered on the forms. Use this summary as a "quick reference" when you need an overview of just what is on each form.

Following this introduction are detailed instructions for completing each form.

As shown on Figure 4-1, an ARS call begins with the dialing of an ARS access code (typically 9). If the facility (e.g., 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 as shown on the figure. 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 in Matching Pattern fields on the ARS Digit Conversion form. If a match occurs, a new number from the Replace field on the form is used to route the call by Automatic Alternate Routing (AAR) over the private network. Certain dialed digit strings may be routed (via their replacement strings) to the attendant, an announcement, or intercept if required. If no 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 form in

Chapter 5). 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 (1-8, administered via COR assignment to station) is used to make the choice of an ARS Analysis form with a PGN of the same number (1-8).

- ARS Partitioning Enabled and TDR Enabled:

  The Time of Day Plan Number of the calling party (1-8, administered via COR assignment to station) is used to make the choice of a Time of Day (TOD) Routing form of the same number (1-8). On the form, a Plan Number (1-8) 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 (1-8).

- 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. Each dialed string entry on the form is associated with a routing pattern and a call type (e.g., HNPA, FNPA, operator, service, etc.). Table 4-1 (see ARS Analysis Table Coverage) provides default translations for typical dialing strings. Operator, Inter-Exchange Carrier, 7-digit (digits 2-9 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 (RHNPA) translations are required, an appropriate entry of "r1" through "r32" is entered in the Routing Pattern field on the ARS Analysis Table form. The RHNPA form is used for translating 3-digit codes in the range 000-999. 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 RHNPA table (1-32) where further translations occur.

If the ARS Analysis table points to an RHNPA table, the next three dialed digits are compared with codes in the selected RHNPA table. Each code on the table may have an administered reference to a routing pattern number (1-254).

The Routing Pattern form is used to route a call over one of six possible trunk groups. Up to 254 Routing Patterns may be assigned in the System. Based on entries on the form, up to 18 leading digits may be deleted from the dialed number and up to 36 (after digit deletion) may be inserted. Up to 54 digits may be outpulsed (includes special symbols "+", "%", "#", "*", and ","). When used, special symbols count as two digits each An ARS Toll Table, when referenced from the routing pattern, is used to specify whether 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 (i.e., trunk port) available in the selected trunk group. When all checks are okay, digits are outpulsed over a selected trunk group member.

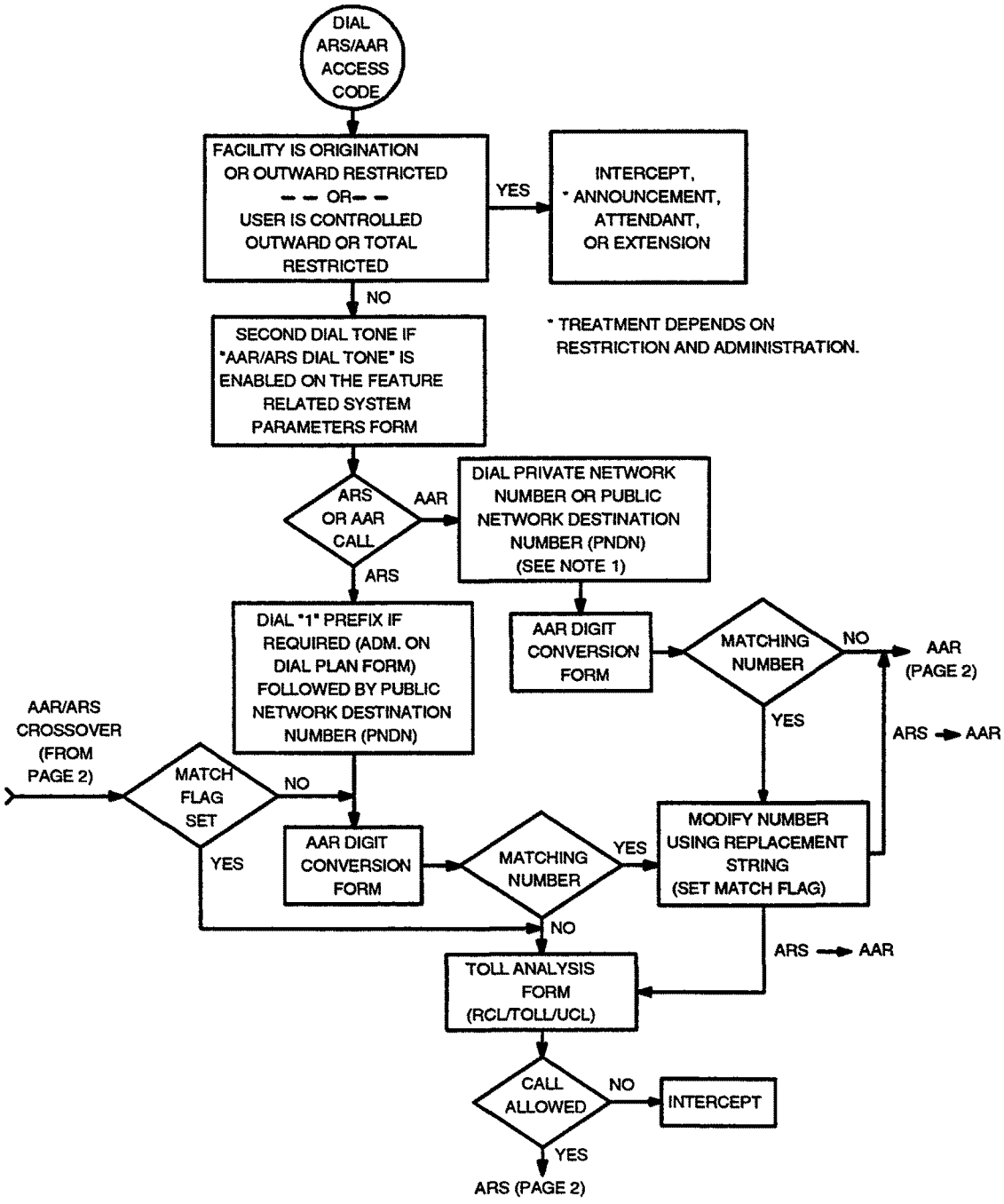


Figure 4-1. Automatic Route Selection Call Processing — Flow Diagram (Sheet 1 of 3)

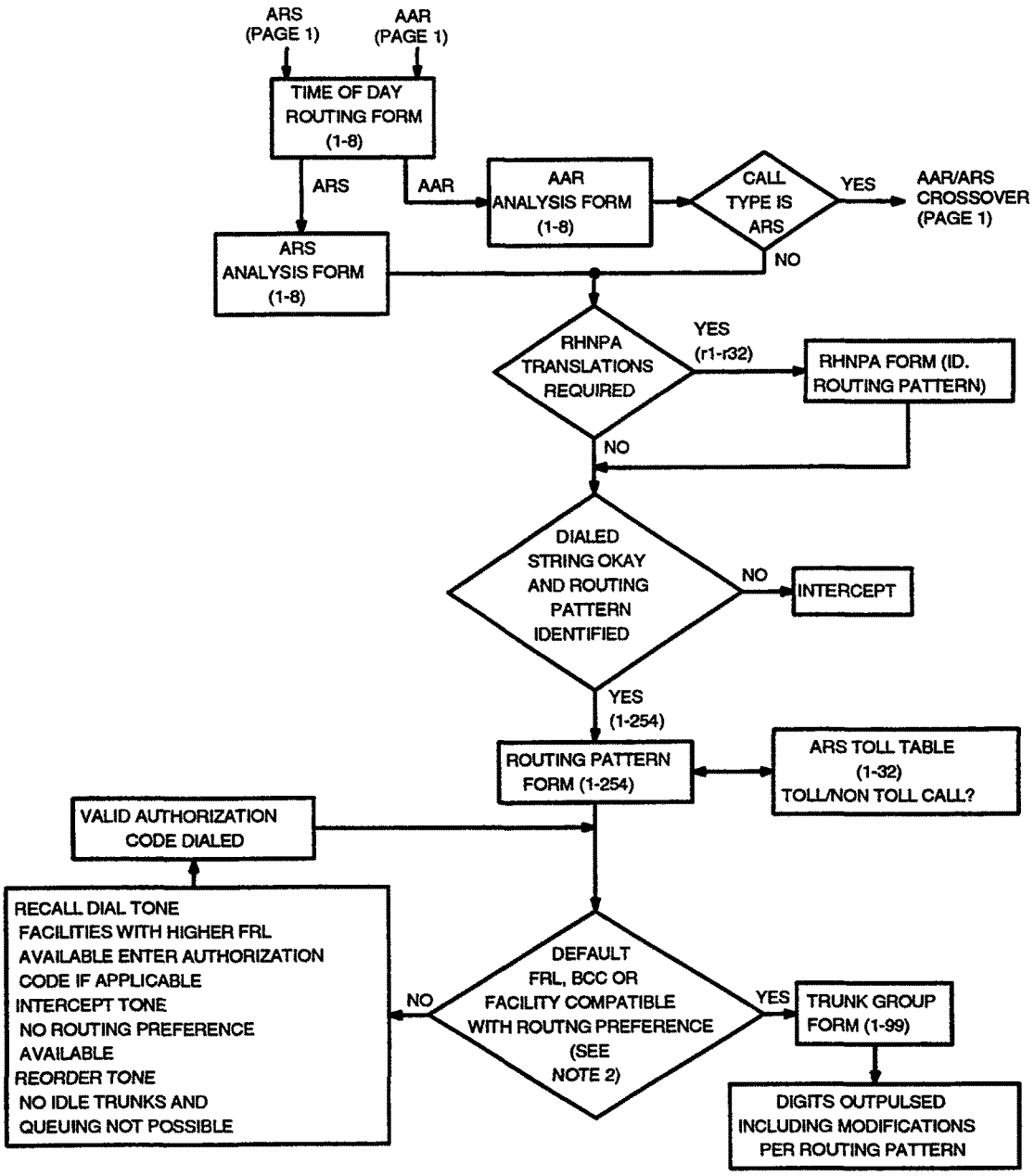


Figure 4-1. Automatic Route Selection Call Processing — Flow Diagram (Sheet 2 of 3)

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 ANALYSIS 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

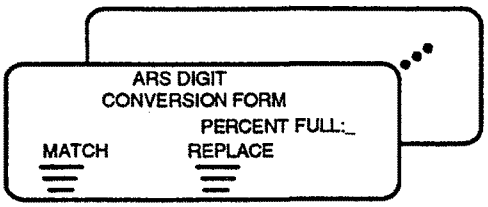
ATTENDANT EXTENDED CALL - DEFAULT FRL IS THE FRL ASSIGNED THE ATTENDANT GROUP, NOT THE FRL ASSIGNED THE USER'S STATION OR FACILITY

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

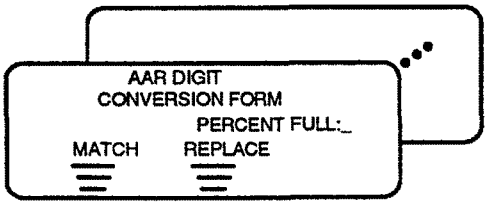
LEGEND:

AAR - AUTOMATIC ROUTE SELECTION
ARS - AUTOMATIC ROUTE SELECTION
BCC - BEARER CAPABILITY CLASS
COR - CLASS OF RESTRICTION
FRL - FACILITY RESTRICTION LEVEL
PNDN - PUBLIC NETWORK DESTINATION NUMBER (I.E . DDD, IDDD, SERVICE CODE 411, 911, ETC)
RHNPA - REMOTE HOME NUMBER PLAN AREA

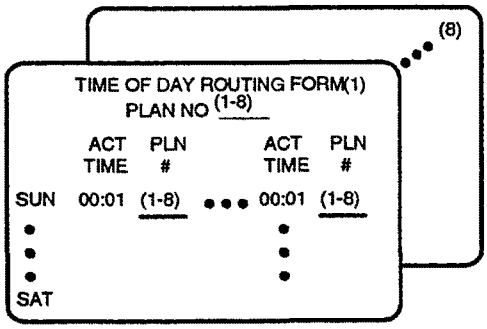
Figure 4-1. Automatic Route Selection Call Processing — Flow Diagram (Sheet 3 of 3)



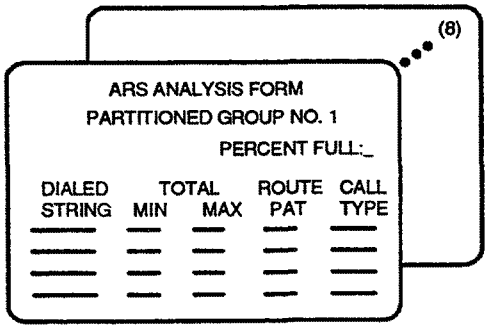
- ROUTES MATCHED CALLS VIA AAR USING REPLACE NUMBERS (MATCH IS ON DIALED NUMBER)
- MATCHING PATTERN FIELD -1 TO 18 CHARACTERS
- REPLACEMENT STRING FIELD - 1 TO 18 CHARACTERS



- MATCHED NUMBER STRINGS ARE MODIFIED USING ASSOCIATED REPLACEMENT STRINGS
- CALL ROUTED PER MODIFIED NUMBER
- MATCHING PATTERN FIELD -1 TO 18 CHARACTERS
- REPLACEMENT STRING FIELD -1 TO 18 CHARACTERS

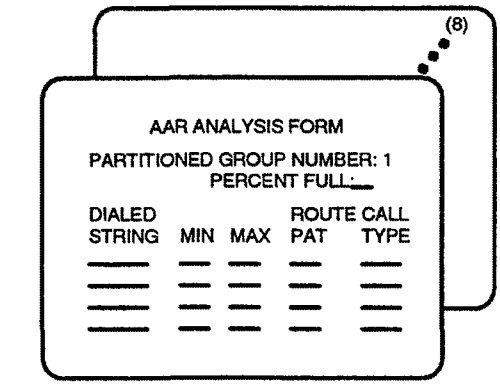


- PROCESSES CALL BASED ON THE TIME OF DAY THE TIME OF DAY NUMBER (1-8) OF A LOCAL CALLING USER IS USED TO CHOOSE AN ASSOCIATED TOD FORM (PLAN NO. 1-8)
- FOR USERS THAT ENTER A BARRIER CODE OR AN AUTHORIZATION CODE, THE COR SPECIFIED BY THE BARRIER OR AUTHORIZATION CODE IS USED TO SELECT A TOD PLAN
- EIGHT FORMS MAXIMUM, EACH ASSOCIATED WITH A DIFFERENT PLAN NO (1-8)
- A DIFFERENT PLN NO CAN BE REFERENCED UP TO SIX TIMES A DAY FOR EACH DAY OF THE WEEK
- THE PLN NO (1-8) IS USED TO IDENTIFY AN ASSOCIATED ARS/AAR ANALYSIS FORM WITH AN EQUIVALENT PARTITIONED GROUP NUMBER (1-8).

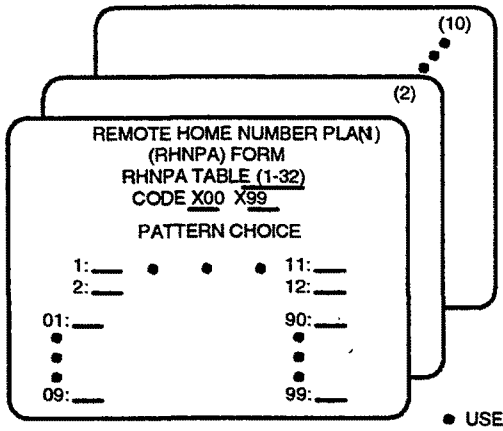


- MATCHES USER DIALED OR MODIFIED DIGIT STRINGS TO ROUTING PATTERNS (1-254). USES UP TO 18 - DIGITS
- MIN - MINIMUM NUMBER OF DIGITS NEEDED TO VALIDATE AND ROUTE THE CALL
- MAX - MAXIMUM NUMBER OF DIGITS NEEDED TO VALIDATE AND ROUTE THE CALL.
- ROUTE PAT - THE ROUTING PATTERN TO USE FOR A CALL (1-254, r1-r32)
- CALL TYPE:
  - INT (INTERNATIONAL)
  - IOP (INTERNATIONAL OPERATOR ASSISTED)
  - OP (OPERATOR ASSISTED)
  - FNPA (10-DIGIT CALL)
  - HNPA (7-DIGIT CALL)
  - SVC (SERVICE CALL)
  - STD (NO SPECIAL ATTRIBUTE - USED FOR INTERNATIONAL APPLICATIONS)

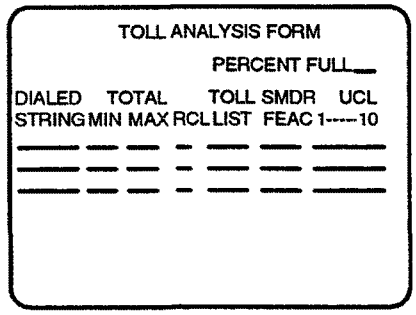
Figure 4-2. ARS Forms Summary (Sheet 1 of 3)



- MATCHED USER DIALED OR MODIFIED DIGIT STRINGS TO ROUTING PATTERNS (1-254) 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 (1-254, r1-r32)
- CALL TYPE:
  - AAR (REGULAR AAR CALL)
  - ARS (CROSSOVER TO ARS CALL)
  - ATTD (ATTENDANT)
  - HAAR (CALL TO TERMINATE TO LOCAL HOME SWITCH)
  - HATD (AAR CALL TO TERMINATE LOCALLY TO ATTENDANT GROUP)



- 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 254 POSSIBLE ROUTING PATTERNS CAN BE REFERENCED ON EACH TABLE.
- EACH PAGE SUPPORTS 100 CODES IN THE RANGE 000-099, 100-199, • • • 900-999



- 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 RC
- TOLL LIST ALL ENTRIES OF "X" AND THEIR ASSOCIATED DIGIT STRINGS ARE REFERRED TO AS THE SYSTEM'S TOLL LIST.
- SMDR FEAC USED TO INDICATE THAT A SMDR ACCOUNT CODE MUST BI 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 4-2. ARS Forms Summary (Sheet 2 of 3)

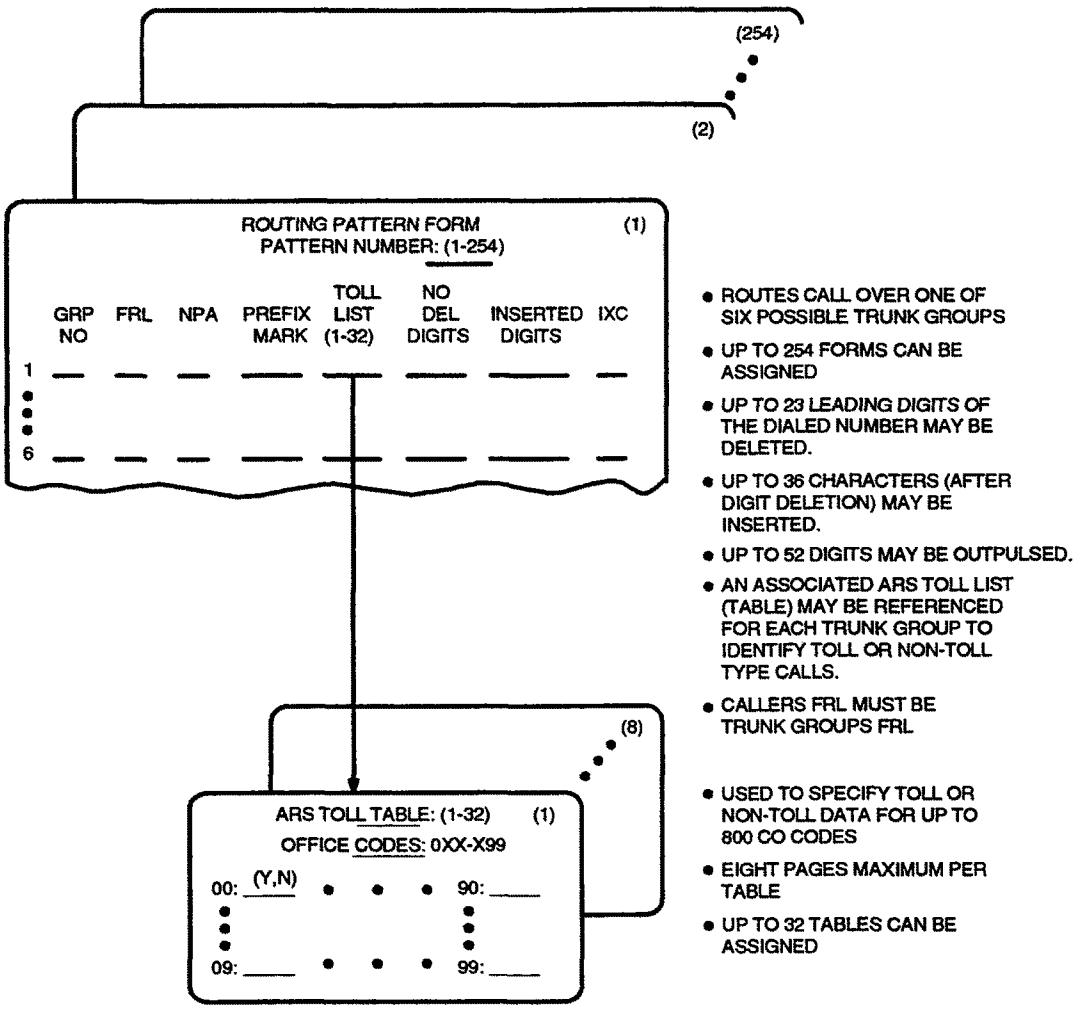


Figure 4-2. ARS Forms Summary (Sheet 3 of 3)

Dialing Patterns

The System recognizes 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 (ARS Analysis Default Translations) 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	Indicates that the Prefix digit 1 is never outpulsed.
1	Indicates that the Prefix digit 1 is outpulsed if ***and only if*** the call is a long distance FNPA call. Prefix Mark 1 should be selected for those HNPAs that require users to dial "1" to indicate a long distance FNPA call.
2	Indicates that the Prefix digit 1 is outpulsed for ***all*** toll calls within and outside the HNPA.
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.

  When a Prefix "1" is required, the first dialed digit of the long distance call following the ARS access code is a 1. Typically, dialing a "1" prefix in system's that require a "1" indicates a 10-digit call. The main purpose of the prefix digit "1" is to distinguish between 7- and 10-digit calls when there are interchangeable CO codes (i.e., CO codes that can be NPA codes).

  Another 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 which can be accessed locally by dialing a 7-digit number. In order 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 are a "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 interdigit 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 (e.g , "0") but more digits may follow, the short 3-second 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. To prevent a time-out race condition between the caller's switch and other network switches, a 10-second short inter-digit timer is used for incoming tie trunk calls. 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 in the public network.

  A trailing # is outpulsed for a range of digits in the dialed string (e.g., international calls) except when outputting dial pulses. An option on the trunk group form can be used to suppress "#" outpulsing. The dialed digits, including the prefix 0 and the trailing #, are always outpulsed as dialed except that # is never outpulsed 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 a 12-digit maximum. 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, etc., and CC and NN digits follow. The term ICDOS (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 = 0-9) 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 interdigit 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). In any case, the call is routed on the first three digits (X11) for these special services and translated by the ARS Analysis Table.
- **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 which are commonly referred to as Feature Group A, B, and D (i.e., 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 (i.e., NXX-XXXX or 950-0/1XXX, respectively) but FG D requires just five digits (i.e., 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.)
  - 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. 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 4-1 (ARS Analysis Default Translations).

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 that 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

Used to support the ISDN Call Identification Display feature. The feature provides a number display for display-equipped stations within an ISDN-PRI network. The System uses the calling party's number information and displays it on the called party's display, if provided. Likewise, the called party's 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 CPN number (1-15 digits) to be displayed instead of the calling party's number.
- Allows up to 240 entries with a maximum of 30 entries on a page.

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 and Error Messages (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 1-8 of the Form

- **Ext Len** — Specifies the number of digits the extension can have. Enter a number from 1 to 5 that corresponds to the extension lengths allowed by the dial plan.
- **Ext Code** — Enter "attd", blank, or an extension code. An extension code allows for groups of extensions to be administered because it consists of the ten thousands, thousands, hundreds, tens, and so forth, digits of a group of extension numbers. 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 digits are 0-9. Note that 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 to 15-digit CPN number. The CPN Prefix can be a 6- to 15-digit number, or can be blank. If it is a 15-digit number, the extension number is not used to formulate the 15-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 to 15-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 (0-15) to be included in the final CPN number.

```
                                                                      Page 1 of 8
                                    CPN PREFIX TABLE
Ext   Ext     CPN               Total        Ext   Ext      CPN               Total
Len   Code    Prefix             CPN         Len   Code     Prefix             CPN
                                Length                                        Length
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
_     _____   ______________     _           _     ____     ______________     _
```

CPN Prefix Table Form (Page 1 of 5)

(To reduce repetition, pages 2-5 are not shown.)

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.

The network-type forms that must be completed or considered when implementing DCS are:

- DS1 Circuit Pack
- Tie, Tandem, or ISDN-PRI Trunk Groups
- Routing Patterns

Refer to Distributed Communications System (DCS) in Chapter 3 for a complete listing of all System forms and/or fields on forms that must be completed or considered when implementing DCS. Forms such as the Dial Plan, Interface Links, etc., that support both networking and other functional areas such as voice and data management may also require implementation.

Note that the Distributed Communications System (DCS) option must be enabled on the System-Parameters Customer-Options form before DCS and UDP can be implemented.

An example of connecting three switches in a DCS configuration using voice tie trunks and DS1 signaling is shown in Figure 4-3.

For detailed information on DCS, refer to *AT&T Network and Data Services Reference Manual*, 555-025-201 Issue 3i, and *AT&T System 75 Application Notes — Distributed Communications System*, 555-209-003.

Completed System forms that are required to support the DCS configuration shown in Figure 4-3 are provided in Screens 4-1 through 4-21.

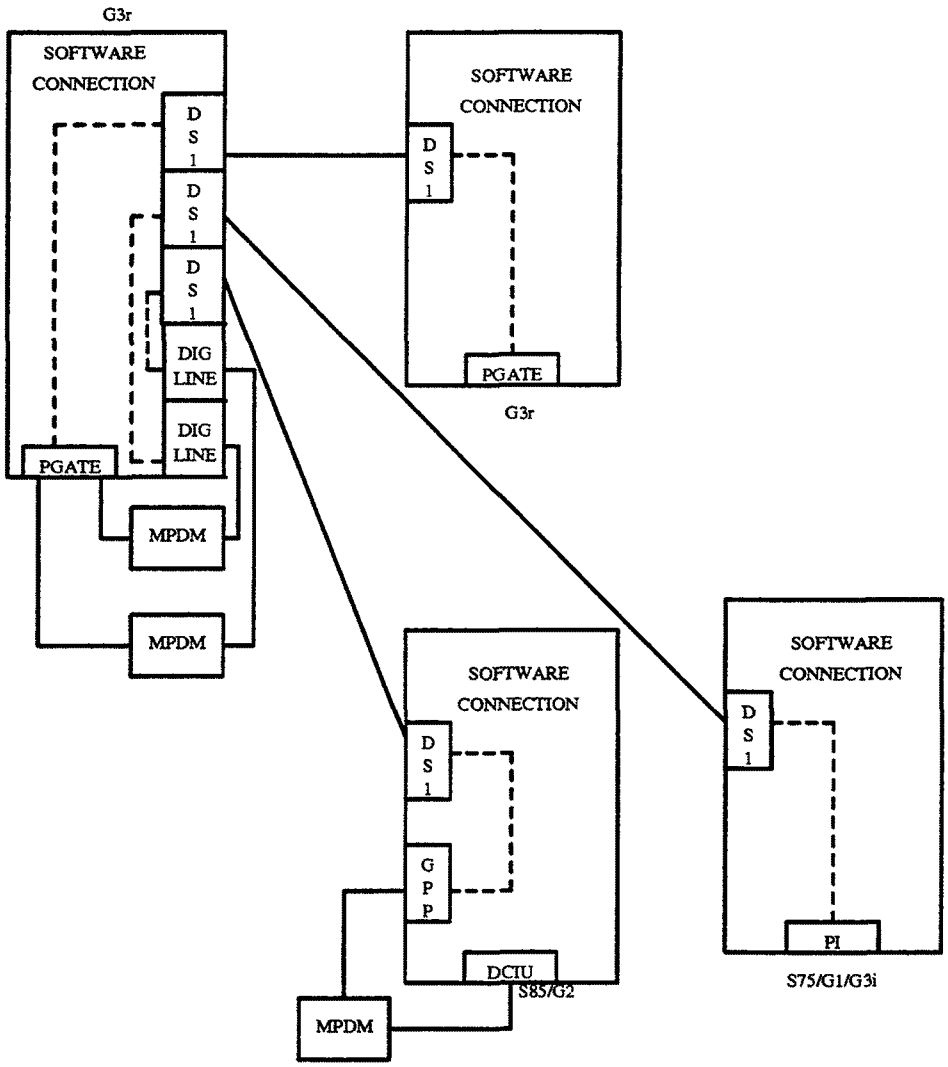


Figure 4-3. Distributed Communications System Using DS1 Facilities

```
                                                              Page 1 of 6
                              DIAL PLAN RECORD
                                 Area Code: 201        Local PBX ID: ___
                          ARS Prefix 1 Required? y
                           Uniform Dialing Plan? y
FIRST DIGIT TABLE
First                                  Length
Digit   -1-          -2-         -3-          -4-          -5-          -6-
  1 __________  __________  ___tac____  __________  __________  __________
  2 __________  __________  __________  __________  extension_  __________
  3 __________  __________  __________  __________  extension_  __________
  4 __________  __________  __________  __________  extension_  __________
  5 __________  __________  __________  __________  extension_  __________
  6 __________  __________  __________  __________  __________  __________
  7 __________  __________  __________  __________  __________  __________
  8 __________  __________  __________  __________  __________  __________
  9 __________  __________  __________  __________  __________  __________
  0 attd
  *             __fac_____
  #             __fac_____
```

Screen 4-1. Switch A Dial Plan Form — Example Only (Sheet 1 of 2)

```
                                                              Page 2 of 6
                            UNIFORM DIALING PLAN
 CODE LCL RNX ID    CODE LCL RNX ID    CODE LCL RNX ID    CODE LCL RNX ID
 _27_  y  824 9_    ____ _ ___ __      ____ _ ___ __      ____ _ ___ __
 _34_  n  834 2_    ____ _ ___ __      ____ _ ___ __      ____ _ ___ __
 _48_  n  848 10    ____ _ ___ __      ____ _ ___ __      ____ _ ___ __
```

Screen 4-2. Switch A Dial Plan Form — Example Only (Sheet 2 of 2)

```
                        AAR Analysis Table
                        Partitioned Group Number:  1          Percent Full:___
     Dialed                        Route  Call       Dialed                  Route  Call
     String          Min Max  Pat   Type       String          Min Max  Pat   Type
_______834_________  _7  _7  _34   _aar  ____________________  __  __  ___   ____
_______848_________  _7  _7  _48   _aar  ____________________  __  __  ___   ____
____________________  __  __  ___   ____  ____________________  __  __  ___   ____
____________________  __  __  ___   ____  ____________________  __  __  ___   ____
```

Screen 4-3. Switch A AAR Analysis Form — Example Only

```
                              TRUNK GROUP                          Page 1 of 9
      Group Number: 27              Group Type:  tie        SMDR Reports? y
        Group Name:  Tie to Switch B       COR: 1_                  TAC: 127
         Direction: two-way   Outgoing Display? n      Trunk Signaling Type:
       Dial Access? y          Busy Threshold: 60         Night Service: _____
       Queue Length: 0__                               Incoming Destination: _
          Comm Type: voice            Auth Code? n
   TRUNK PARAMETERS
     Trunk Type (in/out):  wink/wink       Incoming Rotary Timeout(sec): 5_
      Outgoing Dial Type: tone____                    Incoming Dial Type: tone__
                                                  Disconnect Timing(msec): 500_
         Digit Treatment: __________                                Digits: _____
       Connected to Toll? n       STT Loss: normal       DDD to DCO Loss: normal
      Incoming Dial Tone? n                          Signal Bit Inversion: none
  Disconnect Supervision: n                                  Line Length: short
Answer Supervision Timeout? 10                 Receive Answer Supervision: n
```

Screen 4-4. Switch A DCS Voice Tie Trunk to Switch B — Example Only (Sheet 1 of 3)

Implementation Note:

It is suggested that "Group Number" assignments be the same at the far-end node trunk group.

```
                              TRUNK GROUP                        Page 2 of 9
TRUNK FEATURES
            ACA Assignment? y                          Measured? none____
                                                     Internal Alert? n
                                                     Data Restriction? n

                 Used for DCS? y
       Suppress # Outpulsing? n              Maintenance Tests? y
```

Screen 4-5. Switch A DCS Voice Tie Trunk to Switch B — Example Only (Sheet 2 of 3)

```
GROUP MEMBER ASSIGNMENTS                                        Page 3 of 9
     Port          Name          Night     Mode        Type      Ans Delay
 1:  A0601____     34XXX_____    _____     e&m_____    t1-stan_  20____
 2:  _________     _________     _____     _________   _______   _____
 3:  _________     _________     _____     _________   _______   _____
 4:  _________     _________     _____     _________   _______   _____
 5:  _________     _________     _____     _________   _______   _____
 6:  _________     _________     _____     _________   _______   _____
 7:  _________     _________     _____     _________   _______   _____
 8:  _________     _________     _____     _________   _______   _____
 9:  _________     _________     _____     _________   _______   _____
10:  _________     _________     _____     _________   _______   _____
11:  _________     _________     _____     _________   _______   _____
12:  _________     _________     _____     _________   _______   _____
13:  _________     _________     _____     _________   _______   _____
14:  _________     _________     _____     _________   _______   _____
15:  _________     _________     _____     _________   _______   _____
```

Screen 4-6. Switch A DCS Voice Tie Trunk to Switch B — Example Only (Sheet 3 of 3)

Implementation Note:

"Group Member Assignments" must be the same at the far-end node trunk group.

```
                              TRUNK GROUP                          Page 1 of 9
    Group Number:  48            Group Type:  tie       SMDR Reports? y
      Group Name: Tie to Switch C       COR: 1_                  TAC: 148
       Direction: two-way   Outgoing Display? n     Trunk Signaling Type:
     Dial Access? y          Busy Threshold: 60       Night Service: ____
    Queue Length: 0__                          Incoming Destination: _
       Comm Type: voice           Auth Code? n
TRUNK PARAMETERS
  Trunk Type (in/out): wink/wink       Incoming Rotary Timeout(sec): 5_
   Outgoing Dial Type: tone____                  Incoming Dial Type: tone__
                                        Disconnect Timing(msec): 500_

      Digit Treatment: __________                          Digits: _____
     Connected to Toll? n     STT Loss: normal       DTT to DCO Loss: normal
    Incoming Dial Tone? n                        Signal Bit Inversion: none
  Disconnect Supervision: n                                Line Length: short
Answer Supervision Timeout? 10              Receive Answer Supervision: n
```

Screen 4-7. Switch A DCS Voice Tie Trunk to Switch C — Example Only (Sheet 1 of 3)

Implementation Note:

It is suggested that "Group Number" assignments be the same at the far-end node trunk group.

```
                                TRUNK GROUP                    Page 2 of 9
TRUNK FEATURES
                ACA Assignment? y                        Measured? none____
                                                       Internal Alert? n
                                                      Data Restriction? n

                   Used for DCS? y
          Suppress # Outpulsing? n                 Maintenance Tests? y
```

Screen 4-8. Switch A DCS Voice Tie Trunk to Switch C — Example Only (Sheet 2 of 3)

```
GROUP MEMBER ASSIGNMENTS                                        Page 4 of 9
     Port          Name          Night    Mode          Type       Ans Delay
 1: A0401____   48XXX_____       _____   e&m_____     t1-stan_     20____
 2: _________   _________        _____   _________    _________    _____
 3: _________   _________        _____   _________    _________    _____
 4: _________   _________        _____   _________    _________    _____
 5: _________   _________        _____   _________    _________    _____
 6: _________   _________        _____   _________    _________    _____
 7: _________   _________        _____   _________    _________    _____
 8: _________   _________        _____   _________    _________    _____
 9: _________   _________        _____   _________    _________    _____
10: _________   _________        _____   _________    _________    _____
11: _________   _________        _____   _________    _________    _____
12: _________   _________        _____   _________    _________    _____
13: _________   _________        _____   _________    _________    _____
14: _________   _________        _____   _________    _________    _____
15: _________   _________        _____   _________    _________    _____
```

Screen 4-9. Switch A DCS Voice Tie Trunk to Switch C — Example Only (Sheet 3 of 3)

Implementation Note:

"Group Member Assignments" must be the same at the far-end node trunk group.

```
                              TRUNK GROUP                          Page 1 of 9
      Group Number: 28             Group Type:  tie       SMDR Reports? y
        Group Name: DCS SIG to Switch B         COR: 1_            TAC: 128
         Direction: two-way   Outgoing Display? n     Trunk Signaling Type:
       Dial Access? n          Busy Threshold: 60        Night Service: 27100
      Queue Length: 0__                          Incoming Destination: 27100
         Comm Type:  avd            Auth Code? n
                                                                  BCC: 0
   TRUNK PARAMETERS
     Trunk Type (in/out):  wink/wink      Incoming Rotary Timeout(sec): 5_
      Outgoing Dial Type: tone____                  Incoming Dial Type: tone__
                                          Disconnect Timing(msec): 500_
         Digit Treatment: __________                          Digits: _____
       Connected to Toll? n      STT Loss: normal      DTT to DCO Loss: normal
                Bit Rate: 1200    Synchronization: async        Duplex: full

      Incoming Dial Tone? n                      Signal Bit Inversion: none
   Disconnect Supervision: n                                Line Length: short
Answer Supervision Timeout? 10              Receive Answer Supervision: n
```

Screen 4-10. Switch A DCS Signaling Link to Switch B — Example Only (Sheets 1 of 3)

Implementation Note:

It is suggested that "Group Number" assignments be the same at the far-end node trunk group.

```
                              TRUNK GROUP                    Page 2 of 9
TRUNK FEATURES
               ACA Assignment? y                      Measured? none____
                                                  Internal Alert? n
                                                    Data Restriction? n

                  Used for DCS? y
          Suppress # Outpulsing? n              Maintenance Tests? y
```

Screen 4-11. Switch A DCS Signaling Link to Switch B — Example Only (Sheets 2 of 3)

GROUP MEMBER ASSIGNMENTS Page 3 of 9

	Port	Name	Night	Mode	Type	Ans Delay
1:	A0623____	DCS SIG____	_____	e&m_____	t1-stan_	20____
2:	_____	_____	_____	_____	_____	_____
3:	_____	_____	_____	_____	_____	_____
4:	_____	_____	_____	_____	_____	_____
5:	_____	_____	_____	_____	_____	_____
6:	_____	_____	_____	_____	_____	_____
7:	_____	_____	_____	_____	_____	_____
8:	_____	_____	_____	_____	_____	_____
9:	_____	_____	_____	_____	_____	_____
10:	_____	_____	_____	_____	_____	_____
11:	_____	_____	_____	_____	_____	_____
12:	_____	_____	_____	_____	_____	_____
13:	_____	_____	_____	_____	_____	_____
14:	_____	_____	_____	_____	_____	_____
15:	_____	_____	_____	_____	_____	_____

Screen 4-12. Switch A DCS DS1 Signaling Trunk to Switch B — Example Only (Sheet 3 of 3)

Implementation Note:

"Group Member Assignments" must be the same at the far-end node trunk group.

```
                              TRUNK GROUP                              Page 1 of 9
      Group Number: 49                Group Type:  tie     SMDR Reports? y
        Group Name:  DCS SIG to Switch C     COR: 1_                TAC: 149
         Direction: two-way   Outgoing Display? n      Trunk Signaling Type:
       Dial Access? n              Busy Threshold: 60      Night Service: 27102
      Queue Length: 0__                              Incoming Destination: 27102
         Comm Type:  avd                Auth Code? n
                                                                     BCC: 0
   TRUNK PARAMETERS
     Trunk Type (in/out): wink/wink        Incoming Rotary Timeout(sec): 5_
      Outgoing Dial Type: tone____                    Incoming Dial Type: tone__
                                                Disconnect Timing(msec): 500_
         Digit Treatment: __________                                Digits: _____
       Connected to Toll? n      STT Loss: normal        DTT to DCO Loss: normal
                Bit Rate: 1200    Synchronization: async        Duplex: full

      Incoming Dial Tone? n                        Signal Bit Inversion: none
  Disconnect Supervision: n                                Line Length: short
Answer Supervision Timeout? 10                 Receive Answer Supervision: n
```

Screen 4-13. Switch A DCS Signaling Link to Switch C — Example Only (Sheets 1 of 3)

Implementation Note:

It is suggested that "Group Number" assignments be the same at the far-end node trunk group.

```
                                TRUNK GROUP                    Page 2 of 9
TRUNK FEATURES
                ACA Assignment? y                      Measured? none____
                                                      Internal Alert? n
                                                     Data Restriction? n

                     Used for DCS? y
          Suppress # Outpulsing? n                Maintenance Tests? y
```

Screen 4-14. Switch A DCS DS1 Signaling Trunk to Switch C — Example Only (Sheet 2 of 3)

```
GROUP MEMBER ASSIGNMENTS                                        Page 3 of 9
     Port        Name          Night    Mode        Type        Ans Delay
 1: A0423____    DCS-SIG____   _____    e&m_____    t1-stan_    20____
 2: _________    __________    _____    _________   ________    _____
 3: _________    __________    _____    _________   ________    _____
 4: _________    __________    _____    _________   ________    _____
 5: _________    __________    _____    _________   ________    _____
 6: _________    __________    _____    _________   ________    _____
 7: _________    __________    _____    _________   ________    _____
 8: _________    __________    _____    _________   ________    _____
 9: _________    __________    _____    _________   ________    _____
10: _________    __________    _____    _________   ________    _____
11: _________    __________    _____    _________   ________    _____
12: _________    __________    _____    _________   ________    _____
13: _________    __________    _____    _________   ________    _____
14: _________    __________    _____    _________   ________    _____
15: _________    __________    _____    _________   ________    _____
```

Screen 4-15. Switch A DCS DS1 Signaling Trunk to Switch C — Example Only (Sheet 3 of 3)

Implementation Note:

"Group Member Assignments" must be the same at the far-end node trunk group.

```
                                                          Page 1 of 1
                              Pattern Number: 34
Pattern Assignments (Enter Up To 6)
    Grp.    FRL  NPA    Prefix   Toll    No. Del    Inserted
    No.                  Mark     List    Digits     Digits          IXC
1.  27_     1    ___     _        _       3          3_____________________
```

Screen 4-16. Switch A Routing Pattern to Switch B — Example Only

```
                                                          Page 1 of 1
                              Pattern Number: 48
Pattern Assignments (Enter Up To 6)
    Grp.    FRL  NPA    Prefix   Toll    No. Del    Inserted
    No.                  Mark     List    Digits     Digits          IXC
1.  48_     1    ___     _        _       3          4_____________________
```

Screen 4-17. Switch A Routing Pattern to Switch C — Example Only

```
                                                          Page 1 of 1
                            DS1 CIRCUIT PACK
          Location: A04                          Name: DCS TO SWITCH C
         Bit Rate: 1.544                       Line Coding: zcs
  Line Compensation: 1                      Framing Mode: esf
    Signaling Mode: common-chan___
           DMI-BOS? n
                        MAINTENANCE PARAMETERS
    Slip Detection? y           Remote Loop-Around Test? n
```

Screen 4-18. in Location A06 and A04 — Example Only

```
                                                              Page 1 of 2
                          SYNCHRONIZATION PLAN
              SYNCHRONIZATION SOURCE (DS1 circuit pack location)
                                    Stratum: 4
                    Primary: ___    Secondary: ___
                          DS1 CIRCUIT PACKS
Location   Name       Slip          Location   Name       Slip
A06  DCS TO SWITCH B  n             ___  ________________  _
A04  DCS TO SWITCH C  n             ___  ________________  _
```

Screen 4-19. Adding DS1 Trunks to Synchronization Plan — Example Only

```
                                                              Page 1 of 1
                              DATA MODULE
     Data Extension: 27100          Type: procr-intf   Physical Channel: 01_
               Name: DCS-LINK TO____    COS: __                 COR: __
                     SWITCH_B
ABBREVIATED DIALING
  List1: ____________
```

Screen 4-20. Data Module Administration to Link Switch A and B — Example Only

```
                                                              Page 1 of 1
                              DATA MODULE
     Data Extension: 27102          Type: procr-intf   Physical Channel: 03_
               Name: DCS-LINK TO____    COS: __                 COR: __
                     SWITCH_C
```

Screen 4-21. Data Module Administration to Link Switch A and C — Example Only

Page 1 of 1

INTERFACE LINKS

Link	Enable	Est Conn	PI Ext	Port	Destination Digits	Brd	DTE/ DCE	Identification
1:	y	y	27100	BX.25	128__	____	DTE	DCS Link Switch B
2:	n	_	_____	BX.25	_____	____	DTE	_____
3:	y	y	27102	BX.25	149__	____	DTE	DCS Link Switch C
4:	n	_	_____	BX.25	_____	____	DTE	_____
5:	n	_	_____	BX.25	_____	____	DTE	_____
6:	n	_	_____	BX.25	_____	____	DTE	_____
7:	n	_	_____	BX.25	_____	____	DTE	_____
8:	n	_	_____	BX.25	_____	____	DTE	_____

Screen 4-22. Switch A Interface Links Form — Example Only

Page 1 of 4

PROCESSOR CHANNEL ASSIGNMENT

Proc Chan	Appl.	Interface Link	Interface Chan	Priority	Remote Proc Chan	Machine-ID
1:	_____	_	__	____	__	__
2:	_____	_	__	____	__	__
3:	_____	_	__	____	__	__
4:	_____	_	__	____	__	__
5:	_____	_	__	____	__	__
6:	DCS___	1	28	h___	6_	2_
7:	DCS___	3	49	h___	7_	10
8:	_____	_	__	____	__	__
9:	_____	_	__	____	__	__
10:	_____	_	__	____	__	__
11:	_____	_	__	____	__	__
12:	_____	_	__	____	__	__
13:	_____	_	__	____	__	__
14:	_____	_	__	____	__	__
15:	_____	_	__	____	__	__
16:	_____	_	__	____	__	__

Screen 4-23. Processor Channel Assignment on Switch A — Example Only

DS1 Trunk Service

A maximum of 30 DS1 circuit packs (TN722, TN722B, TN767, TN464B, or TN464C) may be administered in the system.

Hardware Environment

DS1 Circuit Packs Scope of Usage

Both domestic and international DS1 circuit packs are supported in GD91. These boards includes those that provide both 24 and 32 channel operation.

The following table lists the DS1 boards that are supported in GD91. The trunk operations each board will support is indicated by country.

GD91 DS1 Circuit Packs

Board Code	Oper	Country Option									
		1 US	2 Au	3 Ja	4 It	5 Ne	6 Si	7 Me	8 Be	9 SA	10 UK
TN722	Tie	x	x	x	x	x	x	x	x	x	x
	CO										
	DID										
	ISDN										
TN722B	Tie	x	x	x	x	x	x	x	x	x	x
	CO	x									
	DID	x									
	ISDN										
TN767	Tie	x	x	x	x	x	x	x	x	x	x
	CO	x									
	DID	x									
	ISDN	x	x	x	x	x	x	x	x	x	x
TN464B	Tie	x	x	x	x	x	x	x	x	x	x
	CO				x						
	DID				x						
	ISDN	x	x	x	x	x	x	x	x	x	x
TN464C - 1.544	Tie	x	x	x	x	x	x	x	x	x	x
	CO	x									
	DID	x									
	ISDN	x	x	x	x	x	x	x	x	x	x
TN464C - 2.048	Tie	x	x	x	x	x	x	x	x	x	x
	CO				x	x			x		
	DID				x	x		x	x		
	ISDN	x	x	x	x	x	x	x	x	x	x

Country Codes

The country codes entered at the administration screens are as follows:

1 United States
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 (Russia)
16 Argentina
17 Greece

NOTE:
Country codes 11, 12, and 13 are not yet supported.

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 DS1 trunks may be used for data and voice in non-ISDN and ISDN 24 and 32 channel applications.

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.

GD91 DS1 Circuit Packs					
Board Code	**No. Trunk Members**	**Bit Rate**	**Companding**	**Signaling**	**Trunk Type**
TN722	23 24	1.544	mulaw	common-chan robbed-bit	Tie, DMI-BOS Tie
TN722B	23 24	1.544	mulaw	common-chan robbed-bit	Tie, DMI-BOS CO/DID/Tie
TN767	23 24 23 24	1 544	mulaw	common-chan robbed-bit isdn-pri isdn-ext	Tie, DMI-BOS CO/DID/Tie ISDN ISDN
TN464B	30	2.048	alaw/mulaw	CAS	CO/DID/Tie
	31 31		alaw	isdn-pri isdn-ext	ISDN ISDN
TN464C	23 24	1.544	mulaw	common-chan robbed-bit	Tie, DMI-BOS CO/DID/Tie
	23 31	1.544 2.048	alaw/mulaw	isdn-pri	ISDN
	24 31	1.544 2.048	alaw/mulaw	isdn-ext	ISDN
	30	2.048	alaw/mulaw	CAS	CO/DID/Tie

NOTES:

1 CO is any of the following trunk types: FX, WATS, OPS.

2 Tie is any of the following trunk types: access, tie, tandem, RLT, aplt.

3. The TN464B's Companding is based upon the system level companding administered by the user.

4. ISDN-PRI calls are not guaranteed to work for the TN464B if the system's Companding is set to mu-law.

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, 8000 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 6th 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 board TN464C provides 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 PI (Processor Interface) 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 and Error Messages (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 (01-20).

Form Instructions

Make assignments as required for the following fields on the form:

- **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 5 to 6 characters. The first character identifies the network (1-3, default is "1" if no entry); the second character identifies the carrier (A-E); the third and fourth characters identify the slot number in the carrier (01-20 for multi-carrier cabinets [depending on carrier type] or 01-18 for single-carrier cabinets [depending on cabinet type]); the last two characters identify the circuit number (01-24). The location should also be identified for record purposes on the Port Assignment Record and the Circuit Pack Administration form as described in Chapter 1.
- **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.
- **Line Coding** — Enter "b8zs" (bipolar eight zero substitution), "zcs" (zero code suppression), or "hdb3" (high density bipolar 3). 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. Far-end System 85 Generic 2 system and 4 ESS™ switch administer whether or not the the D-Channel data will be inverted

Binary 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.

- **Line Compensation** — Enter a number from 1-5 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 is "esf")." 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.

  CAS signaling is used on 2.048 Mbps, 32-channel, E1 carriers. With CAS, channel 0 is used for framing and channel 16 is reserved for signaling.

  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 24 channels carries the signals for the other 23 channels. AT&T implementation of common channel signaling uses the 24th 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. (AVD signaling is a term that is often used; however, the term is incorrectly used. AVD is a term used when referring to a trunk group that can be used for both voice and digital applications.)

Robbed-Bit Signaling (robbed-bit) is a per-channel signaling technique for transmitting signaling bits within each band on each of the 24 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 DS1 Interface circuit pack be used. This choice will enable ISDN-PRI signaling to be carried over the 24th 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 DS1 Interface circuit pack. This choice will enable the TN767 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 24 channels on a DS1 facility may be used for voice and/or data. The signaling for these channels is provided by the 24th channel 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 for additional information.

- **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 that when the far-end is a DEFINITY Generic 3i system, the Interface field on one end of the connection must be "user" and the other end must be translated as "network". Valid entries are "network" or "user" (System default).

- **Connect** — Only displayed when the Signaling Mode field is "isdn-pri". Specify what is on the far end of the PBX in order to control Layer 3 protocol properly. The default value for this field is "network". This field is displayed when the Signaling Mode field is "isdn-pri". If "pbx" is entered, the Interface field is displayed. Valid entries are "network" (System default), "host", and "pbx".

- **Country Protocol** — Enter 1-17 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. See "Country Codes" earlier in this section to find the appropriate code.
- **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 Companding** — 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: for the United States and Australia it is "11111111"; for Italy it is "01010101"; for Japan at least 3 1s must be administered.
- **DMI-BOS** — Enter "y" (System default) to activate the Digital Multiplexed Interface Bit Oriented Signaling (DMI BOS) mode when the signaling mode is common-channel and a TN722B or TN767 circuit pack has been installed. Valid entries are "y" or "n". This field is not displayed if "isdn-pri" or "isdn-ext" is entered in the Signaling Mode field.

  Digital Multiplexed Interface/Bit-Oriented Signaling (DMI/BOS) is a 24th channel signaling scheme using a DS1 facility which 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" (System 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 externally timed. Normally, those DS1/T1 spans that are used exclusively for voice and which are not designed as the primary or secondary synchronization source should be administered for slip detection "N." Refer to the network synchronization diagram in order 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" (System default) unless the testing is extremely important.

```
                                                              Page 1 of 1
                              DS1 CIRCUIT PACK
            Location: PCSS                          Name:
            Bit Rate: 1.544                  Line Coding: zcs
   Line Compensation: 1                     Framing Mode: esf
      Signaling Mode: common-chan              Interface: user
             Connect: pbx                Country Protocol: 1
        Interconnect: CO                            CRC: n
Interface Companding: mulaw
           Idle Code: 11111111
             DMI BOS:  y

                          MAINTENANCE PARAMETERS
     Slip Detection? n            Remote Loop-Around Test? n
```

DS1 Circuit Pack Form (System Defaults)

Implementation Notes:

The screen above shows all the DS1 fields. The fields that appear on a particular screen, however, depend upon the type of board being administered, the speed, signaling mode, etc.

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.

Refer to 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 LDS (Long-Distance Service). Inter-exchange carrier calls may also be processed. The trunk group utilizes common channel signaling and integrated voice and data transmission.

The ISDN-PRI feature supports the following (refer to each feature description in Chapter 3 for a complete listing of forms to be administered to implement the feature):

- 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 (CPN)/Billing Number (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

The following ISDN-PRI forms are provided in this section.

NOTE:
The ISDN-PRI option must be enabled on the System-Parameters Customer-Options form before associated ISDN forms can be administered.

- 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

Required to be administered 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 and Error Messages (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.

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. Valid entry is a Signaling Group number in the range of 1-8. Default is blank.
- **Adm'd NCA TSC Index** — Used to indicate the administered NCA-TSC that will act as one end point of the gateway. Valid entry is 1-64. 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 end point of the connection in this gateway assignment. Valid entry is a processor channel in the range 1-64. Default is blank.
- **Application:** — Used to indicate the feature this gateway is used for. A gateway channel can be used for DCS over ISDN-PRI D-Channel 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 NCA TSC Index	Processor Channel	Appli-cation	Sig Group	Adm'd NCA TSC Index	Processor Channel	Applic-cation
1: _	___	__	_____	17: __	__	_	_____
2: _	___	__	_____	18: __	__	_	_____
3: _	___	__	_____	19: __	__	_	_____
4: _	___	__	_____	20: __	__	_	_____
5: _	___	__	_____	21: __	__	_	_____
6: _	___	__	_____	22: __	__	_	_____
7: _	___	__	_____	23: __	__	_	_____
8: _	___	__	_____	24: __	__	_	_____
9: _	___	__	_____	25: __	__	_	_____
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
14: _	___	__	_____	30: __	__	_	_____
15: _	___	__	_____	31: __	__	_	_____
16: _	___	__	_____	32: __	__	_	_____

Page 2 of 2

ISDN TSC GATEWAY CHANNEL ASSIGNMENT

Sig Group	Adm'd NCA TSC Index	Processor Channel	Appli-cation	Sig Group	Adm'd NCA TSC Index	Processor Channel	Applic-cation
33: _	___	__	_____	49: __	__	_	_____
34: _	___	__	_____	50: __	__	_	_____
35: _	___	__	_____	51: __	__	_	_____
36: _	___	__	_____	52: __	__	_	_____
37: _	___	__	_____	53: __	__	_	_____
38: _	___	__	_____	54: __	__	_	_____
39: _	___	__	_____	55: __	__	_	_____
40: _	___	__	_____	56: __	__	_	_____
41: _	___	__	_____	57: __	__	_	_____
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
47: _	___	__	_____	63: __	__	_	_____
48: _	___	__	_____	64: __	__	_	_____

ISDN TSC Gateway Forms

Network Facilities

A display-only form of the Network Facilities Services/Features that support the Call by Call Service Selection feature. All administration on this form is performed by the Customer Services Support Organization (CSSO).

Administration Commands

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 and Error Messages (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 that 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	

Predefined Services/Features (see Table 4-4) and 12 fields for new Services/Features are shown on the form.

Table 4-4. Predefined Services/Features — Network Facilities

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.
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 unbanded long-distance 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 unbanded 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.

The fields on the form are as follows:

- **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 which 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.

NETWORK-FACILITIES

Predefined Services/Features

Name	Facility Type	Facility Coding	Name	Facility Type	Facility Coding
outwats-bnd	1	00001	mega800	1	00010
operator	0	00101	megacom	1	00011
sub-operator	0	00110	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	Facility Type	Facility Coding	Name	Facility Type	Facility Coding
_____	_	_____	_____	_	_____
_____	_	_____	_____	_	_____
_____	_	_____	_____	_	_____
_____	_	_____	_____	_	_____
_____	_	_____	_____	_	_____
_____	_	_____	_____	_	_____

Network Facilities Form

Remote Home Numbering Plan Area (RHNPA)

Used when additional 3-digit translations are required in addition to translations performed on the ARS/AAR Analysis Table. Codes in the range of 000-999 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 call begins on the ARS or AAR (ARS/AAR) Analysis Table. Typically, the first three digits representing a nonlocal NPA number are translated using the ARS/AAR Analysis Table and, where appropriate, the table then points to an RHNPA Table for the next 3-digit translation. For example, "r1", "r10", "r32" entries on a ARS/AAR 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 (3-digits are translated via the Digit Analysis Table and the next 3-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 000-999.

The RHNPA form provides a choice of up to 12 routing patterns for the block of 000-999 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 and Error Messages (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(1-32) x(0-9) y(0-9) y(0-9) (Table No. 1-32:office code = office code 000-999)
display	rhnpa	Enter RHNPA and office code n:xyy n(1-32) x(0-9) y(0-9) y(0-9) (Table No. 1-32:office code = code 000-999) ['print' or 'schedule']

* Brackets [ ] indicate the qualifier is optional.

Form Instructions

Make assignments as required for the following fields on the form:

- **RHNPA TABLE** — Enter the applicable table number from 1-32. Up to eight forms may be required for each table, one for each hundreds block, 2-9.
- **Code** — Enter the desired hundreds block; that is, 000-099, 100-199, 200-299,...800-899, 900-999. A separate form is required for each hundreds block.
- **Pattern Choices** — Enter a pattern number from 1-254 representing the routing patterns that can be accessed by the RHNPAs 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.

```
                                                          Page 1 of 1

                              RHNPA TABLE: __
                          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__
```

RHNPA Table Form (Page 1 of 1)

Routing Patterns

The digit translations performed on a Public Network Destination Number by the ARS/AAR Digit Analysis and RHNPA Tables cause a specific routing pattern to be selected for routing the call. The routing pattern contains a sequence of up to six 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 of up to 254 routing patterns, each of which can contain up to six alternate trunk routes. 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 and Error Messages (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	1-254
display	route-pattern	1-254 [print]
list	route-pattern	Enter ['trunk' (1-99)] ['service'/feature name string] [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:

- **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 pattern number from 1-254.
- **Grp No.** — Enter the desired trunk group number from 1-99 to specify which trunk group will be associated with the entries on this line of the form.
- **FRL** — Enter the Facility Restriction Level (FRL) 0-7 (0 being the least restrictive and 7 being the most restrictive) to be assigned this routing preference (i.e., 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 0-7, or leave blank.

- **NPA** (this entry not required when used for AAR) — For ARS applications, enter the NPA of the distant end (i.e., 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 (2-9), second digit (0-9), third digit (0-9). Default is blank.
- **Prefix Mark**(not required for AAR) — For ARS, enter a number from 0-3 as indicated below. This specifies when the prefix digit 1 is outpulsed. Valid entries are 0-3, or leave 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.

  0 Indicates that the Prefix digit 1 is never outpulsed.

  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.
- **Toll List**(not required for AAR) — For ARS, enter a number (1-32) 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". Valid entries are 1-32, or leave blank. Default is blank.
- **No. Del Digits** — Enter the total number of digits (0-18) to be deleted from the dialed string when this trunk group is selected for call routing. Valid entries are 0 through 18, or leave blank. Default is blank.
- **Inserted Digits** — Enter the actual digits (and special characters) to be inserted into the dialed string, up to 36 digits. Characters 0-9, "*", "#", "+", "%", and "," may be inserted. Each special character (e.g., "*", "%", etc.) uses two of the 36 available inserted character positions. The digits may be divided into four groups separated by a wait for dial tone control character ("+"). The "," is used for pause, "+" is used to wait for second (or third) dial tone, "#" is used for end of dialing, and "%" is used for end-to-end signaling. The dial tone detection character ("+") is further controlled by fields on the Miscellaneous System Parameters and Feature-Related System Parameters forms. A digit group is limited to a maximum of 32 characters. Up to 52 digits may be outpulsed. This includes 34 digits inserted (32 digits maximum per group plus one special character) plus a maximum of 18 digits originally dialed. Valid entries are 0-9, "*", "+", "%", ",", and "#".

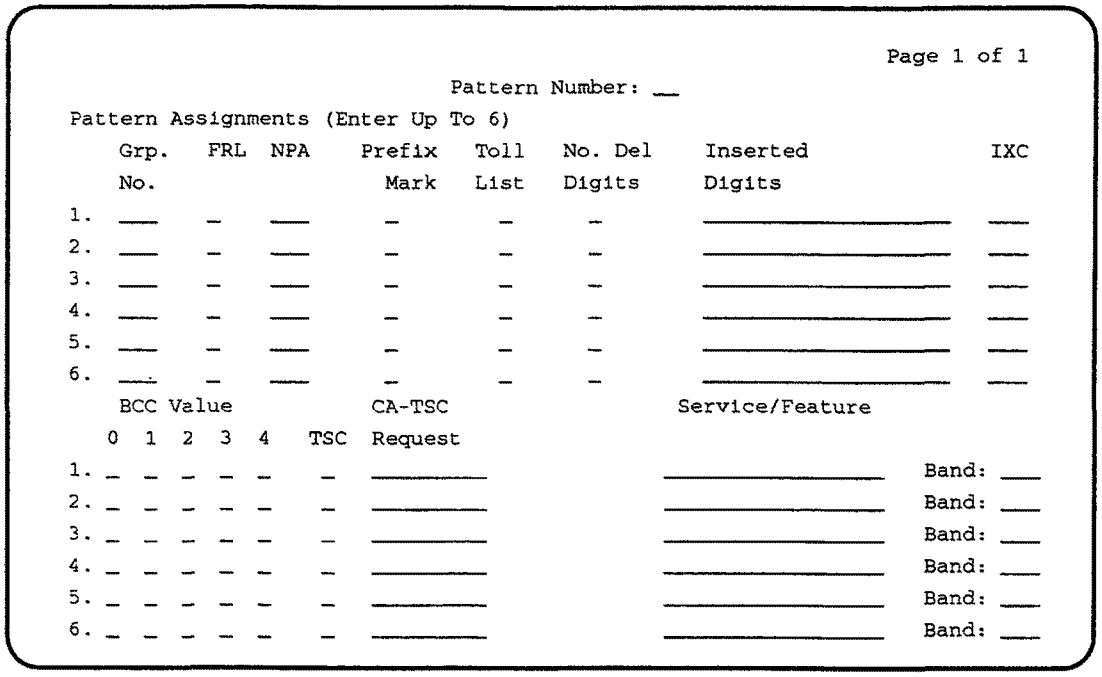
  Note that the special character " p" (pause) should not be used unless absolutely necessary as the first character in the string. Typical misuse can result in calls such as Abbreviated Dialing or Last Number Dialed calls not completing to the far-end.

- **IXC** — Only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form. Enter the last three digits to represent an equal access Inter-exchange Carrier code (e.g., 10XXX). This field is used by all calls that route via an IXC, and is also used for Station Message Detail Recording (SMDR). If an IXC is not specified, a call will be transmitted by the presubscribed common carrier. Note that the IXC value for non-ISDN trunk groups must be entered in the Inserted Digits field.
- **BCC Value**(required by Generalized Route Selection feature) — Only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form. Enter "y" 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 (1-6). Default is "y". 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)

⇒ NOTE:
Refer to the Generalized Route Selection in *DEFINITY® Communications System Generic 3i Global — Feature Description*, 555-230-203. 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** — Field may be displayed. Reserved for future use.
- **CA-TSC Request** — Field may be displayed. Reserved for future use.
- **Service/Feature**(required by the Call by Call Service Selection feature) — Only displayed if the ISDN-PRI option 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 (0-255) that represents the OUTWATS band number. This field is displayed when the Services/Features field has a value of "outwats-bnd". Default is blank.



```
                                                                  Page 1 of 1

                                    Pattern Number: __
Pattern Assignments (Enter Up To 6)
    Grp.    FRL  NPA     Prefix   Toll    No. Del     Inserted                IXC
    No.                   Mark    List    Digits      Digits
1.  ___     _    ___       _       _       _        ____________________     ___
2.  ___     _    ___       _       _       _        ____________________     ___
3.  ___     _    ___       _       _       _        ____________________     ___
4.  ___     _    ___       _       _       _        ____________________     ___
5.  ___     _    ___       _       _       _        ____________________     ___
6.  ___     _    ___       _       _       _        ____________________     ___
    BCC Value                    CA-TSC                  Service/Feature
    0  1  2  3  4    TSC  Request

1.  _  _  _  _  _     _   ________          ____________________   Band: ___
2.  _  _  _  _  _     _   ________          ____________________   Band: ___
3.  _  _  _  _  _     _   ________          ____________________   Band: ___
4.  _  _  _  _  _     _   ________          ____________________   Band: ___
5.  _  _  _  _  _     _   ________          ____________________   Band: ___
6.  _  _  _  _  _     _   ________          ____________________   Band: ___
```

Routing Pattern Form (Page 1 of 1)

Implementation Note:

The IXC, BCC Value, TSC, CA-TSC Request and Service/Feature fields are only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

The Band field is only displayed if the Service/Feature field is "outwats-band".

Signaling Group

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 and Error Messages (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	1-8 or next
change	signaling-group	1-8
display	signaling-group	1-8 ['print' or 'schedule']
list	signaling-group	1-8 ['print' or 'schedule']
remove	signaling-group	1-8

* Brackets [ ] means that the qualifier is optional.

Form Instructions

Make assignments as required for the following fields on each page of the from:

- **Group Number** — Display-only field when the form is accessed using an administration command such as *display*or *change*. Enter a group number from 1-8 when completing a paper form.
- **Associated Signaling** — Enter "y" 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.) Default is "y". When set to "n", the Secondary D-channel field appears on the screen and the columns of "Trunk Brd" and "Interface ID" fields are displayed.

- **Primary D-Channel** — Enter a 5- to 6-character port number associated with the DS1 Interface circuit pack port: port network 1-3 (default is "1" if no entry); carrier (A-E); slot number (01-20 for multi-carrier cabinets depending on carrier type or 01-18 for single carrier cabinets depending on cabinet type); port (24). The port number 24 is used to assign the primary D-Channel in the Signaling Group. Currently, with FAS and NFAS it is always the 24th port on the 1.544 Mbps DS1 Interface circuit pack. On a 2.048 Mbps DS1 interface, the 16th channel is used for signaling. It is recommended that the Primary D-Channel assignment, when possible, be located on the Processor Port Network (i.e., Port Network 1). Default is blank.
- **Secondary D-Channel** — Only displayed if the Associated Signaling field is "n" (indicates NFAS). Enter a 5- to 6-character port number associated with the DS1 Interface port used for secondary D-Channel signaling: port network 1-3 (default is "1" if no entry); carrier (A-E); slot number (01-20 for multi-carrier cabinets depending on carrier type or 01-18 for single carrier cabinets depending on cabinet type); port (24) (currently, with FAS and NFAS it is always the 24th port on a 1.544 Mbps DS1 Interface circuit pack. On a 2.048 Mbps DS1 interface, the 16th channel is used for signaling). Default is blank.
- **Max Number of NCA TSC** — Used to specify 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 Pages 2-5 of the form and those NCA-TSCs that tandem through the switch in-route to another switch in the network. Valid entries are 0-256. Default is "0".
- **Max number of CA TSC** — Used to specify 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. Valid entries are "0" through "400". Default is "0".
- **Trunk Group For NCA TSC** — Used to specify 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. Valid entries are "1" through "99". Default is blank.
- **Trunk Group for Channel Selection** — The member of an ISDN-PRI trunk group on which a channel will be selected to complete a call when the information element associated with the call indicates that any channel is acceptable.
- **Trunk Brd** — Only displayed if the Associated Signaling field is "n" (indicates NFAS). Enter a 4-character DS1 Interface circuit pack number that has trunk members belonging to this Signaling Group: port network 1-3 (default is "1" if no entry); carrier (A-E); slot number (01-20 for multi-carrier cabinets depending on carrier type or 01-18 for single carrier cabinets depending on cabinet type). Default is blank

- **Interface ID** — Only displayed if the Associated Signaling field is "n" (indicates NFAS). Enter an interface ID (0-31) 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 span is to be used to establish the call. The Interface ID numbers on both ends must be the same.

Pages 2-5 of the Form

- **Service/Feature** — Used to specify the service type for all administered NCA-TSCs assigned in this Signaling Group. Valid entries are: "accunet", "i800", "inwats", "lds", "mega800", "megacom", "multiquest", "operator", "sdn", "sub-operator", "wats-max-bnd", and [user-defined services]. Default is blank.
- **As-needed Inactivity Time-out (min)** — Used to specify 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. Valid entries are 10-90. 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 1-64.
- **Local Ext** — Used to assign an extension on the switch to the administered NCA-TSC. Enter an unassigned extension number. Note that the extension cannot be previously assigned to another administered NCA-TSC, station, or data module, etc.
- **Enabled** — Enter "y" to enable the administered NCA-TSC or enter "n" to disable the administered NCA-TSC. Valid entries are "y" or "n".
- **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 the digits 0-9 and can include up to 15 digits. Default is blank.
- **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. In "gateway" is entered, then the ISDN TSC Gateway Channel Assignments form must be completed. Default is blank.

- **Machine ID** — Used to indicate the far-end PBX or the AUDIX machine this administered NCA-TSC is to be connected to. Valid entries are 1-63 for DCS, 1-8 for AUDIX, or blank. Default is blank.

```
                                                          Page 1 of 5
                              SIGNALING GROUP
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: ____         __
```

Signaling Group Form (Page 1 of 1)

Implementation Note:

The following fields are only displayed if the Associated Signaling field is "n" (indicates NFAS).

- Secondary D-Channel
- Trunk Brd
- Interface ID

Page 2 of 5

ADMINISTERED NCA TSC ASSIGNMENT

Service/Feature: _____ As-needed Inactivity Time-out (min): ___

TSC Index	Local Ext.	Enabled	Establish	Dest. Digits	Appl.	Machine ID
1:	_____	_	_____	_____	___	___
2:	_____	_	_____	_____	___	___
3:	_____	_	_____	_____	___	___
4:	_____	_	_____	_____	___	___
5:	_____	_	_____	_____	___	___
6:	_____	_	_____	_____	___	___
7:	_____	_	_____	_____	___	___
8:	_____	_	_____	_____	___	___
9:	_____	_	_____	_____	___	___
10:	_____	_	_____	_____	___	___
11:	_____	_	_____	_____	___	___
12:	_____	_	_____	_____	___	___
13:	_____	_	_____	_____	___	___
14:	_____	_	_____	_____	___	___
15:	_____	_	_____	_____	___	___
16:	_____	_	_____	_____	___	___

Signaling Group Form (Page 2 of 5)

(To avoid repetition, pages 3 through 5 of this form are not shown.)

Time of Day Routing

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 (i.e., station) that a user is calling from. The COR is inspected to identify the TOD plan number (1-8) to be used to process the call. On the TOD Routing Plan, a "Plan #" (1-8, based on the time of day and the day) is identified. This plan number is used to select an ARS/AAR Analysis Table with the same Partitioned Group Number (1-8). 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 and Error Messages (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	[print]
display	time-of-day	1-8 (plan number) ['print' or 'schedule']
change	time-of-day	1-8

* Brackets [ ] indicate the qualifier is optional.

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 through 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 through 23:59. There must be at least one entry for each day. Default is "00:00".

- **PGN #** — Specifies the ARS/AAR Digit Analysis Table with a PGN of the same number (1-8) 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 (1-254) is based on the number dialed. Enter a Partitioned Group number (1-8) that points to the appropriate ARS/AAR Analysis Table to be used. There must be at least one entry for each day. Default is "1".

  Note that 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.

```
                                                                    Page 1 of 1

                              TIME OF DAY ROUTING PLAN x

      Act      PGN   Act      PGN   Act      PGN   Act      PGN   Act      PGN   Act      PGN
      Time     #     Time     #     Time     #     Time     #     Time     #     Time     #
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     __:__    _     __:__    _     __:__    _     __:__    _     __:__    _
```

Time Of Day Routing Form (Page 1 of 1)

Implementation Note:

Up to eight Time of Day Routing Plans (1-8) 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.

Trunk Groups

This section contains the forms and instructions required to implement trunk groups in the System.

A System can be administered to have up to 99 trunk groups and up to 400 trunks.

NOTE:
If the Hospitality Parameters Reduction Option is enabled on the System-Parameters Customer-Options form, a maximum of 50 trunk groups may be administered.

NOTE:
The Basic Call Management System can measure a maximum of 32 trunk groups.

NOTE:
Trunks and Access Endpoints (also known as "Permanent/Administered Switched Connections") consume the same resource. Thus, the sum of trunks and Access Endpoints cannot exceed 400.

The following trunk group forms are included in this section:

- Access Trunk Group
- Administrable Timers
- Advanced Private Line Termination (APLT) Trunk Group
- Central Office Trunk Group
- CPE Trunk Group
- Digital Multiplexed Interface (DMI) — BOS Trunk Group
- Direct Inward Dialing Trunk Group
- Direct Inward Outward Dialing Trunk Group
- Foreign Exchange Trunk Group
- Integrated Services Digital Network — Primary Rate Interface Trunk Group
- Personal Central Office Line Groups (PCOLGS)
- 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 Issue 3i, and *DEFINITY® Communications System Generic 1 and Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.

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 acknowledgement that it is ready to accept dialing from the originating office).

The following five 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 (i.e., 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 (i.e., 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).
5. New signaling types have been added for trunks that terminate outside of the United States of America. These will be explained here at a later date.

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, etc. 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 (0-9, A-Y, or * and #). One of the tones (1633 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 (0-9) 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.
- New alerting types have been added for trunks that terminate outside the United States of America. These will be explained here at a later date.

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, etc., 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, etc.), 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 3400 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 2400 bps, a connection can have up to three tie trunks in tandem. For data rates greater than 2400 bps up to 4800 bps, a connection can have up to two tie trunks in tandem.

Analog tie trunks used in unswitched connections can support up to 9600 bps.

A special type of private network tie trunk is a Release Link Trunk. The Release Link Trunk (RLT) is 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/E1 carrier. It uses digital signal (DS1 or CEPT1) on the T1 or E1 carrier. By multiplexing twenty-four 64-kbps digital channels onto a single 1.544-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. Similarly, by multiplexing thirty-two 64-kbps digital channels onto a single 2.048-Mbps E1 carrier, the international CEPT1 standard is achieved.

The maximum per-channel data rate for DS1 and CEPT1 is 64 kbps, and each channel can carry voice, voiceband data, or high-speed data communications.

The DS1/CEPT1 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. See the *AT&T Network and Data Connectivity* guide (555-025-201) for further details.

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 trunk 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 group 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.

Trunk Group — Access

Used to assign an Access Trunk Group and associated trunk ports. Access trunks 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 and Error Messages" 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	1-99 (or 'next')
change	trunk-group	1-99 or TAC X...
display	trunk-group	1-99 or TAC X...['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-99 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.

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 number from 1-99 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 "access" to identify the trunk group type.
- **SMDR Reports** — Enter "y" (default) to provide a detailed Station Message Detail Recording (SMDR) record of both incoming and outgoing calls made on all trunks in the trunk group; otherwise, enter "n".
- **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 0-95 that reflects the desired restriction. Default is "1".
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. SMDR also uses the TAC to identify the trunk group on associated SMDR 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 whether the trunk group is "incoming", "outgoing", or "two-way". Default is "two-way". 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 is "n".
- **Trunk Signaling Type** — Enter "cont" or "dis" to indicate the trunk signaling type (indicates that only ports from a TN2140 may be administered as trunk group members).

  NOTE:
  When this field is "cont" or "dis", the Send Release Ack, Receive Release Ack, and Send Answer Supervision fields appear.

  If the field is blank (default), ports from any other Tie trunk board may be added as trunk group members. Note that the value in this field will 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; otherwise, enter "n". Default is "n". Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter a number (0-99) of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console. Default is "99".
- **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), "attd" (attendant), ***or*** leave blank (default) if the Trunk Type (in/out) field is not "auto/...".
- **Queue Length** — Enter a number from 0-100 that indicates the number of outgoing calls that can be held waiting. A "0" indicates no calls will be held in queue. Enter "0" for DCS trunks. This field is turned off if the Direction field is "incoming". Default is "0".
- **Incoming Destination** — Enter where incoming calls will terminate. Valid entries are an extension number, "attd" (attendant), VDN, ***or*** leave blank (default) if the Trunk Type (in/out) field is not "auto/...". If "attd" is entered, a call is treated as an LDN call.
- **Comm Type** — Enter if the trunk is to be used for voice, data, alternate voice-data (i.e., avd), or alternate voice/voice grade data and 56 kbps digital data (i.e., robbed-bit alternate voice-data) calls. Valid entries are "avd", "rbavd", "voice", or "data". Type "rbavd" supports access to voice/data SDN service on robbed-bit T1 transmission facilities. Default is "voice". Note that "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 signaling or (if mixed mode signaling is allowed on the DS1 circuit pack), isdn-pri or isdn-ext. 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". 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".
- **BCC**(Bearer Capability Class) — 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. This field only appears when the CommType is "avd", or if 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". 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 3i Global — Feature Description*, 555-230-203, 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. When the Trunk Signaling Type is "dis", valid entries are:

  disc/disc disc/immed immed/disc immed/immed

  When the Trunk Signaling Type is "cont", valid entries are:

auto/auto	cont/auto	delay/auto	immed/auto	wink/auto
auto/cont	cont/cont	delay/cont	immed/cont	wink/cont
auto/delay	cont/delay	delay/delay	immed/delay	wink/delay
auto/immed	cont/immed	delay/immed	immed/immed	wink/immed
auto/wink	cont/wink	delay/wink	immed/wink	wink/wink

  Otherwise, valid entries are:

auto/auto	delay/auto	immed/auto	wink/auto
auto/delay	delay/delay	immed/delay	wink/delay
auto/immed	delay/immed	immed/immed	wink/immed
auto/wink	delay/wink	immed/wink	wink/wink

  ⇒ NOTE:
  For immed/immed trunks (on incoming trunks), the far-end PBX seizes the trunk and then sends digits without waiting for acknowledgement 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/wink 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 far-end 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. The maximum value is 99 seconds. Valid entries are 5-99, or leave blank. Default is "5".
- **Outgoing Dial Type** — Enter the type of pulsing required on an outgoing call. Valid entries are "tone" (default), "rotary," or (if the Trunk Signal Type is blank), "mfc." A value of "mfc" requires that the multifrequency signaling option be enabled at the Customer Options screen.
- **Incoming Dial Type** — Enter the type of pulses required on an incoming trunk group. Valid entries are "tone" (default), "rotary," or (if the Trunk Signal Type is blank), "mfc." The value in this field impacts the appearance of the Incoming Partial Dial timer on the Administrable Timer Page.
- **Disconnect Timing (msec)** — Enter the minimum time period in milliseconds 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 milliseconds). Default is "500". This timer will not be used for ports on a board that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers. These latter two times will 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.
- **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** — The number of digits the far-end sends for incoming call connections. This field only appears if the Direction is incoming or two-way, the Trunk Signaling Type is blank, and the Incoming Dial Type is "mfc". This field must be completed. The default is blank.
- **Connected to Toll** — Enter "y" if connected to a CO toll office; otherwise, enter "n" (default). 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) — Only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103) 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-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 only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

— **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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

- **Sig Bit Inversion** — 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 boards. 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". The default is "none".
- **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".
- **Send Release Ack** — Appears when Trunk Signaling Type is "cont" or "dis". Enter "y" (default) if the switch must send a release acknowledgement in response to a forward or backward release signal; otherwise, enter "n". Note this field only applies to TN2140 ports.
- **Receive Release Ack** — Appears when Trunk Signaling Type is "cont" or "dis". Enter "y" (default) if the switch should expect a release acknowledgement in response to a forward or backward release signal; otherwise, enter "n". Note this field only applies to TN2140 ports.
- **Bit Rate** — Enter the baud rate to be used by pooled modems. Valid entries are "300", "1200", "2400", "4800", "9600", and "19200". This field is 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. Default is "1200".
- **Synchronization** — Enter whether the trunk group will use "synchronous" or "asynchronous" communications. Valid entries are "async" and "sync". This field is 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. Default is "async".

- **Duplex** — Enter either full or half duplex for the trunk group. Valid entries are "full" or "half". Default is "full". This field is only displayed if the Comm Type field is "avd" oe "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.
- **Disconnect Supervision** — 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; otherwise, enter "n". Default is "y".
- **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; otherwise, enter "n". Note that this field only applies to TN2140 ports.
- **Answer Supervision Timeout** — Enter the amount of time in seconds the System allows for the call to be answered before beginning an SMDR 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 0-250. 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 boards) or, for boards 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 frame timeout. Note that the firmware timeout is automatically set to 0 for boards that take the administrable Outgoing End of Dial timer. Receive Answer Supervision must be "n" if the Direction field is "incoming". 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 is "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 0-10. Default is "1". Field must be "0" for a Service Type field entry of "sddn".
  - **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 0-160. 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 0-30. 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 (i.e., 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".
- **Used for DCS** — Specifies whether the trunk group will send and receive messages on a DCS signaling link. Valid entries are "y" or "n". If "y" is entered, complete the PBX ID field entry. Default is "n". This field can be set to yes only when the DCS option has been enabled for the system.
- **PBX ID** — Specifies the number of the remote PBX. It only appears when Used for DCS is set to yes. Valid entries are 1–63. Default is blank.
- **DCS Signaling** — Only displayed when the Used for DCS field is "y". Enter either "bx.25" or "d-chan". Enter "bx.25" for the standard DCS feature and enter "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" or "n". Default is "y".
- **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".

  A final "#" will be outpulsed on interdigit timeout to indicate the start of end-to-end signaling.

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 far-end. Valid entries are 50-2550 in increments of 10. The field cannot be blank. Default is 500. This field appears only for incoming and two-way trunks when the Trunk Signaling Type is either blank or "cont".
- **Outgoing Disconnect (msec)** — Enter the minimum time (in msec) required for recognition of disconnect for an outgoing call. Valid entries are 50-2550 in increments of 10. The field cannot be blank. Default is

500. This field appears only for outgoing and two-way trunks when the Trunk Signaling Type is either blank or "cont".

- **Incoming Dial Guard (msec)** — Enter the interval (in msec) 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 10-2550 in increments of 10. The default is 70 msec. This field cannot be blank
- **Outgoing Dial Guard (msec)** — Enter the minimum time (in msec) between seizure of the trunk and outpulsing of digits. Valid entries are 100-25500 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 100-25500 in increments of 100. The field cannot be blank. Default is 1500. This field appears only when the trunk group 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 100-25500 in increments of 100. The field cannot be blank. Default is 1500. This field appears only for outgoing or two-way trunk groups.
- **Incoming Partial Dial (sec)** — Enter the time (in sec) allowed between digits on rotary DID and TIE trunks. Valid entries are 5-255 in increments of 1. Default is 18 sec.
- **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 150-2550 in increments of 10. The field cannot be blank. Default is 800. Note that the TN767 board also applies this timer to touch-tone dialing.
- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the serving CO. Valid entries are 20-2550 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 when

the timer expires. 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(es) 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 trunk groups. Valid entries are 1-254 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. Valid entries are 1-255 in increments of 1. Default is 5 sec. This timer is sent to the TN760D (v.15 or later), TN464B (or later), TN767, TN439, TN458, and TN2140 tie boards.
- **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 100-25500 in increments of 100. Default is 1500 msec. This timer is sent to the TN760D (v.15 or later), TN464B (or later), TN767, TN458, and TN2140 tie boards.
- **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 (e.g., error message). This timer is administrable on TIE or GS CO trunk groups. Valid entries are 1-255 in increments of 1. Default is 240 sec.
- **Incoming Incomplete Dial Alarm (sec)** — Enter a maximum time (in sec) between incoming seizure of a DID or TIE trunk and receipt of all digits. Intervals greater than this generate an inline error. Valid entries are 1-255 in increments of 1. Default is 255 sec. This timer is sent to the TN760D (v.15 or later), TN464C (or later), TN767, and TN2140 tie boards.
- **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 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. 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 60-250 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 acknowledgement signal. After receiving a forward release signal, the called switch must send the forward release acknowledgement 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 500-1200 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 acknowledgement 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 40-120 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 60-120 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 500-1200 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 40-120 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 500-1200 in increments of 100. Default is 800. Only TN2140 ports receive this timer.
- **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 20-2550 in increments of 10. Default is 350. This field only applies when the Trunk Signaling Type is blank.
- **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 20-2550 in increments of 10. Default is 150. This field only applies when the Trunk Signaling Type is blank.

- **Glare** — Enter the minimum time (in msec) between sending an outgoing seizure and receiving a seizure acknowledgement. If seizure acknowledgement 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 40-100 in increments of 10. Default is 40. Only TN2140 ports receive this timer.
- **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 that the following boards can only do 10 pps: TN439, TN458, and TN767.
- **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 20-80 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 10-40 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 20-80 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 10-40 in increments of five. The field cannot be blank. The default is 30.

Pages 4 through X of the Form (Group Member Assignments)

- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-20 depending on carrier type), and circuit number (01-24). For single-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-18 depending on cabinet type), and circuit number (01-31).
- **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 TN437, TN439, TN458, TN464 (with any suffix), TN722, TN760B (or later), TN767, 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 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", "t5 rev", or "type 5". Default is blank.
- **Ans Delay** — Enter the duration of the wait (in msec) for answer supervision delay on the TN437, TN439, TN458, TN464 (with any suffix), TN722 (with any suffix), TN760B (or later), TN767, or TN2140 circuit packs. Valid entries are 20-5100 in increments of 20. The default is no entry (blank). The timer is used to delay the up-link ANSWER message. 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
                              TRUNK GROUP

Group Number: xx                  Group Type: access        SMDR 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               Auth Code? n

TRUNK PARAMETERS
   Trunk Type (in/out): ____________     Incoming Rotary Timeout(sec): 5_
    Outgoing Dial Type: tone_____                  Incoming Dial Type: mfc
                                          Disconnect Timing(msec): 500_
       Digit Treatment: __________                          Digits: _____
       Expected Digits: ___
                                                 Sig Bit Inversion: none
    Incoming Dial Tone? y
     Disconnect Supervision? y
 Answer Supervision Timeout: 10_          Receive Answer Supervision? n
```

Access Trunk Group Form (Page 1 of X)

Implementation Note:

The BCC field is only displayed if ISDN-PRI is optioned for on the System-Parameters Customer-Options form and the Comm Type field entry is "avd" or "data".

The Connected to Toll and DTT to DCO Loss fields are only displayed when the Trunk Type field is "auto/...", "delay/...", "immed/...", or "wink/...".

The STT Loss field is only displayed when the Connected to Toll field is "n".

The Bit Rate, Synchronization, and Duplex fields are only displayed when the Comm Type field is "avd".

```
                                                                Page 2
TRUNK FEATURES
         ACA Assignment? n           Measured: none
                                Data Restriction? n
           Used for DCS? n                              Maintenance Tests? y
   Suppress # Outpulsing? n
```

Access Trunk Group Form (Page 2 of X)

Implementation Note:

The following fields are only displayed if the ACA Assignment field is "y":

- Long Holding Time (hours)
- Short Holding Time (secs.)
- Short Holding Threshold

The PBX ID field is not displayed if the Used for DCS field is "n".

```
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
  Incoming Dial Guard(msec): ____          Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____        Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                          Outgoing Rotary Dial Interdigit(msec): ____
  Outgoing End of Dial(sec): ___       Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____       Disconnect Signal Error(sec): ___
                            Incoming Incomplete Dial Alarm(sec): ___
END TO END SIGNALING
   Tone(msec): ____          Pause(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

Access Trunk Group Administrable Timers Form
if Trunk Signaling Type Field is Blank (Page 3 of X)

Implementation Notes:

The Incoming Partial Dial is only displayed when the Incoming Dial Type field from Page 1 is "rotary".

The Outgoing End of Dial field will not appear if the Receive Answer Supervision field from Page 1 is "y".

```
ADMINISTRABLE TIMERS

  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
                                           Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____         Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                              Outgoing Rotary Dial Interdigit(msec): ____
                                          Incoming Seizure(msec): ____
  Outgoing End of Dial(sec): ___       Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____      Disconnect Signal Error(sec): ___
                                 Incoming Incomplete Dial Alarm(sec): ___
   Outgoing Last Digit(sec): __
                                                    Glare(msec): ___
OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

Access Trunk Group Administrable Timers Form
if Trunk Signaling Type Field is "cont" (Page 3 of X)

Implementation Notes:

The Incoming Partial Dial is only displayed when the Incoming Dial Type field from Page 1 is "rotary".

The Outgoing End of Dial field will not appear if the Receive Answer Supervision field from Page 1 is "y".

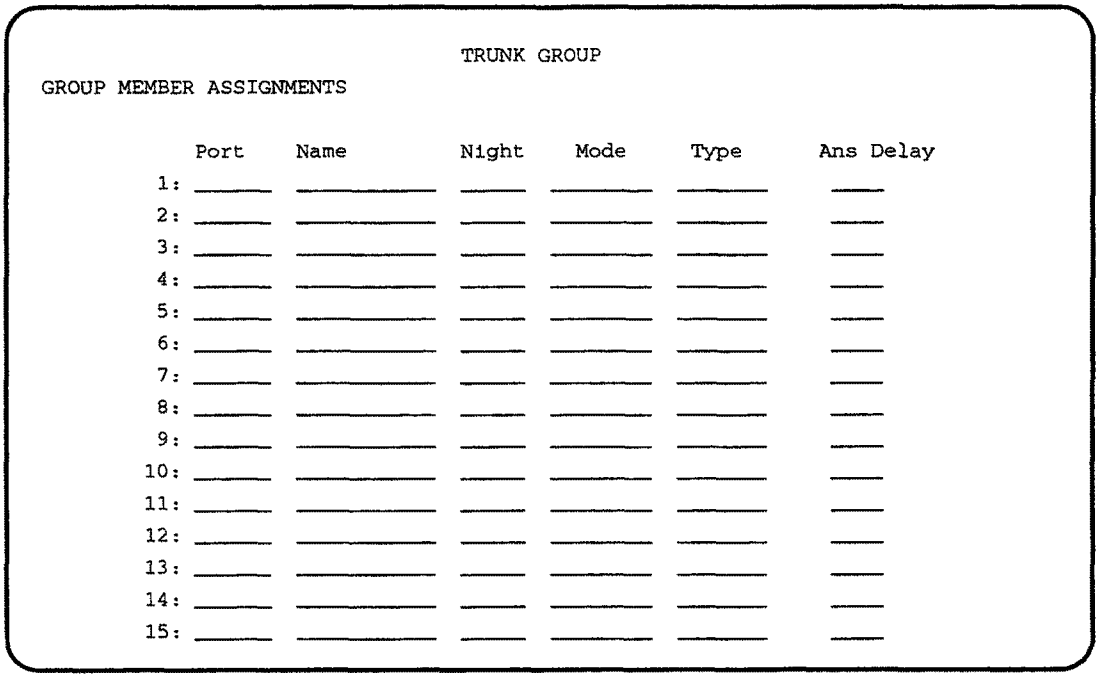
```
ADMINISTRABLE TIMERS
                                        Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____      Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                            Outgoing Rotary Dial Interdigit(msec): ____
  Outgoing End of Dial(sec): ___       Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____      Disconnect Signal Error(sec): ___
                          Incoming Incomplete Dial Alarm(sec): ___
   Outgoing Last Digit(sec): __       Normal Outgoing Seize Send(msec): ___
     Release Ack Send(msec): ____              Seize Ack Delay(msec): ___
          Answer Send(msec): ___      Outgoing Disconnect Send(msec): ____
       Seize Ack Send(msec): ____     Incoming Disconnect Send(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

Access Trunk Group Administrable Timers Form
if Trunk Signaling Type Field is "dis" (Page 3 of X)

Implementation Notes:

The Incoming Partial Dial is only displayed when the Incoming Dial Type field from Page 1 is "rotary".

The Outgoing End of Dial field will not appear if the Receive Answer Supervision field from Page 1 is "y".



```
                                TRUNK GROUP
GROUP MEMBER ASSIGNMENTS

          Port    Name          Night    Mode     Type      Ans Delay
     1:  _____  ___________  _____  ________  ________  ____
     2:  _____  ___________  _____  ________  ________  ____
     3:  _____  ___________  _____  ________  ________  ____
     4:  _____  ___________  _____  ________  ________  ____
     5:  _____  ___________  _____  ________  ________  ____
     6:  _____  ___________  _____  ________  ________  ____
     7:  _____  ___________  _____  ________  ________  ____
     8:  _____  ___________  _____  ________  ________  ____
     9:  _____  ___________  _____  ________  ________  ____
    10:  _____  ___________  _____  ________  ________  ____
    11:  _____  ___________  _____  ________  ________  ____
    12:  _____  ___________  _____  ________  ________  ____
    13:  _____  ___________  _____  ________  ________  ____
    14:  _____  ___________  _____  ________  ________  ____
    15:  _____  ___________  _____  ________  ________  ____
```

Access Trunk Group Forms (Pages 4 through X)

(To reduce repetition, pages 5 through X are not shown.)

Implementation Note:

The Type field does not appear if the Trunk Signaling Type field on Page 1 is "dis".

Trunk Group — APLT

Used to assign an Advanced Private Line Termination (APLT) Trunk Group and associated trunk ports. The APLT Trunk Group provides access to and termination from private line networks. APLT trunks are only to be 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 and Error Messages" 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	1-99 (or 'next')
change	trunk-group	1-99 or TAC X...
display	trunk-group	1-99 or TAC X...['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-99 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.

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 number from 1-99 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 "aplt" to identify the trunk group type.
- **SMDR Reports** — Enter "y" to provide a detailed SMDR 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 0-95 that reflects the desired restriction. Default is "1".
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access

the trunk group. SMDR also uses the TAC to identify the trunk group on associated SMDR 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 whether the trunk group is "incoming", "outgoing", or "two-way". Default is "two-way". 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 is "n".
- **Trunk Signaling Type** — Enter "cont" or "dis" to indicate the trunk signaling type (indicates that only ports from a TN2140 may be administered as trunk group members).

  ⇒ NOTE:
  When this field is "cont" or "dis", the Send Release Ack, Receive Release Ack, and Send Answer Supervision fields appear.

  If the field is blank (default), ports from any other Tie trunk board may be added as trunk group members. Note that the value in this field will 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; otherwise, enter "n". Default is "n". Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter a number (0-99) of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console. Default is "99".
- **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), "attd" (attendant), ***or*** leave blank (default) if the Trunk Type (in/out) field is not "auto/...".
- **Queue Length** — Enter a number from 0-100 that indicates the number of outgoing calls that can be held waiting. A "0" indicates no calls will be held in queue. Enter "0" for DCS trunks. This field is turned off if the Direction field is "incoming". Default is "0".
- **Incoming Destination** — Enter where incoming calls will terminate. Valid entries are an extension number, "attd" (attendant), VDN, ***or*** leave blank (default) if the Trunk Type (in/out) field is not "auto/...". If "attd" is entered, a call is treated as an LDN call.
- **Auth Code** — Enter "y" if an authorization code must be dialed to complete incoming calls on the trunk group; otherwise, enter "n". 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".

- **Trunk Type (in/out)** — Identifies the physical type of incoming and outgoing trunks. When the Trunk Signaling Type is "dis", valid entries are:

  disc/disc disc/immed immed/disc immed/immed

  When the Trunk Signaling Type is "cont", valid entries are:

auto/auto	cont/auto	delay/auto	immed/auto	wink/auto
auto/cont	cont/cont	delay/cont	immed/cont	wink/cont
auto/delay	cont/delay	delay/delay	immed/delay	wink/delay
auto/immed	cont/immed	delay/immed	immed/immed	wink/immed
auto/wink	cont/wink	delay/wink	immed/wink	wink/wink

  Otherwise, valid entries are:

auto/auto	delay/auto	immed/auto	wink/auto
auto/delay	delay/delay	immed/delay	wink/delay
auto/immed	delay/immed	immed/immed	wink/immed
auto/wink	delay/wink	immed/wink	wink/wink

  NOTE:
  For immed/immed trunks (on incoming trunks), the far-end PBX seizes the trunk and then sends digits without waiting for acknowledgement 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/wink 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 far-end 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. The maximum value is 99 seconds. Valid entries are 5-99, or leave blank. Default is "5".
- **Outgoing Dial Type** — Enter the type of pulsing required on an outgoing call. Valid entries are "tone" (default), "rotary" or (if the Trunk Signaling Type is blank) "mfc." A value of "mfc" requires that multifrequency signaling be enabled at the System Parameters Customer Options form.
- **Incoming Dial Type** — Enter the type of pulses required on an incoming trunk group. Valid entries are "tone" (default), "rotary" or (if the Trunk Signaling Type is blank), "mfc". The value in this field impacts the appearance of the Incoming Partial Dial timer on the Administrable Timer Page.
- **Disconnect Timing (msec)** — Enter the minimum time period in milliseconds 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 milliseconds). Default is "500". This timer will not be used for ports on a board that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers. These latter two timers will replace the former.

- **Expected Digits** — Enter the number of digits the far-end sends for incoming call connections. This field only appears if the Direction is incoming or two-way, the Trunk Signaling Type is blank, and the Incoming Dial Type is "mfc".
- **Connected to Toll** — Enter "y" if connected to a CO toll office; otherwise, enter "n" (default). 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) — Only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103) 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-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 only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)
- **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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

- **Sig Bit Inversion** — 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 boards. 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". The default is "none".
- **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".
- **Send Release Ack** — Appears when Trunk Signaling Type is "cont" or "dis". Enter "y" (default) if the switch must send a release acknowledgement in response to a forward or backward release signal; otherwise, enter "n". Note this field only applies to TN2140 ports.
- **Receive Release Ack** — Appears when Trunk Signaling Type is "cont" or "dis". Enter "y" (default) if the switch should expect a release acknowledgement in response to a forward or backward release signal; otherwise, enter "n". Note this field only applies to TN2140 ports.
- **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; otherwise, enter "n".

- **Answer Supervision Timeout** — Enter the amount of time in seconds the System allows for the call to be answered before beginning an SMDR 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 0-250. 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 boards) or, for boards 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 boards that take the administrable Outgoing End of Dial timer. Receive Answer Supervision must be "n" if the Direction field is "incoming". 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 is "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 0-10. 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 0-160. 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 0-30. 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 (i.e., 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".
- **Internal Alert** — Specifies if internal ringing and coverage will be used for incoming calls. Valid entries are "y" or "n". Default is "n".

- **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" or "n". Default is "y".
- **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 far end or any other facility treats # as an error. Default is "n".

  A final "#" will be outpulsed on interdigit timeout to indicate the start of end-to-end signaling.

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 far-end. Valid entries are 50-2550 in increments of 10. The field cannot be blank. Default is 500. The filed only appears for incoming or two-way trunk group when the Trunk Signaling Type is either blank or "cont".
- **Outgoing Disconnect (msec)** — Enter the minimum time (in msec) required for recognition of disconnect for an outgoing call. Valid entries are 50-2550 in increments of 10. The field cannot be blank. Default is 500. This filed only appears for outgoing or two-way trunk groups when the Trunk Signaling Type is either blank or "cont".
- **Incoming Dial Guard (msec)** — Enter the interval (in msec) 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 10-2550 in increments of 10. The default is 70 msec.
- **Outgoing Dial Guard (msec)** — Enter the minimum time (in msec) between seizure of the trunk and outpulsing of digits. Valid entries are 100-25500 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 100-25500 in increments of 100. The field cannot be blank. The default is 1500. This filed only appears when the trunk group 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 100-25500 in increments of 100. The field cannot be blank. Default is 1500. This field only appears for outgoing and two-way trunk groups.
- **Incoming Partial Dial (sec)** — Enter the time (in sec) allowed between digits. Valid entries are 5-255 in increments of 1. Default is 18 sec. This timer appears only if the Incoming Dial Type is "rotary."
- **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 150-2550 in increments of 10. The field cannot be blank. Default is 800. Note that the TN767 boards also apply this timer to touch tone dialing.
- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the serving CO. Valid entries are 20-2550 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 when the timer expires. 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(es) 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 1-254 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. Valid entries are 1-255 in increments of 1. Default is 5 sec. This timer is sent to the TN760D (v.15 or later), TN464B (or later), TN767, TN439, TN458, and TN2140 tie boards.

- **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 100-25500 in increments of 100. Default is 1500 msec. The timer is sent to the TN760D (v.15 or later), TN464B (or later), TN767, TN458, and TN2140 tie boards.
- **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 (e.g., error message). Valid entries are 1-255 in increments of 1. Default is 240 sec.
- **Incoming Incomplete Dial Alarm (sec)** — Enter a maximum time (in sec) between incoming seizure and receipt of all digits. Intervals greater than this generate an inline error. Valid entries are 1-255 in increments of 1. Default is 255 sec. This timer is sent to the TN760D (v.15 or later), TN464C (or later), TN767, and TN2140 tie boards.
- **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 board. 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 60-250 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 acknowledgement signal. After receiving a forward release signal, the called switch must send the forward release acknowledgement 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 500-1200 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 acknowledgement 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 40-120 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 60-120 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 500-1200 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 40-120 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 500-1200 in increments of 100. Default is 800. Only TN2140 ports receive this timer.
- **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. This timer is administered per non-CPE trunk group. It is only administrable if the Trunk Signaling Type is blank. Valid entries are 20-2550 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. This timer is administered per non-CPE trunk group. It is only administrable if the Trunk Signaling Type is blank. Valid entries are 20-2550 in increments of 10. Default is 150.
- **Glare** — Enter the minimum time (in msec) between sending an outgoing seizure and receiving a seizure acknowledgement. If seizure acknowledgement 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 40-100 in increments of 10. Default is 40. Only TN2140 ports receive this timer.
- **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 that the following boards can only do 10pps: TN439, TN458, and TN767.

- **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 20-80 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 10-40 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 20-80 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 10-40 in increments of five. The field cannot be blank. The default is 30.

Pages 4 through X of the Form (Group Member Assignments)

- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-20 depending on carrier type), and circuit number (01-31). For single-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-18 depending on cabinet type), and circuit number (01-31).
- **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 TN437, TN439, TN458, TN464 (with any suffix), TN722, TN760B (or later release), TN767, 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 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", "t5 rev", or "type 5". Default is blank.

- **Ans Delay** — Enter the duration of the wait (in msec) for answer supervision delay on the TN437, TN439, TN458, TN464 (with any suffix), TN722 (with any suffix), TN760B (or later), TN767, or TN2140 circuit packs. Valid entries are 20-5100 in increments of 20. The default is no entry (blank). This delay serves three 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
                                TRUNK GROUP

Group Number: xx                  Group Type: aplt          SMDR 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(sec): 5_
    Outgoing Dial Type: tone_____                  Incoming Dial Type: tone____
                                              Disconnect Timing(msec): 500_
                                                    Sig Bit Inversion: none
    Incoming Dial Tone? y

 Answer Supervision Timeout: 10_          Receive Answer Supervision? n
```

Advanced Private Line Termination Trunk Group Form (Page 1 of X)

Implementation Note:

The Connected to Toll and DTT to DCO Loss fields are only displayed when the Trunk Type field is "auto/...", "delay/...", "immed/...", or "wink/...".

The STT Loss field is only displayed when the Connected to Toll field is "n".

```
                                                              Page 2
TRUNK FEATURES
          ACA Assignment? n            Measured: none
                                 Internal Alert? n
                               Data Restriction? n
                                                  Maintenance Tests? y
   Suppress # Outpulsing? n
```

Advanced Private Line Termination Trunk Group Form (Page 2 of X)

Implementation Note:

The following fields are only displayed if the ACA Assignment field is "y":

- Long Holding Time (hours)
- Short Holding Time (secs.)
- Short Holding Threshold

```
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
  Incoming Dial Guard(msec): ____          Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____        Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                              Outgoing Rotary Dial Interdigit(msec): ____
  Outgoing End of Dial(sec): ___       Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____       Disconnect Signal Error(sec): ___
                             Incoming Incomplete Dial Alarm(sec): ___
END TO END SIGNALING
   Tone(msec): _____          Pause(msec): _____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

APLT Trunk Group Administrable Timers Form
if Trunk Signaling Type Field is Blank (Page 3 of X)

Implementation Notes:

The Incoming Partial Dial Digit field is only displayed when the Incoming Dial Type field from Page 1 is "rotary."

The Outgoing End of Dial field will not appear if the Receive Answer Supervision field from Page 1 is "y".

```
ADMINISTRABLE TIMERS

  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
                                           Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____        Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                              Outgoing Rotary Dial Interdigit(msec): ____
                                          Incoming Seizure(msec): ____
  Outgoing End of Dial(sec): ___       Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____       Disconnect Signal Error(sec): ___
                                 Incoming Incomplete Dial Alarm(sec): ___
   Outgoing Last Digit(sec): __
                                                    Glare(msec): ___
OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

APLT Trunk Group Administrable Timers Form
if Trunk Signaling Type Field is "cont" (Page 3 of X)

Implementation Notes:

The Incoming Partial Dial Digit field is only displayed when the Incoming Dial Type field from Page 1 is "rotary".

The Outgoing End of Dial field will not appear if the Receive Answer Supervision field from Page 1 is "y".

```
ADMINISTRABLE TIMERS
                                        Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____      Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                          Outgoing Rotary Dial Interdigit(msec): _____
  Outgoing End of Dial(sec): ___        Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____      Disconnect Signal Error(sec): ___
                        Incoming Incomplete Dial Alarm(sec): ___
   Outgoing Last Digit(sec): __         Normal Outgoing Seize Send(msec): ___
     Release Ack Send(msec): ____              Seize Ack Delay(msec): ___
          Answer Send(msec): ___        Outgoing Disconnect Send(msec): ____
       Seize Ack Send(msec): ____       Incoming Disconnect Send(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

APLT Trunk Group Administrable Timers Form
if Trunk Signaling Type Field is "dis" (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 will not appear if the Receive Answer Supervision field from Page 1 is "y".

```
                                TRUNK GROUP
GROUP MEMBER ASSIGNMENTS

          Port    Name          Night    Mode      Type      Ans Delay
     1:   _____   ____________  _____    ________  ________  ____
     2:   _____   ____________  _____    ________  ________  ____
     3:   _____   ____________  _____    ________  ________  ____
     4:   _____   ____________  _____    ________  ________  ____
     5:   _____   ____________  _____    ________  ________  ____
     6:   _____   ____________  _____    ________  ________  ____
     7:   _____   ____________  _____    ________  ________  ____
     8:   _____   ____________  _____    ________  ________  ____
     9:   _____   ____________  _____    ________  ________  ____
    10:   _____   ____________  _____    ________  ________  ____
    11:   _____   ____________  _____    ________  ________  ____
    12:   _____   ____________  _____    ________  ________  ____
    13:   _____   ____________  _____    ________  ________  ____
    14:   _____   ____________  _____    ________  ________  ____
    15:   _____   ____________  _____    ________  ________  ____
```

APLT Trunk Group Forms (Pages 4 through X)

(To reduce repetition, pages 5 through X are not shown.)

Implementation Note:

The Type field does not appear if the Trunk Signaling Type field on Page 1 is "dis".

Trunk Group — Central Office

Used to assign a Central Office (CO) Trunk Group and associated trunk ports. The trunk group connects the System to the public telecommunications network via a local CO.

Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a number from 1-99 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.
- **SMDR Reports** — Enter "y" to provide a detailed SMDR 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 0-95 that reflects the desired restriction. Default is "1".
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. SMDR also uses the TAC to identify the trunk group on associated SMDR 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 whether the trunk group is "incoming", "outgoing", or "two-way". Default is "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; otherwise, enter "n". Default is "n". Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter a number (0-99) of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console. Default is "99".
- **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), "attd" (attendant), ***or*** leave blank if the Trunk Type (in/out) field is not "auto/...".

- **Queue Length** — Enter a number from 0-100 that indicates the number of outgoing calls that can be held waiting. A "0" indicates no calls will be held in queue. Enter "0" for DCS trunks. This field is turned off if the Direction field is "incoming". Default is "0". If cut-through signaling is used, then the Queue Length must be zero.
- **Country** — Enter 1-17 to indicate the country where the trunk terminates. Country codes are as follows:
  1. United States
  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 (Russia)
  16. Argentina
  17. Greece

  NOTE:
  Country codes 11, 12, and 13 are not supported as yet.

- **Incoming Destination** — Enter where incoming calls will terminate. Valid entries are an extension number, "attd" (attendant), 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** — Enter if the trunk is to be used for voice, data, alternate voice-data (i.e., avd), or alternate voice/voice grade data and 56 kbps digital data (i.e., rbavd) calls. Valid entries are "avd", "rbavd", "voice", or "data". Type "rbavd" supports access to voice/data SDN service on robbed-bit T1 transmission facilities. Default is "voice". Note that "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 signaling.

- **Auth Code** — Enter "y" if an authorization code must be dialed to complete incoming calls on the trunk group; otherwise, enter "n". 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 0-4) may be administered in the System.
- **Prefix-1** — Indicates if the prefix 1 is required for NXX FNPA calls (where N is 2-9, and X is 0-9). This field only appears on CO, DIOD, and FX trunk group forms. Valid entries are "y" and "n". Default is "y".
- **BCC**(Bearer Capability Class) — 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. This field only appears 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 "avd" or "data". 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 3i Global — Feature Description*, 555-230-203, 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 Flash** — Enter "y" or "n" to indicate if access to customized services provided by a far end (e.g., Central Office) is permitted for this trunk group. The PBX must be directly connected to a far end that provides such services. Default is "n".
- **Toll Restricted** — Appears for CO, DIOD, and FX trunk group forms. Valid entries are "y" (default) and "n". Automatic trunks should have this field set to "n".
- **Trunk Type** — Identifies the physical type of CO trunk. It may differ for incoming and outgoing types. Valid entries are listed below:

  ground-start loop-start auto/auto auto/delay
  auto/immed auto/wink

- **Cut-Through?** — Enter "y" to indicate that the caller will receive dial tone directly from the CO. Upon receiving dial tone, the digits outpulsed can be either rotary or tone (DTMF), depending on the contents of the Outgoing Dial Type field. Default is "n".
- **Outgoing Dial Type** — Enter the type of pulsing required on an outgoing call. Valid entries are "automatic", "mfc", "tone" (default), or "rotary". A value of "mfc" requires that multifrequency signaling be enabled at the System Parameters Customer Options form.

- **Trunk Termination** — Specifies how the trunk group is terminated. Valid entries are "600ohms" or "rc"; 600ohms 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)** — Enter the minimum time period in milliseconds 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 milliseconds). Default is "500".
- **Auto Guard** — Entering "y" prevents 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 "n" on the System Parameters Maintenance Form. Valid entries are "y" and "n". Default is "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 only for TN438B, TN465B, and TN2147 ports. Valid entries are "y" and "n". Default is "n".
- **Sig Bit Inversion** — 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 boards. 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". The default is "none".
- **Connected to Toll** — Enter "y" if connected to a CO toll office; otherwise, enter "n" (default). 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) — Only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103) 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-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 only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

  — **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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

- **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, and this field should be set to "y". This field is only displayed when the Trunk Type field is "ground-start", "loop-start", "immed-start", or "wink-start". 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 (Terminal Balanced field = "n"). 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".
- **Trunk Gain** — Enter "high" or "low" to specify the gain of the trunk. The value of this field, in conjunction with the values of the Trunk Termination and Country fields, determine the input and trans-hybrid balance impedance for TN465B and TN2147 ports. All other CO and DID boards will be automatically set to "high". Valid entries are "high" and "low". Default is "high".
- **Bit Rate** — Enter the baud rate to be used by pooled modems. Valid entries are "300", "1200", "2400", "4800", "9600", and "19200". This field is only displayed if the Comm Type field is "avd". Default is "1200".
- **Synchronization** — Enter whether the trunk group will use "synchronous" or "asynchronous" communications. Valid entries are "async" and "sync". This field is only displayed if the Comm Type field is "avd". Default is "async".
- **Duplex** — Enter either full or half duplex for the trunk group. Valid entries are "full" or "half". Default is "full". This field is only displayed if the Comm Type field is "avd".
- **Disconnect Supervision** — Enter "y" 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; otherwise, enter "n". Default is "y".
- **Cyclical Hunt** — Enter "y" if a preferential hunting algorithm is to be used. Otherwise, a linear hunting algorithm will be used. Default is "y".
- **Answer Supervision Timeout** — Enter the amount of time in seconds the System allows for the call to be answered before beginning an SMDR 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 0-250. The default is "10".

  This timer should be longer than the Short Interdigit Timeout field (see *Miscellaneous System Parameters*) to avoid trunk signaling while the caller is dialing.

- **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 boards) or, for boards 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. This time-out is automatically set to "0" for boards that take the administrable Outgoing End of Dial timer. Receive Answer Supervision must be "n" if the Direction field is "incoming." Default is "n."

  NOTE:
  When this field is "y", the direction is "incoming", and the Trunk Type is "loop-start", polarity reversal is used for the trunks. In this case only circuit packs with polarity reversal may be used in the trunk group (TN2147, TN465B, and TN747Bv12).

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 is "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 0-10. Default is "1". Field must be "0" for a Service Type field entry of "sddn".
  - **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 0-160. 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 0-30. 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 (i.e., 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".
- **Abandoned Call Search** — Enter a "y" if this trunk group will conduct an Abandoned Call Search to identify a ghost call; otherwise, enter "n". Default is "n". This field is only applicable if Trunk Type is "ground-start". Note that the CO must support Abandoned call search for the feature to work properly.

  ⇒ 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. Note that 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" or "n". Default is "y".
- **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".

  A final "#" will be outpulsed on interdigit timeout to indicate the start of end-to-end signaling.

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 50-2550 in increments of 10. The field cannot be blank. Default is 500. This timer is sent to ground-start and loop-start TN2138 boards.
- **Outgoing Disconnect (msec)** — Enter the minimum time (in msec) required for recognition of disconnect for an outgoing call. Valid entries are 50-2550 in increments of 10. The field cannot be blank. Default is 500. This timer is sent to ground-start and loop-start TN2138 boards.
- **Outgoing Dial Guard (msec)** — Enter the minimum time (in msec) between seizure of the trunk and outpulsing of digits. Valid entries are 100-25500 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 100-25500 in increments of 100. The field cannot be blank. Default is 1500.
- **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 100-25500 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 (that is, PBX). Valid entries are 150-2550 in increments of 10. The field cannot be blank. Default is 800. Note that the TN767 boards also apply this timer to touch-tone dialing.
- **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 200-51000 in increments of 200. Default is 5200. The field cannot be blank. This timer is sent to the TN760D (v.15 or later), TN464B (or later), TN767, TN424, TN438 (all), TN465, TN465B, TN465B, TN447, TN2138, and TN2147 CO boards.
- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the serving CO. Valid entries are 20-2550 in increments of 10. The field cannot be blank. Default is 500. This timer is sent to the TN760D (v.15 or later), TN464B (or later), TN767, TN424, TN438 (all), TN465, TN465B, TN465B, TN447, TN2138, and TN2147 CO boards.
- **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 when the timer expires. 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(es) 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 1-254 in increments of 1. Default is 10.

This timer should be longer than the Short Interdigit Timeout (see Miscellaneous System Parameters) to avoid trunk signaling while the caller is still dialing.

- **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 1-255 in increments of 1. Default is 5 sec. This timer is sent to TN760D (v.15 or later), TN464B (or later), TN767, TN438B, TN447, TN465B, and TN2147 CO boards.
- **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 100-25500 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 (e.g., error message). This timer is administrable on TIE or GS CO trunk groups. Valid entries are 1-255 in increments of 1. Default is 240 sec. This timer is sent to TN760D (v.15 or later), TN464B (or later), TN767, TN438B, TN447, and TN2147 CO boards.
- **Flash Length** — Specifies the length (in msec) of the flash signal to be generated toward the Central Office. Valid entries are 10-2550 in increments of 10. Default is 540 msec. This timer is sent to TN464C (or later), TN465B, and TN2147 ports.
- **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 20-2550 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 20-2550 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 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 20-80 in increments of five. 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 10-40 in increments of five; default is 20. The field cannot be blank.
- **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 20-80 in increments of five; default is 60. This field cannot be blank.

  If the PPS field is 20, the sum of the Make and Break fields must equal 50. Valid entries are 10-40 in increments of five; default is 30. This field cannot be blank.
- **PPM**(Periodical Pulse Metering) — Appears for outgoing or two-way CO trunks. Enter "y" if pulses should be collected from the public network to determine call cost; otherwise enter "n" (default). If this field is "y", the Frequency field appears.
- **Frequency** — Appears if the PPM field is "y". Identifies 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 TN2138 board.

  This field is also sent to the TN465B as follows:

  - If 50/12k or 12k are administered, the TN465B will be set to detect 12 kHz;
  - If 16k, 50, of 50/16k are adminstered, the TN465B will be set to detect 16 kHz.

Pages 4 through X of the Form (Group Member Assignments)

- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-20 depending on carrier type), and circuit number (01-24). For single-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-18 depending on cabinet type), and circuit number (01-31).

- **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 TN437, TN439, TN458, TN464, TN722, TN760B, TN767, 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 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", "t5 rev", or "type 5". Default is blank.

- **Ans Delay** — Enter the duration of the wait (in msec) for answer supervision delay on the TN437, TN439, TN458, TN464, TN722, TN760B, TN767, or TN2140 circuit packs. Valid entries are 20-5100 in increments of 20. The default is no entry (blank). This delay serves three 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.
  3. Used to delay cut-through in release link trunk applications so that the central attendant does not miss call progress tones.

```
                                                              Page 1
                              TRUNK GROUP

Group Number: xx                  Group Type: co          SMDR 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? y                            Cyclical Hunt? y
Answer Supervision Timeout: 10_          Receive Answer Supervision? n
```

Central Office Trunk Group Form (Page 1 of X)

Implementation Notes:

The BCC field is only displayed when ISDN-PRI is optioned for on the System-Parameters Customer-Options form and the Comm Type field is "avd" or "data".

The Connected to Toll and DTT to DCO Loss fields are only displayed if the Trunk Type field is "auto/.. ".

The STT Loss field is only displayed when the Connected to Toll field is "n".

The Terminal Balanced field is only displayed when the Trunk Type field is "ground-start" or "loop-start". The RA Trunk Loss field is only displayed when the Terminal Balanced field is "n".

The Bit Rate, Synchronization, and Duplex fields are only displayed when the Comm Type field is "avd".

The Trunk Flash field is only displayed when the Group Type field is "co", "fx", or "wats".

```
                                                                Page 2
TRUNK FEATURES
          ACA Assignment? n            Measured: none

                                Data Restriction? n

   Abandoned Call Search? n                              Maintenance Tests? y
   Suppress # Outpulsing? n
```

Central Office Trunk Group Form (Page 2 of X)

Implementation Note:

The following fields are only displayed if the ACA Assignment field is "y":

- Long Holding Time (hours)
- Short Holding Time (secs.)
- Short Holding Threshold.

```
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
                                           Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____         Outgoing Glare Guard(msec): _____

                                Outgoing Rotary Dial Interdigit(msec): ____
     Ringing Monitor(msec): _____            Incoming Seizure(msec): ____
  Outgoing End of Dial(sec): ___         Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____         Disconnect Signal Error(sec): ___
         Flash Length(msec): ____


END TO END SIGNALING
   Tone(msec): ____              Pause(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __      PPM? y  Frequency: 50/12k
```

Central Office Trunk Group Administrable Timers Form (Page 3 of X)

Implementation Notes:

The Outgoing End of Dial field will not be displayed if the Receive Answer Supervision field on Page 1 is "y".

TRUNK GROUP

GROUP MEMBER ASSIGNMENTS

	Port	Name	Night	Mode	Type	Ans Delay
1:						
2:						
3:						
4:						
5:						
6:						
7:						
8:						
9:						
10:						
11:						
12:						
13:						
14:						
15:						

Central Office Trunk Group Form (Pages 4 through X)

(To reduce repetition, pages 5 through X are not shown.)

Trunk Group — CPE

Used to assign a CPE Trunk Group and associated trunk ports. The trunk group provides 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 and Error Messages" 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	1-99 (or 'next')
change	trunk-group	1-99 or TAC X...
display	trunk-group	1-99 or TAC X...['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-99 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.

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 number from 1-99 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.
- **SMDR Reports** — Enter "y" to provide a detailed SMDR 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 0-95 that reflects the desired restriction. Default is "1".
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group SMDR also uses the TAC to identify the trunk group on associated SMDR 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).

- **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; otherwise, enter "n". Default is "n". Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter a number (0-99) of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console. Default is "99".
- **Queue Length** — Enter a number from 0-100 that indicates the number of outgoing calls that can be held waiting. A "0" indicates no calls will be held in queue. Enter "0" for DCS trunks. This field is turned off if the Direction field is "incoming". Default is "0".
- **Disconnect Timing (msec)** — Enter the minimum time period in milliseconds 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 milliseconds). Default is "500".
- **End-to-End Signaling** — Enter the duration (in milliseconds) of touch-tone signal tone which is sent to the far-end for interpretation by devices at that location. The duration time entered must be a multiple of 10. Valid entries are 60-360, or leave blank. Default is "60".
- **Answer Supervision Timeout** — Enter the amount of time in seconds the System allows for the call to be answered before beginning an SMDR 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 0-250. The 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. Valid entries are "y" or "n". Default is "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 0-10. Default is "1". Field must be "0" for a Service Type field entry of "sddn".
  - **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 0-160. 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 0-30. 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 (i.e., 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" or "n". Default is "y".
- **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".

  A final "#" will be outpulsed on interdigit timeout to indicate the start of end-to-end signaling.

Pages 3 through X of the Form (Group Member Assignments)

- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-20 depending on carrier type), and circuit number (01-24). For single-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-18 depending on cabinet type), and circuit number (01-31).
- **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.

```
                                                              Page 1
                              TRUNK GROUP

Group Number: __                Group Type: cpe          SMDR Reports? y
  Group Name: OUTSIDE_CALL____          COR: 1_                   TAC:____
                           Outgoing Display? n
 Dial Access? y              Busy Threshold: 99
Queue Length: 0__

TRUNK PARAMETERS
                                          Disconnect Timing(msec): 500_
 End-to-End Signaling: 60_
 Answer Supervision Timeout: 10_
```

Customer-Provided Equipment Trunk Group Form (Page 1 of X)

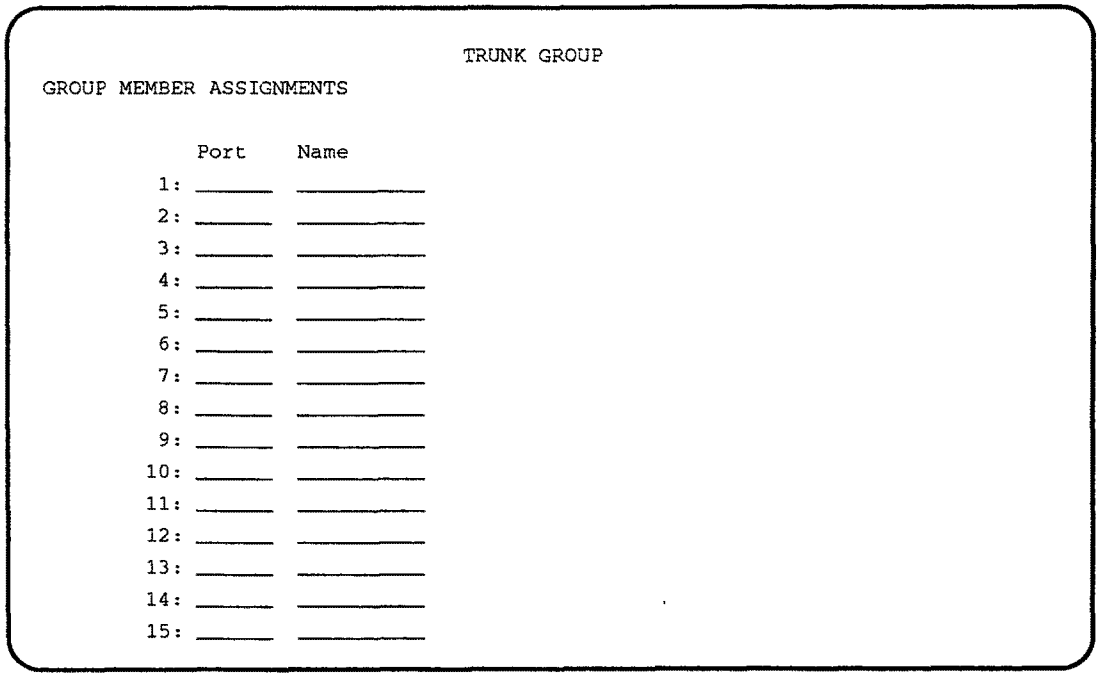
```
                                                              Page 2
TRUNK FEATURES
          ACA Assignment? n          Measured: none
                                Data Restriction? n
                                                  Maintenance Tests? y
   Suppress # Outpulsing? n
```

Customer-Provided Equipment Trunk Group Form (Page 2 of X)

Implementation Note:

The following fields are only displayed if the ACA Assignment field is "y":

- Long Holding Time (hours)
- Short Holding Time (secs.)
- Short Holding Threshold



TRUNK GROUP

GROUP MEMBER ASSIGNMENTS

	Port	Name
1:	_____	_____
2:	_____	_____
3:	_____	_____
4:	_____	_____
5:	_____	_____
6:	_____	_____
7:	_____	_____
8:	_____	_____
9:	_____	_____
10:	_____	_____
11:	_____	_____
12:	_____	_____
13:	_____	_____
14:	_____	_____
15:	_____	_____

Customer-Provided Equipment Trunk Group Form (Pages 3 through X)

(To reduce repetition, pages 4 through X are not shown.)

Trunk Group — DMI-BOS

Used to assign a DMI-BOS Trunk Group and associated trunk ports. The DMI-BOS Trunk Group allows 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 and Error Messages" 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	1-99 (or 'next')
change	trunk-group	1-99 or TAC X...
display	trunk-group	1-99 or TAC X...['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-99 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.

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 number from 1-99 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.
- **SMDR Reports** — Enter "y" to provide a detailed SMDR 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 0-95 that reflects the desired restriction. Default is "1".
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. SMDR also uses the TAC to identify the trunk group on

associated SMDR 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 whether the trunk group is "incoming", "outgoing", or "two-way". Default is "two-way". 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 is "n".
- **Dial Access** — Enter "y" to allow the trunk group to be accessed via a TAC; otherwise, enter "n". Default is "y". Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter a number (0-99) of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console. Default is "99".
- **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), "attd" (attendant), ***or*** leave blank (default) if the Trunk Type (in/out) field is not "auto/...".
- **Incoming Destination** — Enter where incoming calls will terminate. Valid entries are an extension number, "attd" (attendant), VDN, ***or*** leave blank (default) if the Trunk Type (in/out) field is not "auto/...". If "attd" is entered, a call is treated as an LDN call.
- **Auth Code** — Enter "y" if an authorization code must be dialed to complete incoming calls on the trunk group; otherwise, enter "n". 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".
- **Trunk Type (in/out)** — Identifies the physical type of incoming and outgoing trunks. Valid entries are listed below:

auto/auto	delay/auto	immed/auto	wink/auto
auto/delay	delay/delay	immed/delay	wink/delay
auto/immed	delay/immed	immed/immed	wink/immed
auto/wink	delay/wink	immed/wink	wink/wink

NOTE:
For immed/immed trunks (on incoming trunks), the far-end PBX siezes the trunk and then sends digits without waiting for acknowledgement 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/wink 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 far-end 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. The maximum value is 99 seconds. Valid entries are 5-99, or leave blank. Default is "5".
- **Outgoing Dial Type** — Enter the type of pulsing required on an outgoing call. Valid entries are "tone" (default), "mfc", or "rotary". A value of "mfc" requires that the multifrequency signaling option be enabled at the System Parameters Customer Options form.
- **Incoming Dial Type** — Enter the type of pulses required on an incoming trunk group. Valid entries are "tone" (default), "mfc", or "rotary". The value in this field impacts the appearance of the Incoming Partial Dial Times on the Administrable Timer page.
- **Disconnect Timing (msec)** — Enter the minimum time period in milliseconds 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 milliseconds). Default is "500". This timer will not be used for ports on a board that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers. These latter two times will 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.
- **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** — Enter the number of digits the far-end sends for incoming call connections. This field only appears if the Direction is incoming or two-way, and the Incoming Dial type is "mfc". This field must be completed. The default is blank.
- **Sig Bit Inversion** — 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 boards. 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". The default is "none".
- **Connected to Toll** — Enter "y" if connected to a CO toll office; otherwise, enter "n" (default). 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) — Only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103) 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-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 only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)
- — **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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

- **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** — Enter the baud rate to be used by pooled modems. Valid entries are "300", "1200", "2400", "4800", "9600", and "19200". Default is "1200".
- **Synchronization** — Enter whether the trunk group will use "synchronous" or "asynchronous" communications. Valid entries are "async" and "sync". Default is "async".
- **Duplex** — Enter either full or half duplex for the trunk group. Valid entries are "full" or "half". Default is "full".
- **Answer Supervision Timeout** — Enter the amount of time in seconds the System allows for the call to be answered before beginning an SMDR 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 0-250. 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 boards) or, for boards 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 boards that take the administrable Outgoing End of Dial timer. Receive Answer Supervision must be "n" if the Direction field is "incoming". 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 is "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 0-10. 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 0-160. 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 0-30. 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 (i.e., 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".
- **Internal Alert** — Specifies if internal ringing and coverage will be used for incoming calls. Valid entries are "y" or "n". Default is "n".
- **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" or "n". Default is "y".
- **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 far-end treats # as an error. Default is "n".

  A final "#" will be outpulsed on interdigit timeout to indicate the start of end-to-end signaling.

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 far-end. Valid entries are 50-2550 in increments of 10. The field cannot be blank. Default is 500. This field only appears for incoming or two-way trunk groups.
- **Outgoing Disconnect (msec)** — Enter the minimum time (in msec) required for recognition of disconnect for an outgoing call. Valid entries are 50-2550 in increments of 10. The field cannot be blank. Default is 500. This field only appears for outgoing or two-way trunk groups.
- **Incoming Dial Guard (msec)** — Enter the interval (in msec) 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 10-2550 in increments of 10. The default is 70 msec.
- **Outgoing Dial Guard (msec)** — Enter the minimum time (in msec) between seizure of the trunk and outpulsing of digits. Valid entries are 100-25500 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 100-25500 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 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 100-25500 in increments of 100. The field cannot be blank. Default is 1500. This field only appears for outgoing and two-way trunk groups.
- **Incoming Partial Dial (sec)** — Enter the time (in sec) allowed between digits on rotary DID and TIE trunks. Valid entries are 5-255 in increments of 1. Default is 18 sec. This timer only appears only if the Incoming Dial Type is "rotoary."
- **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 150-2550 in increments of 10. The field cannot be blank. Default is 800. Note that the TN767 boards also apply this timer to touch tone dialing.

- **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 when the timer expires. 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(es) 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 1-254 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. Valid entries are 1-255 in increments of 1. Default is 5 sec. This timer is sent to the TN464B (or later), TN767, TN439, and TN458 tie boards.
- **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 100-25500 in increments of 100. Default is 1500 msec. This timer is sent to the TN464B (or later), TN767, and TN458 tie boards.
- **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 (e.g., error message). Valid entries are 1-255 in increments of 1. Default is 240 sec.
- **Incoming Incomplete Dial Alarm (sec)** — Enter a maximum time (in sec) between incoming seizure and receipt of all digits. Intervals greater than this generate an inline error. Valid entries are 1-255 in increments of 1. Default is 255 sec. This timer is sent to the TN464C (or later), and TN767 tie boards.
- **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 20-2550 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 20-2550 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 that the following boards can only do 10pps:TN439, TN458, and TN767.
- **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 20-80 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 10-40 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 20-80 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 10-40 in increments of five. The field cannot be blank. The default is 30.

Pages 4 through X of the Form (Group Member Assignments)

- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-20 depending on carrier type), and circuit number (01-24). For single-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-18 depending on cabinet type), and circuit number (01-31).
- **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 TN437, TN439, TN458, TN464 (with any suffix), TN722, TN760B (or later release), TN767, 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, TN437, TN439, TN464 (with any suffix), or TN458 circuit packs.

  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", "t5 rev", or "type 5". Default is blank.
- **Ans Delay** — Enter the duration of the wait (in msec) for answer supervision delay on the TN437, TN439, TN458, TN464, TN722, TN760B, TN767, or TN2140 circuit packs. Valid entries are 20-5100 in increments of 20. The default is no entry (blank). This timer is used to delay the up-link ANSWER message. 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
                              TRUNK GROUP

Group Number: xx              Group Type: dmi-bos    SMDR Reports? y
  Group Name: OUTSIDE_CALL____      COR: 1_                  TAC: ___
   Direction: two-way_ Outgoing Display? n
 Dial Access? y          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: _____
                                          Sig Bit Inversion: none
Incoming Dial Tone? y
          Bit Rate: 1200_       Synchronization: async  Duplex: full
 Answer Supervision Timeout: 10_    Receive Answer Supervision? n
```

Digital Multiplexed Interface Trunk Group Form (Page 1 of X)

Implementation Note:

The Connected to Toll and DTT to DCO Loss fields are only displayed if the Trunk Type field is "auto/...", "delay/...", "wink/...", or "immed/...".

The STT Loss field is only displayed when the Connected to Toll field is "n".

Expected digits field is only displayed when the direction is incoming or two-way.

```
                                                              Page 2
TRUNK FEATURES
        ACA Assignment? n           Measured: none
                                 Internal Alert? n
                               Data Restriction? n
                                                  Maintenance Tests? y
  Suppress # Outpulsing? n
```

Digital Multiplexed Interface Trunk Group Form (Page 2 of X)

Implementation Note:

The following fields are only displayed if the ACA Assignment field is "y":

- Long Holding Time (hours)
- Short Holding Time (secs.)
- Short Holding Threshold

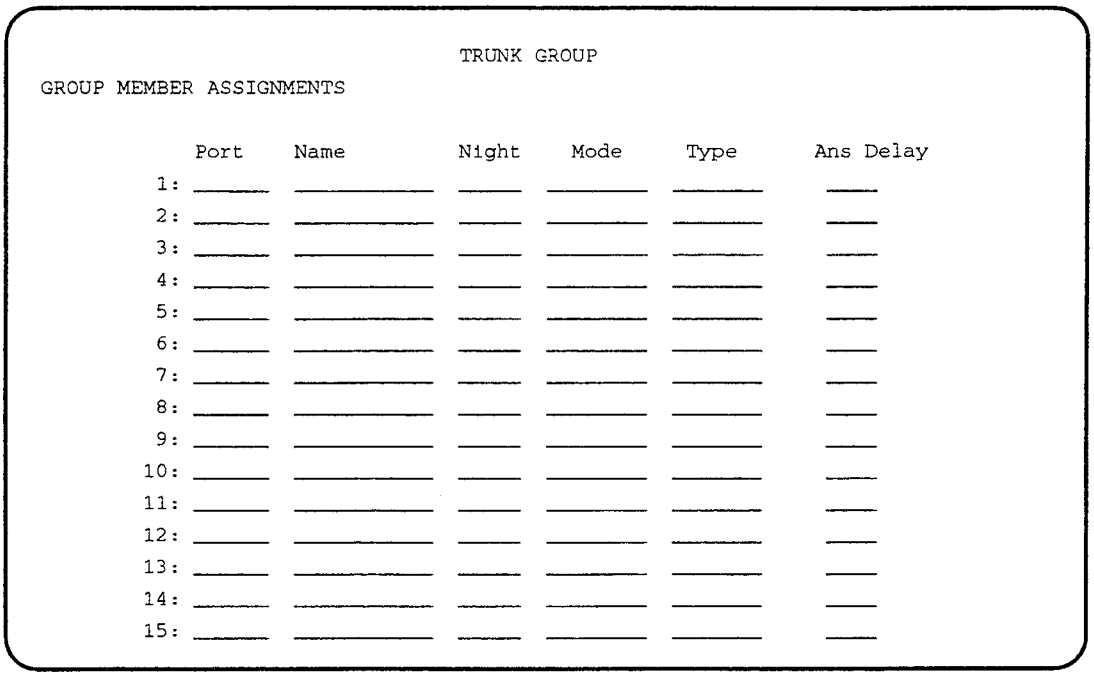
```
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
  Incoming Dial Guard(msec): ____          Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____        Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                              Outgoing Rotary Dial Interdigit(msec): ____
  Outgoing End of Dial(sec): ___       Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____       Disconnect Signal Error(sec): ___
                               Incoming Incomplete Dial Alarm(sec): ___
END TO END SIGNALING
   Tone(msec): ____          Pause(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

Digital Multiplexed Interface 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 will not appear if the Receive Answer Supervision field from Page 1 is "y".



TRUNK GROUP

GROUP MEMBER ASSIGNMENTS

	Port	Name	Night	Mode	Type	Ans Delay
1:						
2:						
3:						
4:						
5:						
6:						
7:						
8:						
9:						
10:						
11:						
12:						
13:						
14:						
15:						

Digital Multiplexed Interface Trunk Group Form (Pages 4 through X)

(To reduce repetition, pages 5 through X are not shown.)

Trunk Group — Direct Inward Dialing

Used to assign a Direct Inward Dialing (DID) Trunk Group and associated trunk ports. A DID Trunk Group allows 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 and Error Messages" 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	1-99 (or 'next')
change	trunk-group	1-99 or TAC X...
display	trunk-group	1-99 or TAC X...['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-99 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.

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 number from 1-99 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.
- **SMDR Reports** — Enter "y" to provide a detailed SMDR 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 0-95 that reflects the desired restriction. Default is "1".
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. SMDR also uses the TAC to identify the trunk group on

associated SMDR 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).

- **Country** — Enter 1-17 to indicate the country where the trunk terminates. Country codes are as follows:

  1. United States
  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 (Russia)
  16. Argentina
  17. Greece

  NOTE:
  Country codes 11, 12, and 13 are not yet supported.

- **Protocol Type** — This field appears if the country code is 15. Enter "intol" for incoming toll protocol. Enter "inloc" for incoming local protocol. Default is "inloc".
- **CO Type** — This field appears if the country code is 14. Enter "analog" or "digital". Default is analog.
- **Auth Code** — Enter "y" if an authorization code must be dialed to complete incoming calls on the trunk group; otherwise, enter "n". 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". Note that this field is used only for TN2146 boards and, if using Italian DID protocol, TN464 boards.

- **Trunk Type** — Identifies the physical type of trunk. Valid entries are listed below:

  loop-start>immed-start>wink-start

  All members of a DID group with a loop-start Trunk Type must be on TN429 boards.

- **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 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. The maximum value is 99 seconds. Valid entries are 5-99, or leave blank. Default is "5".

- **Incoming Dial Type** — Indicates the type of pulses required on an incoming trunk group. Valid entries are "tone", "rotary", or "mfc". To use mfc, the Expected Digits field must be administered. Default is "tone". The value in this field impact the appearance of the Incoming Partial Dial Timer on the Administrable Timer Page.

- **Trunk Termination** — Specifies how the trunk group is terminated. Valid entries are "600ohm" or "rc"; 600ohms 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)** — Enter the minimum time period in milliseconds 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 milliseconds). Default is "500". This timer will not be used for ports on a board that receives the Incoming Disconnect Timer. The latter timer will 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.

- **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** — Enter the number of digits the Central Office sends for incoming call connections. If the Incoming Dial Type is mfc, this field must be completed. Default is blank.

- **Sig Bit Inversion** — 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 boards. 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". The default is "none".

- **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, and this field should be set to "y". This field is only displayed when the Trunk Type field has been entered. 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 (Terminal Balanced field = "n"). 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".
- **Extended Loop Range** — Enter "y" to indicate that the switch is farther away from the central office than the required distance. This field is used only on the TN459A board. Default is "n".
- **Trunk Gain** — Enter "high" or "low" to specify the gain for the trunk. 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 TN2146 ports. All other DID boards will be automatically set to high; this is what happened before the implementation of this field. Default is "high".
- **Drop Treatment** — Enter "intercept", "busy", or "silence". Entering "intercept" in this field applies the intercept tone to the talk path when the terminating party drops the call and the originating party is still off-hook. Entering "busy" applies the busy tone in the same situation; entering silence indicates that no tone will be applied in this situation.
- **Disconnect Supervision** — Enter "y" 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; otherwise, enter "n". Default is "y".

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 is "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 0-10. 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 0-160. 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 0-30. 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 (i.e., 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".

  A final "#" will be outpulsed on interdigit timeout to indicate the start of end-to-end signaling.

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 50-2550 in increments of 10. The field cannot be blank. Default is 500.
- **Incoming Dial Guard (msec)** — Enter the interval (in msec) 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 10-2550 in increments of 10. The default is 70 msec.
- **Incoming Partial Dial (sec)** — Enter the time (in sec) allowed between digits on rotary trunks. Valid entries are 5-255 in increments of 1. Default is 18 sec. This timer appears only if the Incoming Dial Type is "rotary."
- **Flash Length** — Specifies the length (in msec) 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 10-2550 in increments of 10. Default is 540 msec.

- **Incoming Incomplete Dial Alarm (sec)** — Enter a maximum time (in sec) between incoming seizure and receipt of all digits. Intervals greater than this generate an inline error. Valid entries are 1-255 in increments of 1; default is 255. This timer is sent to TN464C (or later), TN767, TN436 (all), TN459 (all), and TN2146 DID boards.
- **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 20-2550 in increments of 10; default is 350. This timer is sent to TN464B (or later), TN767, TN436B, TN459B, and TN2146 DID boards.
- **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 20-2550 in increments of 10. Default is 150. This timer is sent to TN464B (or later), TN767, TN436B, TN459B, and TN2146 DID boards.

Pages 4 through X of the Form (Group Member Assignments)

- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-20 depending on carrier type), and circuit number (01-31). For single-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-18 depending on cabinet type), and circuit number (01-31).
- **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).

```
                              TRUNK GROUP                Page 1 of X

Group Number: xxx                Group Type: did          SMDR Reports? y
  Group Name: OUTSIDE_CALL____         COR: 1_                    TAC: ____
                                   Country: 8_
                                 Auth Code? n
TRUNK PARAMETERS
        Trunk Type: ____________           Incoming Rotary Timeout: 5_
                                                Incoming Dial Type: tone__
 Trunk Termination: rc____                 Disconnect Timing(msec): 500_
   Digit Treatment: _________                                Digits: _____
   Expected Digits: __                                Sig Bit Inversion: ___
Extended Loop Range: __     Trunk Gain: high        Drop Treatment: silence
Disconnect Supervision: y
```

Direct Inward Dialing Trunk Group Form (Page 1 of X)

Implementation Note:

The Terminal Balanced field is only displayed when the Trunk Type field has been entered.

The RA Trunk Loss field is only displayed if the Terminal Balanced field is "n".

```
                              TRUNK GROUP              Page 2 of X
TRUNK FEATURES
         ACA Assignment? n                  Measured: none
                                    Data Restriction? n
                                   Maintenance Tests? y
  Suppress # Outpulsing? n
```

Direct Inward Dialing Trunk Group Form (Page 2 of X)

Implementation Note:

The following fields are only displayed if the ACA Assignment field is "y":

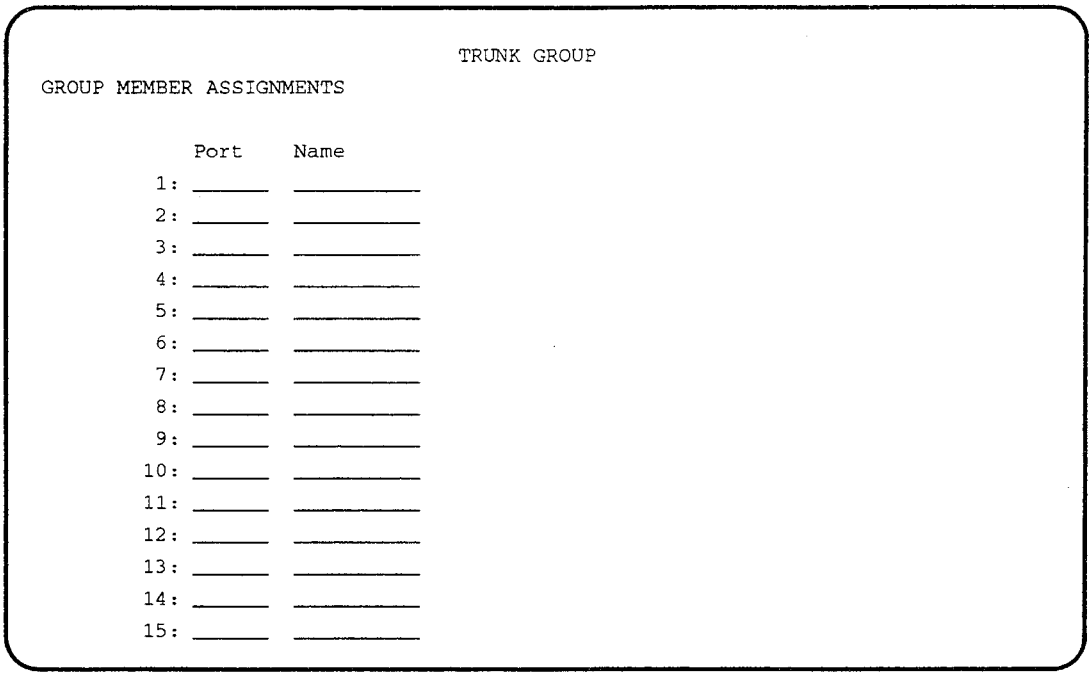
- Long Holding Time (hours)
- Short Holding Time (secs.)
- Short Holding Threshold

```
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): ____
  Incoming Dial Guard(msec): ____
 Incoming Partial Dial(sec): ___
         Flash Length(msec): ____  Incoming Incomplete Dial Alarm(sec): ___

END TO END SIGNALING
   Tone(msec): ____            Pause(msec): ____
```

Direct Inward Dialing Trunk Group Administrable Timers Form (Page 3 of X)

Implementation Notes:

The Incoming Partial Dial field only appears if the Incoming Dial Type field on Page 1 is "rotary".



```
                                    TRUNK GROUP
GROUP MEMBER ASSIGNMENTS

              Port    Name
        1:  _____   _________
        2:  _____   _________
        3:  _____   _________
        4:  _____   _________
        5:  _____   _________
        6:  _____   _________
        7:  _____   _________
        8:  _____   _________
        9:  _____   _________
       10:  _____   _________
       11:  _____   _________
       12:  _____   _________
       13:  _____   _________
       14:  _____   _________
       15:  _____   _________
```

Direct Inward Dialing Trunk Group Form (Pages 4 through X)

(To reduce repetition, pages 5 through X are not shown.)

Trunk Group — Direct Inward and Outward Dialing

NOTE:
The TN429 D1OD Trunk circuit pack is used in Japan. See "Direct Inward/Outward Dial (DIOD)" section in Chapter 3 for more information.

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.

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 number from 1-99 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.
- **SMDR Reports** — Enter "y" to provide a detailed SMDR 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 0-95 that reflects the desired restriction. Default is "1".
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. SMDR also uses the TAC to identify the trunk group on associated SMDR 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** — For DIOD trunks, only "two-way" is valid.
- **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; otherwise, enter "n". Default is "n". Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter a number (0-99) of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console. Default is "99".

- **Queue Length** — Enter a number from 0-100 that indicates the number of outgoing calls that can be held waiting. A "0" indicates no calls will be held in queue. This field is turned off if the Direction field is "incoming". Default is "0".
- **Auth Code** — Enter "y" if an authorization code must be dialed to complete incoming calls on the trunk group; otherwise, enter "n". 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 0-4) may be administered in the System.
- **Prefix-1** — Indicates if the prefix 1 is required for NXX FNPA calls (where N is 2-9, and X is 0-9). Valid entries are "y" and "n". Default is "y".
- **Toll Restricted** — Automatic dial type trunks should have this field set to 'n'. Valid entries are "y" and "n". Default is "y".
- **Trunk Type** — Enter "loop-start" for DIOD trunk types. Default is blank. Entering "loop-start" causes the fields Terminal Balanced to appear. All members of this group must be on TN429 boards.
- **Outgoing Dial Type** — Enter the type of pulsing required on an outgoing call. Valid entries are "tone", "rotary", or "mfc". Default is "tone". A value of "mfc" requires that the multifrequency dial type be enabled at the System Parameters Customer Options form.
- **Incoming Dial Type** — Indicates the type of pulses required on an incoming trunk group. The only allowable entry for DIOD trunk groups is "tone".
- **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.
- **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 the Central Office sends for an incoming call connections. Default is blank.

- **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, 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 (Terminal Balanced field = "n"). 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** — Enter "y" 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; otherwise, enter "n". Default is "y".
- **Cyclical Hunt** — Enter "y" if a preferential hunting algorithm is to be used. Otherwise, a linear hunting algorithm will be used. Default is "y".
- **Answer Supervision Timeout** — Enter the amount of time in seconds the System allows for the call to be answered before beginning an SMDR 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 0-250. 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 boards) or, for boards 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 boards that take the administrable Outgoing End of Dial timer. Receive Answer Supervision must be "n" if the Direction field is "incoming". 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 is "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 0-10. 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 0-160. 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 0-30. 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 (i.e., 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" or "n". Default is "y".
- **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".

  A final "#" will be outpulsed on interdigit timeout to indicate the start of end-to-end signaling.

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 50-2550 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)** — Enter the minimum time (in msec) required for recognition of disconnect for an outgoing call. Valid entries are 50-2550 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)** — Enter the minimum time (in msec) between seizure of the trunk and outpulsing of digits. Valid entries are 100-25500 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 100-25500 in increments of 100. The field cannot be blank. Default is 1500.
- **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 100-25500 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 (that is, PBX). Valid entries are 150-2550 in increments of 10. The field cannot be blank. Default is 800. Note that the TN767 also applies this timer to touch-tone dialing.
- **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 200-51000 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 20-2550 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 when the timer expires. 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(es) 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 1-254 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 1-255 in increments of 1. Default is 5 sec. Note that this timer is not sent to TN429 ports.
- **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 100-25500 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. This timer is administered per non-CPE trunk group. Valid entries are 20-2550 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. This timer is administered per non-CPE trunk group. Valid entries are 20-2550 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 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 20-80 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 10-40 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 20-80 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 10-40 in increments of five. The field cannot be blank. The default is 30.

- **PPM**(Periodical Pulse Metering) — Pulses collected from the public network to determine call cost. When this field is "y", PPM pulses will be collected for the trunks in this group. If this field is "y", the Frequency field will appear. Valid entries are "y" and "n". Default is "n". Note that this field does not apply to the TN429 since that circuit pack cannot detect PPM.
- **Frequency** — Appears if the PPM field is "y". 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). Valid entries are "12k", "16k", "50", "50/12k", and "50/16k". Default is "50/12k". Note that this field does not apply to the TN429.

Pages 4 through X of the Form (Group Member Assignments)

- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-20 depending on carrier type), and circuit number (01-8). For single-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-18 depending on cabinet type), and circuit number (01-8). Note that all ports in a DIOD trunk group must be from TN429 boards.
- **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. Valid entries are "e&m" (interface), "simplex" (phantomed), or "protected". This entry must correspond to associated dip switch settings on the circuit pack. This field must be blank for DIOD groups.
- **Type** — Specifies the signaling type to be used.

  Valid entries are "t1 stan", "t1 comp", "t5 rev", or "type 5". Default is blank. This filed must be blank for DIOD groups.
- **Ans Delay** — Enter the duration of the wait (in msec) for answer supervision delay. Valid entries are 20-5100 in increments of 20. The default is no entry (blank). This field must be blank for DIOD groups.

```
                                                              Page 1
                                TRUNK GROUP

Group Number: xx                    Group Type: diod          SMDR Reports? y
  Group Name: OUTSIDE CALL____           COR: 1_                      TAC: ____
   Direction: two-way_       Outgoing Display? n
 Dial Access? y                Busy Threshold: 99
Queue Length: 0__
                                     Auth Code? n    Digit Absorption List: _
    Prefix-1? y                                            Toll Restricted? y

TRUNK PARAMETERS
            Trunk Type: loop-start
    Outgoing Dial Type: tone_____                 Incoming Dial Type: tone_____
     Trunk Termination: rc____
       Digit Treatment: __________                                Digits: _____
       Expected Digits: _
    Terminal Balanced?: n

                                                          RA Trunk Loss:0db
    Disconnect Supervision? y                             Cyclical Hunt? y
 Answer Supervision Timeout: 10_          Receive Answer Supervision? n
```

Direct Inward and Outward Dial Trunk Group Form (Page 1 of X)

```
                                                              Page 2
TRUNK FEATURES
          ACA Assignment? n              Measured: none
                                 Data Restriction? n
                                                   Maintenance Tests? y
   Suppress # Outpulsing? n
```

Direct Inward and Outward Dial Trunk Group Form (Page 2 of X)

Implementation Notes:

The following fields are only displayed if the ACA Assignment field is "y":

- Long Holding Time (hours)
- Short Holding Time (secs.)
- Short Holding Threshold

```
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
                                           Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____         Outgoing Glare Guard(msec): _____
                          Outgoing Rotary Dial Interdigit(msec): ____
      Ringing Monitor(msec): _____            Incoming Seizure(msec): ____
  Outgoing End of Dial(sec): ___       Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____

END TO END SIGNALING
   Tone(msec): ____              Pause(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __      PPM? y  Frequency: 50/12k
```

Direct Inward and Outward Dial Trunk Group Administrable Timers Form (Page 3 of X)

Implementation Notes:

The Outgoing End of Dial field will not be displayed if the Receive Answer Supervision field on Page 1 is "y".

TRUNK GROUP

GROUP MEMBER ASSIGNMENTS

	Port	Name	Night	Mode	Type	Ans Delay
1:						
2:						
3:						
4:						
5:						
6:						
7:						
8:						
9:						
10:						
11:						
12:						
13:						
14:						
15:						

Direct Inward and Outward Dial Trunk Group Form (Page 4 of X)

(To reduce repetition, pages 5 through X are not shown.)

Trunk Group — Foreign Exchange

Used to assign a Foreign Exchange (FX) Trunk Group and associated trunk ports. The FX Trunk Group allows 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 and Error Messages" 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	1-99 (or 'next')
change	trunk-group	1-99 or TAC X...
display	trunk-group	1-99 or TAC X...['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-99 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.

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 number from 1-99 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.
- **SMDR Reports** — Enter "y" to provide a detailed SMDR 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 0-95 that reflects the desired restriction. Default is "1".
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. SMDR also uses the TAC to identify the trunk group on associated SMDR 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 whether the trunk group is "incoming", "outgoing", or "two-way". Default is "two-way". 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 is "n".
- **Dial Access** — Enter "y" to allow the trunk group to be accessed via a TAC; otherwise, enter "n". Default is "n". Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter a number (0-99) of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console. Default is "99".
- **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), "attd" (attendant), ***or*** leave blank (default) if the Trunk Type (in/out) field is not "auto/...".
- **Queue Length** — Enter a number from 0-100 that indicates the number of outgoing calls that can be held waiting. A "0" indicates no calls will be held in queue. This field is turned off if the Direction field is "incoming". Default is "0". If the trunk is administered for cut-through operation, the Queue Length must be zero.
- **Country** — Enter 1-17 to indicate the country where the trunk terminates. Country codes are as follows:

    1. United States
    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 (Russia)
16. Argentina
17. Greece

NOTE:
Country codes 11, 12, and 13 are not supported as yet.

- **Incoming Destination** — Enter where incoming calls will terminate. Valid entries are an extension number, "attd" (attendant), 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** — Enter if the trunk is to be used for voice, data, alternate voice-data (i.e., avd), or alternate voice/voice grade data and 56 kbps digital data (i.e., rbavd) calls. Valid entries are "avd", "rbavd", "voice", or "data". Type "rbavd" supports access to voice/data SDN service on robbed-bit T1 transmission facilities. Default is "voice". Note that "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 signaling or (if mixed mode signaling is aloowed on the DS1 circuit pack), isdn-pri or isdn-ext. 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". 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 0-4) may be administered in the System.
- **Prefix-1** — Indicates if the prefix 1 is required for NXX FNPA calls (where N is 2-9, and X is 0-9). Valid entries are "y" and "n". Default is "y".
- **Trunk Flash** — Enter "y" or "n" to indicate if access to customized services provided by a far end (e.g., Central Office) is permitted for this trunk group. The PBX must be directly connected to a far end that provides such services. Default is "n".
- **BCC**(Bearer Capability Class) — 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. This field only appears when the Comm Type is "avd", or if the Integrated Services Digital Network Primary Rate Interface is optioned for on the System-Parameters Customer-Options form and the Comm Type field is "avd" or "data." 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 3i Global — Feature Description*, 555-230-203, for a detailed description of Bearer Capability Classes (BCCs) and their use.

- **Toll Restricted** — Valid entries are "y" (default) and "n". Automatic dial type trunks should have this field set to 'n'.
- **Trunk Type** — Identifies the physical type of trunk. It may differ for incoming and outgoing types. Valid entries are listed below:

ground-start	loop-start	auto/auto
auto/delay	auto/immed	auto/wink

- **Outgoing Dial Type** — Enter the type of pulsing required on an outgoing call. Valid entries are "tone" (default), "rotary", or (if the Trunk Signal Type is blank), "mfc." A value of "mfc" requires that multifrequency signaling be enabled at the System Parameters Customer Options form.
- **Cut-Through** — Enter "y" or "n" to indicate if Cut-Through is desired for this trunk group. Cut-through operation allows the caller to receive dial tone directly from the CO. Upon receiving dial tone, the digits outpulsed can be "rotary" or "tone" (DTMF), depending on the contents of the Outgoing Dial Type field. The default is "n."
- **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 milliseconds 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 milliseconds). Default is "500". This timer will not be used for ports on a board that can receive the administrable Incoming Disconnect and OUtgoing Disconnect timers. These latter two timers will replace the former.
- **Auto Guard** — Entering "y" prevents repeated seizures of a defective trunk. This field is only effective for TN438B, TN465B, and TN2147 ports. TN438B 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 "n" on the system-parameters maintenance form. Valid entries are "y" and "n". Default is "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 only for TN438B, TN465B, and TN2147 ports. Valid entries are "y" and "n". Default is "n".

- **Sig Bit Inversion** — 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 boards. 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". The default is "none".
- **Connected to Toll** — Enter "y" if connected to a CO toll office; otherwise, enter "n" (default). 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) — Only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103) 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-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 only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

  — **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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

- **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, and this field should be set to "y". This field is only displayed when the Trunk Type field is "ground-start" or "loop-start." 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 (Terminal Balanced field = "n"). 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".

- **Trunk Gain** — Enter "high" or "low" to specify the gain of the trunk. The value of this field, in conjunction with the values of the Trunk Termination and Country fields, determine the input and trans-hybrid balance impedance for TN465B and TN2147 ports. All other boards will be automatically set to "high". Valid entries are "high" and "low". Default is "high".
- **Bit Rate** — Enter the baud rate to be used by pooled modems. Valid entries are "300", "1200", "2400", "4800", "9600", and "19200". This field is 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. Default is "1200".
- **Synchronization** — Enter whether the trunk group will use "synchronous" or "asynchronous" communications. Valid entries are "async" and "sync". This field is 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 Customers Options form. Default is "async".
- **Duplex** — Enter either full or half duplex for the trunk group. Valid entries are "full" or "half". Default is "full". This field is 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 enable on the System Parameters Customer Options form.
- **Disconnect Supervision** — Enter "y" 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; otherwise, enter "n". Default is "y".
- **Cyclical Hunt** — Enter "y" if a preferential hunting algorithm is to be used. Otherwise, a linear hunting algorithm will be used. Default is "y". This field only appears when the direction is two-way and the trunk type is loop-start.
- **Answer Supervision Timeout** — Enter the amount of time in seconds the System allows for the call to be answered before beginning an SMDR 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 0-250. 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 boards) or, for boards 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. This time-out is automatically set to "0" for boards that take the administrable Outgoing End of Dial timer. Receive Answer Supervision must be "n" if the Direction field is "incoming." Default is "n."

  ⇒ NOTE:
  When this field is "y", the direction is "incoming," and the Trunk Type is "loop-start", polarity reversal is used for the trunks. In this case only circuit packs with polarity reversal may be used in the trunk group (TN2147, TN465B, and TN747Bv12).

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 is "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 0-10. 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 0-160. 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 0-30. 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 (i.e., 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".
- **Abandoned Call Search** — Enter a "y" if this trunk group will conduct an Abandoned Call Search to identify a ghost call; otherwise, enter "n". Default is "n". This field is only applicable if Trunk Type is "ground-start". Note that the CO must support Abandon Call Search for the feature to work properly.

  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 Abandon Call Search feature. Note that the CO must support Abandon 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" or "n". Default is "y".
- **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 or any other facility treats # as an error. Default is "n".

  A final "#" will be outpulsed on interdigit timeout to indicate the start of end-to-end signaling.

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 far-end. Valid entries are 50-2550 in increments of 10; default is 500. The field cannot be blank. This timer appears for ground-start and loo-start groups when the direction is either incoming or two-way. But the only loop-start board that will receive it is the TN2138.
- **Outgoing Disconnect (msec)** — Enter the minimum time (in msec) required for recognition of disconnect for an outgoing call. Valid entries are 50-2550 in increments of 10; default is 500. The field cannot be blank. This timer appears for ground-start and loo-start groups when the direction is either outgoing or two-way. But the only loop-start board that will receive it is the TN2138.
- **Outgoing Dial Guard (msec)** — Enter the minimum time (in msec) between seizure of the trunk and outpulsing of digits. Valid entries are 100-25500 in increments of 100 (no blanks); 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 100-25500 in increments of 100; default is 1500. The field cannot be blank. This field only appears when the trunk group 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 100-25500 in increments of 100; default is 1500. The field cannot be blank. 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 150-2550 in increments of 10; default is 800. The field cannot be blank. Note that the TN767 boards also apply this timer to touch tone dialing.
- **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 200-51000 in increments of 200; default is 5200. The field cannot be blank. This timer is sent to TN760D (v.15 or later), TN464C (or later), TN767, TN429, TN438 (all), TN465, TN465B, TN447, TN2138, and TN2147 boards.
- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the serving CO. Valid entries are 20-2550 in increments of 10; default is 500. The field cannot be blank. This timer is sent to TN760D (v 15 or later), TN464C (or later), TN767, TN429, TN438 (all), TN465, TN465B, TN447, TN2138, and TN2147 boards.

- **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 when the timer expires. 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(es) 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 or FX trunk groups. Valid entries are 1-254 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. Valid entries are 1-255 in increments of 1. Default is 5 sec. This timer is sent to TN760D (v.15 or later), TN464B (or later), TN767, TN438B, TN447, TN465B, and TN2147 FX boards.
- **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 100-25500 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 (e.g., error message). This timer is administrable only on ground-start trunk groups. Valid entries are 1-255 in increments of 1. Default is 240 sec.
- **Flash Length** — Specifies the length (in msec) of the flash signal to be generated toward the Central Office. This field is sent to TN464C (or later), TN465B, and TN2147 ports. Valid entries are 10-2550 in increments of 10. Default is 540 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 20-2550 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 20-2550 in increments of 10. Default is 150.
- **PPS** — Enter either "10" (default) 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 that the following boards can only perform 10 pps: TN747Bv.12 and TN767.

- **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 20-80 in increments of five; default is 40. The field cannot be blank.

  If the PPS field is 20, the sum of the Make and Break fields must equal 50. Valid entries are 10-40 in increments of five; default is 20. The field cannot be blank.

- **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 20-80 in increments of five; default is 60. The field cannot be blank.

  If the PPS field is 20, the sum of the Make and Break fields must equal 50. Valid entries are 10-40 in increments of five; default is 30. The field cannot be blank.

- **PPM**(Periodical Pulse Metering) — Appears for outgoing or two-way CO trunks. Enter "y" to collect PPM pulses from the public network to determine call cost for trunks in this group; otherwise, enter "n" (default). If this field is "y", the Frequency field appears.

- **Frequency** — Appears if the PPM field is "y". 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). Valid entries are "12k", "16k", "50", "50/12k", and "50/16k". Default is "50/12k". This field is sent to the TN2138 board.

  This field is also sent to the TN465B as follows:

  - If 50/12k or 12k are administered, the TN465B will be set to detect 12 kHz;
  - If 16k, 50, of 50/16k are adminstered, the TN465B will be set to detect 16 kHz.

Pages 4 through X of the Form (Group Member Assignments)

- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-20 depending on carrier type), and circuit number (01-31). For single-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-18 depending on cabinet type), and circuit number (01-31).
- **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 TN437, TN439, TN458, TN464, TN722, TN760B or TN767 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, TN437, TN439, TN464 (with any suffix), or TN458 circuit packs.

  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", "t5 rev", or "type 5". Default is blank.
- **Ans Delay** — Enter the duration of the wait (in msec) for answer supervision delay on the TN437, TN439, TN458, TN464, TN722, TN760B (or later), or TN767 circuit packs. Valid entries are 20-5100 in increments of 20. The default is no entry (blank). 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

Group Number: xx                   Group Type: fx              SMDR 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? y                              Cyclical Hunt? y
 Answer Supervision Timeout: 10_           Receive Answer Supervision? n
```

Foreign Exchange Trunk Group Form (Page 1 of X)

Implementation Notes:

This BCC field is only displayed when the Comm Type is "avd", or if the Integrated Services Digital Network Primary Rate Interface is optioned for on the System-Parameters Customer-Options form and the Comm Type field is "avd" or "data."

The Connected to Toll and DTT to DCO Loss fields are only displayed when the Trunk Type field is "auto/...".

The STT Loss field is only displayed when the Connected to Toll field is "n".

The Terminal Balanced field is only displayed when the Trunk Type field is "ground-start" or "loop-start". The RA Trunk Loss field is only displayed when the Terminal Balanced field 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.

```
TRUNK FEATURES                                                Page 2
         ACA Assignment? n           Measured: none
                                Data Restriction? n
     Abandoned Call Search? n                          Maintenance Tests? y
   Suppress # Outpulsing? n
```

Foreign Exchange Trunk Group Form (Page 2 of X)

Implementation Note:

The following fields are only displayed if the ACA Assignment field is "y":

- Long Holding Time (hours)
- Short Holding Time (secs.)
- Short Holding Threshold

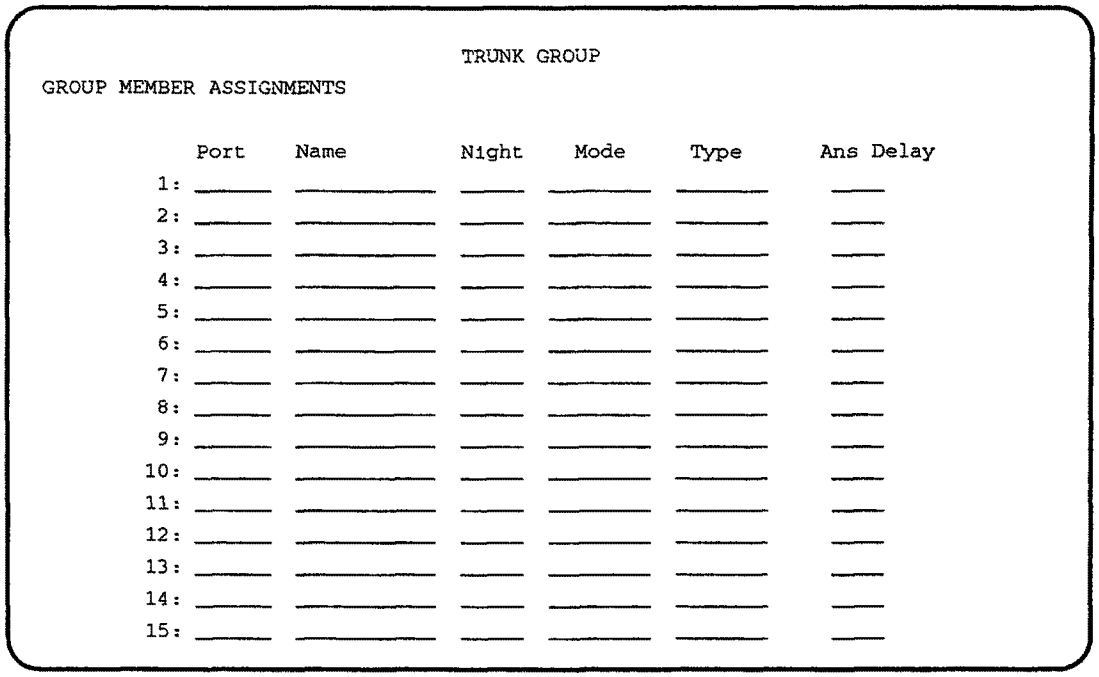
```
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
                                           Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____         Outgoing Glare Guard(msec): _____
                              Outgoing Rotary Dial Interdigit(msec): ____
      Ringing Monitor(msec): _____             Incoming Seizure(msec): ____
  Outgoing End of Dial(sec): ___       Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____       Disconnect Signal Error(sec): ___
         Flash Length(msec): ____

END TO END SIGNALING
   Tone(msec): ____            Pause(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __    PPM? y  Frequency: 50/12k
```

Foreign Exchange Trunk Group Administrable Timers Form (Page 3 of X)

Implementation Notes:

The Outgoing End of Dial field will not be displayed if the Receive Answer Supervision field on Page 1 is "y".

Disconnect Signal Error is only displayed for ground-start trunk groups. Frequency is only displayed when PPM is "y "



TRUNK GROUP

GROUP MEMBER ASSIGNMENTS

	Port	Name	Night	Mode	Type	Ans Delay
1:						
2:						
3:						
4:						
5:						
6:						
7:						
8:						
9:						
10:						
11:						
12:						
13:						
14:						
15:						

Foreign Exchange Trunk Group Form (Pages 4 through X)

(To reduce repetition, pages 5 through X are not shown.)

Trunk Group — ISDN — PRI

Used to assign an Integrated Services Digital Network — Primary Rate Interface (ISDN-PRI) Trunk group which 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 to both AT&T PRI Specified and CCITT defined, standard multipurpose user-network interfaces. Calls to a variety of switched nodal services such as MEGACOM telecommunications service, WATS, and ACCUNET digital service and calls destined for different inter-exchange carriers can be processed.

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 and Error Messages" 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	1-99 (or 'next')
change	trunk-group	1-99 or TAC X...
display	trunk-group	1-99 or TAC X...['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-99 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

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 number from 1-99 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 that when supporting DCS, it is suggested 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.
- **SMDR Reports** — Enter "y" to provide a detailed record of both incoming and outgoing calls made on all trunks in the trunk group. Valid entries are "y" or "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 0-95 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. SMDR also uses the TAC to identify the trunk group on associated SMDR reports. Valid entries are TACs compatible with the System Dial Plan (1 to 4 digits).
- **Direction** — Identifies whether the trunk group is "incoming", "outgoing", or "two-way". Default is "two-way".
- **Outgoing Display** — Specifies whether or not the trunk group name is displayed on outgoing calls. Valid entries are "y" or "n". Default is "n".
- **Dial Access** — Enter "y" to allow the trunk group to be accessed via a trunk access code; otherwise, enter "n". Access via the Automatic Route Selection feature is allowed regardless of this entry. A "y" may only be entered if the Service Type field entry is "access", "tie", "tandem", or dmi-mos. Default is "n".
- **Busy Threshold** — Enter the number (0-99) of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console. Default is 99.
- **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, "attd" (attendant), **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 5-11 of the form.
- **Queue Length** — Enter a number from 0-100 that indicates the number of outgoing calls that can be held waiting. A "0" indicates no calls will be held in queue. Enter "0" for DCS trunks or a Service Type field entry of "sddn". Default is "0".
- **Service Type** — Indicates the service for which this trunk group will be dedicated. Table 4-5 provides a listing of predefined entries. In addition to the Services/Features, listed on the 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.

  A maximum of ten ISDN-PRI trunk groups can have the Service Type field administered as "cbc".

Table 4-5. Predefined 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	MEGACOM Service — an AT&T communications service that provides unbanded long-distance 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 unbanded 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 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
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

- **Auth Code** — Enter "y" if an Authorization Code must be dialed to complete incoming calls on the trunk group; otherwise, enter n. Default is "n". This field can only be set to "y" if the Authorization Codes feature on the System-Parameters Customer-Options form has been enabled.
- **Usage Alloc** — Specifies whether or not the user wishes to allocate the usage of the services provided by the trunk group. This field only appears if the Service Type field is "cbc". Valid entries are "y" and "n". Default is "n". 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.

- **TestCall BCC** — Enter 0-4 to indicate the Bearer Capability Code used for the ISDN-PRI test call. The Bearer Capability Codes are as follows:

  0 Voice

  1 Mode 1

  2 Mode 2 Asynchronous

  3 Mode 3 Circuit

  4 Mode 0

  Default is 4 (Mode 0).

- **Test Call Service** — This field specifies the call by call selection for an ISDN-PRI test call. This field only appears if the Service Type field is "cbc." Allowable entries are all the services listed in Table 4-5 excluding "sddn" and any user defined services as administered on the Network Facilities form.

- **Codeset to Send Display** — Enter "0", "6", or "7" to indicate the codeset for sending ISDN-PRI Information Elements (IEs) for Display. Use codeset "7" for System 85 R2V4, 4E11; codeset "0" for CCITT; and codeset "6" for all others. Default is "6".

- **Codeset to Send TCM, Lookahead** — Enter "6" or "7" to indicate the codeset for sending ISDN-PRI Information Elements (IEs) for Traveling Class Mark and Lookahead Interflow. Use codeset "7" for System 85 R2V4, 4E11, and newer machines. Use codeset "6" for all others. Default is "6".

  NOTE:
  A Traveling Class Mark (i.e., user's FRL or the FRL of a user's trunk group) is passed between tandem nodes in an ETN in the setup message. 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** — Enter 128, 244, 256, or 260. Defines the maximum size of ISDN-PRI messages sent by the switch. Currently, System 85 R2V4 and No. 4 ESS version 4E11 switches can only receive messages of 128 bytes. The System can receive 260 byte messages. Default is "260".

- **Connected to Toll** — Enter "y" if connected to a CO toll office; otherwise, enter "n" (default).

- **STT Loss**(Satellite PBX Tie Trunk Loss) — Only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103) 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 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 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). Valid entries are "normal" (default) or "low".

  This option affects the transmission performance of public network access via a private PBX network. Choose the "low" option only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

  — **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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

- **Bit Rate** — Enter the baud rate used for pooled modems. Valid entries are "300", "1200", "2400", "4800", "9600", and "19200". Default is "1200".
- **Synchronization** — Specifies if the trunk group will use synchronous or asynchronous communications. Valid entries are "async" and "sync". Default is "async".
- **Duplex** — Enter if the trunk will operate full or half duplex. Valid entries are "full" and "half". Default is "full".
- **Disconnect Supervision** — Enter "y" 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; otherwise, enter "n". Default is "y".

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 is "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 0-10. Default is "1". Field must be "0" for a Service Type field entry of "sddn".
  - **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 0-160. 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 0-30. 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 (i.e., 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".

- **Internal Alert** — Specifies if internal ringing and coverage will be used for incoming calls. Valid entries are "y" or "n." Default is "n." This field only appears if the Service Type on page 1 is "tie."
- **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".
- **NCA-TSC Signaling Group** — Enter the appropriate signaling group numbers (1-8) to identify on which signaling group an NCA TSC will be routed out if the signaling groups entered will be chosen by "round-robin" method. To balance the load of sending TSCs on every signaling group, a signaling group number can be entered twice to increase its probability of being used as an outgoing route for NCS TSCs. If left blank, the system default will be used.

  A signaling group is a group of B-channels for which a given D-channel (or D-channel pair) will carry the signaling information.
- **Send CPN** — Specifies if the calling party's number is sent to the network on incoming and/or outgoing ISDN calls. Valid entries are "y" or "n". If "y" is entered, the CPN Prefix Table is accessed to construct the actual number to be sent over the network. (Note that the CPN Prefix Table can override the Send CPN field entry for any administrable block of extensions.) Default is "n".
- **Send Name** — Specifies if the calling party's administered name is sent to the network on incoming and/or outgoing calls. Valid entries are "y" or "n". Default is "n".
- **Used for DCS** — Specifies whether the trunk group will send and receive messages on a DCS signaling link. Valid entries are "y" or "n". If "y" is entered, complete the DOS Signaling field entry. Default is "n". This field will not appear if the Service Type is "dmi-bos" or "sddn."
- **PBX ID** — Specifies the number of the remote PBX. This field appears only when the Used for DCS field is set to yes. Valid entries are 1-63. Default is blank.
- **DCS Signaling** — Only displayed when the Used for DCS field is "y". This field specifies by what means the DCS message is sent. Enter either "bx.25" or "d-chan". Enter "bx.25" for the traditional DCS feature and enter "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" or "n". Default is "y".

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 "megacom-800" 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 (i.e., 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 (i.e., Del, Insert, ...) 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 only 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.

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 "wild card" entry and, when used, means that any length of digits associated with the specified Service/Feature can match in this field. Valid entries are 0-16, or leave blank.
- **Called Number** — Specifies the leading digits received for an incoming call. A blank entry is used as a "wild card" entry and, when used, means that any number associated with the specified Service/Feature can match in this field. Valid entries are 1-16 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 1-16, "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 character (0-9, *, or #), 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 that 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, "attd" (attendant), or leave blank.

Page 3 of the Form

Page 3 is only displayed if the Service Type on page 1 is "cbc" and Usage Alloc 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 (1-3).

NOTE:
Refer to "Call By Call Service Selection" in *DEFINITY® Communications System Generic 3i Global — Feature Description*, 555-230-203, 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 are reserved for 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. Valid entries are 0-99, or leave blank.
- **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. Valid entries are 1-99, or leave blank.

Page 4 of the Form

Page 4 is only displayed if the 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** — Entering a "y" in this field overrides the Allocation Plan Assignment Schedule by the plan entered in the Allocation Plan Number field. If the Fixed field is "y", an entry must be made in the Allocation Plan Number field. This field must be completed if a Service/Feature has been entered on Page 2 of the form. Valid entries are "y" and "n". Default is "n".
- **Allocation Plan Number** — Specifies the CBC Trunk Allocation Plan (1-3) 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 1-3, or blank. Default is blank.
- **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. Valid entries are "y" and "n". Default is "n".
- **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 which will be in effect from the activation time until the activation time of the next scheduled plan change. Valid entries are 1-3.

Pages 5 through 11 of the Form (Group Member Assignments)

NOTE:
When supporting DCS, Member Number Assignments must be the same between nodes (i.e., Member #1 must be Member #1 at the far-end trunk group).

- **Port** — Indicates the trunk port number in the form. For multi-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-20 depending on carrier type), and circuit number (01-31). For single-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-18 depending on cabinet type), and circuit number (01-31). Refer to the "Port Assignment" record.
- **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), "attd" (attendant), or leave blank.
- **Sig Grp** — Enter the appropriate signaling group number (1-8). See Signaling Group Form for additional information. If a DS1 interface appears in one and only 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. This value cannot be altered without adding a circuit pack TN code for DS1 interface to another signaling group. If a DS1 circuit pack appears in more than one signaling group, then no default will appear in the Sig Grp column.

```
                                TRUNK GROUP                          Page 1

Group Number: xx                    Group Type: isdn-pri      SMDR 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__
Service Type: _______________       Auth Code? n
                         Far End Test Line No: _______________
TestCall BCC: 4

TRUNK PARAMETERS
         Codeset to Send Display: 0     Codeset to Send TCM,Lookahead: 6
        Max Message Size to Send: 260_

     Connected to Toll? n      STT Loss: normal       DTT to DCO Loss: normal
              Bit Rate: 1200_        Synchronization: async    Duplex: full
Disconnect Supervision? y
```

ISDN-PRI Trunk Group Form (Page 1 of X)

Implementation Note:

"Queue Length" is only displayed if the Direction field is "outgoing" or "two-way".

"Usage Alloc" and "TestCall Service" are only displayed if in the Service Type field is "cbc".

STT loss is only displayed if Connected to Toll is "n."

```
TRUNK FEATURES                                                    Page 2
          ACA Assignment? n            Measured: none
                                 Data Restriction? n  NCA-TSC Signaling Group: _
                                         Send CPN? n                Send Name? n
            Used for DCS? n                                 Maintenance Tests? y

Service/        Called    Called       Del      Insert       Per Call  Night
Feature          Len      Number                             CPN/BN    Serv
_____________   __   _____________   __   _____________   _________  _______
_____________   __   _____________   __   _____________   _________  _______
_____________   __   _____________   __   _____________   _________  _______
_____________   __   _____________   __   _____________   _________  _______
_____________   __   _____________   __   _____________   _________  _______
_____________   __   _____________   __   _____________   _________  _______
_____________   __   _____________   __   _____________   _________  _______
_____________   __   _____________   __   _____________   _________  _______
_____________   __   _____________   __   _____________   _________  _______
_____________   __   _____________   __   _____________   _________  _______
_____________   __   _____________   __   _____________   _________  _______
_____________   __   _____________   __   _____________   _________  _______
```

ISDN-PRI Trunk Group Form (Page 2 of X)

Implementation Note:

The following fields are only displayed if the ACA Assignment field is "y":

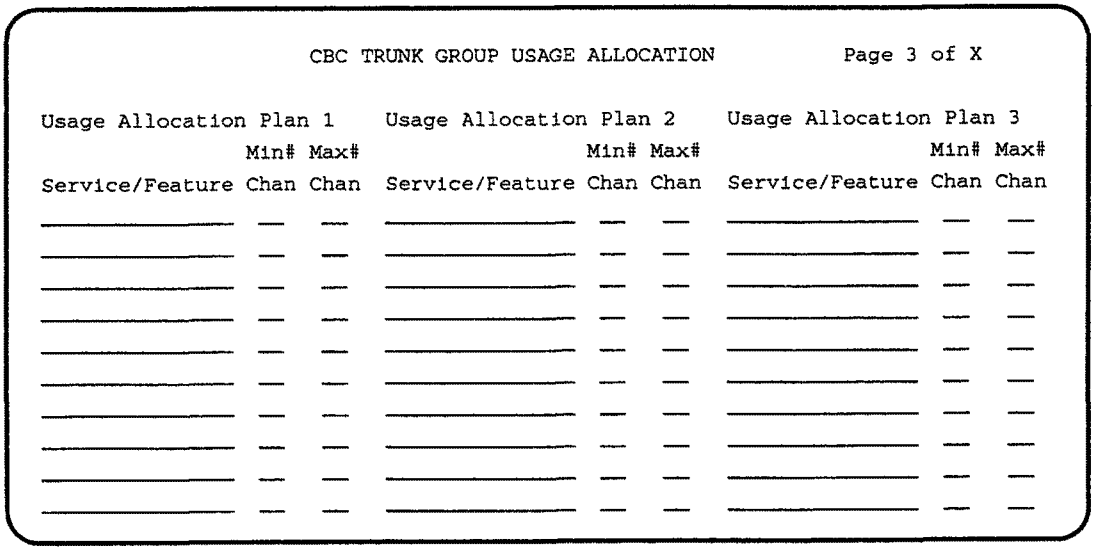
- Long Holding Time (hours)
- Short Holding Time (secs.)
- Short Holding Threshold

The Internal Alert field is only displayed if the Service Type field on page 1 is "tie".

The Used for DCS field is not displayed if the Service Type field on page 1 is "dmi-mos" or "sddn."

DCS Signaling field only displayed when Used for DCS field is "y".

The PBX-ID field is not displayed if the Used For DCS field is "n".



```
                    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
_______________   __   __   _______________   __   __   _______________   __   __
_______________   __   __   _______________   __   __   _______________   __   __
_______________   __   __   _______________   __   __   _______________   __   __
_______________   __   __   _______________   __   __   _______________   __   __
_______________   __   __   _______________   __   __   _______________   __   __
_______________   __   __   _______________   __   __   _______________   __   __
_______________   __   __   _______________   __   __   _______________   __   __
_______________   __   __   _______________   __   __   _______________   __   __
_______________   __   __   _______________   __   __   _______________   __   __
_______________   __   __   _______________   __   __   _______________   __   __
```

ISDN-PRI Trunk Group Form (Page 3 of X)

Implementation Note:

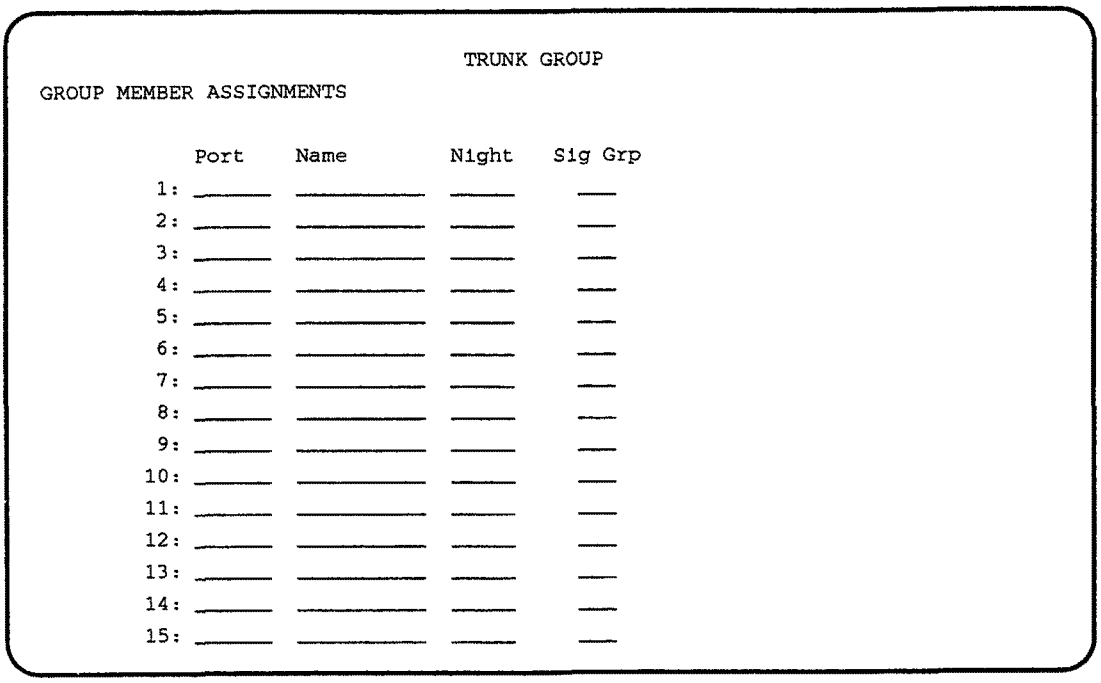
This page is only displayed if the Service Type field on page 1 is "cbc", and Usage Alloc is "y."

```
          CBC TRUNK GROUP USAGE ALLOCATION PLAN ASSIGNMENT SCHEDULE

  Usage Method:
        Fixed? y      Allocation Plan Number: 1
    Scheduled? n

Usage Allocation Plan Activation Schedule:
         Act  Pln    Act  Pln    Act  Pln    Act  Pln    Act  Pln    Act  Pln
         Time  #     Time  #     Time  #     Time  #     Time  #     Time  #
Sun      __:__ __    __:__ __    __:__ __    __:__ __    __:__ __    __:__ __
Mon      __:__ __    __:__ __    __:__ __    __:__ __    __:__ __    __:__ __
Tue      __:__ __    __:__ __    __:__ __    __:__ __    __:__ __    __:__ __
Wed      __:__ __    __:__ __    __:__ __    __:__ __    __:__ __    __:__ __
Thu      __:__ __    __:__ __    __:__ __    __:__ __    __:__ __    __:__ __
Fri      __:__ __    __:__ __    __:__ __    __:__ __    __:__ __    __:__ __
Sat      __:__ __    __:__ __    __:__ __    __:__ __    __:__ __    __:__ __
```

ISDN-PRI Trunk Group Form (Page 4 of X)

Implementation Note:

This page is only displayed if the Service Type field on page 1 is "cbc", and Usage Alloc is "y." Allocation Plan Number is displayed only if Fixed is "y."



```
                                TRUNK GROUP
GROUP MEMBER ASSIGNMENTS

              Port     Name          Night    Sig Grp
     1:  _______  ____________  _____    ___
     2:  _______  ____________  _____    ___
     3:  _______  ____________  _____    ___
     4:  _______  ____________  _____    ___
     5:  _______  ____________  _____    ___
     6:  _______  ____________  _____    ___
     7:  _______  ____________  _____    ___
     8:  _______  ____________  _____    ___
     9:  _______  ____________  _____    ___
    10:  _______  ____________  _____    ___
    11:  _______  ____________  _____    ___
    12:  _______  ____________  _____    ___
    13:  _______  ____________  _____    ___
    14:  _______  ____________  _____    ___
    15:  _______  ____________  _____    ___
```

ISDN-PRI Trunk Group Form (Page 5 through X)

(To reduce repetition, pages 6 through X are not shown.)

Implementation Note:

Above Group Member Assignments pages are for an ISDN-PRI Trunk Group type "cbc"; otherwise, page numbers will be 3 through X.

Trunk Group — Personal Central Office Line (PCOL)

This section contains the form necessary to implement a Personal Central Office Line (PCOL) Group. A PCOL provides a dedicated trunk circuit between multi-appearance voice terminals and a central office (CO) or other switch via the PBX network. Up to 40 PCOL Groups can be implemented.

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 and Error Messages" 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	1-40 (or 'next')
change	personal-co-line	1-40
display	personal-co-line	1-40 ['print' or 'schedule']
list	personal-co-line	['print' or 'schedule']
remove	personal-co-line	1-40

* 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

- **Group Number** — Enter a number from 1-40 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, fx, or wats to identify the type of PCOL Group as follows·
  - — Central Office (co)
  - — Foreign Exchange (fx)
  - — Wide Area Telecommunications Service (wats)
- **SMDR Reports** — Enter "y" to provide a detailed SMDR record of incoming and outgoing calls made on the PCOL; otherwise enter "n". Default is "y".

- **Group Name** — Enter a unique name that identifies the PCOL Group. Up to 16 characters can be used (all forms). Default is "OUTSIDE CALL".
- **Coverage Path** — Enter the number of the Call Coverage Path (1-600) used to redirect the incoming calls on this PCOL Group. This field may be left blank.
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the PCOL Group. SMDR also uses the TAC to identify the trunk group on associated SMDR 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).
- **Security Code** — Is a 4-digit security code used for message retrieval, including voice message retrieval and the Demand Print Message feature. This field may be left blank.
- **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 is "n".
- **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 is "n".
- **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).
- **Trunk Port** — Enter six characters. The first character identifies the network (1-3, default is "1" if no entry); the second character identifies the carrier (A-E); the third and fourth identify the slot number in the carrier (01-20); the last two characters identify the circuit number (01-31).
- **Disconnect Timing (msec)** — Represents the time in milliseconds that is required for recognition of the disconnect signal from the serving CO. Valid entries are 140-2550 ms in increments of 10; default is 500. This timer is not used when a port is administered for a board that can restore the administrable Incoming Disconnect and Outgoing Disconnect timers since the latter two timers replace the former two.
- **Trunk Name** — Enter 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; 600 ohm is used to match short loops. Valid entries are "600ohm" or "rc"; 600ohm is used 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", "automatic", "rotary", or "mfc". Default is "tone". A value of "mfc" requires that the multifrequency signaling option be enabled at the Customer Options form.

- **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" causes the RA Trunk Loss field to appear. Since most trunks are not balanced, the default is "n".
- **Prefix-1** — Indicates if the prefix 1 is required for NXX FNPA calls (where N is 2-9, and X is 0-9). This field is only displayed for "co" and "fx" PCOL groups. Valid entries are "y" and "n". Default is "y".
- **Disconnect Supervision** — Enter "y" 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; otherwise, enter "n". Default is "y".
- **RA Trunk Loss** — (Remote Access Trunk Loss) Specifies the type of dB loss to be applied to non-terminally balanced trunks (Terminal Balanced field = "n"). 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".
- **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 is "n".
- **Answer Supervision Timeout** — Enter the amount of time in seconds the System allows for the call to be answered before beginning an SMDR 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 0-250. 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 boards) or, for boards 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 is automatically set to "0" for boards that take the administrable Outgoing End of Dial timer. Receive Answer Supervision must be "n" if the Direction field is "incoming." Default is "n."

NOTE:
When this field is "y" the direction is incoming and the Trunk Type is "loop-start", polarity reversal is used for trunks. In this case only circuit packs with polarity reversal may be used in the trunk group (TN2147 and TN747Bv12).

- **Trunk Gain** — Enter "high" or "low" to specify the gain of the trunk. The value of this field, in conjunction with the values of the Trunk Termination and Country fields, determine the input and trans-hybrid balance impedance for TN2147 ports. All other CO boards must be set to "high". Valid entries are "high" and "low". Default is "high".
- **Country** — Enter 1-17 to indicate the country where the trunk terminates. Country codes are as follows:

  1. United States
  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 (Russia)
  16. Argentina
  17. Greece

  NOTE:
  Country codes 11, 12, and 13 are not supported as yet.

- **(ASSIGNED MEMBERS) Ext** — Extension number of a voice terminal with a button for access to this PCOL. This field is only used for TN2147 ports.
- **(ASSIGNED MEMBERS) Name** — Name of employee assigned to extension.

Page 2 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 50-2550 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 50-2550 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 100-25500 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 100-25500 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 100-25500 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 150-2550 in increments of 10. The field cannot be blank. Default is 800. Note that the TN767 board also applies this timer to touch-tone dialing.
- **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 200-51000 in increments of 200. Default is 5200. The field cannot be blank. This timer is sent to TN767 and TN2147 boards.
- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the serving CO. Valid entries are 20-2550 in increments of 10. The field cannot be blank. Default is 500. Send to TN767 and TN2147 boards.
- **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 when the timer expires. 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(es) 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 1-254 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 1-255 in increments of 1. Default is 5 sec. Sent only to TN767 and TN2147.
- **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 100-25500 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 (e.g., error message). This timer is administrable on ground-start trunk groups. Valid entries are 1-255 in increments of 1. Default is 240 sec.
- **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 10-2550 in increments of 10. Default is 540 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 20-2550 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 20-2550 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 that the TN767 and the TN747 can only do 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 20-80 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 10-40 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 20-80 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 10-40 in increments of five. The field cannot be blank. The default is 30.

- **PPM (Periodic Pulse Metering)** — Appears when SMDR 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; otherwise enter "n" (default).

```
                        PERSONAL CO LINE GROUP

 Group Number: ____          Group Type: _____________  SMDR Reports? _
   Group Name: _____________ Coverage Path: ____              TAC: ___
Security Code: ____      Outgoing Display? _      Data Restriction? _

TRUNK PARAMETERS
                Trunk Type: _____________      Trunk Direction: _________
                Trunk Port: ________     Disconnect Timing(msec): ____
                Trunk Name: ___________        Trunk Termination: _______
         Outgoing Dial Type: __________        Terminal Balanced? _
                   Prefix-1? _
     Disconnect Supervision? _                    Call Still Held? _
Answer Supervision Timeout: ___       Receive Answer Supervision? _
                Trunk Gain: ____                          Country: __

ASSIGNED MEMBERS (Stations with a button for this PCOL Group)
      Ext    Name                      Ext    Name
    1: _____ ________________       3: _____ ________________
    2: _____ ________________       4: _____ ________________
```

Personal Central Office Line Group Form (Page 1 of 2)

Implementation Note:

The Prefix-1 field only appears if the Group Type field is "co" or "fx". RA trunk loss only appears if Terminal Balanced is "n."

Call Still Held only appears if the Group Type field is "co" or "fx."

```
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
                                           Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____         Outgoing Glare Guard(msec): _____
                          Outgoing Rotary Dial Interdigit(msec): ____
      Ringing Monitor(msec): _____              Incoming Seizure(msec): ____
                                      Outgoing Seizure Response(sec): ___
       Outgoing End of Dial: _____      Disconnect Signal Error(sec): ___
Programmed Dial Pause(msec): _____      Disconnect Signal Error(sec): ___
         Flash Length(msec): ____

END TO END SIGNALING
   Tone(msec): ____            Pause(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __      PPM?: n
```

Personal Central Office Line Group Administrable Timers Form (Page 2 of 2)

Trunk Group — Release Link

Used to assign a Release Link Trunk (RLT) Group and associated trunk ports. The trunk group is used to implement the Centralized Attendant Service (CAS) feature and is used 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 and Error Messages" 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	1-99 (or 'next')
change	trunk-group	1-99 or TAC X...
display	trunk-group	1-99 or TAC X...['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-99 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.

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 number from 1-99 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 "rlt" to identify the trunk group type.
- **SMDR Reports** — Enter "y" to provide a detailed SMDR 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 0-95 that reflects the desired restriction. Default is "1".
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. SMDR also uses the TAC to identify the trunk group on

associated SMDR 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 whether the trunk group is "incoming" or "out-going." 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 is "n".
- **Trunk Signaling Type** — Enter "cont" or "dis" to indicate the trunk signaling type (indicates that only ports from a TN2140 may be administered as trunk group members).

  ⇒ NOTE:
  When this field is "cont" or "dis", the Send Release Ack, Receive Release Ack, and Send Answer Supervision fields appear.

  If the field is blank (default), ports from any other Tie trunk board may be added as trunk group members. Note that the value in this field will affect which timers will appear on the Administerable Timer Page.
- **Busy Threshold** — Enter a number (0-99) of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console. Default is "99".
- **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), "attd" (attendant), ***or*** leave blank (default) if the Trunk Type (in/out) field is not "auto/...".
- **Queue Length** — Enter a number from 0-100 that indicates the number of outgoing calls that can be held waiting. A "0" indicates no calls will be held in queue. Enter "0" for DCS trunks. This field is turned off if the Direction field is "incoming". Default is "0".
- **Incoming Destination** — Enter where incoming calls will terminate. Valid entries are an extension number, "attd" (attendant), VDN, ***or*** leave blank (default) 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. When the Trunk Signaling Type is "dis", valid entries are:

  disc/disc disc/immed immed/disc immed/immed

  When the Trunk Signaling Type is "cont", valid entries are:

	cont/auto	delay/auto	immed/auto	wink/auto
auto/cont	cont/cont	delay/cont	immed/cont	wink/cont

auto/delay	cont/delay	delay/delay	immed/delay	wink/delay
auto/immed	cont/immed	delay/immed	immed/immed	wink/immed
auto/wink	cont/wink	delay/wink	immed/wink	wink/wink

Otherwise, valid entries are:

	delay/auto	immed/auto	wink/auto
auto/delay	delay/delay	immed/delay	wink/delay
auto/immed	delay/immed	immed/immed	wink/immed
auto/wink	delay/wink	immed/wink	wink/wink

NOTE:
For immed/immed trunks (on incoming trunks), the far-end PBX seizes the trunk and then sends digits without waiting for acknowledgement 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/wink 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 far-end 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. The maximum value is 99 seconds. Valid entries are 5-99, or leave blank. Default is "5".
- **Outgoing Dial Type** — Enter the type of pulsing required on an outgoing call. Valid entries are "tone", "rotary", or "mfc". Default is "tone". A value of "mfc" requires the multifrequency signaling be enabled at the System Parameters Customer Options form.
- **Incoming Dial Type** — Enter the type of pulses required on an incoming trunk group. Valid entries are "tone" or "rotary". Default is "tone".
- **Sig Bit Inversion** — 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 boards. 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". The default is "none".
- **Connected to Toll** — Enter "y" if connected to a CO toll office; otherwise, enter "n" (default). 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) — Only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103) 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-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 only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

  — **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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

- **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".
- **Send Release Ack** — Appears when Trunk Signaling Type is "cont" or "dis". Enter "y" (default) if the switch must send a release acknowledgement in response to a forward or backward release signal; otherwise, enter "n". Note that this field only applies to TN2140 ports.
- **Receive Release Ack** — Appears when Trunk Signaling Type is "cont" or "dis". Enter "y" (default) if the switch should expect a release acknowledgement in response to a forward or backward release signal; otherwise, enter "n". Note that this field only applies to TN2140 ports.
- **Disconnect Supervision** — 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; otherwise, enter "n". Default is "y". In a CAS system, release link trunks must be administered to have disconnect supervision at the branch node.
- **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; otherwise, enter "n". Note that this field only applies to TN2140 ports.
- **Answer Supervision Timeout** — Enter the amount of time in seconds the System allows for the call to be answered before beginning an SMDR 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 0-250. 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 boards) or, for boards 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 is automatically set to "0" for boards that take the administrable Outgoing End of Dial timer. Receive Answer Supervision must be "n" if the Direction field is "incoming." 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 is "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 0-10. Default is "1". Field must be "0" for a Service Type field entry of "sddn".
  - **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 0-160. 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 0-30. 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 (i.e., 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".
- **Used for DCS** — Specifies whether the trunk group will send and receive messages on a DCS signaling link. Valid entries are "y" or "n". If "y" is entered, complete the PBX ID field entry. Default is "n". This field cannot have a value of "yes" unless the option for DCS has been enabled for the system.
- **PBX ID** — Determines the remote PBX Identification number. It only appears when used for DCS is "yes." Valid entries are 1-63. The default is blank.
- **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are "y" or "n". Default is "y".
- **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 far-end treats # as an error. Default is "n".

  A final "#" will be outpulsed on interdigit timeout to indicate the start of end-to-end signaling.

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 50-2550 in increments of 10. The field cannot be blank. Default is 500. This field only appears for incoming or two-way trunk groups when the Trunk Signaling type is either blank or "cont."
- **Outgoing Disconnect (msec)** — Enter the minimum time (in msec) required for recognition of disconnect for an outgoing call. Valid entries are 50-2550 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 either blank or "cont."
- **Incoming Dial Guard (msec)** — Enter the interval (in msec) 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 is blank. Valid entries are 10-2550 in increments of 10. The default is 70 msec. This field cannot be blank.
- **Outgoing Dial Guard (msec)** — Enter the minimum time (in msec) between seizure of the trunk and outpulsing of digits. Valid entries are 100-25500 in increments of 100. The field cannot be blank. Default is 1600.
- **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 100-25500 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. Valid entries are 5-255 in increments of 1. Default is 18 sec. This timer appears only if the Incoming Dial Type is "rotary."
- **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 150-2550 in increments of 10. The field cannot be blank. Default is 800. Note that the TN767 boards also apply this timer to time dialing.
- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the far-end. Valid entries are 20-2550 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 when the timer expires. 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(es) 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 trunk groups. Valid entries are 1-254 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. Valid entries are 1-255 in increments of 1. Default is 5 sec. This timer is sent to the TN760D (v.15 or later), TN464B (or later), TN767, TN439, TN458, and TN2140 tie boards.
- **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 100-25500 in increments of 100. Default is 1500 msec. This timer is sent to the TN760D (v.15 or later), TN464B (or later), TN767, TN458, and TN2140 tie boards.
- **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 (e.g., error message). Valid entries are 1-255 in increments of 1. Default is 240 sec.
- **Incoming Incomplete Dial Alarm (sec)** — Enter a maximum time (in sec) between incoming seizure and receipt of all digits. Intervals greater than this generate an inline error. Valid entries are 1-255 in increments of 1. Default is 255 sec. This timer is sent to the TN760D (v.15 or later), TN464C (or later), TN767, and TN2140 tie boards.
- **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 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 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 60-250 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 acknowledgement signal. After receiving a forward release signal, the called switch must send the forward release acknowledgement 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 500-1200 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 acknowledgement 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 40-120 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 60-120 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 500-1200 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 40-120 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 500-1200 in increments of 100. Default is 800. Only TN2140 ports receive this timer.

- **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. It is only administerable if the Trunk Signaling Type is blank. Valid entries are 20-2550 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. It is only administerable if the Trunk Signaling Type is blank. Valid entries are 20-2550 in increments of 10. Default is 150.
- **Glare** — Enter the minimum time (in msec) between sending an outgoing seizure and receiving a seizure acknowledgement. If seizure acknowledgement 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 40-100 in increments of 10. Default is 40. Only TN2140 ports receive this timer.
- **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 that the following boards can only do 10 pps: TN439, TN458, and TN767.
- **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 20-80 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 10-40 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 20-80 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 10-40 in increments of five. The field cannot be blank. The default is 30.

Pages 4 through X of the Form (Group Member Assignments)

- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-20 depending on carrier type), and circuit number (01-31). For single-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-18 depending on cabinet type), and circuit number (01-31).
- **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 TN760D (v.15 or later), TN437, TN439, TN458, TN464 (with any suffix), TN722, TN760B (or later) , TN767, 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 does appears when 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", "t5 rev", or "type 5". Default is blank.

- **Ans Delay** — Enter the duration of the wait (in msec) for answer supervision delay on the TN437, TN439, TN458, TN464 (with any suffix), TN722, TN760B (or later), TN767, or TN2140 circuit packs. Valid entries are 20-5100 in increments of 20. The default is no entry (blank). This timer is used to delay the up-link answer message. 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
                              TRUNK GROUP

Group Number: xx                  Group Type: rlt          SMDR Reports? y
  Group Name: OUTSIDE_CALL_____          COR: 1_                    TAC: ____
   Direction: incoming      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(sec): 5_
    Outgoing Dial Type: tone_____                  Incoming Dial Type: tone_____
                                                    Sig Bit Inversion: none
    Incoming Dial Tone? y
     Disconnect Supervision? y
 Answer Supervision Timeout: 10_          Receive Answer Supervision? n
```

Release Link Trunk Group Form (Page 1 of X)

Implementation Note:

The Night Service and Incoming Destination fields are only displayed if the Direction field is "incoming."

The Queue Length field is not displayed if the Direction field is "incoming".

The Connected to Toll and DTT to DCO Loss fields are only displayed when the Trunk Type field is "auto/...", "delay/...", "immed/...", "wink/...".

The STT Loss field is only displayed when the Connected to Toll field is "n".

```
                                                                Page 2
TRUNK FEATURES
          ACA Assignment? n            Measured: none
                                 Data Restriction? n
            Used for DCS? n                              Maintenance Tests? y
   Suppress # Outpulsing? n
```

Release Link Trunk Group Form (Page 2 of X)

Implementation Note:

The following fields are only displayed if the ACA Assignment field is "y":

- Long Holding Time (hours)
- Short Holding Time (secs.)
- Short Holding Threshold

The PBX ID field is not displayed if the Used for DCS field is "n".

```
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
  Incoming Dial Guard(msec): ____          Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____        Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                              Outgoing Rotary Dial Interdigit(msec): ____
  Outgoing End of Dial(sec): ___       Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____       Disconnect Signal Error(sec): ___
                             Incoming Incomplete Dial Alarm(sec): ___

END TO END SIGNALING
   Tone(msec): ____          Pause(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

Release Link Trunk Group Administrable Timers Form if Trunk Signaling Type Field is Blank (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 will not appear if the Receive Answer Supervision field from Page 1 is "y".

```
ADMINISTRABLE TIMERS

  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
                                           Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____         Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                              Outgoing Rotary Dial Interdigit(msec): ____
                                          Incoming Seizure(msec): ____
  Outgoing End of Dial(sec): ___       Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____      Disconnect Signal Error(sec): ___
                                 Incoming Incomplete Dial Alarm(sec): ___
   Outgoing Last Digit(sec): __
                                                      Glare(msec): ___
OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

Release Link Trunk Group Administrable Timers Form if Trunk Signaling Type Field is "cont" (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 will not appear if the Receive Answer Supervision field from Page 1 is "y".

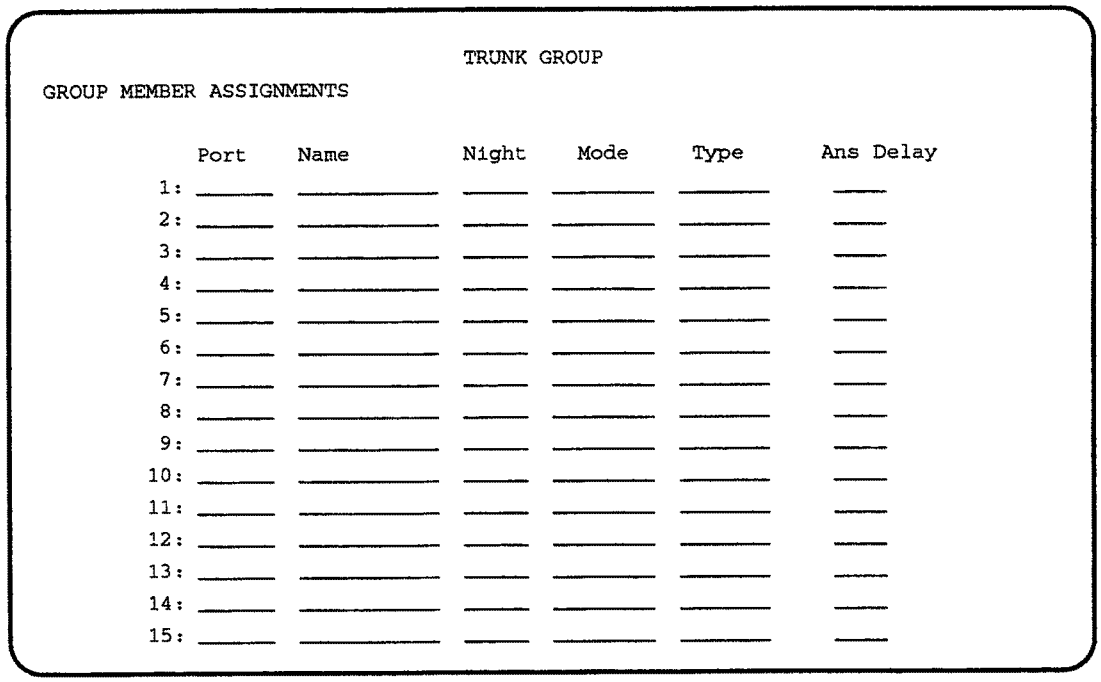
```
ADMINISTRABLE TIMERS
                                        Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____      Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                          Outgoing Rotary Dial Interdigit(msec): ____
  Outgoing End of Dial(sec): ___        Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____      Disconnect Signal Error(sec): ___
                          Incoming Incomplete Dial Alarm(sec): ___
   Outgoing Last Digit(sec): __         Normal Outgoing Seize Send(msec): ___
     Release Ack Send(msec): ____              Seize Ack Delay(msec): ___
          Answer Send(msec): ___        Outgoing Disconnect Send(msec): ____
       Seize Ack Send(msec): ____       Incoming Disconnect Send(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

Release Link Trunk Group Administrable Timers Form if Trunk Signaling Type Field is "dis" (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 will not appear if the Receive Answer Supervision field from Page 1 is "y".



TRUNK GROUP

GROUP MEMBER ASSIGNMENTS

	Port	Name	Night	Mode	Type	Ans Delay
1:						
2:						
3:						
4:						
5:						
6:						
7:						
8:						
9:						
10:						
11:						
12:						
13:						
14:						
15:						

Release Link Trunk Group Form (Pages 4 through X)

(To reduce repetition, pages 5 through X are not shown.)

Implementation Note:

The Type field does not appear if the Trunk Signaling Type field on Page 1 is "dis".

Trunk Group — Tandem

Used to assign a Tandem Trunk Group in the System. Tandem trunks are 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 outpulsing 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 and Error Messages" 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	1-99 (or 'next')
change	trunk-group	1-99 or TAC X...
display	trunk-group	1-99 or TAC X...['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-99 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.

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 number from 1-99 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 "tandem" to identify the trunk group type.
- **SMDR Reports** — Enter "y" to provide a detailed SMDR 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 0-95 that reflects the desired restriction. Default is "1".

- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. SMDR also uses the TAC to identify the trunk group on associated SMDR 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 whether the trunk group is "incoming", "outgoing", or "two-way". Default is "two-way". Note that the Direction administered will affect which timers will appear on the Administerable 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 is "n".
- **Trunk Signaling Type** — Enter "cont" or "dis" to indicate the trunk signaling type (indicates that only ports from a TN2140 may be administered as trunk group members).

  ⇒ NOTE:
  When this field is "cont" or "dis", the Send Release Ack, Receive Release Ack, and Send Answer Supervision fields appear.

  If the field is blank (default), ports from any other Tie trunk board may be added as trunk group members. Note that value in this field will affect which timer will appear on the Administrable Timer Page.
- **Dial Access** — Enter "y" to allow the trunk group to be accessed via a TAC; otherwise, enter "n". Default is "n". Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter a number (0-99) of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console. Default is "99".
- **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), "attd" (attendant), ***or*** leave blank (default) if the Trunk Type (in/out) field is not "auto/...".
- **Queue Length** — Enter a number from 0-100 that indicates the number of outgoing calls that can be held waiting. A "0" indicates no calls will be held in queue. Enter "0" for DCS trunks. This field is turned off if the Direction field is "incoming". Default is "0".
- **Incoming Destination** — Enter where incoming calls will terminate. Valid entries are an extension number, "attd" (attendant), VDN, ***or*** leave blank (default) if the Trunk Type (in/out) field is not "auto/...". If "attd" is entered, a call is treated as an LDN call.
- **Comm Type** — Enter if the trunk is to be used for voice, data, alternate voice-data (i.e., avd), or alternate voice/voice grade data and 56 kbps digital data (i.e., robbed-bit alternate voice-data) calls. Valid entries are "avd", "rbavd", "voice", or "data". Type "rbavd" supports access to voice/data SDN service on robbed-bit T1 transmission facilities. Default is

"voice". Note that "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 signaling or (if mixed mode signaling is allowed on the DS1 circuit pack), isdn-pri or isdn-ext. An "avd" type requires that the DS1 circuit pack be administered for either common-chan or CAS signaling.

- **BCC**(Bearer Capability Class) — 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. This field only appears when the CommType is "avd", or if 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". 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 3i Global — Feature Description*, 555-230-203, 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. When the Trunk Signaling Type is "dis", valid entries are:

  disc/disc disc/immed immed/disc immed/immed

  When the Trunk Signaling Type is "cont", valid entries are:

auto/auto	cont/auto	delay/auto	immed/auto	wink/auto
auto/cont	cont/cont	delay/cont	immed/cont	wink/cont
auto/delay	cont/delay	delay/delay	immed/delay	wink/delay
auto/immed	cont/immed	delay/immed	immed/immed	wink/immed
auto/wink	cont/wink	delay/wink	immed/wink	wink/wink

  Otherwise, valid entries are:

auto/auto	delay/auto	immed/auto	wink/auto
auto/delay	delay/delay	immed/delay	wink/delay
auto/immed	delay/immed	immed/immed	wink/immed
auto/wink	delay/wink	immed/wink	wink/wink

  ⇒ NOTE:
  For immed/immed trunks (on incoming trunks), the far-end PBX siezes the trunk and then sends digits without waiting for acknowledgement 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/wink 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 far-end 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. The maximum value is 99 seconds. Valid entries are 5-99, or leave blank. Default is "5".
- **Outgoing Dial Type** — Enter the type of pulsing required on an outgoing call. Valid entries are "tone" (default) or "rotary", or (if the Trunk Signaling Type is blank), "mfc." A value of "mfc" requires that multifrequency signaling be enabled at the System Parameters Customer Options form.
- **Incoming Dial Type** — Enter the type of pulses required on an incoming trunk group. Valid entries are "tone" (default), "rotary," or (if the Trunk Signal Type is blank), "mfc." The value in this field impacts the appearance of the Incoming Partial Dial timer on the Administrable Timer Page.
- **Disconnect Timing (msec)** — Enter the minimum time period in milliseconds 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 milliseconds). Default is "500". This timer will not be used for ports on a board that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers. These latter two times will 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.
- **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** — The number of digits the far-end sends for incoming call connections. This field only appears if the Direction is incoming or two-way, the Trunk Signaling Type is blank, and the Incoming Dial Type is "mfc". This field must be completed. The default is blank.
- **Sig Bit Inversion** — 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 boards. 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". The default is "none".
- **Connected to Toll** — Enter "y" if connected to a CO toll office; otherwise, enter "n" (default). 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) — Only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103) 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-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 only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

— **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 Generic 3 DS1/CEPT1/ISDN-PRI Reference, 555-025-103.)

- **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".
- **Send Release Ack** — Enter "y" if the switch must send a release acknowledgement in response to a forward or backward release signal. This field only displays when the Trunk Signaling Type field has a value of either "cont" or "dis". This field only applies to TN2140 ports. Valid entries are "y" and "n". Default is "y".
- **Receive Release Ack** — Enter "y" if the switch should expect to receive a release acknowledgement in response to a forward or backward release signal. The Receive Release Ack field appears only when the Trunk Signaling Type field has a value of either "cont" or "dis". This field only applies to TN2140 ports. Valid entries are "y" and "n". Default is "y".
- **Bit Rate** — Enter the baud rate to be used by pooled modems. Valid entries are "300", "1200", "2400", "4800", "9600", and "19200". This field is 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-PRV is enabled on the System Parameters Customer Options form. Default is "1200".
- **Synchronization** — Enter whether the trunk group will use "synchronous" or "asynchronous" communications. Valid entries are "async" and "sync". This field is 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-PRV is enabled on the System Parameters Customer Options form. Default is "async".
- **Duplex** — Enter either full or half duplex for the trunk group. Valid entries are "full" or "half". Default is "full". This field is only displayed if the Comm Type field is "avd" oe "rbavd". It also appears if the Comm Type is "data" but *only* if the option for ISDN-PRV is enabled on the System Parameters Customer Options form.
- **Disconnect Supervision** — 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; otherwise, enter "n". Default is "y".

- **Send Answer Supervision** — Enter if the switch should signal that the destination party has answered. This field appears only when the Trunk Signaling Type field has a value of "cont" or "dis". This field only applies to TN2140 ports. The Send Answer Supervision field cannot be "y" if the Direction field is "outgoing". Valid entries are "y" and "n". Default is "n".
- **Answer Supervision Timeout** — Enter the amount of time in seconds the System allows for the call to be answered before beginning an SMDR 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 0-250. 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 boards) or, for boards 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 is automatically set to "0" for boards that take the administrable Outgoing End of Dial timer. Receive Answer Supervision must be "n" if the Direction field is "incoming." 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 is "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 0-10. Default is "1". Field must be "0" for a Service Type field entry of "sddn".
  - **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 0-160. 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 0-30. 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 (i.e., 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".
- **Used for DCS** — Specifies whether the trunk group will send and receive messages on a DCS signaling link. Valid entries are "y" or "n". If "y" is entered, complete the PBX ID field entry. Default is "n". This field cannot have a value of yes unless the option for DCS has been enabled for the system.
- **PBX ID** — Determines the remote PBX Identification number. It only appears when Used for DCS field is set to yes. Valid enties are 1-63. The default is blank.
- **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are "y" or "n". Default is "y".
- **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 far-end or any other facility treats # as an error. Default is "n".

  A final "#" will be outpulsed on interdigit timeout to indicate the start of end-to-end signaling.

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 far-end. Valid entries are 50-2550 in increments of 10. The field cannot be blank. Default is 500. This field only appears for incoming or two-way trunk group when the Trunk Signaling Type is either blank or "cont".
- **Outgoing Disconnect (msec)** — Enter the minimum time (in msec) required for recognition of disconnect for an outgoing call. Valid entries are 50-2550 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".

- **Incoming Dial Guard (msec)** — Enter the interval (in msec) 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 10-2550 in increments of 10. The field cannot be blank. The default is 70 msec.
- **Outgoing Dial Guard (msec)** — Enter the minimum time (in msec) between seizure of the trunk and outpulsing of digits. Valid entries are 100-25500 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 100-25500 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 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 100-25500 in increments of 100. The field cannot be blank. Default is 1500. This field only appears for outgoing and two-way trunk groups.
- **Incoming Partial Dial (sec)** — Enter the time (in sec) allowed between digits. Valid entries are 5-255 in increments of 1. Default is 18 sec. This timer appears only if the Incoming Dial Type is "rotary".
- **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 150-2550 in increments of 10. The field cannot be blank. Default is 800. Note that the TN767 boards also apply this timer to touch tone dialing.
- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the far-end. Valid entries are 20-2550 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 when the timer expires. 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(es) 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 trunk groups. Valid entries are 1-254 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. Valid entries are 1-255 in increments of 1. Default is 5 sec. This timer is sent to the TN760D (v.15 or later), TN464B (or later), TN767, TN439, TN458, and TN2140 tie boards.
- **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 100-25500 in increments of 100. Default is 1500 msec. This timer is sent to the TN760D (v.15 or later), TN464B (or later), TN767, TN458, and TN2140 tie boards.
- **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 (e.g., error message). Valid entries are 1-255 in increments of 1. Default is 240 sec.
- **Incoming Incomplete Dial Alarm (sec)** — Enter a maximum time (in sec) between incoming seizure of a DID or TIE trunk and receipt of all digits. Intervals greater than this generate an inline error. Valid entries are 1-255 in increments of 1. Default is 255 sec. This timer is sent to the TN760D (v.15 or later), TN464C (or later), TN767, and TN2140 tie boards.
- **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 board. 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 60-250 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 acknowledgement signal. After receiving a forward release signal, the called switch must send the forward release acknowledgement 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 500-1200 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 acknowledgement 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 40-120 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 60-120 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 500-1200 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 40-120 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 500-1200 in increments of 100 Default is 800. Only TN2140 ports receive this timer.

- **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. It is only administrable if the Trunk Signaling Type is blank. Valid entries are 20-2550 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. It is only administrable if the Trunk Signaling Type is blank. Valid entries are 20-2550 in increments of 10. Default is 150.
- **Glare** — Enter the minimum time (in msec) between sending an outgoing seizure and receiving a seizure acknowledgement. If seizure acknowledgement 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 40-100 in increments of 10. Default is 40. Only TN2140 ports receive this timer.
- **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 that the following boards can only do 10pps: TN439, TN458, and TN767.
- **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 20-80 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 10-40 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 20-80 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 10-40 in increments of five. The field cannot be blank. The default is 30.

Pages 4 through X of the Form (Group Member Assignments)

- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-20 depending on carrier type), and circuit number (01-24). For single-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-18 depending on cabinet type), and circuit number (01-31).
- **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 TN437, TN439, TN458, TN464 (with any suffix), TN722, TN760B (or later release), TN767, 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 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", "t5 rev", or "type 5". Default is blank.

- **Ans Delay** — Enter the duration of the wait (in msec) for answer supervision delay on the TN437, TN439, TN458, TN464 (with any suffix), TN722 (with any suffix), TN760B (or later), TN767, or TN2140 circuit packs. Valid entries are 20-5100 in increments of 20. The default is no entry (blank). This timer is used to delay the up-link ANSWER message. 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
                              TRUNK GROUP

Group Number: xx                  Group Type: tandem        SMDR Reports? y
  Group Name: OUTSIDE_CALL_____          COR: 1_                     TAC: ____
   Direction: two-way_      Outgoing Display? n     Trunk Signaling Type: cont
 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   Send Release Ack? y   Receive Release Ack? y

     Disconnect Supervision? y                Send Answer Supervision? y
 Answer Supervision Timeout: 10_           Receive Answer Supervision? n
```

Tandem Trunk Group Form (Page 1 of X)

Implementation Note:

The Send Release Ack, Receive Release Ack, and Send Answer Supervision fields are only displayed when the Trunk Signaling Type field is "cont" or "dis."

The BCC field is only displayed when ISDN-PRI is optioned for on the System-Parameters Customer-Options form and the Comm Type field is or "data".

The Connected to Toll and DTT to DCO Loss fields are only displayed when the Trunk Type field is "auto/...", "delay/...", "wink/...", or "immed/...".

The STT Loss field is only displayed when the Connected to Toll field is "n".

The Bit Rate, Synchronization, and Duplex fields are only displayed when the Comm Type field is "avd".

```
                                                              Page 2
TRUNK FEATURES
          ACA Assignment? n            Measured: none
                                Data Restriction? n
            Used for DCS? n                          Maintenance Tests? y
   Suppress # Outpulsing? n
```

Tandem Trunk Group Form (Page 2 of X)

Implementation Note:

The following fields are only displayed if the ACA Assignment field is "y":

- Long Holding Time (hours)
- Short Holding Time (secs.)
- Short Holding Threshold

The PBX ID field is not displayed if the Used for DCS field is "n".

```
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
  Incoming Dial Guard(msec): ____          Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____        Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                              Outgoing Rotary Dial Interdigit(msec): ____
  Outgoing End of Dial(sec): ___       Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____       Disconnect Signal Error(sec): ___
                                 Incoming Incomplete Dial Alarm(sec): ___

END TO END SIGNALING
   Tone(msec): ____          Pause(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

Tandem Trunk Group Administrable Timers Form
if Trunk Signaling Type Field is Blank (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 will not appear if the Receive Answer Supervision field from Page 1 is "y".

```
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
                                           Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____         Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                              Outgoing Rotary Dial Interdigit(msec): ____
                                           Incoming Seizure(msec): ____
  Outgoing End of Dial(sec): ___          Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____         Disconnect Signal Error(sec): ___
                             Incoming Incomplete Dial Alarm(sec): ___
   Outgoing Last Digit(sec): __
                                                      Glare(msec): ___
OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

Tandem Trunk Group Administrable Timers Form
if Trunk Signaling Type Field is "cont" (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 will not appear if the Receive Answer Supervision field from Page 1 is "y".

```
ADMINISTRABLE TIMERS
                                        Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____      Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                          Outgoing Rotary Dial Interdigit(msec): _____
  Outgoing End of Dial(sec): ___        Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____      Disconnect Signal Error(sec): ___
                          Incoming Incomplete Dial Alarm(sec): ___
   Outgoing Last Digit(sec): __         Normal Outgoing Seize Send(msec): ___
     Release Ack Send(msec): ____                Seize Ack Delay(msec): ___
          Answer Send(msec): ___        Outgoing Disconnect Send(msec): ____
       Seize Ack Send(msec): ____       Incoming Disconnect Send(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

Tandem Trunk Group Administrable Timers Form
if Trunk Signaling Type Field is "dis" (Page 3 of X)

Implementation Notes:

The Incoming Partial Dial and Incoming First Digit fields are only displayed when the Incoming Dial Type field from Page 1 is "rotary".

The Outgoing End of Dial field will not appear if the Receive Answer Supervision field from Page 1 is "y".

TRUNK GROUP

GROUP MEMBER ASSIGNMENTS

	Port	Name	Night	Mode	Type	Ans Delay
1:						
2:						
3:						
4:						
5:						
6:						
7:						
8:						
9:						
10:						
11:						
12:						
13:						
14:						
15:						

Tandem Trunk Group Form (Pages 4 through X)

(To reduce repetition, pages 5 through X are not shown.)

Implementation Notes:

The Type field does not appear if the Trunk Signaling Type field on Page 1 is "dis".

Trunk Group — Tie

Used to assign a Tie Trunk Group and associated trunk ports. The trunk group provides 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 4 ESS switch in support of MEGACOM service, MEGACOM 800 service, and MEGACOM 800 DNIS service.

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 and Error Messages" 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	1-99 (or 'next')
change	trunk-group	1-99 or TAC X...
display	trunk-group	1-99 or TAC X...['print' or 'schedule']
list	trunk-group	['print' or 'schedule']
remove	trunk-group	1-99 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.

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 number from 1-99 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 "tie" to identify the trunk group type.
- **SMDR Reports** — Enter "y" to provide a detailed SMDR 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 0-95 that reflects the desired restriction. Default is "1".
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. SMDR also uses the TAC to identify the trunk group on associated SMDR 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 whether the trunk group is "incoming", "outgoing", or "two-way". Default is "two-way". Note that the Direction administered will affect which timers will appear on the Administerable 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 is "n".
- **Trunk Signaling Type** — Enter "tge", "tgi", or "tgu" to indicate that trunk groups members are on TN497 ports. Doing so causes the Line Length field to appear; and causes the following fields to disappear: Trunk Type (in/out value will be set from the Trunk Signaling Type field), Outgoing Dial Type (value will be implied to be rotary), Incoming Dial Type, and Receive Answer Supervision (implied to be no).

  Enter "cont" or "dis", to indicate that trunk goups members are on TN2140 ports. Doing so causes the Send Release Ack, Receive Release Ack, and Send Answer Supervision fields to appear.

  If this field is blank, ports from any other Tie trunk board may be added as trunk group members. Default is blank. Note that the value in this field will affect which timer will appear on the Administrable Timer Page.
- **Dial Access** — Enter "y" to allow the trunk group to be accessed via a TAC; otherwise, enter "n". Default is "n". Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter a number (0-99) of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console. Default is "99".
- **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), "attd" (attendant), ***or*** leave blank (default) if the Trunk Type (in/out) field is not "auto/...".
- **Queue Length** — Enter a number from 0-100 that indicates the number of outgoing calls that can be held waiting. A "0" indicates no calls will be held in queue. Enter "0" for DCS trunks. This field is turned off if the Direction field is "incoming". Default is "0".
- **Incoming Destination** — Enter where incoming calls will terminate. Valid entries are an extension number, "attd" (attendant), VDN, ***or*** leave blank (default) if the Trunk Type (in/out) field is not "auto/...". If "attd" is entered, a call is treated as an LDN call.
- **Comm Type** — Enter if the trunk is to be used for voice, data, alternate voice-data (i.e., avd), or alternate voice/voice grade data and 56 kbps digital data (i.e., robbed-bit alternate voice-data) calls. Valid entries are "avd", "rbavd", "voice", or "data". Type "rbavd" supports access to voice/data SDN service on robbed-bit T1 transmission facilities. Default is "voice". Note that "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 signaling or (if mixed mode signaling is allowed on the DS1 circuit pack), isdn-pri or isdn-ext. 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". 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".
- **BCC**(Bearer Capability Class) — 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. This field only appears when the CommType is "avd", or if 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". 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 3i Global — Feature Description*, 555-230-203 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. When the Trunk Signaling Type is "dis", valid entries are:

  disc/disc disc/immed immed/disc immed/immed

  When the Trunk Signaling Type is "cont", valid entries are:

auto/auto	cont/auto	delay/auto	immed/auto	wink/auto
auto/cont	cont/cont	delay/cont	immed/cont	wink/cont
auto/delay	cont/delay	delay/delay	immed/delay	wink/delay
auto/immed	cont/immed	delay/immed	immed/immed	wink/immed
auto/wink	cont/wink	delay/wink	immed/wink	wink/wink

  Otherwise, valid entries are:

auto/auto	delay/auto	immed/auto	wink/auto
auto/delay	delay/delay	immed/delay	wink/delay
auto/immed	delay/immed	immed/immed	wink/immed
auto/wink	delay/wink	immed/wink	wink/wink

NOTE:
For immed/immed trunks (on incoming trunks), the far-end PBX seizes the trunk and then sends digits without waiting for acknowledgement 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/wink 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 far-end 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. The maximum value is 99 seconds. Valid entries are 5-99, or leave blank. Default is "5".
- **Outgoing Dial Type** — Enter the type of pulsing required on an outgoing call. Valid entries are "tone", "rotary", or "mfc". Default is "tone". A value of "mfc" requires that multifrequency signaling be enabled at the System Parameters Customer Options form.
- **Incoming Dial Type** — Enter the type of pulses required on an incoming trunk group. Valid entries are "tone" (default), "rotary," or (if the Trunk Signal Type is blank), "mfc." The value in this field impacts the appearance of the Incoming Partial Dial timer on the Administrable Timer Page.
- **Disconnect Timing (msec)** — Enter the minimum time period in milliseconds 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 milliseconds). Default is "500". This timer will not be used for ports on a board that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers. These latter two times will 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.
- **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** — The number of digits the far-end sends for incoming call connections. This field only appears if the Direction is incoming or two-way, the Trunk Signaling Type is blank, and the Incoming Dial Type is "mfc". This field must be completed. The default is blank.

- **Sig Bit Inversion** — 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 boards. 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". The default is "none".
- **Connected to Toll** — Enter "y" if connected to a CO toll office; otherwise, enter "n" (default). 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) — Only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103) 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-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 only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)
  - **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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

- **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".
- **Send Release Ack** — Appears when Trunk Signaling Type is "cont" or "dis". Enter "y" (default) if the switch must send a release acknowledgement in response to a forward or backward release signal; otherwise, enter "n". Note this field only applies to TN2140 ports.
- **Receive Release Ack** — Appears when Trunk Signaling Type is "cont" or "dis". Enter "y" (default) if the switch should expect a release acknowledgement in response to a forward or backward release signal; otherwise, enter "n". Note this field only applies to TN2140 ports.
- **Line Length** — Enter either "long" or "short" to determine the transmission plan requirements for the call. This field appears only when the Trunk Signaling Type field has a value of "tge", "tgi", or "tgu". This field only applies to TN497 ports. Default is "short".

- **Bit Rate** — Enter the baud rate to be used by pooled modems. Valid entries are "300", "1200", "2400", "4800", "9600", and "19200". This field is 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-PRV is enabled on the System Parameters Customer Options form. Default is "1200".
- **Synchronization** — Enter whether the trunk group will use "synchronous" or "asynchronous" communications. Valid entries are "async" and "sync". This field is 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-PRV is enabled on the System Parameters Customer Options form. Default is "async".
- **Duplex** — Enter either full or half duplex for the trunk group. Valid entries are "full" or "half". Default is "full". This field is only displayed if the Comm Type field is "avd" oe "rbavd". It also appears if the Comm Type is "data" but *only* if the option for ISDN-PRV is enabled on the System Parameters Customer Options form.
- **Disconnect Supervision** — 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; otherwise, enter "n". Default is "y".
- **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; otherwise, enter "n". Note this field only applies to TN2140 ports.
- **Answer Supervision Timeout** — Enter the amount of time in seconds the System allows for the call to be answered before beginning an SMDR 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 0-250. 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 boards) or, for boards 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 boards that take the administrable Outgoing End of Dial timer. Receive Answer Supervision must be "n" if the Direction field is "incoming". 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 is "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 0-10. 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 0-160. 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 0-30. 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 (i.e., 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".
- **Internal Alert** — Specifies if internal ringing and coverage will be used for incoming calls. Valid entries are "y" or "n". Default is "n".
- **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".
- **Used for DCS** — Specifies whether the trunk group will send and receive messages on a DCS signaling link. Valid entries are "y" or "n". If "y" is entered, complete the PBX ID field entry. Default is "n". This field cannot have a value of yes unless the option for DCS has been enabled for the system.
- **PBX ID** — Determines the remote PBX Identification number. It only appears when Used for DCS field is set to yes. Valid enties are 1-63. The default is blank.
- **Maintenance Tests** — Indicates whether or not hourly maintenance tests will be made on this trunk group. Valid entries are "y" or "n". Default is "y".

- **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 far-end treats # as an error. Default is "n".

  A final "#" will be outpulsed on interdigit timeout to indicate the start of end-to-end signaling.

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 far-end. Valid entries are 50-2550 in increments of 10. The field cannot be blank. Default is 500. This field only appears for incoming or two-way trunk group when the Trunk Signaling Type is either blank or "cont".
- **Outgoing Disconnect (msec)** — Enter the minimum time (in msec) required for recognition of disconnect for an outgoing call. Valid entries are 50-2550 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".
- **Incoming Dial Guard (msec)** — Enter the interval (in msec) 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 10-2550 in increments of 10. The field cannot be blank. The default is 70 msec.
- **Outgoing Dial Guard (msec)** — Enter the minimum time (in msec) between seizure of the trunk and outpulsing of digits. Valid entries are 100-25500 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 100-25500 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 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 100-25500 in increments of 100. The field cannot be blank. Default is 1500. This field only appears for outgoing and two-way trunk groups.
- **Incoming Partial Dial (sec)** — Enter the time (in sec) allowed between digits. Valid entries are 5-255 in increments of 1. Default is 18 sec. This timer appears only if the Incoming Dial Type is "rotary".

- **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 150-2550 in increments of 10. The field cannot be blank. Default is 800. Note that the TN767 boards also apply this timer to touch tone dialing.
- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the far-end. Valid entries are 20-2550 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 when the timer expires. 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(es) 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 except when the Trunk Signaling Type is "tgu." Valid entries are 1-254 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 only when the Trunk Signaling Type is blank, "cont", or "dis." Valid entries are 1-255 in increments of 1. Default is 5 sec. This timer is sent to the TN760D (v.15 or later), TN464B (or later), TN767, TN439, TN458, and TN2140 tie boards.
- **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 but only when the Trunk Signaling Type is blank, "cont", or "dis." Valid entries are 100-25500 in increments of 100. Default is 1500 msec. This timer is sent to the TN760D (v.15 or later), TN464B (or later), TN767, TN458, and TN2140 tie boards.

- **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 (e.g., error message). This timer is administrable only when the Trunk Signaling Type is blank, "cont", or "dis." Valid entries are 1-255 in increments of 1. Default is 240 sec.
- **Incoming Incomplete Dial Alarm (sec)** — Enter a maximum time (in sec) between incoming seizure and receipt of all digits. Intervals greater than this generate an inline error. This timer is administrable only when the Trunk Signaling Type is blank, "cont", or "dis." Valid entries are 1-255 in increments of 1. Default is 255 sec. This timer is sent to the TN760D (v.15 or later), TN464C (or later), TN767, and TN2140 tie boards.
- **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 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. Valid entries are 1-40. Default is 10. Only TN2140 and TN497ports 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 60-250 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 acknowledgement signal. After receiving a forward release signal, the called switch must send the forward release acknowledgement 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 500-1200 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 acknowledgement 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 40-120 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 60-120 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 500-1200 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 40-120 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 500-1200 in increments of 100. Default is 800. Only TN2140 ports receive this timer.
- **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. It is only administrable if the Trunk Signaling Type is blank. Valid entries are 20-2550 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. It is only administrable if the Trunk Signaling Type is blank. Valid entries are 20-2550 in increments of 10. Default is 150.
- **Glare** — Enter the minimum time (in msec) between sending an outgoing seizure and receiving a seizure acknowledgement. If seizure acknowledgement 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 40-100 in increments of 10. Default is 40. Only TN2140 ports receive this timer.
- **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 following boards can only do 10PPS: TN439, TN458, TN497, and TN767.

- **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 20-80 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 10-40 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 20-80 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 10-40 in increments of five. The field cannot be blank. The default is 30.

Pages 4 through X of the Form (Group Member Assignments)

- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-20 depending on carrier type), and circuit number (01-31). For single-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-18 depending on cabinet type), and circuit number (01-31).

- **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 TN437, TN439, TN458, TN464 (with any suffix), TN722, TN760B (or later release), TN767, 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 field 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 when 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", "t5 rev", or "type 5". Default is blank.
- **Ans Delay** — Enter the duration of the wait (in msec) for answer supervision delay on the TN437, TN439, TN458, TN464 (with any suffix), TN722 (with any suffix), TN760B (or later), TN767, or TN2140 circuit packs. Valid entries are 20-5100 in increments of 20. The default is no entry (blank). This timer is used to delay the up-link ANSWER message. 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
                              TRUNK GROUP

Group Number: xx                  Group Type: tie          SMDR 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                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                               Line Length: short
     Disconnect Supervision? y
 Answer Supervision Timeout: 10_          Receive Answer Supervision? n
```

Tie Trunk Group Form (Page 1 of X)

Implementation Notes:

The BCC field is only displayed when ISDN-PRI is optioned for on the System-Parameters Customer-Options form and the Comm Type field is "data".

The Connected to Toll and DTT to DCO Loss fields are only displayed when the Trunk Type field is "auto/...", "delay/...", "wink/...", or "immed/...".

The STT Loss field is only displayed when the Connected to Toll field is "n".

The Bit Rate, Synchronization, and Duplex fields are only displayed when the Comm Type field is "avd".

The Trunk Type, Outgoing Dial Type, Incoming Dial Type, and Receive Answer Supervision fields do not display 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".

```
                                                                Page 2
TRUNK FEATURES
          ACA Assignment? n            Measured: none
                                   Internal Alert? n
                                 Data Restriction? n
            Used for DCS? n                              Maintenance Tests? y
   Suppress # Outpulsing? n
```

Tie Trunk Group Form (Page 2 of X)

Implementation Note:

The following fields are only displayed if the ACA Assignment field is "y":

- Long Holding Time (hours)
- Short Holding Time (secs.)
- Short Holding Threshold

The PBX ID field is not displayed if the Used for DCS field is "n".

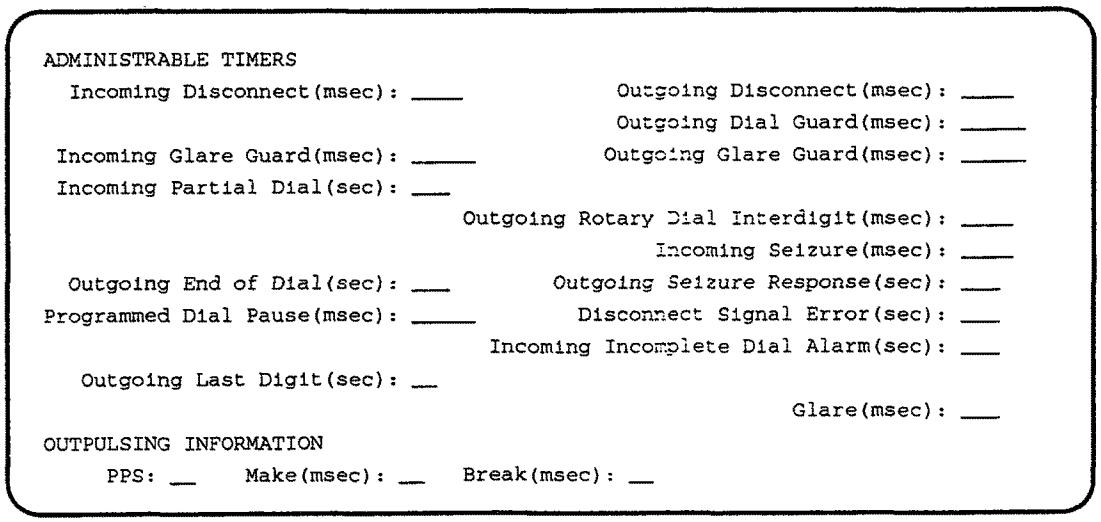
```
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
  Incoming Dial Guard(msec): ____          Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____        Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                              Outgoing Rotary Dial Interdigit(msec): ____
  Outgoing End of Dial(sec): ___       Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____       Disconnect Signal Error(sec): ___
                                 Incoming Incomplete Dial Alarm(sec): ___

END TO END SIGNALING
   Tone(msec): ____          Pause(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

Tie Trunk Group Administrable Timers Form
if Trunk Signaling Type Field is Blank (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 will not appear if the Receive Answer Supervision field from Page 1 is "y".



Tie Trunk Group Administrable Timers Form
if Trunk Signaling Type Field is "cont" (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 will not appear if the Receive Answer Supervision field from Page 1 is "y".

```
ADMINISTRABLE TIMERS
                                        Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____      Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                          Outgoing Rotary Dial Interdigit(msec): ____
  Outgoing End of Dial(sec): ___        Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____      Disconnect Signal Error(sec): ___
                        Incoming Incomplete Dial Alarm(sec): ___
   Outgoing Last Digit(sec): __       Normal Outgoing Seize Send(msec): ___
     Release Ack Send(msec): ____             Seize Ack Delay(msec): ___
          Answer Send(msec): ___      Outgoing Disconnect Send(msec): ____
       Seize Ack Send(msec): ____     Incoming Disconnect Send(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __
```

Tie Trunk Group Administrable Timers Form
if Trunk Signaling Type Field is "dis" (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 will not appear if the Receive Answer Supervision field from Page 1 is "y".

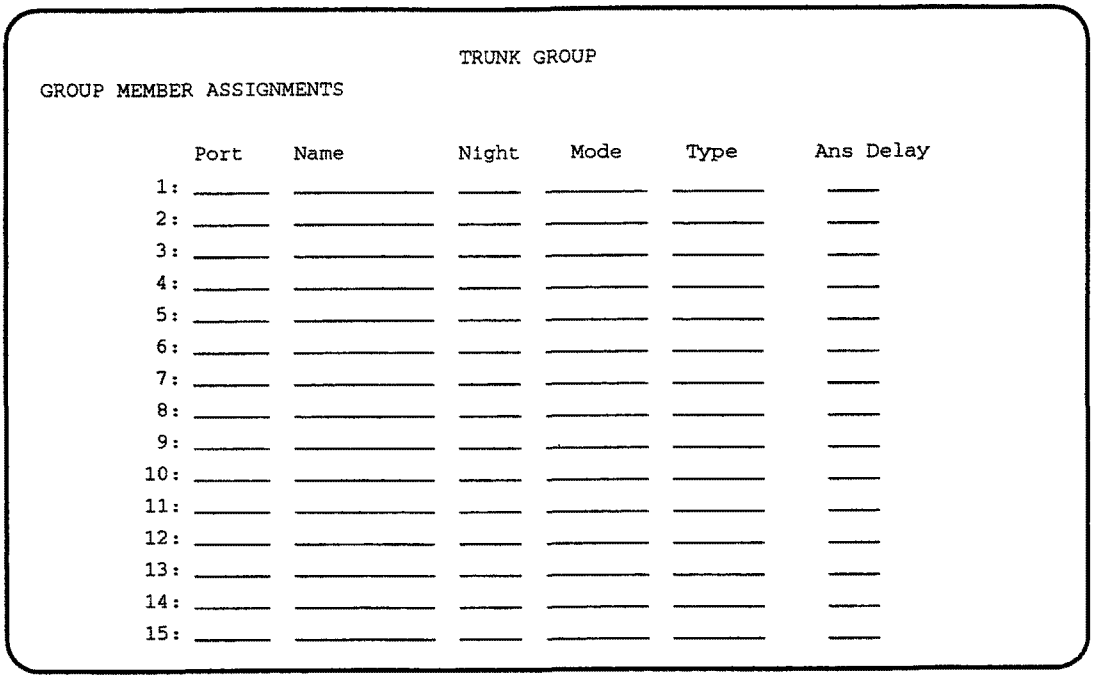
```
ADMINISTRABLE TIMERS
 Incoming Glare Guard(msec): _____          Outgoing Glare Guard(msec): _____
 Incoming Partial Dial(sec): ___
                              Outgoing Rotary Dial Interdigit(msec): ____
  Outgoing End of Dial(sec): ___
   Outgoing Last Digit(sec): __

OUTPULSING INFORMATION
     PPS: __     Make(msec): __   Break(msec): __
```

Tie Trunk Group Administrable Timers Form
if Trunk Signaling Type Field is "tge", "tgi", or "tgu" (Page 3 of X)

Implementation Notes:

The Outgoing Last Digit field does not appear if the Trunk Signaling Type field is "tge" or "tgi".

The Outgoing End of Dial field does not appear if the Trunk Signaling Type field is "tgu".



TRUNK GROUP

GROUP MEMBER ASSIGNMENTS

	Port	Name	Night	Mode	Type	Ans Delay
1:						
2:						
3:						
4:						
5:						
6:						
7:						
8:						
9:						
10:						
11:						
12:						
13:						
14:						
15:						

Tie Trunk Group Form (Pages 4 through X)

(To reduce repetition, pages 5 through X are not shown.)

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/from a portion of the DDD network via dedicated trunks to/from a WATS serving office.

Instructions

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Group Number** — Enter a number from 1-99 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.
- **SMDR Reports** — Enter "y" to provide a detailed SMDR 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 0-95 that reflects the desired restriction. Default is "1".
- **TAC** — Enter the trunk access code (TAC) that must be dialed to access the trunk group. SMDR also uses the TAC to identify the trunk group on associated SMDR 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 whether the trunk group is "incoming", "outgoing", or "two-way". Default is "two-way". 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 is "n".
- **Dial Access** — Enter "y" to allow the trunk group to be accessed via a TAC; otherwise, enter "n". Default is "n". Access via the ARS feature is allowed regardless of this entry.
- **Busy Threshold** — Enter a number (0-99) of trunk group members that must be busy before the attendant is alerted by the Warning lamp on the Attendant Console. Default is "99"
- **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), "attd" (attendant), *or*leave blank (blank) if the Trunk Type (in/out) field is not "auto/...".

- **Queue Length** — Enter a number from 0-100 that indicates the number of outgoing calls that can be held waiting. A "0" indicates no calls will be held in queue. Enter "0" for DCS trunks. This field is turned off if the Direction field is "incoming". Default is "0".
- **Country** — Enter 1-17 to indicate the country where the trunk terminates. Country codes are as follows:

  1. United States
  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 (Russia)
  16. Argentina
  17. Greece

  NOTE:
  Country codes 11, 12, and 13 are not supported as yet.

- **Incoming Destination** — Enter where incoming calls will terminate. Valid entries are an extension number, "attd" (attendant), 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** — Enter if the trunk is to be used for voice, data, alternate voice-data (i.e., avd), or alternate voice/voice grade data and 56 kbps digital data (i.e., robbed-bit alternate voice-data) calls. Valid entries are "avd", "rbavd", "voice", or "data". Type "rbavd" supports access to voice/data SDN service on robbed-bit T1 transmission facilities. Default is "voice". Note that "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 signaling or (if mixed mode signaling is allowed on the DS1 circuit pack), isdn-pri or isdn-ext. 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". 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".
- **Trunk Flash** — Enter "y" or "n" to indicate if access to customized services provided by a far end (e.g., Central Office) is permitted for this trunk group. The PBX must be directly connected to a far end that provides such services. Default is "n".
- **BCC**(Bearer Capability Class) — 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. This field only appears when the CommType is "avd", or if 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". 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 3i Global — Feature Description*, 555-230-203, 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** — Identifies the physical type of trunk. It may differ for incoming and outgoing types. Valid entries are listed below:

  ground-start loop-start auto/auto auto/delay
  auto/immed auto/wink

- **Outgoing Dial Type** — Enter the type of pulsing required on an outgoing call. Valid entries are "tone" (default), "mfc", "automatic", or "rotary". A value of "mfc" requires that multifrequency signaling be enabled at the System Parameters Customer Options form.
- **Incoming Dial Type** — Enter the type of pulses required on an incoming trunk group. Valid entries are "tone" or "rotary". Default is "tone".
- **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)** — Enter the minimum time period in milliseconds 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 milliseconds). Default is "500". This timer will not be used for ports on a board that can receive the administrable Incoming Disconnect and Outgoing Disconnect timers These latter two times will replace the former

- **Sig Bit Inversion** — 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 boards. 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". The default is "none".
- **Connected to Toll** — Enter "y" if connected to a CO toll office; otherwise, enter "n" (default). 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) — Only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103) 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-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 only 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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)
- **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 Generic 3 DS1/CEPT1/ISDN-PRI Reference*, 555-025-103.)

- **Trunk Gain** — Enter "high" or "low" to specify the gain of the trunk. The value of this field, in conjunction with the values of the Trunk Termination and Country fields, determine the input and trans-hybrid balance impedance for TN465B and TN2147 ports. All other boards will be automatically set to "high". Valid entries are "high" and "low". Default is "high".
- **Bit Rate** — Enter the baud rate to be used by pooled modems. Valid entries are "300", "1200", "2400", "4800", "9600", and "19200". This field is 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-PRV is enabled on the System Parameters Customer Options form. Default is "1200".
- **Synchronization** — Enter whether the trunk group will use "synchronous" or "asynchronous" communications. Valid entries are "async" and "sync". This field is 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-PRV is enabled on the System Parameters Customer Options form. Default is "async".
- **Duplex** — Enter either full or half duplex for the trunk group. Valid entries are "full" or "half". Default is "full". This field is only displayed if the Comm Type field is "avd" oe "rbavd". It also appears if the Comm Type is "data" but *only* if the option for ISDN-PRV is enabled on the System Parameters Customer Options form.

- **Disconnect Supervision** — Enter "y" 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; otherwise, enter "n". Default is "y".
- **Cyclical Hunt** — Enter "y" if a preferential hunting algorithm is to be used. Otherwise, a linear hunting algorithm will be used. Default is "y". This field only appears when the Direction is two-way and Trunk Type is loop-start.
- **Answer Supervision Timeout** — Enter the amount of time in seconds the System allows for the call to be answered before beginning an SMDR 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 0-250. 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 boards) or, for boards 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 boards that take the administrable Outgoing End of Dial timer. Receive Answer Supervision must be "n" if the Direction field is "incoming". Default is "n".

  NOTE:
  When this field is "y", the Direction is "incoming", and the Trunk Type is "loop-start", polarity reversal is used for the trunks. In this case only circuit packs with polarity reversal may be used in the trunk group (TN2147, TN465B, and TN747Bv12).

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 is "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 0-10. Default is "1". Field must be "0" for a Service Type field entry of "sddn".
  - **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 0-160 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 0-30. 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 (i.e., 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".
- **Abandoned Call Search** — Enter a "y" if this trunk group will conduct an Abandoned Call Search to identify a ghost call; otherwise, enter "n". Default is "n". This field is only applicable if Trunk Type is "ground-start". Note that the CO must support Abandoned call search for the feature to work properly.

  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. Note that 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" or "n". Default is "y".
- **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)** — Enter the minimum time (in msec) required for recognition of disconnect for an incoming call from the serving CO. Valid entries are 50-2550 in increments of 10. The field cannot be blank. Default is 500. This timer appears for ground-start and loop-start groups when the Direction is either incoming or two-way. But the only loop-start board that will receive it is the TN2138.

- **Outgoing Disconnect (msec)** — Enter the minimum time (in msec) required for recognition of disconnect for an outgoing call. Valid entries are 50-2550 in increments of 10. The field cannot be blank. Default is 500. This timer appears for ground-start and loop-start groups when the Direction is either outgoing or two-way. But the only loop-start board that will receive it is the TN2138.
- **Outgoing Dial Guard (msec)** — Enter the minimum time (in msec) between seizure of the trunk and outpulsing of digits. Valid entries are 100-25500 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 100-25500 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 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 100-25500 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 (in msec) between rotary dial digits being outpulsed by the system (that is, PBX). Valid entries are 150-2550 in increments of 10. The field cannot be blank. Default is 800. Note that TN767 boards also apply this timer to touch tone dialing.
- **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 200-51000 in increments of 200. Default is 5200. The field cannot be blank. This timer is sent to TN760D (v.15 or later), TN464C (or later), TN767, TN429, TN438 (all), TN465, TN465B, TN447, TN2138, and TN2147 CO boards.
- **Incoming Seizure (msec)** — Enter the minimum time (in msec) required for recognition of incoming ringing signal from the serving CO. Valid entries are 20-2550 in increments of 10. The field cannot be blank. Default is 500. This timer is sent to TN760D (v.15 or later), TN464C (or later), TN767, TN429, TN438 (all), TN465, TN465B, TN447, TN2138, and TN2147 CO boards.

- **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 when the timer expires. 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(es) 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 1-254 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. Valid entries are 1-255 in increments of 1; default is 5 sec. This timer is sent to TN760D (v.15 or later), TN464B (or later), TN767, TN438B, TN447, TN465B, and TN2147 boards.
- **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 100-25500 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 (e.g., error message). This timer is administrable only for ground-start trunk groups. Valid entries are 1-255 in increments of 1; default is 240. This timer is sent to TN464B (or later), TN767, TN438B, TN447, and TN2147 WATS boards.
- **Flash Length** — Specifies the length (in msec) of the flash signal to be generated toward the Central Office. This field is sent to TN464C (or later), TN465B, and TN2147 ports. Valid entries are 10-2550 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 20-2550 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 20-2550 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 that the following boards can only do 10PPS: TN747Bv12 and TN767.

- **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 20-80 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 10-40 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 20-80 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 10-40 in increments of five. The field cannot be blank. The default is 30.

- **PPM**(Periodical Pulse Metering) — Pulses collected from the public network to determine call cost. When this field is "y", 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 trunk. If this field is "y", the Frequency field will appear. Valid entries are "y" and "n". Default is "n".

- **Frequency** — Appears if the PPM field is "y". 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). Valid entries are "12k", "16k", "50", "50/12k", and "50/16k'. Default is "50/12k". This field is sent to TN2138 boards.

  This field is also sent to the TN465B as follows:

  - If 50/12k or 12k are administered, the TN465B will be set to detect 12 kHz;
  - If 16k, 50, of 50/16k are adminstered, the TN465B will be set to detect 16 kHz.

  For other boards that can detect PPM the boards will listen for the firmware default frequency (50/12K for the TN438, 50Hz for the TN447, 16kHz for the TN465)

Pages 4 through X of the Form (Group Member Assignments)

- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-20 depending on carrier type), and circuit number (01-31). For single-carrier cabinets, enter the port network (1-3, default is 1), the carrier letter (A-E), the slot numbers (01-18 depending on cabinet type), and circuit number (01-31).
- **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 TN437, TN439, TN458, TN464, TN722, TN760B, or TN767 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, TN437, TN439, TN464 (with any suffix), or TN458 circuit packs.

  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", "t5 rev", or "type 5". Default is blank.
- **Ans Delay** — Enter the duration of the wait (in msec) for answer supervision delay on the TN437, TN439, TN458, TN464, TN722, TN760B (or later), or TN767 circuit packs. Valid entries are 20-5100 in increments of 20. The default is no entry (blank). 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
                              TRUNK GROUP

Group Number: xx                  Group Type: wats          SMDR 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
                                  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? y                              Cyclical Hunt? y
 Answer Supervision Timeout: 10_           Receive Answer Supervision? n
```

WATS Trunk Group Form (Page 1 of X)

Implementation Notes:

The BCC field is only displayed when ISDN-PRI is optioned for on the System-Parameters Customer-Options form and the Comm Type field is "data".

The Connected to Toll and DTT to DCO Loss fields are only displayed when the Trunk Type field is "auto/...".

The STT Loss field is only displayed when the Connected to Toll field is "n".

The Bit Rate, Synchronization, and Duplex fields are only displayed when the Comm Type field is "avd".

The Cyclical Hunt field only appears when the Direction is two-way and Trunk Group Type is loop-start.

```
                                                              Page 2
TRUNK FEATURES
          ACA Assignment? n            Measured: none
                                Data Restriction? n
   Abandoned Call Search? n                          Maintenance Tests? y
   Suppress # Outpulsing? n
```

WATS Trunk Group Form (Page 2 of X)

Implementation Note:

The following fields are only displayed if the ACA Assignment field is "y":

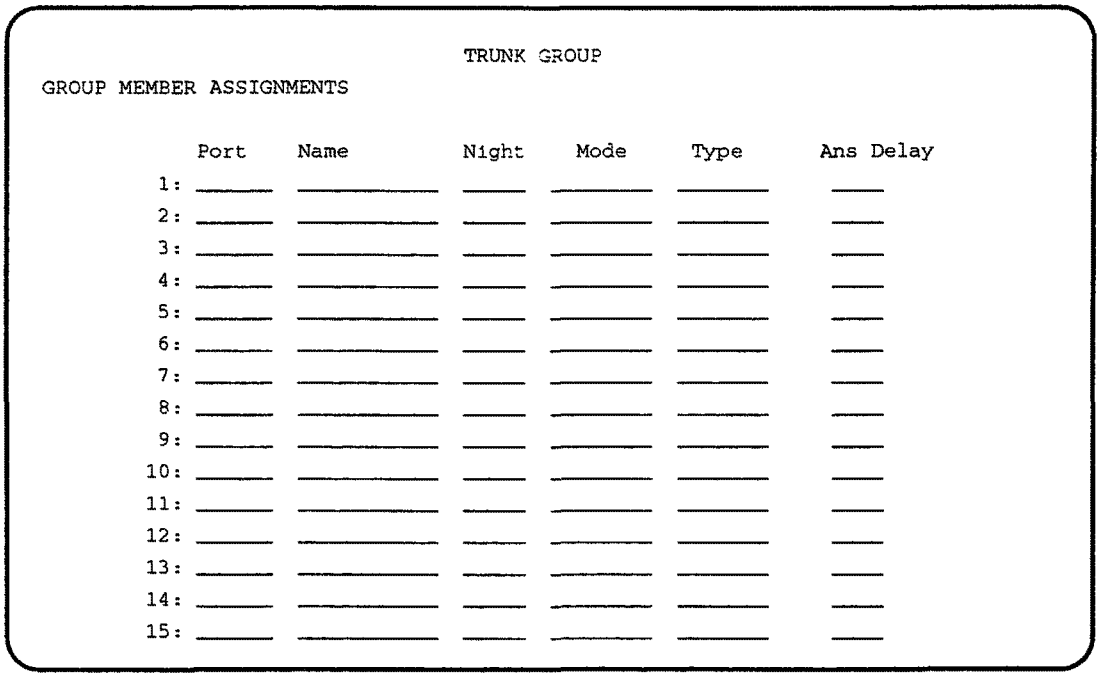
- Long Holding Time (hours)
- Short Holding Time (secs.)
- Short Holding Threshold

```
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): ____          Outgoing Disconnect(msec): ____
                                           Outgoing Dial Guard(msec): _____
 Incoming Glare Guard(msec): _____         Outgoing Glare Guard(msec): _____
                              Outgoing Rotary Dial Interdigit(msec): ____
      Ringing Monitor(msec): _____             Incoming Seizure(msec): ____
  Outgoing End of Dial(sec): ___       Outgoing Seizure Response(sec): ___
Programmed Dial Pause(msec): _____       Disconnect Signal Error(sec): ___
         Flash Length(msec): ____

END TO END SIGNALING
   Tone(msec): ____            Pause(msec): ____

OUTPULSING INFORMATION
     PPS: __    Make(msec): __   Break(msec): __     PPM? y  Frequency: 50/12k
```

WATS Trunk Group Administrable Timers Form (Page 3 of X)

Implementation Notes:

The Outgoing End of Dial field will not be displayed if the Receive Answer Supervision field on Page 1 is "y".



TRUNK GROUP

GROUP MEMBER ASSIGNMENTS

	Port	Name	Night	Mode	Type	Ans Delay
1:						
2:						
3:						
4:						
5:						
6:						
7:						
8:						
9:						
10:						
11:						
12:						
13:						
14:						
15:						

WATS Trunk Group Form (Pages 4 through X)
(To reduce repetition, Pages 5 through X are not shown.)

5. Forms for System Features and Services

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 those forms 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. Multi-use forms such as the Dial Plan and Feature Access Codes that support both network, voice management, data management, etc., 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 Chapter 2 and system management information contained in the *DEFINITY® Global Communications System Generic 1 and Generic 3 — System Management*, 555-230-500, to implement the System. The hard copy forms should then be retained as part of the System's hard copy records.

Abbreviated Dialing — Enhanced List

Used to implement an Enhanced Abbreviated Dialing List. The Enhanced List consists of 10 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 forms used to enter the 1000 enhanced dial code list entries. 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.

Only one Enhanced Abbreviated Dialing List can be assigned in the System. The list is controlled by the System Manager. Up to 12,000 abbreviated dialing list entries (includes enhanced, system, group, and personal lists) may be administered in the System.

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 and Error Messages (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. Note that the screen form example is 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 per form 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. Up to 24 characters can be used for each entry. Note that a Vector Directory Number extension may also be assigned.

  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 3i Global Feature Description*, 555-230-203, for a detailed description of the special characters.

```
                                                          Page 1 of 4
                        ABBREVIATED DIALING LIST
                                Enhanced List
                    Size (multiple of 5): 5          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: _____________________
```

Abbreviated Dialing Enhanced List — Form 0 (Page 1 of 4)

Page 2 of 4

ABBREVIATED DIALING LIST
Enhanced List

DIAL CODE

030:	_____	045:	_____
031:	_____	046:	_____
032:	_____	047:	_____
033:	_____	048:	_____
034:	_____	049:	_____
035:	_____	050:	_____
036:	_____	051:	_____
037:	_____	052:	_____
038:	_____	053:	_____
039:	_____	054:	_____
040:	_____	055:	_____
041:	_____	056:	_____
042:	_____	057:	_____
043:	_____	058:	_____
044:	_____	059:	_____

Abbreviated Dialing Enhanced List — Form 0 (Page 2 of 4)

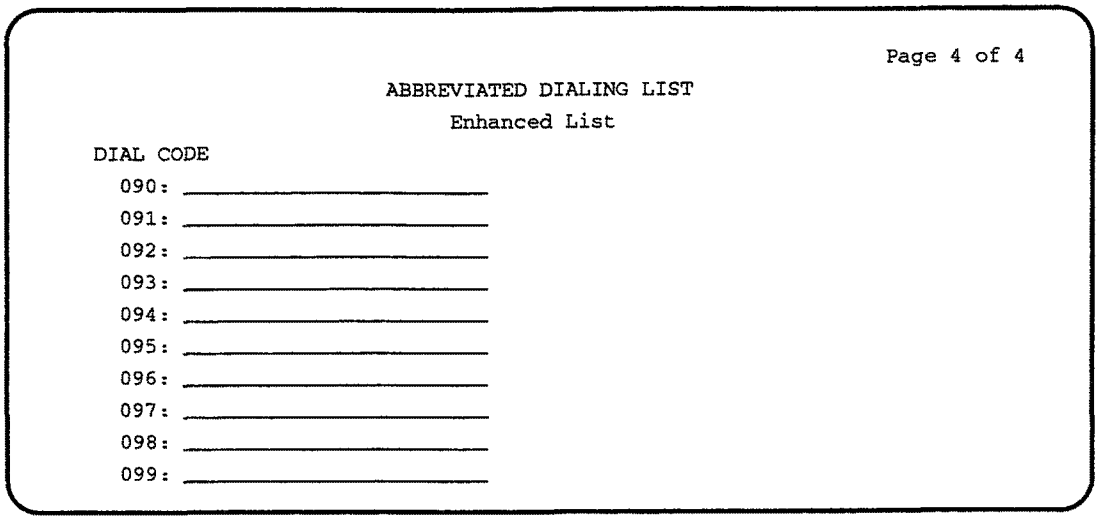
Page 3 of 4

ABBREVIATED DIALING LIST
Enhanced List

DIAL CODE

060:	_____	075:	_____
061:	_____	076:	_____
062:	_____	077:	_____
063:	_____	078:	_____
064:	_____	079:	_____
065:	_____	080:	_____
066:	_____	081:	_____
067:	_____	082:	_____
068:	_____	083:	_____
069:	_____	084:	_____
070:	_____	085:	_____
071:	_____	086:	_____
072:	_____	087:	_____
073:	_____	088:	_____
074:	_____	089:	_____

Abbreviated Dialing Enhanced List — Form 0 (Page 3 of 4)



Page 4 of 4

ABBREVIATED DIALING LIST
Enhanced List

DIAL CODE

090: _____
091: _____
092: _____
093: _____
094: _____
095: _____
096: _____
097: _____
098: _____
099: _____

Abbreviated Dialing Enhanced List — Form 0 (Page 4 of 4)

Implementation Note

To reduce repetition, Forms 1 through 9 are not shown. For a complete set of blank forms, refer to the Blank Forms Package.

Abbreviated Dialing — Group List

Used to implement the Abbreviated Dialing Group List. Up to 100 lists can be assigned. The Group Lists are controlled by the System Manager. Up to 12,000 Abbreviated Dialing list entries (includes enhanced, group, system, and personal lists) may be administered in the System. Up to 90 numbers can be entered per group list which 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 and Error Messages (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	1-100 (or 'next')
change	abbreviated-dialing group	1-100
display	abbreviated-dialing group	1-100 ['print' or 'schedule']
list	abbreviated-dialing group	[xx] ('count' 1-100) ['print' or 'schedule']
remove	abbreviated-dialing group	1-100

* 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

- **Group List** — Enter a group number from 1 to 100 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, for example, 5, 10, 15, up to 90. 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. Up to 24 characters can be used for each entry. Note that a Vector Directory Number extension may also be assigned.

  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)

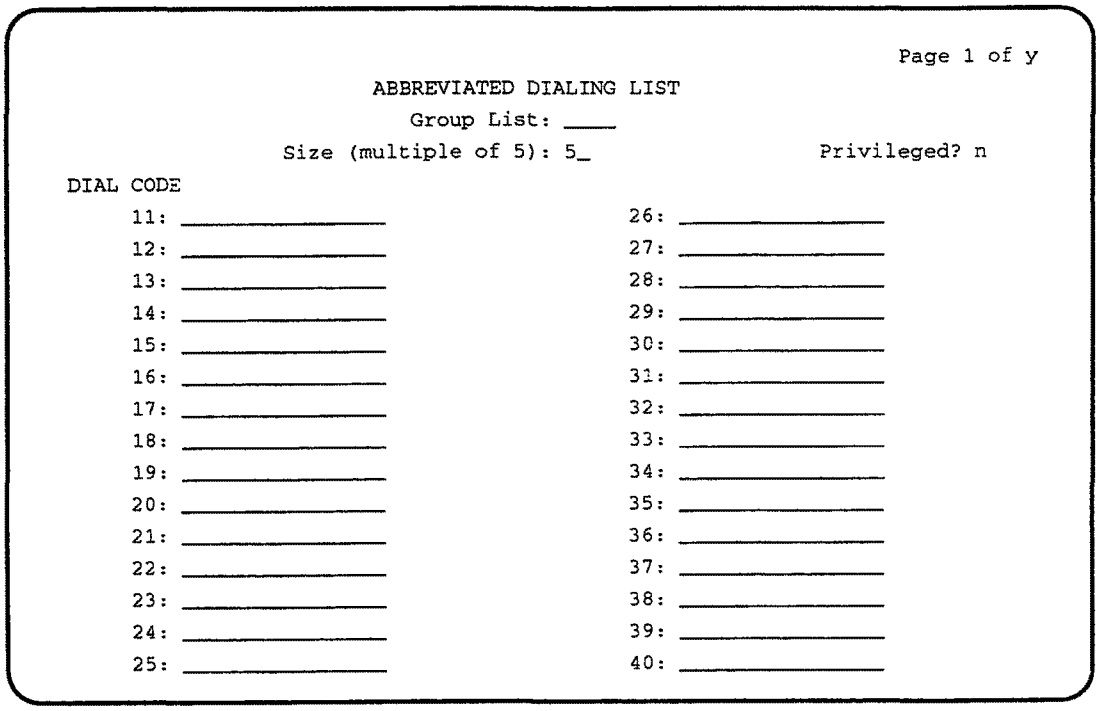
  s (suppress)

  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 3i Global Feature Description*, 555-230-203, for a detailed description of special characters.



Page 1 of y

ABBREVIATED DIALING LIST

Group List: ____

Size (multiple of 5): 5_ 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:	

Abbreviated Dialing Group List Form (Page 1 of y)

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, Page 2 and Page 3 are not shown. For a complete set of blank forms, refer to the Blank Forms Package.

Abbreviated Dialing — Personal List

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. Up to 2400 personal lists can be assigned in the System. 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. Up to 12,000 list entries (includes enhanced, group, system, and personal lists) can be administered in the System.

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 and Error Messages (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 personal	xxxx (extension number of assigned object with a personal list) and List 1-3 or 'next'
change	abbreviated-dialing personal	xxxx (extension number of assigned person list) and List 1-3
display	abbreviated-dialing personal	xxxx (extension number of assigned person list) and List 1-3 ['print' or 'schedule']
list	abbreviated-dialing personal	xxxx (extension and 'count' 1-1600 ['print' o '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:

- **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. Up to 24 characters can be used for each entry. Note that a Vector Directory Number extension may also be assigned.

  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)

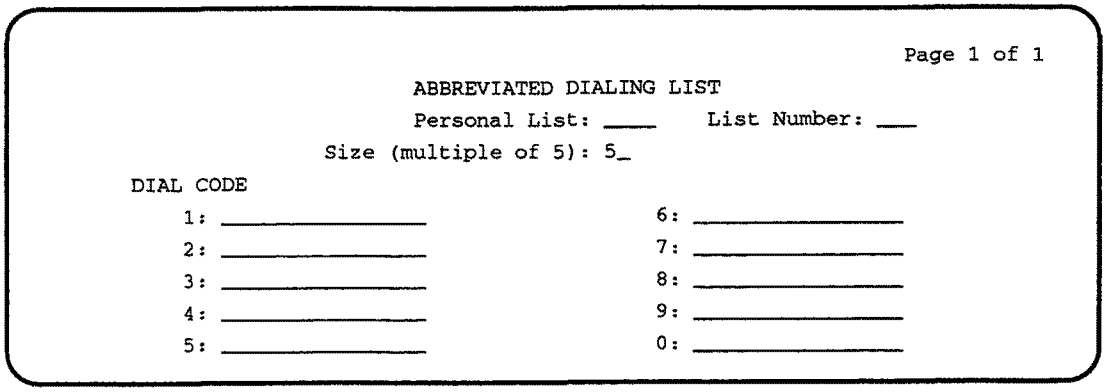
  s (suppress)

  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 3i Global Feature Description*, 555-230-203, for a detailed description of special characters.



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 0 will also be displayed if the Size field is "10".

Abbreviated Dialing — System List

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. Up to 12,000 list entries (includes enhanced, group, system, and personal lists) may be administered in the System.

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 and Error Messages (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, for example, 5, 10, 15, through 90 can be entered. Default is "30".
- **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. Up to 24 characters can be used for each entry. A maximum of 90 entries can be assigned. Note that a Vector Directory Number extension may also be assigned.

  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)

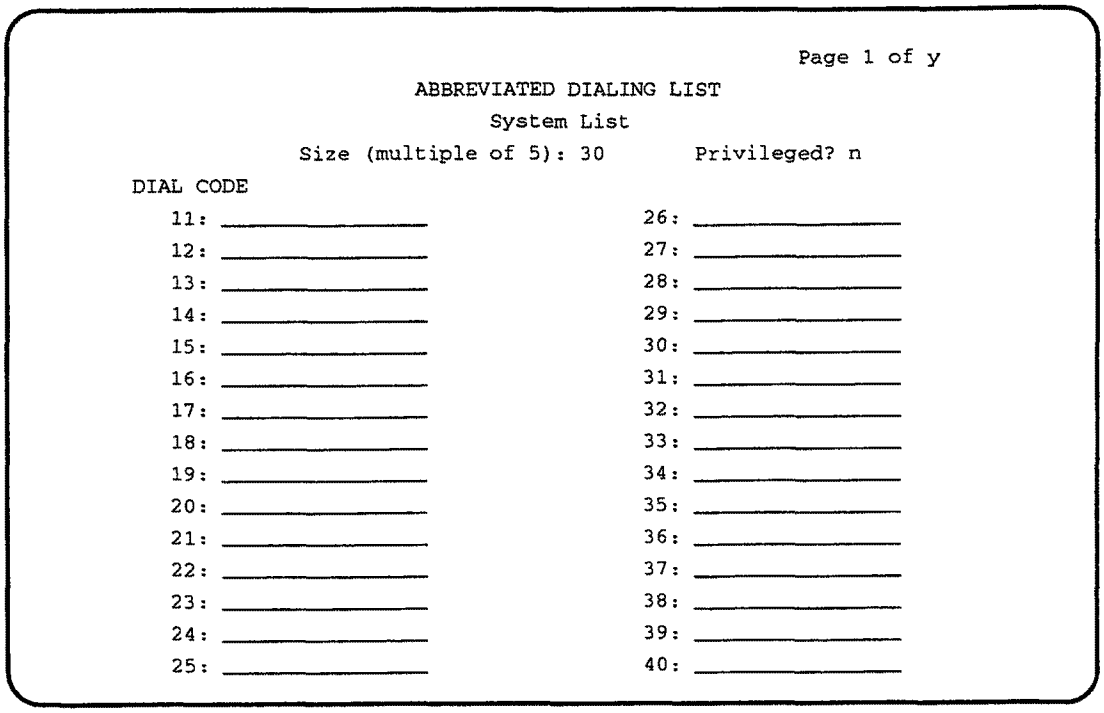
  s (suppress)

  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 3i Global Feature Description*, 555-230-203, for a detailed description of special characters



Page 1 of y

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:	_____

Abbreviated Dialing System List Form (Page 1 of y)

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, Page 2 and Page 3 are not shown. For a complete set of blank forms, refer to the Blank Forms Package.

Abbreviated Dialing — 7103A List

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 and Error Messages (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 1-8 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)

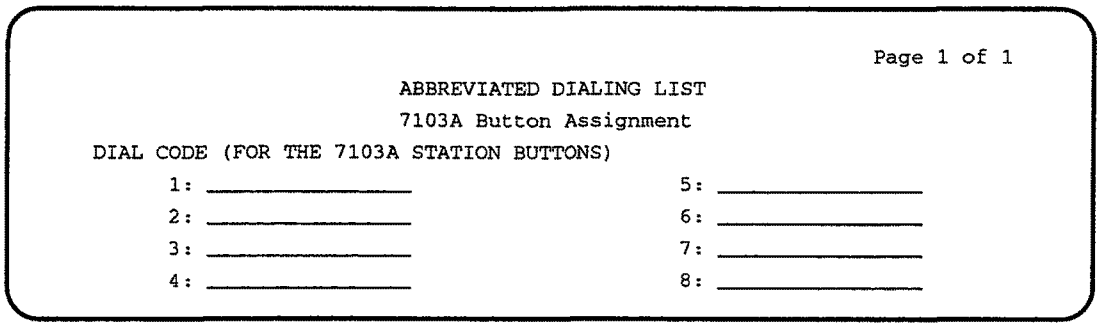
  s (suppress)

  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 3i Global Feature Description*, 555-230-203, for a detailed description of special characters.



Page 1 of 1

ABBREVIATED DIALING LIST

7103A Button Assignment

DIAL CODE (FOR THE 7103A STATION BUTTONS)

1: _____	5: _____
2: _____	6: _____
3: _____	7: _____
4: _____	8: _____

Abbreviated Dialing 7103A List Form (Page 1 of 1)

Access Endpoint

An Access Endpoint is a non-signaling 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.

NOTE:
Access Endpoints (sometimes called "Administered/Permanent Switched Connections") consume the same resource that trunks use. Thus, the sum of Access Endpoints and trunks cannot exceed 400.

Refer to Administered Connection/Access Endpoint feature 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 and Error Messages (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' 1-400] ['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:

- **Extension** — Display-only field when the form is accessed using an administration command such as *change* or *display*. This is the extension number assigned to the non-signaling trunk and used to access the trunk. Enter a valid unassigned extension number when completing a paper form. Default is blank.
- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 20 depending on carrier type), and circuit

number (01 through 24). For single-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 18 depending on cabinet type), and circuit number (01 through 31).

The DS1 circuit number corresponds to the channel that will carry the data traffic. Channels 1 through 24 may be used when the DS1 signaling type is "robbed-bit" or "isdn-ext". In the case of Common Channel Signaling or ISDN-PRI, use of the channels is limited to channel 1 through 23. 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). Default is "voice-grade-data".
- **Name** — Enter up to 10 alphanumeric characters to identify the endpoint. Default is blank.
- **COR** — Enter the appropriate class of restriction (COR) number in the range from 0-95. 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".
- **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: _____              Port: _______
Communication Type: voice-grade-data    Name: _______________
                COR: 1_                  COS: __
```

Access Endpoint Form

Adjunct-Switch Application Interface Link

Used to administer an 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. In some cases, just the most commonly used commands are shown. Refer to Administration Commands and Error Messages (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' 1-1600) type ASAI ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-1600) 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

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".

  ⇒ NOTE:
  The BCC field disappears when "asai" is entered as the station type.

- **COR** — Make no entry. Not required for the ASAI Link. (Default is "1".)
- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 20 depending on carrier type), and circuit number (01 through 24). For single-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 18 depending on cabinet type), and circuit number (01 through 31).
- **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 adjunct. Default is "n". See table below.
- **TEI** — Displayed when Fixed TEI is "y". This field identifies if the ASAI Link has a Fixed Terminal 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), other Maintenance/Management capability. Valid entries are "y" or "n". Enter "n" for ASAI and for all other vendors. Default is "n". Form is adjusted accordingly.
- **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 in order 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 re-used 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".

- **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 then 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.
- **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
                                  STATION
Extension: ____
     Type: asai                                            COR: 1
     Port: _____________                                   COS: 1
     Name: _____________
FEATURE OPTIONS
                    XID? y          Fixed TEI? y          TEI: 3
             MIM Support? n         CRV Length: 1
```

ASAI Station Form (Page 1 of 1)

Implementation Note:

TEI field only displayed when the Fixed TEI field is "y".

Adjunct Controlled Agent Table

Used to assign Outbound Call Management (OCM) adjunct controlled agent extensions. Up to 80 extensions may be administered.

An agent whose extension is on the Adjunct Controlled Agent Table (ACAT) may log into any OCM adjunct-controlled split without having to be a member of each split. At login, the System checks to ensure that:

- The agent is a valid adjunct controlled agent.
- The split is adjunct controlled.
- The 3B2 Call Management System is not currently moving the agent.
- The agent **is not** logged into another split (that is, agent may only be a member of one BX.25 adjunct controlled split at a time).

If the above criteria are met and the agent is not already a member of the split as a result of a previous login, the System moves the agent to the new split. OCM agent moves will be blocked during a save translation.

A subsequent display of the associated Hunt Group form's split members will show the agent as a member of the split.

A display of the Adjunct Controlled Agent Table will show the split number that the agent is currently assigned to. An asterisk (*) beside the split number indicates that the agent is logged into the split.

Administration Commands

The following administration commands can be used to access the Adjunct Controlled Agent Table form. In some cases, just the most commonly used commands are shown. Refer to Administration Commands and Error Messages (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	adjunct-controlled-agent-table	—
display	adjunct-controlled-agent-table	['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.

- **Ext** — Enter an assigned agent extension for each agent that is to be controlled by an OCM adjunct.
- **Split** — Display-only field. Displays the split the agent Ext (extension) is a member of. The Split field will be marked with an asterisk if the agent is logged into the split. Agent extensions initially entered on the table are automatically assigned to a default adjunct controlled split number. System defaults to first adjunct-controlled split administered in the System.

Page 1 of 2

ADJUNCT CONTROLLED AGENT TABLE

Agent	Ext	Split	Agent	Ext	Split	Agent	Ext	Split
1			15			29		
2			16			30		
3			17			31		
4			18			32		
5			19			33		
6			20			34		
7			21			35		
8			22			36		
9			23			37		
10			24			38		
11			25			39		
12			26			40		
13			27			41		
14			28			42		

Adjunct Controlled Agent Table Form (Page 1 of 2)

Page 2 of 2

ADJUNCT CONTROLLED AGENT TABLE

Agent	Ext	Split	Agent	Ext	Split	Agent	Ext	Split
43			57			71		
44			58			72		
45			59			73		
46			60			74		
47			61			75		
48			62			76		
49			63			77		
50			64			78		
51			65			79		
52			66			80		
53			67					
54			68					
55			69					
56			70					

Adjunct Controlled Agent Table Form (Page 2 of 2)

Administered Connection

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 and Error Messages (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	1-128 (or 'next')
change	administered-connection	1-128 (or 'next')
display	administered-connection	1-128 (or 'next') ['print' or 'schedule']
duplicate	administered-connection	1-128 (or 'next')
remove	administered-connection	1-128 (or 'next')
list	administered-connection	1-128 ['count' 1-128] ['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:

- **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 in the range from 1 to 128.
- **Enable** — Enter "y" to indicate that an attempt will be made to establish the AC when the AC is due to be active; otherwise, enter "n". 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. Default is blank. Endpoints may be:
  - Non-signaling 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 or 7400B Data Module
- 7401D 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
- PC/PBX Connection.

— TN556 ISDN-BRI Line Circuit Pack connections, including:

- 7505D/7506D/7507D Voice Terminal with ADM

- **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 " p", and so on, count as two. 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); otherwise, enter "n". If "y" is entered, the seven Start Days and associated Duration fields **are not** displayed. If "n" is entered, these fields are 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; otherwise, enter "n".

Note that 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. Default is "n".

- **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 [hours (00-23), minutes (00-59)]. 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 00-59 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. Note that 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 (ac-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; otherwise, enter "n". 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".

```
                                                          Page 1 of 1
                          ADMINISTERED CONNECTION
        Connection Number: 1                                Enable? 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: warning                 Alarm Threshold: 5
          Retry Interval: 2                     Auto Restoration? y
                Priority: 5
```

Administered Connection Form (Page 1 of 1)

Implementation Note:

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".

Alias Station

Used to administration 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 non-supported 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 that DCP (Data Communication Protocol) 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 and Error Messages (Chapter 2) for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

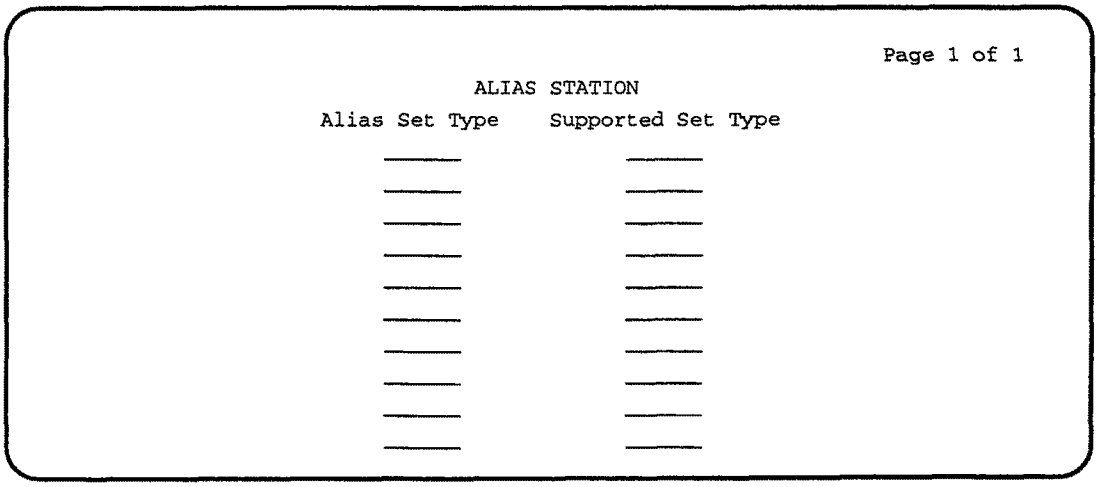
Action	Object	Qualifier*
change	alias station	—
display	alias station	['print' or 'schedule']

* Brackets [ ] indicate the qualifier is optional.

Form Instructions

Make assignments as required for the following fields on the form.

- **Alias Set Type** — Enter a non-supported 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 that a duplicate non-supported 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 non-supported 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.



Alias Station Form (Page 1 of 1)

Alphanumeric Dialing Table

This form is used to associate alpha-names to dialed digit strings. This then 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 200 paired Alpha-name/Mapped String fields (that is, six pages). Pages 1 through 5 have 34 paired fields per page. Page 6 has 30 paired 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 and Error Messages (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 upper-case entries are mapped to lower-case)

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.

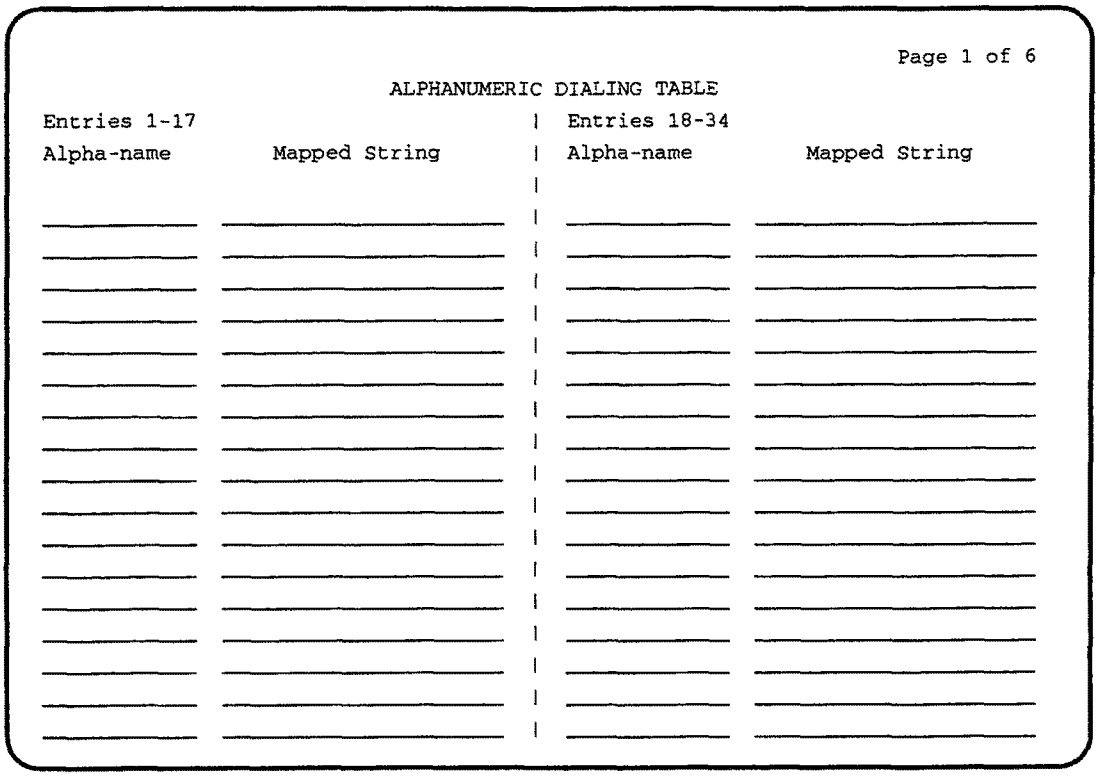
  "^" — Treated as a readability character.

  "+" — Suspend digit outpulsing until a dial tone is detected.

  "," — Pause 1.5 seconds. (Used only for outgoing trunk calls. If used internally, the 1.5 second pause is ignored.)

  "%" — Digits following this character are for end-to-end signaling. Following digits to be outpulsed 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".

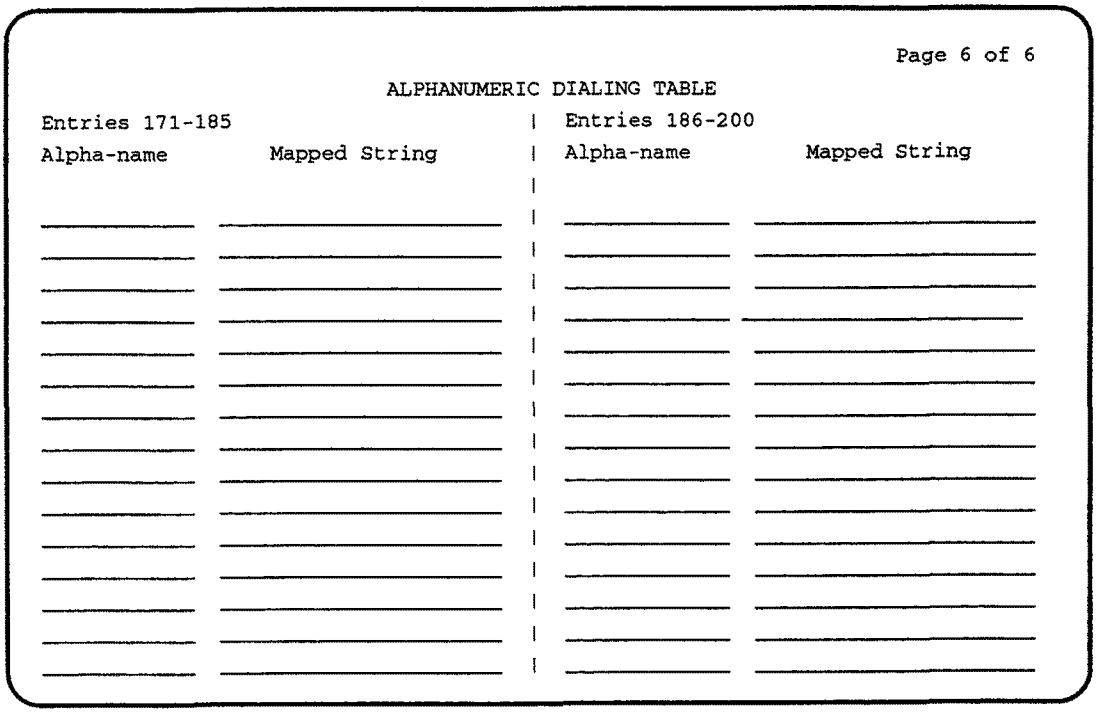


Page 1 of 6

ALPHANUMERIC DIALING TABLE

Entries 1-17		Entries 18-34	
Alpha-name	Mapped String	Alpha-name	Mapped String

Alphanumeric Dialing Form (Page 1 of 6)



Page 6 of 6

ALPHANUMERIC DIALING TABLE

Entries 171-185		Entries 186-200	
Alpha-name	Mapped String	Alpha-name	Mapped String

Alphanumeric Dialing Form (Page 6 of 6)

Implementation Note:

To reduce repetition, Pages 2 through 5 are not shown.

Attendant Console

Used to assign one Attendant Console in the System. Up to seven consoles may be assigned. 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 and Error Messages (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	1-16
change	attendant	1-16
display	attendant	1-16 ['print' or 'schedule']
remove	attendant	1-16

* Brackets [ ] indicate the qualifier is optional.

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 (1 through 16) 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" (this is the only choice).
- **Extension** — 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 via the dial "0" access code. Refer to the Individual Attendant Access feature in *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203, for additional information.

  Note that, 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 through 15 alphanumeric characters). Any entry is accepted.
- **Console Type** — Enter the intended use for this console; valid entries are "principal", "day-only", "night-only", or "day/night". 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** — Enter "y" if the attendant console has auto answer; otherwise, enter "n." Auto Answer indicates that an incoming call will be automatically answered without any action (no button presses required) by the attendant. Default is "n".
- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 20 depending on carrier type), and circuit number (01 through 24). For single-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 18 depending on cabinet type), and circuit number (01 through 31). Each attendant console requires a port on a TN754 or TN413 Digital Line circuit pack. For reliability, the attendant consoles should not be assigned to the same circuit pack. For example, if three attendant consoles are implemented, assign each console to a port on three separate TN754 or TN413 Digital Line circuit packs. However, if necessary, all attendant consoles can be connected to one Digital Line circuit pack.
- **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; otherwise, enter "n". 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, and Spanish are acceptable entries English is the default.

- **DIRECT TRUNK GROUP SELECT BUTTON ASSIGNMENTS** (Trunk Access Codes) (See Figure 5-1 or 5-2) — 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 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 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.
- **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

- **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 Customer-Options form.

    ⇒ NOTE:
    Refer to Generalized Route Selection in *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203, 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).

  - **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" for personal, "s" for system, "g" for group, or "e" for enhanced. If "g" or "p" is entered, a group number (1 through 100), or personal list number (1 through 3), respectively, 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-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) from 0 through 999. 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 From above list** — Only displayed when the Special Dialing Option field is "default". Enter a list number (associated with the above AD List) from 0 through 999. 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** — Make no entry. 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

- **FEATURE BUTTON ASSIGNMENTS** — Enter the desired feature buttons from Table 5-1 that you want to assign to the attendant console. The fixed buttons which 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 (this Chapter) for a description of feature buttons. Feature not included in those tables are listed below.
  - 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 maximum.)

  - "in-ringoff" — Incoming call ringer off; turns on/off the audible tone for incoming call ringer. (1 per console maximum.)
  - "re-ringoff" — Timed reminder ringer off; turns on/off the audible tone for timer reminder ringer. (1 per console maximum.)

- 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 maximum.)
  - "deact-tr-g" — Deactivate trunk group access; allows the attendant to release control of a trunk group. (1 per console maximum.)
- Display Class of Restriction ("class-rstr") — Display Class of Restriction; used to display the COR associated with a call. (1 per console maximum.)
- 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 maximum.)
- 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 maximum.)
- 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 maximum.)
- 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 maximum.)
- Attendant Override ("override") — This button will enable the attendant to override diversion features (for example, Call Forwarding, Call Coverage, and so on). (1 per console maximum.)

- 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 maximum.)
- Don't Split ("dont-split") — This button allows the attendant to not split away a call when dialing (1 per console maximum.)
- Visually Impaired 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 for blind attendants.
  - "display" calls out display contents to blind attendants.
  - "dtgs-stat" calls out the DTGS status to blind attendants.
  - "last-mess" repeats the last message for blind attendants.
  - "last-op" repeats the last operation for blind attendants.
- Public CO Register Recall feature (flsh-pcorr) — Sends a flash signal to the central office over the active public network trunk.
- Trunk Group Select
  - "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 maximum.)
  - "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 maximum.)

Up to 12 Hundreds Group Select buttons may be assigned on Page 2 of the form. This supplements those that can be administered on Page 1. (Note that only 20 Hundreds Group Select buttons maximum can be administered between the two pages of the form.)

If up to 12 Hundreds Group Select buttons are to be administered on Page 2, it is recommended that the night, pos busy, and hold buttons be reassigned to button locations 20, 21, and 3, respectively. The Hundreds Group Select buttons should then be assigned in the rightmost three columns, as required.

Page 4 of the Form

- **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 4
                              ATTENDANT CONSOLE  _
          Type:  console
     Extension: _____          Name: _______________
  Console Type: _________       COS: 1                 Auto Answer? n
          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: ___
```

Attendant Console Form (Page 1 of 4)

```
                                                          Page 2 of 4
                                   STATION
DATA MODULE
     Data Extension: ____                BCC: 2
               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:
```

Attendant Console Data Module Form (Page 2 of 4)

Implementation Note:

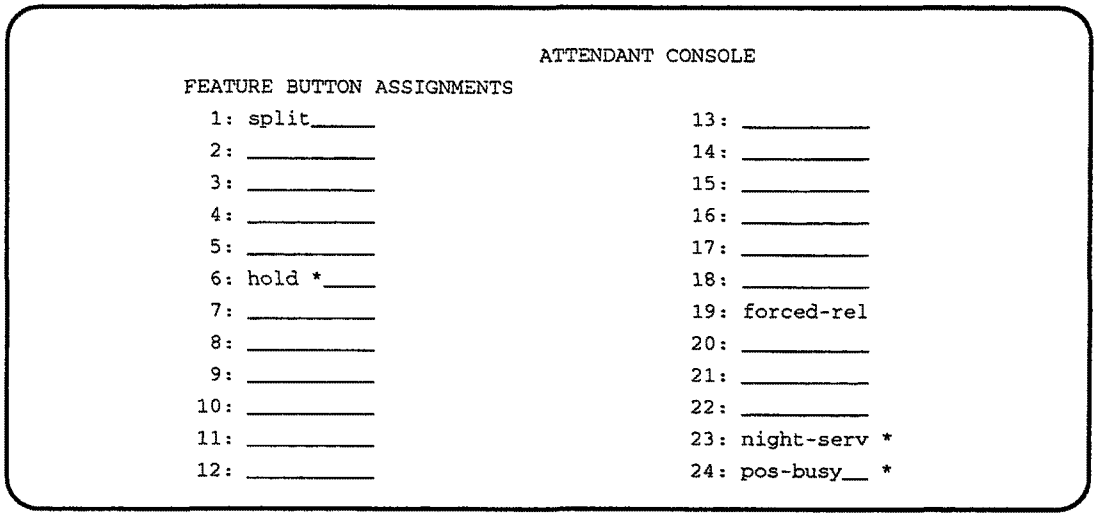
This page is only displayed if the Data Module field on Page 1 is "y".

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".



```
                                ATTENDANT CONSOLE
FEATURE BUTTON ASSIGNMENTS
  1: split_____                          13: _________
  2: _________                           14: _________
  3: _________                           15: _________
  4: _________                           16: _________
  5: _________                           17: _________
  6: hold *____                          18: _________
  7: _________                           19: forced-rel
  8: _________                           20: _________
  9: _________                           21: _________
 10: _________                           22: _________
 11: _________                           23: night-serv *
 12: _________                           24: pos-busy__ *
```

Attendant Console Form (Page 3 of 4)

Implementation Note

* Feature button administrable to other button locations (shown in system default location).

```
                                                          Page 4 of 4
                              ATTENDANT CONSOLE
DISPLAY MODULE BUTTON ASSIGNMENTS
  1: normal____                          5: delete-msg
  2: inspect___                          6: call-disp_
  3: cov-msg-rt                          7: date-time_
  4: next______                          8: timer_____
```

Attendant Console Form (Page 4 of 4)

Implementation Note:

Defaulted feature buttons shown above. Other display feature buttons as noted on Table 5-1 may be administered here, as required.

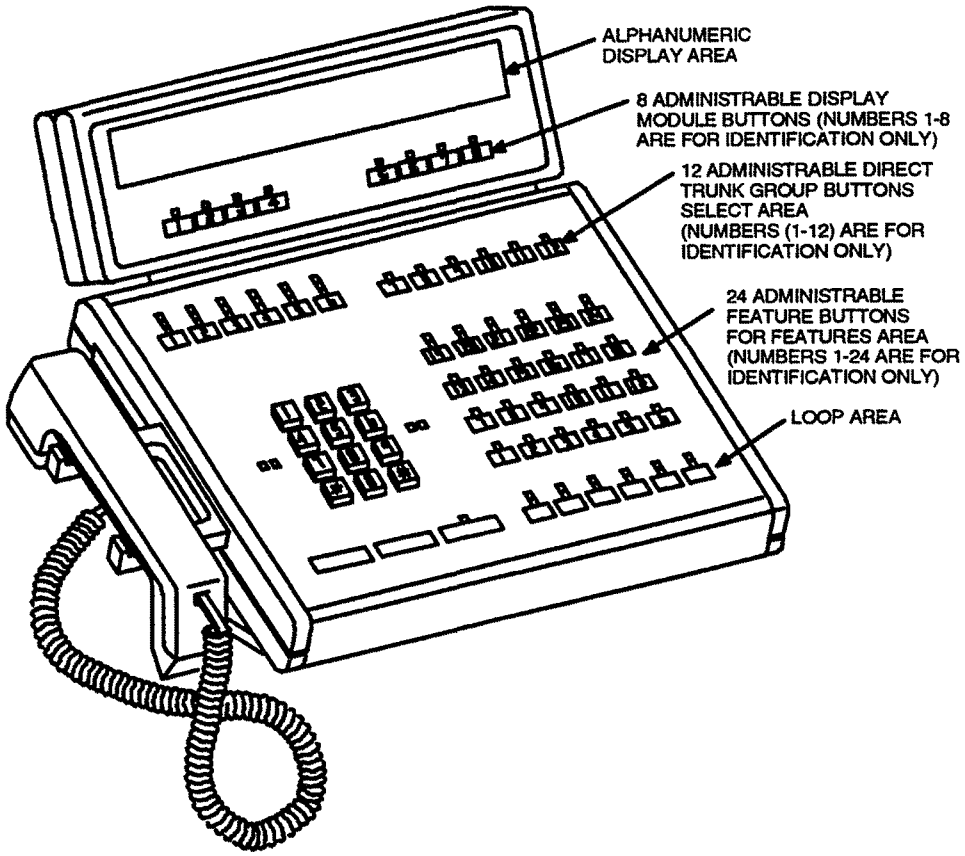


Figure 5-1. Basic Attendant Console (301A) Button Assignments

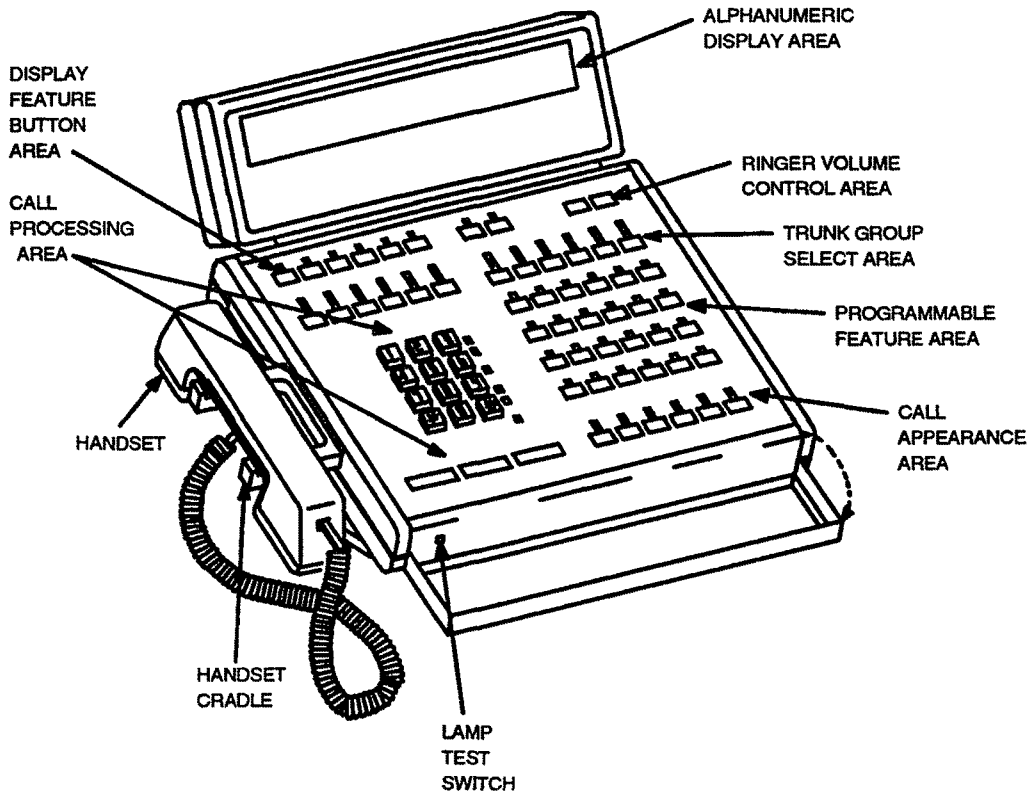


Figure 5-2. Enhanced Attendant Console (302A) Button Assignments

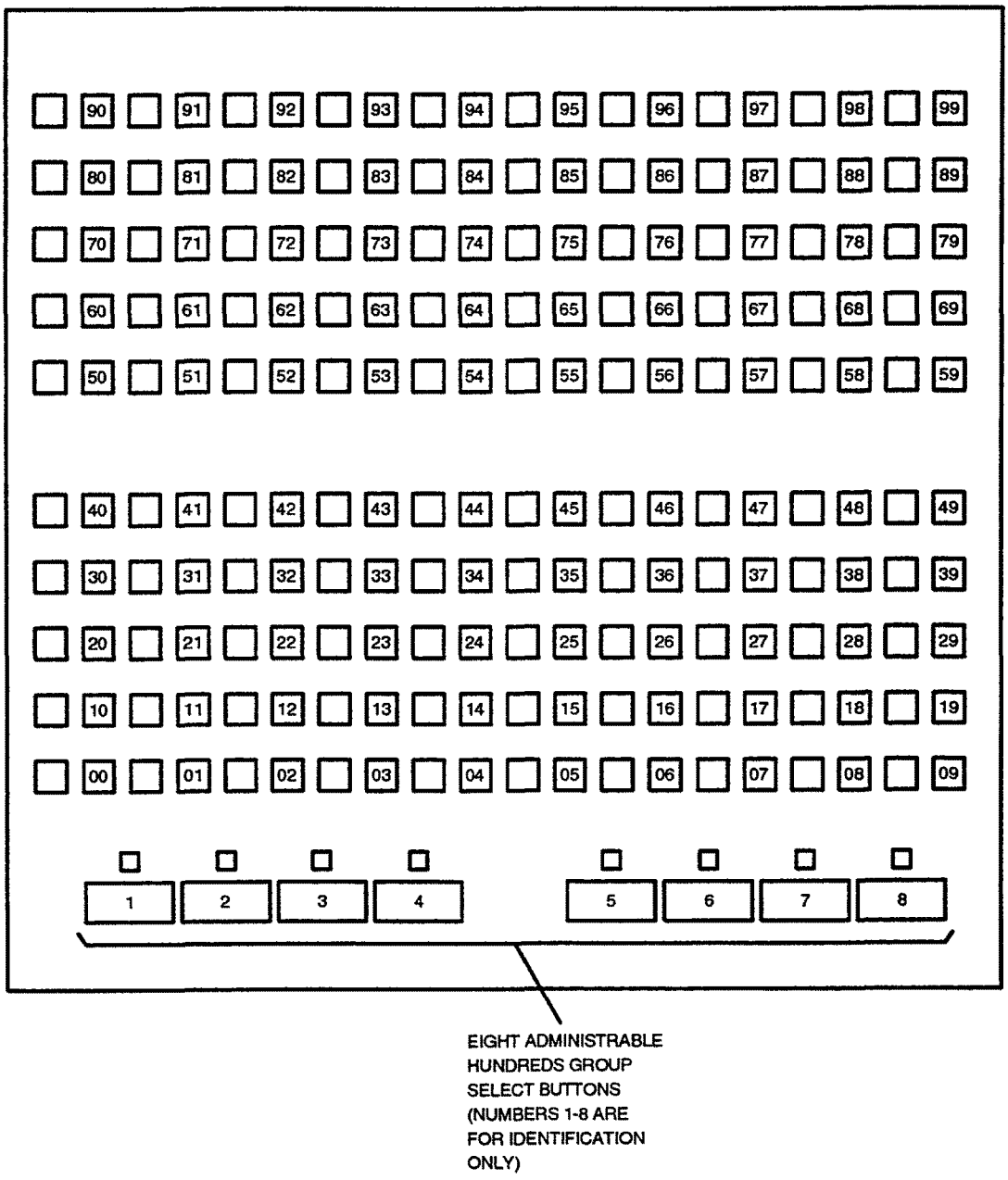


Figure 5-3. Selector Console (24A) Administrable Hundreds Group Select Buttons

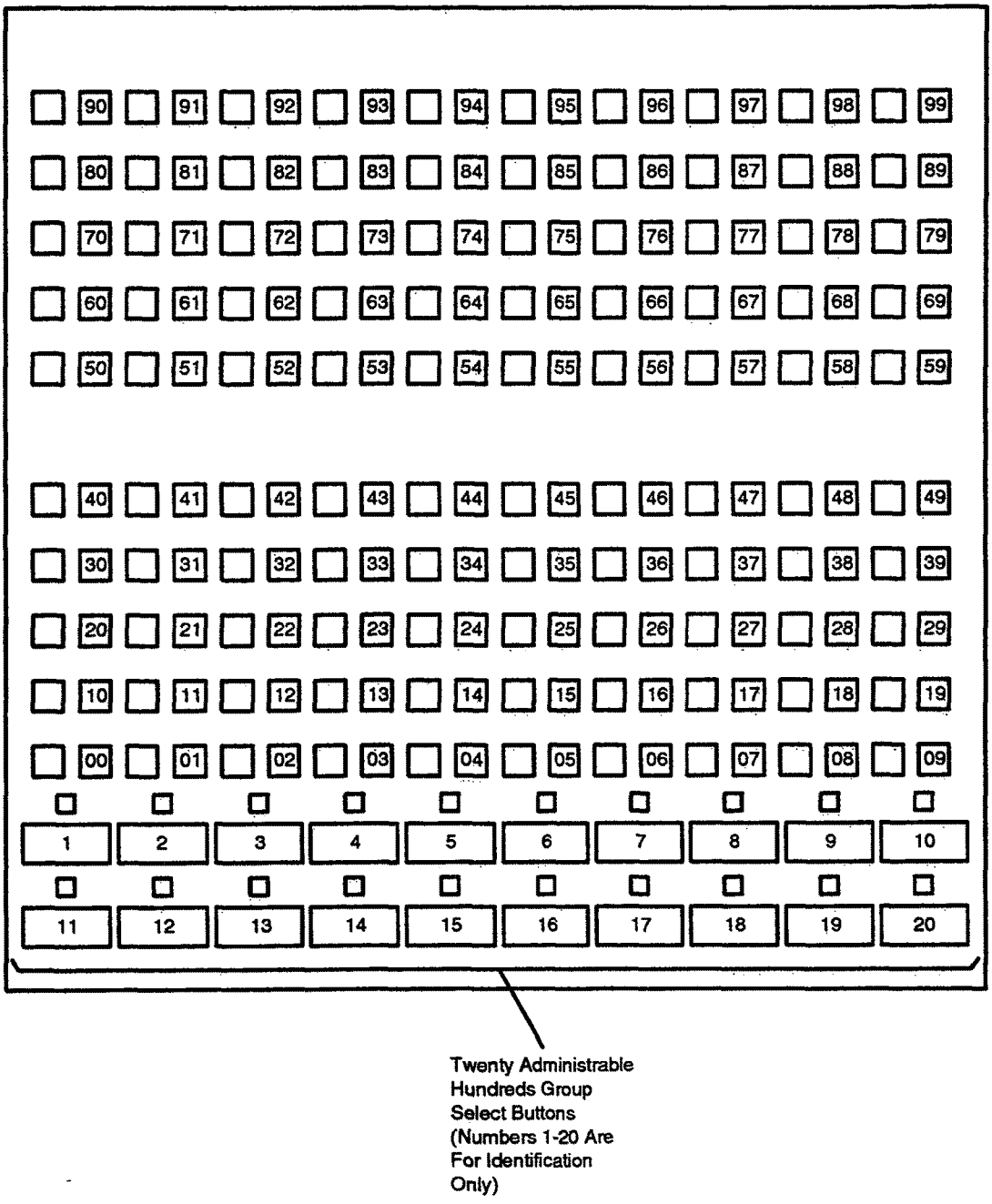


Figure 5-4. Enhanced Selector Console (26A) Administrable Hundreds Group Select Buttons

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	ac-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-In	manual-in (Grp. No.__)	1 per split group	2
	Release	release	1	
	Work Code	work-code	1	
	Stroke (0-9)	stroke-cnt	1	10
Attendant Console (Calls Waiting)	CW Aud Off	cw-ringoff	1	
Attendant Control of Trunk Group Access (Activate)	Cont Act	act-tr-grp	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.

(Continued on next page)

Table 5-1. Attendant Console Feature Button Characteristics *(continued)*

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
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]	*Date/Time*	*date-time*	*1*	
	Inspect Mode	*inspect*	*1*	
	Normal Mode	*normal*	*1*	
	Stored Number	*stored-num*	*1*	
	Timer	*timer*	*1*	
Attendant Hundreds Group Select	*Group Select _*	*hundrd-sel (Grp:__)*	*20 per console*	*11*
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 Prompting [display button]	*Caller Info*	*callr-info*	*1*	
Centralized Attendant Service	*CAS-Backup*	*cas-backup*	*1*	

** Feature button descriptions are provided in the "Voice Terminals— General" section of this chapter.*

*** See Notes at end of table.*

(Continued on next page)

Table 5-1. Attendant Console Feature Button Characteristics *(continued)*

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
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	
Emergency Access To the Attendant	Emerg. Access To Attndt	em-acc-att	1	
Facility Busy Indication [status lamp]	Busy (trunk or extension#)	busy-ind (TAC/Ext: _)	1 per TAC/Ext.	8
Facility Test Calls [status lamp]	FTC Alarm	trk-ac-alm	1	
Hardware Failure [status lamps]	Major Hdwe Failure	major-alrm	10 per System	
	Auto Wakeup	pr-awu-alm	1	
	DS1 (facility)	ds1-alarm	10 per system	
	PMS Failure	pms-alarm	1	
	PMS Ptr Alm	pr-pms-alm	1	
	SMDR 1 Failure	smdr1-alrm	1	
	SMDR 2 Failure	smdr2-alrm	1	
	Sys Ptr Alm	pr-sys-alm	1	

*Feature button descriptions are provided in the "Voice Terminals — General" section of this chapter.

** See Notes at end of table.

(Continued on next page)

Table 5-1. Attendant Console Feature Button Characteristics *(continued)*

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
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
PMS Interface [display buttons]	Message Waiting Act.	mwn-act	1per system	
	Message Waiting Deact.	mwn-deact	1 per System	
Priority Calling	Prior Call	priority	N	

* 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

(Continued on next page)

Table 5-1. Attendant Console Feature Button Characteristics *(continued)*

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
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	
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	

* 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 below.

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 (1 through 99).
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 (1 through 99)
5. Grp: A trunk group number (1 through 99).
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)

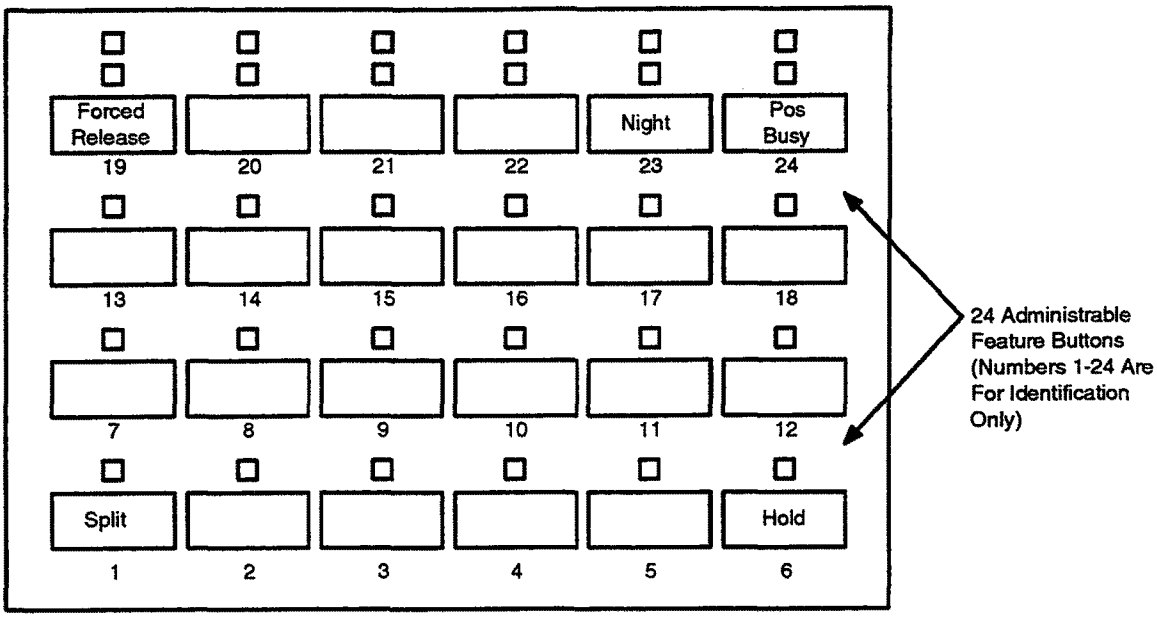


Figure 5-5. Attendant Console 24 Administrable Feature Button Number Assignments

Authorization Codes

Used to assign authorization codes and associate them with classes of restriction (CORs). On an internal originating call, the COR assigned the facility (for example, 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. Up to 96 different authorization codes can be assigned on one form and 5000 codes can be assigned in the System. Note that the use of authorization codes when accessing a Vector Directory Number extension will be denied.

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 and Error Messages (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.
- **AC** — 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.
- **COR** — Enter the desired COR number from 0 through 95.

Page 1 of 1

Authorization Code - COR Mapping

Number of Codes Administered: _____

AC	COR	AC	COR	AC	COR	AC	COR	AC	COR	AC	COR

Authorization Code Form (Page 1 of 1)

Call Coverage Answer Group

Used to establish Call Coverage Answer Groups. An answer group is a group of 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 200. 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 and Error Messages (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	1-200 (or 'next')
change	coverage answer-group	1-200
display	coverage answer-group	1-200 ['print' or 'schedule']
list	coverage answer-group	['print' or 'schedule']
remove	coverage answer-group	1-200

* 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 number from 1 through 200 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 then 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.

```
                                                          Page 1 of 1
                        COVERAGE ANSWER GROUP
                       Group Number: ____
                         Group Name: COVERAGE_GROUP_
GROUP MEMBER ASSIGNMENTS
        Ext     Name                                Ext     Name
    1: ____                                     5: ____
    2: ____                                     6: ____
    3: ____                                     7: ____
    4: ____                                     8: ____
```

Coverage Answer Group Form (Page 1 of 1)

Call Coverage Paths

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. A blank form should be reproduced for each coverage path to be implemented.

Call coverage provides internal System users with automatic redirection of calls to answering positions. Both internal and outside calls may be redirected to coverage. Up to 600 coverage paths can be implemented in the System.

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 Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

Action	Object	Qualifier*
Without Hospitality Parameter Reduction Feature	add	coverage path
	change	coverage path
	display	coverage path
	list	coverage path
	remove	coverage path
With Hospitality Parameter Reduction Feature	add	coverage path
	change	coverage path
	display	coverage path
	list	coverage path
	remove	coverage path

* 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:

- **Coverage Path Number** — Enter a number from 1 through 600 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 that if the Hospitality Parameters Reduction option is enabled on the System-Parameters Customer-Options form, only five (maximum) coverage paths can be assigned in the System.
- **Next Path Number** — Enter the number of the coverage path (1 through 600) 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. Calls not answered in path 1 are directed to path 2, and if not answered there are directed to path 3. Coverage Path screen forms are shown for each path. Each path is linked to the next path via the Next Path Number field entry on the associated screen forms as shown. For example, on the first screen, Coverage Path Number 1 is linked to Coverage Path 2 by the "2" entered in the Next Path Number field on the form. The *display coverage path 1* (screen four in the series) then shows (after all paths have been added) Coverage Path 1 with its "Next Path Number" (2) and Coverage Path 2 linkage to Coverage Path 3.
- **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/Go to Cover — allows users to activate Send All Calls and to temporarily 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, Alland DND/SAC/Go to Cover** — Enter a "y" to activate this criteria; otherwise, enter "n". 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 that a Call Vector or Vector Directory Number cannot be translated as a coverage point. 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 (1 through 99)
- — A Coverage Answer Group Number (1 through 200)
- — The Attendant Group ("attd")

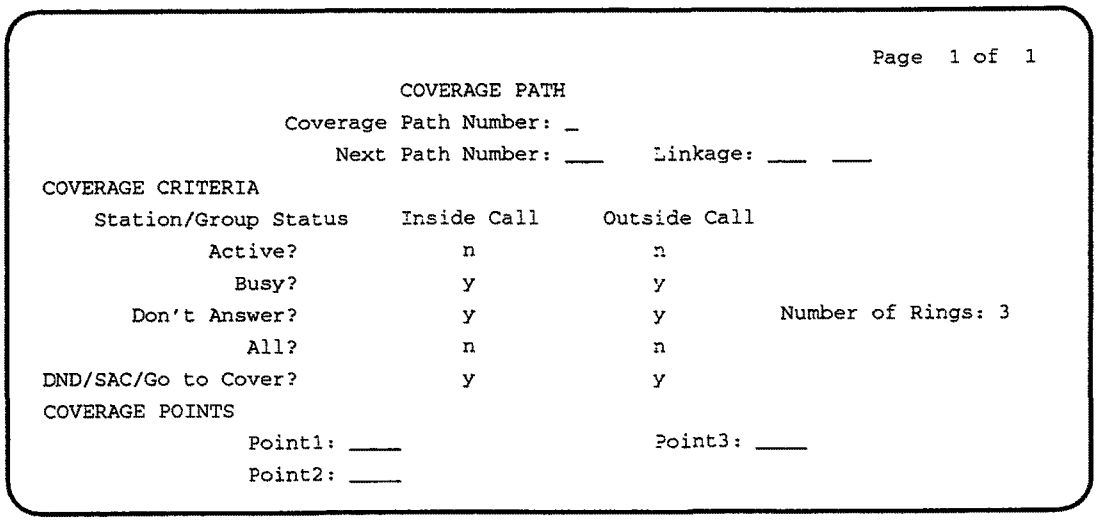
When entering data for the three coverage points, use the following notations:

- Use the letter "h" to indicate hunt, followed by a hunt group number (1 through 99). 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 (1 through 200). For example, you would enter "c100" if you wanted a coverage point to be routed to call coverage answer group 100.
- 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, h1-h32 (hunt), c1-c200 (coverage), **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 (h1-h32). 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.

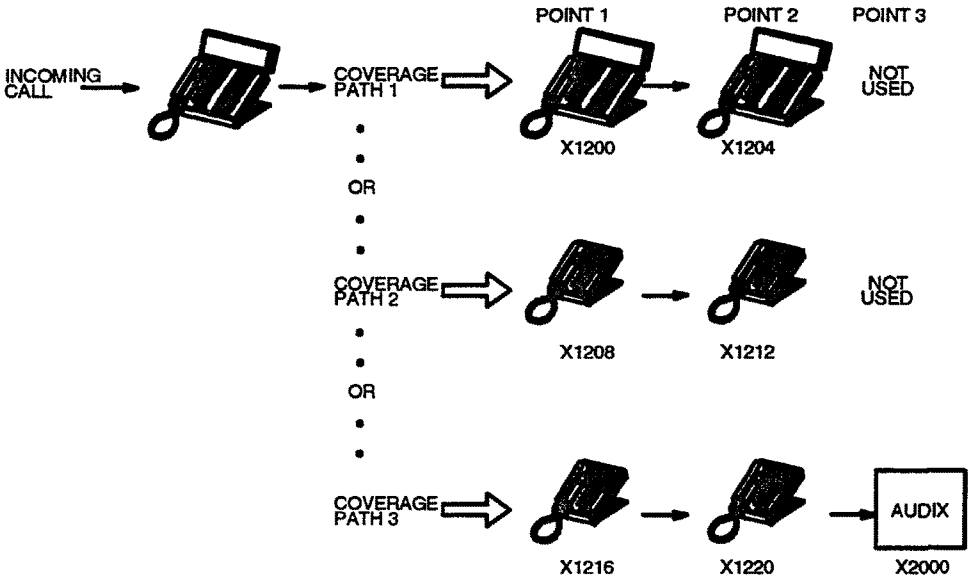
  If calls redirect to Message Center (a special Uniform Call Distribution hunt group), AUDIX, or to the attendant, do not list any additional coverage points. These calls will normally queue and never redirect to another coverage point.

  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.



```
                                                          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: ____
```

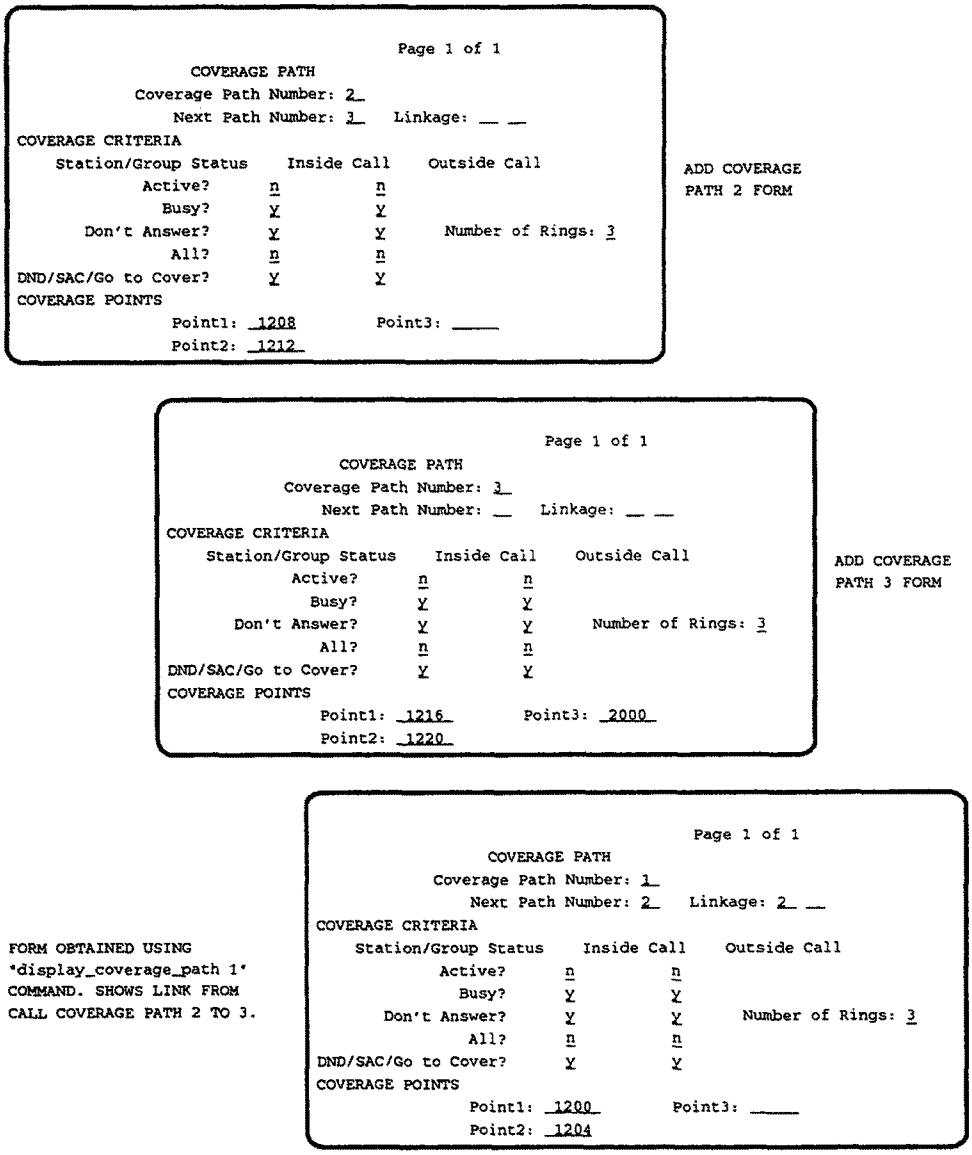
Coverage Path Form (Page 1 of 1)



ADD COVERAGE PATH 1 FORM

```
                                                    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



```
                                    Page 1 of 1
                          COVERAGE PATH
                    Coverage Path Number: 2
                       Next Path Number: 3   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: 1208          Point3: _____
                    Point2: 1212
```

ADD COVERAGE PATH 2 FORM

```
                                    Page 1 of 1
                          COVERAGE PATH
                    Coverage Path Number: 3
                       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: 1216          Point3: 2000
                    Point2: 1220
```

ADD COVERAGE PATH 3 FORM

FORM OBTAINED USING 'display_coverage_path 1' COMMAND. SHOWS LINK FROM CALL COVERAGE PATH 2 TO 3.

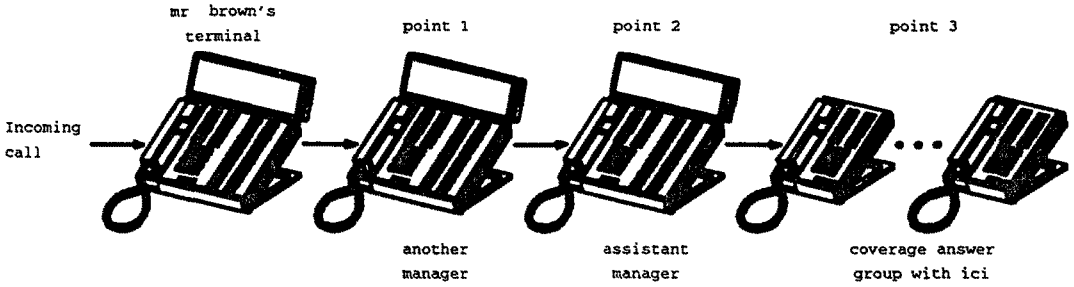
```
                                    Page 1 of 1
                          COVERAGE PATH
                    Coverage Path Number: 1
                       Next Path Number: 2   Linkage: 2 __
COVERAGE CRITERIA
    Station/Group Status    Inside Call    Outside Call
              Active?           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: 1200          Point3: _____
                    Point2: 1204
```

Figure 5-7. Example of Call Coverage Paths and Associated Linkage (Page 2 of 2)

EXAMPLE 1 COVERAGE PATH FOR OUTSIDE CALLS

call type - OUTSIDE

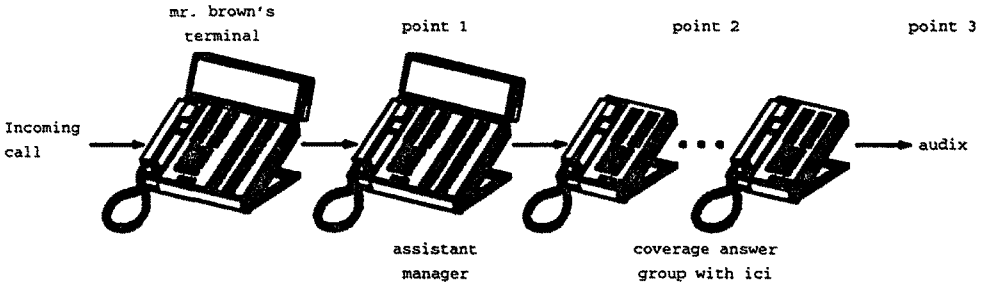
CRITERIA - busy, don't answer, and send all calls (when activated)



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

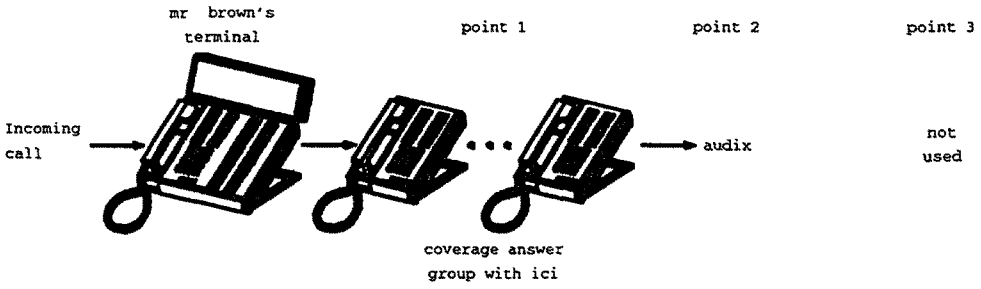


Figure 5-8. Typical Call Coverage Path Assignments

Call Vector

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.

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 and Error Messages (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	[1-256]
display	vector	[1-256] ['print' or 'schedule']
list	vector	[1-256] ['count' 1-256] ['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.

** Do not change a call vector while it is processing a call. It is recommended to add a new vector and then change the form to point to the new vector.

Form Instructions

Make assignments as required for the following fields on the form:

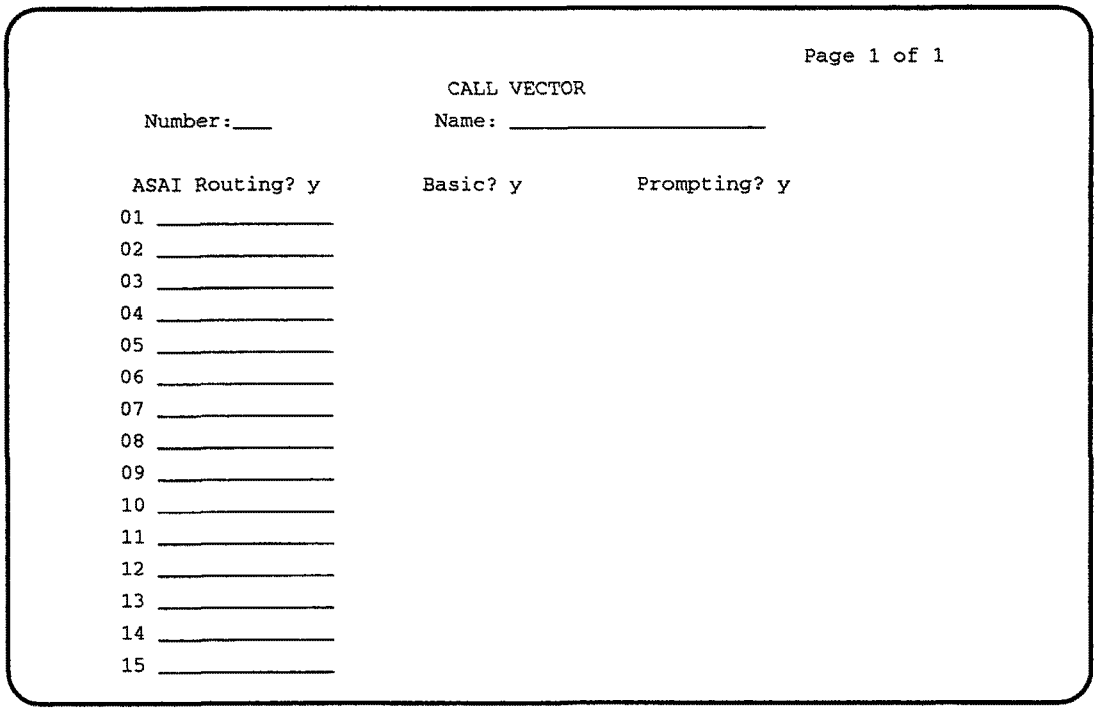
- **Number** — Display-only field when the form is accessed using a *change* or *display*administration command. Enter a vector number in the range from 1 through 256 when completing a paper form.
- **Name** — Enter up to 15 alphanumeric characters to represent the vector name. This is an optional field. Default is blank.
- **ASAI Routing** — Display-only field. Indicates whether or not the Adjunct/Switch Applications Interface (ASAI) Routing option is enabled on the System-Parameters Customer-Options (SPCO) form. Valid values are "y" or "n".
- **Basic** — Display-only field. Indicates whether or not the "Vectoring (Basic)" option is enabled on the SPCO form. Valid values are "y" or "n".
- **Prompting** — Display-only field. Indicates whether or not the "Vectoring (Prompting)" option is enabled on the SPCO form. Valid values are "y" or "n".

- **01** through **15** — Enter up to 15 vector commands as required. Any Command field which is left blank is skipped during vector processing. There is an implicit "Stop" after Step 15. Valid vector commands are: "adjunct", "announcement", "busy", "check", "collect", "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", "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. Up to 15 commands may be entered on the form. 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. Branching to other vectors from a vector is permitted but the system will stop all vector processing after 1000 vector steps have been processed.



```
                                                    Page 1 of 1

                              CALL VECTOR

 Number:____                  Name: ____________________

 ASAI Routing? y        Basic? y         Prompting? y
 01 ____________
 02 ____________
 03 ____________
 04 ____________
 05 ____________
 06 ____________
 07 ____________
 08 ____________
 09 ____________
 10 ____________
 11 ____________
 12 ____________
 13 ____________
 14 ____________
 15 ____________
```

Call Vector Form (Page 1 of 1)

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 routing request to the associated adjunct. This command is only available when the Inbound Call Management feature is active for.
announcement	extension _____. 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: 1-99, default is blank)	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: 1-99, default is blank)	priority _ if **available** agents > ___. priority: l (low), m (medium), h (high), t (top). Default is "m". *available agents* >: 0-199, *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 Detailed descriptions of the Call Vector and Call Prompting commands is provided in *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203.

(Continued on next page)

Table 5-2. Call Vector Commands *(continued)*

Command	Conditions *	Description **
check backup split _ (split: 1-99, default is blank)	priority _ if **staffed** agents > ___. priority: l (low), m (medium), h (high), t (top). Default is "m". staffed agents >: 0-199, 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: 1-99, default is blank)	priority _ if **calls** queued < ___. priority: l (low), m (medium), h (high), t (top). Default is "m". calls queued <: 1-199, 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: 1-99, default is blank)	priority _ if **oldest-call-waiting** < ___. priority: l (low), m (medium), h (high), t (top). Default is "m". oldest-call-waiting <: 2-998, 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 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".
disconnect	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: 1-15) -or- **goto vector**___ (vector: 1-256)	**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. Detailed descriptions of the Call Vector and Call Prompting commands is provided in *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203.

(Continued on next page)

Table 5-2. Call Vector Commands *(continued)*

Command	Conditions *	Description **
goto step__ (step: 1-15) -or- **goto vector**___ (vector: 1-256)	if **available-agents** in split __ is _ ___. split: 1-99, default is "blank". is: < or >, 0-200, 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 (0-200).
goto step__ (step: 1-15) -or- **goto vector**___ (vector: 1-256)	if **staffed-agents** in split __ is ___ split: 1-99, default is blank is < or >: 0-200, default is 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 greater than (>) the number specified (0-200).
goto step__ (step: 1-15) -or- **goto vector**___ (vector: 1-256)	if **calls-queued** in split __ is _ ___ pri _. split: 1-99, default is blank. is: < or >, 0-200, 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 (0-200). Check for queued calls at the priority level specified or at higher priority levels.
goto step__ (step: 1-15) -or- **goto vector**___ (vector: 1-256)	if **oldest-call-waiting** in split __ is _ ___. split: 1-99, default is blank. is: < or >, 0-998 (even numbers only), defaults are > and 2. 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 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: 1-15) -or- **goto vector**___ (vector: 1-256)	if **digits**_____ 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 *Collect* 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 Detailed descriptions of the Call Vector and Call Prompting commands is provided in *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203.

(Continued on next page)

Table 5-2. Call Vector Commands *(continued)*

Command	Conditions *	Description **
goto step__ (step: 1-15) -or- **goto vector**___ (vector: 1-256)	if **time-of-day** is ___ __:__ to ___ __:__. is (day) (hour):(minute) to (day) (hour):(minute): day: mon, tue, wed, thr, fri, sat, sun. 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: 1-99, default is blank)	for extension ____. 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".
queue> to main split ___ (split: 1-99, 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 * and # plus 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. Detailed descriptions of the Call Vector and Call Prompting commands is provided in *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203.

(Continued on next page)

Table 5-2. Call Vector Commands *(continued)*

Command	Conditions *	Description **
route	to **number**_____ if **digit** equals _. number: 1 to 16 digits (includes * and # plus 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 *collect* digits command matches the single digit (0-9) entered following the word "equals". Note that this command can only be used for routing 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 *collect* digits command.
stop	Form Fields: "Basic" or "Prompting" must be "y".	Enter *stop* to terminate processing of any subsequent vector steps. The following remain in effect after processing the *stop*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 hearing: silence, ringing, music Default is "silence". Form Fields: "Basic" 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. Detailed descriptions of the Call Vector and Call Prompting commands is provided in *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203

Circuit Pack Administration

Used to administer circuit packs to carrier slots before the circuit packs are actually installed in the carrier or cabinet. This then 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.

Refer to Chapter 1 for circuit pack administration forms and associated instructions. (Note that the DS1 circuit pack and associated translations coverage is provided in Chapter 3.)

NOTE:
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.

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:
Note that 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 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 and Error Messages" in chapter 3 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 Automatic Alternate Routing (AAR) and/or Automatic Route Selection (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.
- **APLT** — Enter "n" to allow access to 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: "origination", "outward", "all-toll", "tac-toll", or "none".
  - *origination* — Blocks the calling party from originating a call from the facility at any time. 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.

- **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 calling party from receiving incoming exchange network calls.
  - — *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 (1-8) 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:
  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.

  NOTE:
  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 an ACD call to be terminated on the station.
- **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 (that is, "trk-ac-alm") status lamp will light when a successful FAT access has occurred. Pressing one of the alarm buttons (ten maximum) when it's associated status lamp is lighted will turn off 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.
- **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".

- **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".
- **Category for CIS Ani** — Enter 1-10 to include the number in the ANI sent to the central office when the country is the Commonwealth of Independent States (country code 15). 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".

```
                        CLASS OF RESTRICTION

              COR Number: __                              FRL: _
                    APLT? _              Calling Party Restriction: _____
       Time of Day Chart: _               Called Party Restriction: _____
       Service Observing? _          Forced Entry of Account Codes? _
        Priority Queuing? _                    Direct Agent Calling? _
    Restricted Call List? _             Facility Access Trunk Test? _
Unrestricted Call Lists: __ __ __ __ __ __ __ __ __ __
    Restriction Override: _____
                                          Fully Restricted Service? _
     Category of CIS Ani: __
```

COR Form (Page 1 of 2)

```
                        CLASS OF RESTRICTION

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

COR Form (Page 2 of 2)

Class of Service (COS)

Used to administer access permissions for call processing features that require dial code and/or feature button access permission. Note that 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 3i Global Feature Description*, 555-230-203, 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
  - 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 and Error Messages (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.

```
                                                                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 Calls  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
```

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 and Error Messages" in chapter 3 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 15 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 from 1 through 300 to indicate the number of incoming calls that can be in the attendant queue before the console's Call Waiting lamp lights. The first (leftmost) 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; otherwise, enter "n". If "y" is entered, the attendant is prohibited from reentering a call that has been extended to a voice terminal unless recalled by a voice terminal user on the call. Default is "y".

- **Ext Alert Port (TAAS)** — Enter the port number assigned to the external alerting device (this supports the Night Service — Trunk Answer From Any Station feature). The first character identifies the port network (1 through 3, default is "1" if no entry); the second character identifies the carrier (A through E); the third and fourth identify the slot number in the carrier (01 through 20); the last two characters identify the circuit number (01 through 31).

  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.

- **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".

- **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 from 1 through 99 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 dialplan; 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 (1 through 99) 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".
- **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. Default is 20.
- **Alerting (sec)** — Enter the number of seconds (10 through 1024) after which a held or unanswered call is disconnected from an attendant loop. Default is 40.
- **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" (range is 1 through 1000). 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 Generic 3i Global Feature Description*, 555-230-203.

- **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 from 1 through 40 to indicate the number of consecutive extensions (beginning with the Start Extension) to be used as common shared extensions. Valid entries are 1 through 40, or leave blank.

  These extension numbers (with no physical voice terminals assigned) are used by the attendant to park calls. For example, you may enter 4300/3 which directs the System to store three consecutive extension numbers: 4300, 4301, and 4302. These numbers are given to the attendant so that he/she knows 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 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 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.

```
                          CONSOLE PARAMETERS                  Page 1 of 3
       Attendant Group Name: _____________________
                        COS: 0_                                   COR: 0_
     Calls in Queue Warning: 5_                  Attendant Lockout? y
      Ext Alert Port (TAAS): _______
                        CAS: none__
                                                Night Service Act. Ext.: xxxxx
              IAS (Branch)? n                   IAS Tie Trunk Group No.: ____
       IAS Att. Access Code: _____
                                        DID-LDN Only to LDN Night Ext? n
 TIMING
  Time Reminder on Hold (sec): 10__     Return Call Timeout (sec): 30__
  Time in Queue Warning (sec): ___
INCOMING CALL REMINDERS
      No Answer Timeout (sec): 20__     Alerting (sec): 30__

ABBREVIATED DIALING
     List1: ________          List2: ________          List3: ________

                   COMMON SHARED EXTENSIONS
  Starting Extension: _____          Count: __
```

Attendant Group Console Parameters Form (Page 1 of 3)

Implementation Note:

Default values are defined above.

```
                                                          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_
```

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:
```

Attendant Group Console Parameters Form (Page 3 of 3)

Data Modules

The following data modules can be used with the System:

- Data Line Data Module
- Modular Processor Data Modules/Modular Trunk Data Modules
- Netcon Data Module
- Processor Interface Data Module
- Recorded Announcement Data Module

This following pages describe the purpose of each data module and provide administration commands and form instructions.

Data Line Data Module

Used to assign ports on the TN726 Data Line circuit pack (DLC) that allows EIA (EIA 232C) devices[1] 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, 4800, 9600, and 19200 bps (bits per second) 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
- ISN (Information Systems Network), EIA 232C LANs (Local Area Networks), or other data switches

The following figure shows some typical DLC applications.

1. In this chapter, the term "device" is used to refer to EIA (EIA 232C) equipment including data terminals, personal computers, printers, and host computers

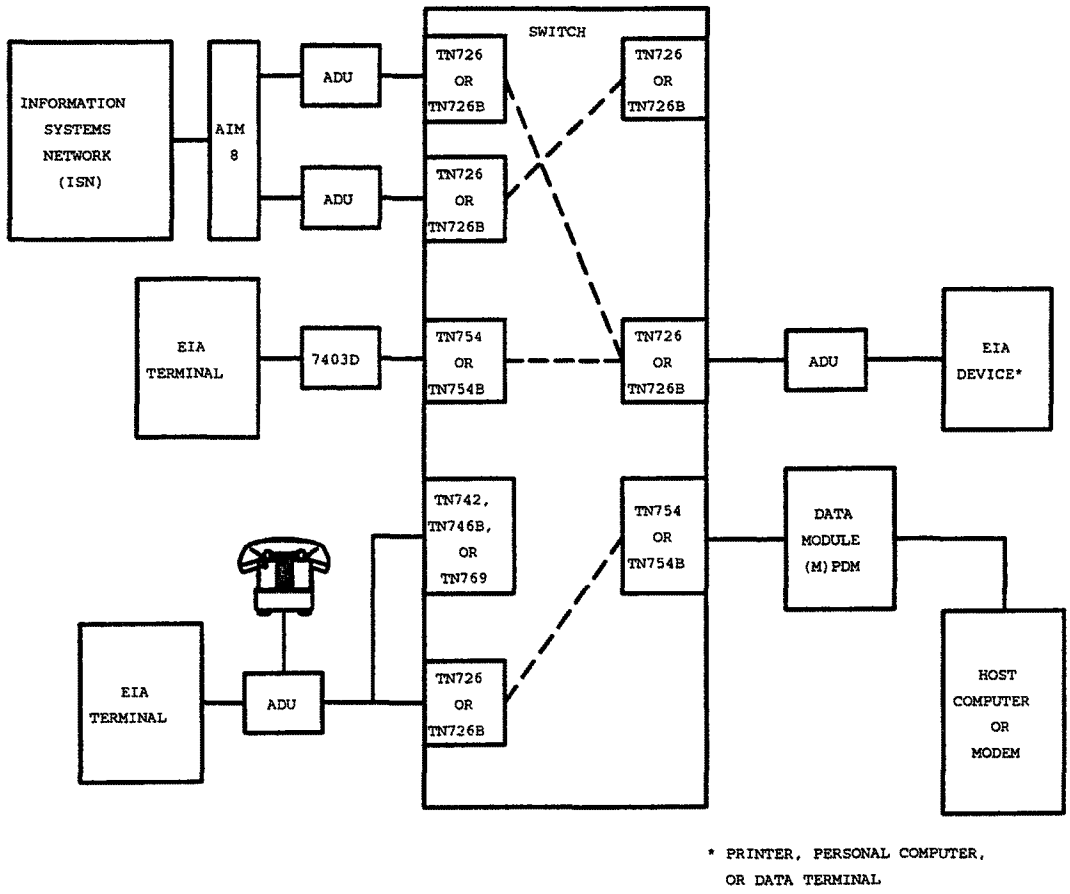


Figure 5-9. TN726 Data Line Circuit Pack Applications

Administration Commands

The following administration commands can be used to access the Data Line Data Module form. In some cases, just the most commonly used commands are shown. Refer to Administration Commands and Error Messages (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) — 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. 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 the Generalized Route Selection feature description in *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203, 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 five to six characters. For multi-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 20 depending on carrier type), and circuit number (01 through 24). For single-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 18 depending on cabinet type), and circuit number (01 through 31).
- **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 through 15. Default is "1".
- **COR** — Enter the desired class of restriction (COR) number from 0 through 95. Default is "1".
- **Connected To** — Enter "dte" (Data Terminal Equipment) or "isn" (Information Systems Network). This field shows what the ADU (Asynchronous Data Unit) is connected to. Default is "dte".
- **List1** — Enter "p" for personal, "s" for system, "g" for group, or "e" for enhanced. If "g" or "p" is entered, a group number (1 through 100) or personal list number (1 through 3) 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** — Only displayed when the Special Dialing Option field is "hot-line". Enter a list number (associated with the above AD List) from 0 through 999. The associated AD (Abbreviated Dialing) number will be dialed when the user goes off-hook on a Data Hot Line call.
- **DEFAULT DIALING Abbreviated Dialing Dial Code From above list** — Only displayed when the Special Dialing Option field is "default". Enter a list number (associated with the above AD List) from 0 through 999. 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. 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 this extension number.

Page 2 of the Form

Refer to the DLC Option Settings information that follows these instructions for additional information when assigning entries for the remaining fields on the form.

- **KYBD Dialing** — Enter "y" to allow keyboard dialing; otherwise, enter "n". This enables the data endpoint to receive and transmit text during call origination or termination. If "y" is entered, complete the following applicable fields. If "y" is entered in this field, an "n" must be entered in the Low field.

  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.

- **Configuration** — Enter "y" to allow the viewing and changing of options from the DTE; otherwise, enter "n". (This field appears only when "KYBD Dialing" is enabled.)

  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; otherwise, enter "n". 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 set to 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 set to the highest selected speed. This is required because all feedback text is delivered to the DTE at the highest selected speed.

- **SPEEDS — Autoadjust** — 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. (This field only appears when "KYBD Dialing" is enabled.) 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 only) during the handshake process. 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 be set to 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** — Enter "y" to echo characters back to the DTE; otherwise, enter "n". (This field is enabled only if "KYBD Dialing" is enabled.) Dial echoing should be disabled when keyboard dialing is done by an intelligent device.
- **Disconnect Sequence** — 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. (This field is enabled only when "KYBD Dialing" is enabled.)

- **Answer Text** — 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 field is enabled only when "KYBD Dialing" is enabled.)

  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** — Enter "even", "odd", "mark", or "space" to select the desired type of parity. (This field is enabled only when "KYBD Dialing" is enabled.) 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 only for the DLC to terminal communications during call setup.

- **Connected Indication** — Enter "y" to give text feedback to the DTE when a connection has been established. (This field is enabled only when "KYBD Dialing" is enabled.) 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	*Subject to distance limitations; Autoadjust not used*
KYBD Dialing	no	
Busy Out	yes	*If printer is member of Hunt Group*
Permit Mismatch	yes	*No, if printer is low speed*
Parity	-	*Don't care*
Dial Echoing	-	*Don't care*
Disconnect Sequence	-	*Don't care*
Answer Text	-	*Don't care*
Connected Indication	-	*Don't care*
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	*Subject to distance limitations; Autoadjust only if Keyboard Dialing is yes and the Terminal can generate an ASCII "carriage return"*
KYBD Dialing	yes	
Busy Out	no	*Yes, if terminal is member of a hunt group*
Permit Mismatch	yes	-
Parity	Same as DTE	
Dial Echoing	yes	*Only if KYBD Dialing is yes*
Disconnect Sequence	2 <BREAK>s	*Depends on terminal*
Answer Text	yes	
Connected Indication	-	*Don't care*
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	*Subject to distance limitations; Autoadjust not used*
KYBD Dialing	yes	
Busy Out	no	*Yes, if device is accessed through a hunt group*
Permit Mismatch	yes	*No, if device does not support XON/XOFF flow control*
Parity	Same as DTE	
Dial Echoing	no	*These devices can dial in the ASCII stream without human intervention*
Disconnect Sequence	Long <BREAK>	-
Answer Text	no	*These devices may not want to see any text*
Connected Indication	-	*Don't care*
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	*Subject to distance limitations; Autoadjust not used*
KYBD Dialing	no	
Busy Out	-	*Don't care*
Permit Mismatch	-	*Don't care*
Parity	-	*Don't care*
Dial Echoing	-	*Don't care*
Disconnect Sequence	-	*Don't care*
Answer Text	-	*Don't care*
Connected Indication	-	*Don't care*
Configuration	-	*Don't care*

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	*Subject to distance limitations; Autoadjust not used*
KYBD Dialing	yes	
Busy Out	no	*Yes, if computer is accessed through a hunt group*
Permit Mismatch	yes	*No, if computer does not support XON/XOFF flow control*
Parity	Same as DTE	
Dial Echoing	no	*The computer can dial in the ASCII stream without human intervention*
Disconnect Sequence	Long <BREAK>	-
Answer Text	no	*The computer may not want to see any text*
Connected Indication	-	*Don't care*
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 next two 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	*Subject to distance limitations; Autoadjust not used*
KYBD Dialing	no	
Busy Out	no	*Yes, if ISN is accessed through a hunt group*
Permit Mismatch	no	*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*
Parity	Same as ISN	
Dial Echoing	no	*The ISN can dial in the ASCII stream without human intervention*
Disconnect Sequence	Long <BREAK>	
Answer Text	no	*The ISN may not want to see any text*
Connected Indication	-	*Don't care*
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	*Subject to distance limitations; Autoadjust not used*
KYBD Dialing	yes	
Busy Out	-	*Don't care*
Permit Mismatch	no	*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 be at no greater than 9.6 kbps*
Parity	Same as ISN	
Dial Echoing	yes	
Disconnect Sequence	Long <BREAK>	
Answer Text	no	*The ISN may not want to see any text*
Connected Indication	-	*Don't care*
Configuration	no	

```
                                                          Page 1 of 2
                            DATA MODULE
     Data Extension:       BCC: __      Type: data-line          Port : __
              Name: _______________      COS: 1_                   COR: 1_
       Connected To: dte_
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:
```

Data Line Data Module Form (Page 1 of 2)

Implementation Note:

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".

```
                                                          Page 2 of 2
                                DATA MODULE
CAPABILITIES
                 KYBD Dialing? y                    Configuration? n
                     Busy Out? n
SPEEDS
       Low? n           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
```

NOTE:
If KYBD Dialing is "y", the above page is displayed

```
                                                          Page 2 of 2
                                DATA MODULE
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
```

NOTE:
If KYBD Dialing is "n", the above page is displayed

Data Line Data Module Form (Page 2 of 2)

Modular Processor Data Modules/Modular Trunk Data Modules

Used to assign Modular Processor Data Modules (MPDMs) and Modular Trunk Data Modules (MTDMs) in the system. 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 in the System.

The MPDM or 7400B Data Module provides a Data Communications Equipment (DCE) interface for connection to equipment such as data terminals, Station Message Detail Recording (SMDR) output devices, on-premises administration terminal, Message Server, Property Management System (PMS), Audio Information Exchange (AUDIX), and host computers. It also provides a Digital Communications Protocol (DCP) interface to the digital switch. (Digital Communications Equipment 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. (Data Terminal Equipment 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 make up 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 the MPDM/MTDM form. In some cases, just the most commonly used commands are shown. Refer to Administration Commands and Error Messages (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

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 that 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)** — 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. 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 the Generalized Route Selection feature in *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203, 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 five or six character port location to which the data module is connected. For multi-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 20 depending on carrier type), and circuit number (01 through 24). For single-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 18 depending on cabinet type), and circuit number (01 through 31).
- **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 through 15. Default is "1".

- **COR** — Enter the desired class of restriction (COR) number from 0 through 95. Default is "1".
- **Connected to** — 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; otherwise, enter "n". In general, AT&T equipment will support this test but it is not required by Level 2 Digital Communications Protocol.
- **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 (1 through 100) or personal list number (1 through 3), 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** — Only displayed when the Special Dialing Option field is "hot-line". Enter a list number (associated with the above AD List) from 0 through 999. 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 From above list** — Only displayed when the Special Dialing Option field is "default". Enter a list number (associated with the above AD List) from 0 through 999. 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** — 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.

```
                                                          Page 1 of 1
                              DATA MODULE
        Data Extension: ____   BCC: __     Type: pdm_________      Port : __
                  Name: _______________     COS: 1_                 COR: 1_
      Connected to: ___                          Remote Loop-Around Test: __
    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:
```

MPDM/MTDM Data Module Form (Page 1 of 1)

Implementation Note:

The Type field may be either "pdm" or "tdm". If "tdm" is entered, the Connected to field is not displayed.

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".

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 SMDR line printer. They are characterized by their special locations, that is, special port identifications.

NOTE:
Refer to Data Modules in Chapter 3 for information on the administration, considerations, and uses of a Netcon channel interface.

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 and Error Messages (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 3i Global Feature Description*, 555-230-203, 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.
- **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.
- **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) from 0 through 999. 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:   BCC: __        Type: netcon_____  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:
```

Netcon Data Module Form (Page 1 of 1)

Implementation Note:

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".

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. 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 and Error Messages (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, etc. 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" 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. 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) from 0 through 999. 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:
```

Processor Interface Data Module Form (Page 1 of 1)

Implementation Note:

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".

Recorded 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 (see Recorded Announcements in Chapter 3) allows the System to transfer the recorded announcements file from the TN750 announcement circuit pack to the System tape (save operation) and from the System tape to the announcement circuit pack (restore operation).

Administration Commands

The following administration commands can be used to access the Recorded Announcement Data Module form. In some cases, just the most commonly used commands are shown. Refer to Administration Commands and Error Messages (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:

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 announcement board number that indicates the physical board the announcement module is connected to. Enter three to four characters. 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).

- **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 through 15. Default is "1".
- **COR** — Enter the desired class of restriction (COR) number from 0 through 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.

```
                                                          Page 1 of 1
                              DATA MODULE
 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:
```

Recorded Announcement Data Module Form (Page 1 of 1)

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 3i Global Feature Description*, 555-230-203, 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 and Error Messages (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:

Page 1 of the Form

- **Area Code** — 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.
- **Local PBX ID** — Enter a number from 1 through 63 to uniquely identify a node in a PBX network. The PBX ID is used by the automatic restoration capability of Administered Connections. The PBX ID entry must match the DCS switch node number and the SMDR node number if they are specified. The field may be left blank if automatic restoration, DCS, and SMDR are not used.
- **ARS Prefix 1 Required** — Enter "y" (system default) if dialing a "1" is required to call an area code; otherwise, enter "n". Enter "y" if the office codes in the HNPA are interchangeable with NPAs; otherwise, enter "n". 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.

  The following examples show how dialed numbers are interpreted by the System if "y" is assigned to ARS Prefix 1 Required field. The number 9 represents the ARS Access Code.

— *9+1+(212)-201-1234* infers a 10-digit toll call.

— *9+(212)-201-1234* infers that 212 is a local 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.

— *9+201-1234* infers a 7-digit call within the Home Number Plan Area (HNPA).

— *9+1+201-1234* infers the first seven digits of a 10-digit toll call. The System waits for the remaining three digits. The number outpulsed 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 example above, then the HNPA must also be included in the number dialed (refer to example number 1).

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

- **Uniform Dialing Plan** — Enter "y" if a Uniform Dialing Plan is to be administered on this switch; otherwise, enter "n" (System default). If this field is set to "y", the Dial Plan becomes six pages. Note that the Uniform Dialing Plan option must be enabled on the System-Parameters Customer-Option form before a "y" can be entered in this field.

  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, Main/Satellite/Tributary, or DCS configurations.

- **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 a dialed digit length of 1 through 5.

  NOTE:
  If the Uniform Dialing Plan is enabled, no extensions should be administered which begin with "0".

  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 interdigit 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 # characters) and be one to four digits in length. For example, 9 could be used for local trunk access, 8 for Wide Area Telecommunications System (WATS) trunk access, and 7 for tie trunk access. A TAC must be the last item entered in a row when mixed station numbering is used. Note that 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.

— "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.

— "prefixed extension" — Is made up of a prefix (first digit) which 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, no other dial type (that is, extension, fac, tac) or prefixed extension can be entered on the same row on 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). Note that 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 interdigit time-out to ensure that all dialed digits are collected. The interdigit 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.

- **Plan Length** — Only displayed if the Uniform Dialing Plan field entry is "y". Enter the number of digits in the UDP. Valid entries are "4" or "5". Default is "4". These numbers are used to signify the use of a 4- or 5-digit Dial Plan.

Pages 2 through 6 of the Form

The following fields are only displayed if the Uniform Dialing Plan field entry is "y".

- **CODE** — Enter a PBX Code number (1-9999) representing the first one, two, three, or four digits of a 4- or 5-digit extension. Each PBX Code will have an associated LCL, RNX, and ID field. Fields are provided for up to 240 PBX Codes. It is possible that the code can be the same as a local extension number. In this case, the UDP PBX code overrides the extension number at the local switch.
- **LCL** — Enter "y" if the associated PBX Code is local to the System being administered. Enter "n" if it is located on a remote switch or PBX.

  CAUTION:
  Do not assign extensions as remote extensions (LCL = "n") if they are currently administered to facilities on this switch.

- **RNX** — Enter the RNX assigned to the associated PBX in the form XXX (where X is any digit 0-9). In the System UDP, the PBX code yields the associated RNX and this RNX is then used to select a Routing Pattern for the call.
- **ID** — Enter a number from 1-63 representing a specific switch. At present, this field is used only with DCS. If DCS is not used, leave this field blank.

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) which 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.

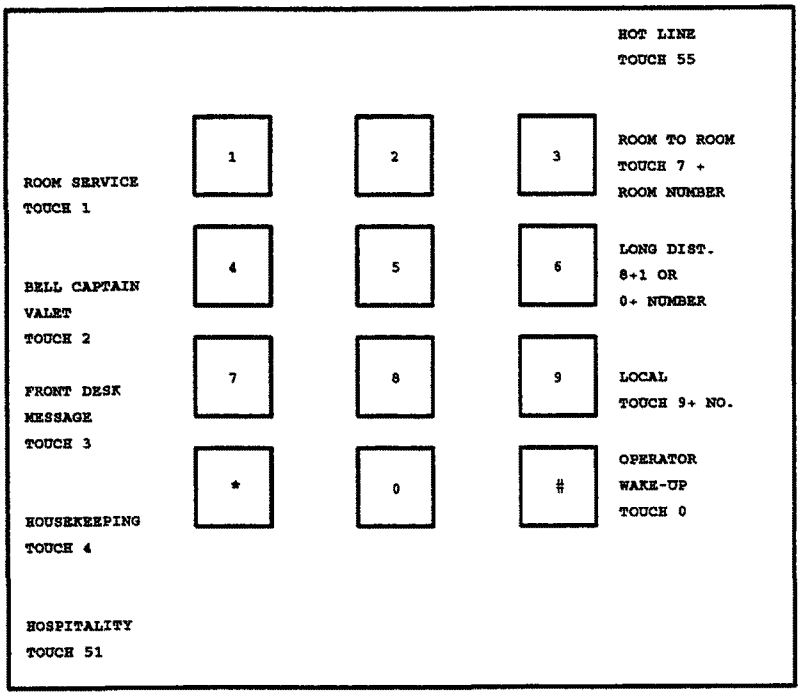


Figure 5-10. Typical Hotel/Motel Feature Assignments

Page x of the Form (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.

- **Digit** — A display-only field that marks the value of the second digit.
- **Identification** — Enter a 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, 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
                                Area Code: ___                Local PBX ID: __
                      ARS Prefix 1 Required? y
                       Uniform Dialing Plan? n
FIRST DIGIT TABLE
First                                      Length
Digit    -1-          -2-          -3-          -4-          -5-          -6-
  1: _________    _________    _________    _________    _________    _________
  2: _________    _________    _________    _________    _________    _________
  3: _________    _________    _________    _________    _________    _________
  4: _________    _________    _________    _________    _________    _________
  5: _________    _________    _________    _________    _________    _________
  6: _________    _________    _________    _________    _________    _________
  7: _________    _________    _________    _________    _________    _________
  8: _________    _________    _________    _________    _________    _________
  9: _________    _________    _________    _________    _________    _________
  0: _________    _________    _________    _________    _________    _________
  *: _________    _________    _________    _________
  #: _________    _________    _________    _________
```

Dial Plan Record Form (Page 1 of 1)

Implementation Note:

This is a 1-page form if the Uniform Dialing Plan field is "n".

```
                               DIAL PLAN RECORD                Page 1 of 6
                             Area Code: ___           Local PBX ID: ___
                      ARS Prefix 1 Required? y
                       Uniform Dialing Plan? y           Plan Length: 5
FIRST DIGIT TABLE
First                                  Length
Digit  -1-          -2-         -3-         -4-         -5-         -6-
  1: __________  __________  __________  __________  __________  __________
  2: __________  __________  __________  __________  __________  __________
  3: __________  __________  __________  __________  __________  __________
  4: __________  __________  __________  __________  __________  __________
  5: __________  __________  __________  __________  __________  __________
  6: __________  __________  __________  __________  __________  __________
  7: __________  __________  __________  __________  __________  __________
  8: __________  __________  __________  __________  __________  __________
  9: __________  __________  __________  __________  __________  __________
  0: __________  __________  __________  __________  __________  __________
  *: __________  __________  __________  __________
  #: __________  __________  __________  __________
```

Dial Plan Record Form (Page 1 of 6)

Implementation Note:

This form becomes six pages if the Uniform Dialing Plan field is "y".

```
                         UNIFORM DIALING PLAN                   Page 2 of 6
  CODE LCL RNX ID    CODE LCL RNX ID    CODE LCL RNX ID    CODE LCL RNX ID
  ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
  ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
  ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
  ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
  ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
  ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
  ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
  ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
  ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
  ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
  ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
  ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
```

(To reduce repetition, pages 3 through 5 are not shown.)

```
                          UNIFORM DIALING PLAN                 Page 6 of 6
   CODE LCL RNX ID    CODE LCL RNX ID    CODE LCL RNX ID    CODE LCL RNX ID
   ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
   ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
   ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
   ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
   ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
   ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
   ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
   ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
   ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
   ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
   ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
   ____  _  ___ __    ____  _  ___ __    ____  _  ___ __    ____  _  ___ __
```

Dial Plan Record Form (Pages 2 through 6)

```
                       SECOND DIGIT TABLE FOR DIGIT _      Page 1 of 1
SECOND DIGIT TABLE
Digit  Identification   Number of     Digit  Identification   Number of
                        Digits                                Digits
   0: __________          0              5: __________           0
   1: __________          0              6: __________           0
   2: __________          0              7: __________           0
   3: __________          0              8: __________           0
   4: __________          0              9: __________           0
```

Second Digit Form (Pages 1 of 1)

Digit Absorption

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 and Error Messages (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 — 0, 1, 2 , 3, 4, 5, 6, 7, 8,** or **9** — Enter a desired treatment letter (A through F). All choices for the digits 0-9 must be taken from the same group (that is, Group I or Group II). Default is "A".

```
                                                          Page  1 of 1
                          DIGIT ABSORPTION
                        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
```

Digit Absorption Form (Page 1 of 1)

Feature Access Codes

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 and Error Messages (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

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.

  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.

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 Access Code** — 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.

- **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.

Page 4 of the Form

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 a do not disturb request without using a display — through the use of voice prompting.

```
                                                          Page 1 of 4
                          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: ____
                       Data Origination Access Code: ____
                           Data Privacy Access Code: ____
         Emergency Access To Attendant Access Code: ____
                    Facility Test Calls Access Code: ____
       Flash/Public CO Register Recall Access Code: ____
```

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.

```
                                                        Page 2 of 4
                        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: ____
                Print Messages Access Code: ____
             Priority Calling Access Code: ____
                     Program Access Code: ____
               Send All Calls Activation: ____   Deactivation: ____
            SMDR Account Code Access Code: ____
          Transfer into 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: ____
```

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: ___
```

Feature Access Code Form (Page 3 of 4)

Implementation Note:

The ACD split group features are displayed when the optional ACD feature has been enabled on the System-Parameters Customer-Options form.

```
                                                    Page 4 of 4
                    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: _____
```

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

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 and Error Messages (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.

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 3i Global Feature Description*, 555-230-203.

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 set up 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.
- **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 a tone from off-premises during dialing. Once the time-out interval occurs, any additional call progress tones will not be recorded. Default is 20.

  This timer should be less than or equal to the trunk Answer Supervision Timeout and/or Outgoing End of Dial timer.
- **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; otherwise, enter "n". 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.

  A tone is generated if the administered tone generation set maps to the Italian or Belgium tone plan or a hold tone is specified in the Tone Name field of the System Parameters Country Options form. See the Base Tone Generation Set on the System Parameters Country Options form for more details. In addition, refer to appendix B to determine the country codes that map to Italy and Belgium.
- **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 an analog line circuit pack. For multi-carrier cabinets, enter the port network (1 through 3), the carrier letter (A through E), the slot numbers (01 through 20 depending on carrier type), and circuit number (01 through 24). For single-carrier cabinets, enter the port network (1 through 3), the carrier letter (A through E), the slot numbers (01 through 18 depending on cabinet type), and circuit number (01 through 31).
- **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.
- **Messaging Service Adjunct (MSA) Connected** — Enter "y" if MSA is connected to the System; otherwise, enter "n". Default is "n".
- **Automatic Circuit Assurance (ACA) Enabled** — 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.

Page 2 of the Form

- **Primary Output Layout** — Specifies the output format that is sent to the primary recipient of SMDR data which is less likely to lose data. Valid

entries are dependent on the Output Layout Fields information as shown in the following table.

- **Primary Output Destination** — Appears when the Primary Output layout is not blank. Enter the assigned extension or "eia".
- **Secondary Output Layout** — Specifies the output format that is sent to the secondary recipient of SMDR data. Valid entries are shown in the following table and depend on the Primary Output Layout field entry.
- **Secondary Output Destination** — Appears when the Primary Output layout is not blank. Enter the assigned extension or "eia".

NOTE:
Both the Primary Output Layout and the Secondary Output Layout fields can be administered to provide International output records that include PPM data.

Table 5-10. SMDR Primary/Secondary Output Layout Fields (Standard)

Description	Primary Output Layout Field Entry	Secondary Output Layout Field Entry
A record layout that can be sent to COMSTOR.	59-char	cdru/lsu, int-direct, int-process, or blank
A 24-word layout which has space between fields and can be output to printers, personal computers, etc.	expanded	cdru/lsu, unformatted int-direct, int-process, or blank
A generic local storage unit. Either 94A/LSU or 3B2 SMDRU fits this category. This is an 18-word record.	cdru/lsu	cdru/lsu, int-direct, int-process, or blank
An 18-word record layout which has spaces between the fields and can be output to printers, PCs, etc.	printer	cdru/lsu, int-direct, int-process, or blank
An 18-word record layout that can be sent to AT&T CAS or TELESEER SMDR.	teleseer	cdru/lsu, int-direct, int-process, or blank
A 24-word record layout that has no spaces between the fields and can be sent to printers, PCs, and the 3B2 SMDRU.	unformatted	cdru/lsu, unformatted, int-direct, int-process, or blank
An international V2 printer layout with a PPM count	int-direct	cdru/lsu,int-direct, int-process, or blank
An international TELSEER printer layout with a PPM count	int-process	cdru/lsu, int-direct, int-process, or blank
An international ISDN layout	int-isdn	cdru/lsu, int-direct, int-process, or blank
	leave blank	cdru/lsu unformatted int-direct, int-process

- **Use ISDN Layouts** — Displayed when the ISDN-PRI option is enabled on the System Parameters Customer Option form. Enter "y" if the SMDR port is to output data in ISDN format; otherwise, enter "n". If either the Primary Output Layout field is "59-char", or both the Primary Output Layout and Secondary Output Layout fields are blank, this field is not displayed.
- **EIA Device Bit Rate** — Enter the operating speed of the SMDR device. This field must be completed if "eia" was entered in the Output Ext. field. Valid entries are "300", "1200", "2400", "4800", or "9600". Default is "9600".
- **SMDR Account Code Length** — Enter the number of digits that will be collected by call processing when an SMDR account code is entered in the System. Valid entries are 1-15. All account codes must be the same length. Default is "2".
- **Record Outgoing Calls Only** — Enter "y" to record SMDR information on outgoing calls only; otherwise, enter "n". An entry of "n" enables both incoming and outgoing calls to be recorded. Default is "n".
- **Disconnect Information In Place of FRL** — Enter "y" to allow call disconnect data to be recorded in the place of an FRL data on the SMDR report; otherwise, enter "n" (default). An entry of "n" enables FRL field data to be recorded on the SMDR report. If "y" is entered, the following call disconnect data (0 through 3) is printed on the SMDR report instead of the FRL data:
  - "0" — Don't know who dropped first
  - "1" — Station disconnected
  - "2" — The trunk dropped first
  - "3" — Maintenance seized the trunk
- **Forced Entry of Acct Code for Calls Marked on Toll Analysis Form** — Enter "y" or "n" to indicate whether or not an account code will be required when making an outgoing call. The dialed strings associated with calls that require account codes are defined on the Toll Analysis form. Entering "y" requires the Forced Entry of Account Codes feature to be enabled on the System-Parameters Customer-Options form. Default is "n".
- **Suppress SMDR for Ineffective Call Attempts** — Enter "y" to suppress recording unsuccessful call attempts; otherwise, enter "n". An ineffective call attempt is a call originating at the station on the System that is blocked due to an insufficient FRL, Authorization Code feature, or no available outgoing trunks. Default is "y".
- **Calls to Hunt Group-Record** — Allows SMDR to record calls made to a hunt group or member of a hunt group. Valid entries are "group-ext" for the hunt group or "member-ext" for member of a hunt group. Default is "member-ext".

- **Record Called Vector Directory Number Instead of Group or Member** — Enter "y" if a Vector Directory Number (VDN) will be included in the Dialed Number field of an SMDR record; otherwise, enter "n". Note that this option overrides the "Calls to Hung Group Record" option. If a call is directed through more than one VDN, the first VDN is stored on the SMDR record. Default is "n".
- **Record Non-Call-Associated Temporary Signaling Connections**— Only displayed if the Use ISDN Layouts field entry is "y". Used to specify whether Non-Call Associated Temporary Signaling Connections (NCA-TSC) should be recorded for SMDR. Note that information about Call Associated TSCs (CA-TSCs) will be automatically included in the ISDN-format SMDR records of the associated calls if the Use ISDN Layouts field entry is "y". Valid entries are "y" and "n".
- **Record Call-Associated Temporary Signaling Connections**— Displayed if the Use ISDN Layouts entry is "y". Used to specify whether call-associated temporary signaling connections (CA-TSCs) should be recorded in SMDR.
- **Privacy - Digits to Hide** — Enter the number of digits to be blanked from the call record. This supports certain country requirements that specify a certain number of digits to be blanked from all calls. Valid entry is a number in the range of 0 through 7. Default is "0".
- **Intra-switch SMDR** — Only displayed when the Primary Layout field entry is other than "59-char". Enter "y" to allow SMDR records to be generated for internal calls to or from an administered set of extensions. Otherwise, enter "n". Valid entries are "y" and "n". Default is "n".
- **SMDR Call Splitting** — Enter "y" to indicate that the charges for transferred or conferenced calls should be split among call participants according to the time each spent on the call.
- **Attendant Call Recording** — Enter "y" to indicate that a separate SMDR record should be generated for the attendant when a call is handled through him or her.

Page 3 of the Form

- **Reserved Slots for Attendant Priority Queue** — Enter the number of calls (2 through 75) that can go in to 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 10 to 3000 seconds. Default is "10".
- **Emergency Access Redirection Extension** — Enter the extension number (can be a VDN) where emergency queue overflow will redirect.
- **Service Observing Warning Tone** (see Note) — 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. Enter "n" if this feature is not desired. 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.

- **Outbound Call Management COR** — Enter desired class of restriction (COR) number from 0 through 95.
- **Outbound Call Management COS** — Enter desired class of service (COS) number from 0 through 15.
- **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", "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", "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".
- **Deluxe Paging and Call Park Timeout to Originator** — An entry of "y" enables the Loudspeaker Paging — Deluxe feature which 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. Timed out parked calls return to the attendant. Default is "n".
- **Authorization Code Enabled** — An entry of "y" enables the Authorization Codes feature on a system-wide basis. This field cannot be administered if the Authorization Codes feature is not enabled on the System-Parameters Customer-Options form. Default is "n".
- **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 displayed and must be completed if the Authorization Codes Enabled field is enabled. This is the number of digits that must be assigned to the Authorization Code (AC) field on the Authorization Code form. Default is "7".

- **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 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. Default is "n".

Page 4 of the Form

System Printer Parameters (printer dedicated to support the Report Scheduler feature):

- **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.
- **EIA Device Bit Rate** — Enter "1200", "2400", "4800", or "9600" per the required printer speed setting. Default is "1200".
- **Lines Per Page** — Enter the number of lines per page required for the report. Valid entries are 24 through 132 (system default is 60).

Basic Call Management Parameters:

- **BCS 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** — "R3" is the only acceptable entry here.
- **Automatic Call Distribution (ACD) Log-In Identification** — Enter 0 through 9 to indicate the length of the code that must be dialed in order to access Automatic Call Distribution (ACD). Default is "0".

Page 5 of the Form

Leave Word Calling Parameters/Security Violation Notification Parameters

- **Maximum Number of Messages Per Station (when MSA not in service)** — Enter the maximum number of Leave Word Calling Messages (0 through 125) 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 ten voice terminal extension numbers that can retrieve Leave Word Calling Messages for all other voice terminals. The entry "attd" is a valid substitute for the number of the attendant's extension. A VDN extension is not allowed. A 0 (zero) entry gives retrieval permission to all attendants.
- **SVN Login Violation Notification Enabled** — Enter "y" if an audit trail of login security violations will be maintained and whether a designated referral destination will be notified in the event of a login security violation. Otherwise, enter "n". Valid entries are "y" or "n". Default is "n".

  The following four fields are only displayed when the SVN Login Violation Notification Enabled field entry 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. Default is blank.
- **Referral Destination** — Enter "attd" or 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.
- **Login Threshold** — Enter the minimum number of Manager I or SAT-PC login security violations 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. Valid entry is a number in the range 1 through 9. Default is "5".
- **Time Interval** — Enter the time period that the login security violations must occur within. The time interval is specified as two fields separated by a colon (that is, h:mm). Default is "0:03".
- **SVN Remote Access Violation Notification Enabled** — Enter "y" if an audit trail of remote access security violations will be maintained and whether a designated referral destination will be notified in the event of a remote access violation. Otherwise, enter "n". Valid entries are "y" or "n". Default is "n".

  The following four fields are only displayed when the SVN Remote Access Violation Notification Enabled field entry 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 "attd" or the extension assigned to the station 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 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. Valid entry is an number in the range 1 through 99. Default is "10".

— **Time Interval** — Enter the time period that the remote access security violations must occur within. The time interval is specified as two fields separated by a colon (that is, h:mm). Default is "0:03".

```
                                                          Page 1 of 5
                      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? __
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: 1c700
          Music (or Silence) On Transferred Trunk Calls: n
                     DID/Tie/ISDN Intercept Treatment: attd
              Messaging Service Adjunct (MSA) Connected? n
              Automatic Circuit Assurance (ACA) Enabled? n
                                    ACA Referral Calls: lc al
                               ACA Referral Destination: _______
           ACA Short Holding Time Originating Extension: _____
            ACA Long Holding Time Originating Extension: _____
                         ACA Remote PBX Identification: ___
```

Feature-Related System Parameters Form (Page 1 of 5)

Implementation Note:

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.

```
                                                              Page 2 of 5
                        FEATURE-RELATED SYSTEM PARAMETERS
  SMDR PARAMETERS
         Primary Output Layout: ________     Primary Output Destination: ____
       Secondary Output Layout: ________   Secondary Output Destination: ____
             Use ISDN Layouts? n                    EIA Device Bit Rate: 9600
                                       SMDR Account Code Length: 2_
                                     Record Outgoing Calls Only? n
  Disconnect Information In Place of Facility Restriction Level? n
Forced Entry of Acct Code for Calls Marked on Toll Analysis Form? n
                     Suppress SMDR for Ineffective Call Attempts? y
                   Calls to Hunt Group-Record (Group or Member): member-ext
Record Called Vector Directory Number Instead of Group or Member? _
      Record Non-Call-Associated Temporary Signaling Connections? _
          Record Call-Associated Temporary Signaling Connections? _
                                       Privacy - Digits to Hide: _
                                              Intra-switch SMDR? _
                                           SMDR Call Splitting? _
                                       Attendant Call Recording? _
```

Feature-Related System Parameters Form (Page 2 of 5)

Implementation Notes:

Use ISDN Layouts field only displayed if the ISDN-PRI feature is enabled on the System Parameters Customer Options form.

Record Non-Call associated Temporary Signaling Connections field and the Record Call associated Temporary Signaling Connections field only displayed if the Use ISDN Layout field entry is "y".

SMDR Call Recording - Incoming field only displayed if the Record Outgoing Calls Only field entry (Page 2) is "n".

Intra-switch SMDR field only displayed when the Primary Layout field entry is other than "54-char".

Attendant Call Splitting field only displayed if one of the SMDR Call Recording field entries is "y".

```
                                                          Page 3 of 5
                    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
                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? n
                                        Authorization Code Length: 7
                              Authorization Code Cancellation Symbol? #
                                          Attendant Time Out Flag? n
```

Feature-Related System Parameters Form (Page 3 of 5)

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".

```
                                                          Page 4 of 5
                    FEATURE-RELATED SYSTEM PARAMETERS
          SYSTEM PRINTER PARAMETERS
                    Printer Extension: ____
                  EIA Device Bit Rate: 1200
                       Lines Per Page: 60
          BASIC CALL MANAGEMENT PARAMETERS
                  BCS Measurement Interval: _________
                       Adjunct CMS Release: ___
 Automatic Call Distribution (ACD) Log-in Identification Length: 0
```

Feature-Related System Parameters Form (Page 4 of 5)

```
                                                              Page 5 of 5
                    FEATURE-RELATED SYSTEM PARAMETERS
LEAVE WORD CALLING PARAMETERS
Maximum Number of Messages Per Station (when MSA not in service): 10_
     Stations with System-wide Retrieval Permission (enter extension)
          1: 34430    3: 0____    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
```

Feature-Related System Parameters Form (Page 5 of 5)

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 "0" or local extension number for Referral Destination.

Hop Channel Assignments

Used to assign up to 64 Hop Channels. Up to 64 connections may be established between channels on the System's interface links.

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 and Error Messages (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.

Form Instructions

Observe the following when assigning hop channels:

- Both links in a hop channel assignment must be on the same Processor Interface circuit pack. Currently, links 1 through 4 are on Processor Interface circuit pack 1 and links 5 through 8 are on Processor Interface circuit pack 2 for multi-carrier cabinet systems (single-carrier cabinet systems have just four links).
- The Link/Chan pair must not be assigned to a local processor channel on the Processor Channel Assignments form.
- A link used for ISDN cannot be assigned on the Hop Channel Assignments form.
- All five fields associated with a hop channel must be either filled in or left blank.
- Use the following table to ensure that the interface link channel numbers match between switches.

Make assignments as required for the following fields on each page of the form:

Pages 1 and 2 of the Form

- **Link** (two fields) — Enter an interface link number in each field from 1 through 8 for multi-carrier cabinet systems and 1 through 4 for single-carrier cabinet systems.
- **Chan** (two fields) — Enter a number from 1 through 64 in each field.

- **Priority** — Enter "h" or "l" 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.

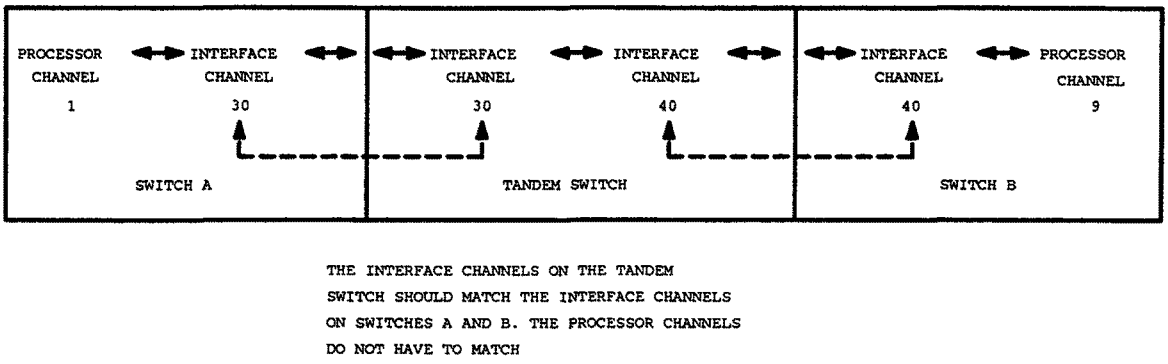


Figure 5-11. Interface Channel Assignments Between Switches

Page 1 of 2

HOP CHANNEL ASSIGNMENT

Link/Chan	Link/Chan	Priority	Link/Chan	Link/Chan	Priority
— —	— —	—	— —	— —	—
— —	— —	—	— —	— —	—
— —	— —	—	— —	— —	—
— —	— —	—	— —	— —	—
— —	— —	—	— —	— —	—
— —	— —	—	— —	— —	—
— —	— —	—	— —	— —	—
— —	— —	—	— —	— —	—
— —	— —	—	— —	— —	—
— —	— —	—	— —	— —	—
— —	— —	—	— —	— —	—
— —	— —	—	— —	— —	—
— —	— —	—	— —	— —	—

Hop Channel Assignment Form (Page 1 of 2)

(To reduce repetition, page 2 is not shown)

Hospitality-Related System Parameters

Used to implement the System parameters associated with the hospitality features.

Administration Commands

The following administration commands can be used to access the Hospitality-Related System Parameters form. In some cases, just the most commonly used commands are shown. Refer to Administration Commands and Error Messages (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.

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 from 0 through 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.
- **Default Coverage Path For Client Rooms** — Enter Coverage Path number (1 through 600) or leave blank (System default). This field defines the call coverage path number set for an extension when the System receives a check-out 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. Entries can only be made in this field when the PMS Protocol Mode field is "transparent".
- **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" (System default) 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.
- **Seconds Before PMS Link Idle Timeout** — Enter the idle time in seconds (5 through 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 through 500) the System waits for an acknowledgement from the PMS indicating it correctly received a message. Default is "200".
- **PMS Link Maximum Retransmissions** — Enter the number of times (1 through 5) that the System will retransmit a message in response to a negative acknowledgement or send an inquiry for an acknowledgement 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 through 5) that the switch will request the PMS to retransmit a message. Default is "3".
- **Take Down Link for Lost Messages?** — Enter "y" to discontinue link operation upon detection of lost messages. Default is "n".

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.
- **Auxiliary Board For Announcement** — Enter a 3- or 4-character circuit pack number. This field requests the circuit pack address that connects to the external announcement equipment. The first character identifies the network (1 through 2, 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 or 01 through 18 for single-carrier cabinets).
- **Announcement Ports** — Enter two port numbers of five to six 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 first port character identifies the network (1 through 2, 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 or 01 through 18 for single-carrier cabinets); the last two characters identify the circuit number (01 through 04).
- **Length of Time To Remain Connected To Announcement** — Enter the length of time in seconds (0 through 300) the hotel guest will receive a wakeup call announcement.
- **Extension To Receive Failed Wakeup LWC Messages** — Enter the extension number (may not be a VDN extension) where unsuccessful wakeup LWC messages will be stored. A dedicated unassigned extension is required.
- **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.
- **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. Default is "n".

```
                                                        Page 1 of 2
                HOSPITALITY RELATED SYSTEM PARAMETERS
                       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: ____
                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 Request: 3
                      Take Down Link for Lost Messages? n
```

Hospitality-Related System Parameters Form (Page 1 of 2)

```
                                                        Page 2 of 2
              HOSPITALITY RELATED SYSTEM PARAMETERS
                 Time of Scheduled Wakeup Activity Report: _______
                  Time of Scheduled Wakeup Summary Report: _______
          Time of Scheduled Emergency Access Summary Report: _______
                                       Announcement Type: silence
      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
```

Hospitality-Related System Parameters Form (Page 2 of 2)

Implementation Note:

This is Page 2 when the Announcement Type field is "silence".

```
                                                        Page 2 of 2
                HOSPITALITY RELATED SYSTEM PARAMETERS
             Time of Scheduled Wakeup Activity Report: _____
              Time of Scheduled Wakeup Summary Report: _____
    Time of Scheduled Emergency Access Activity Report: _____
                                    Announcement Type: voice-synthesis
                                   Announcement Ports: _____
    Length of Time To Remain Connected To Announcement: _____
       Extension To Receive Failed Wakeup LWC Messages: _____
      Routing Extension On Unavailable Voice Synthesis: _____
              Display Room Information in Call Display? n
```

Hospitality-Related System Parameters Form (Page 2 of 2)

Implementation Note:

This is Page 2 when the Announcement Type field is "voice-synthesis". The Announcement Ports field must be completed if "voice-synthesis" is entered as the Announcement Type.

```
                                                        Page 2 of 2
                HOSPITALITY RELATED SYSTEM PARAMETERS
             Time of Scheduled Wakeup Activity Report: _____
              Time of Scheduled Wakeup Summary Report: _____
    Time of Scheduled Emergency Access Activity Report: _____
                                    Announcement Type: external
                  Auxiliary Board For Announcement: _____
    Length of Time To Remain Connected To Announcement: _____
       Extension To Receive Failed Wakeup LWC Messages: _____
      Routing Extension On Unavailable Voice Synthesis: _____
              Display Room Information in Call Display? n
```

Hospitality-Related System Parameters Form (Page 2 of 2)

Implementation Note:

This is Page 2 when the Announcement Type field is "external". The Auxiliary Board For Announcement field must be completed if "external" is entered as the Announcement Type.

Hunt Group

Allows calls to be answered by users (that is, agents) at a pre-designated group of terminals or devices.

This form is used to create a Hunt Group that is identified by a Hunt Group number from 1 through 99. Users assigned to a Hunt Group are identified by their extension number. Up to 200 users can be assigned to a Hunt Group. Note that if the Hospitality Parameters Reduction option is enabled on the System-Parameters Customer-Options form; only five (maximum) Hunt Groups may be assigned.

Several different hunt group forms 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 that vector controlled splits (that is, ACD hunt group with vector = "y") may be called directly via the split extension (instead of calling a VDN mapped to a vector that will terminate the call to a vector controlled split); 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 and Error Messages (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
	change	hunt-group
	display	hunt-group
	list	hunt-group
	remove	hunt-group
With Hospitality Parameter Reduction Feature	add	hunt-group
	change	hunt-group
	display	hunt-group
	list	hunt-group
	remove	hunt-group

* 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:

- **Group Number** — Enter a hunt group number from 1 through 99 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). Note that the CMS Release 3 software (required for G3i) can measure up to 99 hunt groups and Group Numbering restrictions required by previous releases of the software no longer apply. 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" or "ddc". Enter "ucd" if the hunt group has an AUDIX or Message Server Adjunct message . Also, "ucd" is required when supporting the Outbound Call Management feature and when the "Controlling Adjunct" field is administered as "asai" or "bx.25". Default is "ucd".
- **Group Name** — Enter a 16-character string that uniquely identifies the group, for example, "parts dept.", "purchasing", or "sales dept."
- **Coverage Path** — Enter a coverage path number from 1 through 600. This assigns a coverage path for the Hunt Group. The coverage path is assigned using the Call Coverage Path form. Valid entries are 1 through 600 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".

- **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.
- **Message Center** — Enter the type of message the hunt group connects to. Valid entries are "msa" (Message 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". Only one hunt group in the System may be administered as msa, one as rem-audix, and one as audix. For a hunt group serving as an Outgoing Call Management (OCM) split, the typical entry is "none".
- **ACD** — Enter "y" if the hunt group will function as an Automatic Call Distribution (ACD) split. AUDIX and msa hunt groups may function as ACD splits. This field cannot be completed if the ACD option is not enabled on the System-Parameters Customer-Options (SPCO) form. Enter "n" if this feature is not desired, even though ACD is enabled on the SPCO form. When the hunt group is assigned as an ACD split, the hunt group members will serve as ACD agents. The agents in this split are allowed to log in and receive ACD split calls. If AUDIX is used as the hunt group message enter "y" to have the ACD CMS provide AUDIX traffic measurements. 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; otherwise, enter "n". Default is "n".

The next **seven** fields apply if Queue is "y".

- **Queue Length** — Enter the maximum number of calls (1 through 200) that can be in the queue at the same time. This field must have an entry when Queue is "y". For OCM splits, a short queue length should be assigned and coordinated with the OCM adjunct administration.
- **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. These lamps are lighted steadily when at least one call is in queue and the threshold has not yet been reached. Valid entries are a number from 1 through 200 and 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 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). Enter 5 to 6 characters. 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); the last two characters identify the circuit number (01 through 16). This port is assigned to an Analog Line circuit pack.

— **Time Warning Threshold** — Enter the time in seconds from 0 through 999 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. An entry of "0" provides a warning whenever a call is queued. Valid entries are 0-999 or leave blank.

— **Time Warning Port** — Enter the 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. Enter 5 to 6 characters. 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); the last two characters identify the circuit number (01 through 16). This port is assigned to an Analog Line circuit pack.

— **First Announcement Extension** — 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.

— **First Announcement Delay (sec)** — Enter the number of seconds from 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 (not recommended for OCM splits). This value is automatically set to "0" if there is no queue. This field must be blank if there is no first announcement.

- **Night Service Destination** — 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), "attd" (attendant), or leave blank. Note that this field is not supported when the Controlling Adjunct field entry is "bx.25".
- **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.
- **Audix Extension** — This field is only displayed if the Message Center field is "rem-audix". Enter a valid Uniform Dial Plan (UDP) extension (4 to 5 digits) that identifies the AUDIX extension number on the host switch that will be used as the message for this hunt group (supports the AUDIX In A DCS feature).

The next **four** fields are displayed if Queue is "y" and ACD is "y".

- **Inflow Threshold** — Enter the number of seconds from 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 only if there is an available agent. Valid entries are 0 through 999.
- **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. It is recommended that if this split or hunt group is a coverage point for another split, that this delay should not be more than 15 seconds.
- **Second Announcement Delay (sec)** — Enter the time in seconds from 1 through 99 before the call in the queue receives second recorded announcement or that the second announcement is repeated. Leave blank if there is no second announcement.
- **Second Announcement Recurring** — Enter "y" to have the second announcement repeated; otherwise, enter "n". Leave blank if there is no second announcement.

The next **four** fields are displayed if ACD is "y".

- **Measured** — Enter "internal" to have change of state messages for the ACD split measured by the Basic Call Management System (internal to switch) and enter "external" to have measurements made by the 3B 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". Note that all BX.25 controlled splits (Controlling Adjunct field is "bx.25") must have the same entry in this field.
- **Supervisor Extension** — Enter the extension number (may not be a VDN number) of the ACD split supervisor that agents can dial to request assistance.
- **Priority On Intraflow** — Enter "y" if calls intraflowing from this split to a covering split will be given priority over other calls waiting in the covering split's queue. Default is "n".
- **Controlling Adjunct** — Displayed when the ACD field is "y". Enter "none" to indicate that members of the split or hunt group are not controlled by an adjunct processor. When set to "asai" or "bx.25", all agent logins are controlled by an associated adjunct and logged-in agents can only use their data terminal keyboards (that is, locked out from using their associated voice terminals); otherwise, enter "none". 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 ASAI capability.) If the controlling adjunct is an OCM Starcaller adjunct (requires a BX.25 interface link), then "bx.25" should be entered in this field. (The OCM-CPN/BN option must be enabled on the System-Parameters Customer-Option form.) Valid entries are "asai, "bx.25", or "none".

- **ASAI Link Extension** — Displayed when Controlling Adjunct field is "asai". Enter the appropriate ASAI Link extension. (See Adjunct/Switch Applications Interface Link information elsewhere is this chapter.) Field may not be blank. Note that "asai" and "bx.25" interfaces cannot both be provided on the switch. Only one of the interface types can be administered.
- **Forced Entry of Stroke Counts or Call Word Codes** — This field is only displayed when the ACD field is "y" and 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.
- **BCMS Acceptable Service Levels (sec.)** — Enter 0-9999 or blank to indicate the number of seconds within which BCMS calls should be answered. The percentage of calls answered within this interval is reported on the Monitor BCMS screen. This field is displayed when the contents of the Measured field is "internal" or "both".
- **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.

Valid entries are "y" or "n". Default is "n". (SEe example screen forms for fields that are displayed when "y" is entered in this field.)

Pages 2 through 6 of the Form

- **Group Number** — Display-only field.
- **Group Extension** — Display-only field.
- **Group Type** — Display-only field.
- **Ext** — Display-only field if the Controlling Adjunct field is "y". Controlled Agent extensions must be entered on the Adjunct Controlled Agent Table form. For Controlling Adjunct = "n", 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.
- **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 6

    Group Number: __                Group Extension: ____    Group Type: ucd_
      Group Name: ________________   Message Center: none          ACD? n
           Queue: n                                            Vector? n
   Security Code? ____   Night Service Destination: ____          COR: 1
ISDN Caller Disp: ________           Coverage Path: ___
```

Hunt Group Form (Page 1 of 6)

Implementation Note:

This is Page 1 when the ACD, Queue, and Vector fields are "n".

```
                              HUNT GROUP                        Page 1 of 6

    Group Number: __              Group Extension: ____     Group Type: ucd_
      Group Name: _______________  Message Center: none          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: _____
     Time Warning Threshold: ___                 Time Warning Port: _____

First Announcement Extension: _____   First Announcement Delay (sec): ___
```

Hunt Group Form (Page 1 of 6)

Implementation Note:

This is Page 1 when the Queue field is "y" and the ACD and Vector fields are "n".

```
                              HUNT GROUP                        Page 1 of 6

    Group Number: __              Group Extension: ____     Group Type: ucd_
      Group Name: _______________  Message Center: none          ACD? y
           Queue: 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): __

First Announcement Extension: ____

             Forced Entry of Stroke Count or Call Work Code? n
```

Hunt Group Form (Page 1 of 6)

Implementation Note:

This is Page 1 when the Queue and Vector fields are "n" and the ACD field is "y".

```
                                HUNT GROUP                          Page 1 of 6

    Group Number: __                Group Extension: _____    Group Type: ucd_
      Group Name: ________________   Message Center: none          ACD? y
           Queue: y                                             Vector? n
   Security Code? _____  Night Service Destination: _____         COR: 1
ISDN Caller Disp: _________          Coverage Path: ___

                  Measured? both____          Supervisor Extension: ______
       Priority On Intraflow? n                   Inflow Threshold: 999
         Controlling Adjunct? none  ECMS Acceptable Service Level(sec): __

                Queue Length: 1
     Calls Warning Threshold: ___                 Calls Warning Port: _____
     Time Warning Threshold: ___                  Time Warning Port: _____

        First Ann. Extension: _____  First Announcement Delay (sec): ___
Second Announcement Extension: _____ Second Announcement Delay (sec): ___
Second Announcement Recurring? n
             Forced Entry of Stroke Count or Call Work Code? n
```

Hunt Group Form (Page 1 of 6)

Implementation Note:

This is Page 1 when the Queue and ACD fields are "y" and Vector field is "n".

```
                                HUNT GROUP                          Page 1 of 6

    Group Number: __                Group Extension: _____    Group Type: ucd_
      Group Name: ________________   Message Center: none          ACD? n
           Queue: n                                             Vector? y
   Security Code? _____                                           COR: 1
ISDN Caller Disp: _________
```

Hunt Group Form (Page 1 of 6)

Implementation Note:

This is Page 1 when the Vector field is "y" and the ACD and Queue fields are "n".

```
                              HUNT GROUP                          Page 1 of 6

     Group Number: __                Group Extension: ____    Group Type: ucd_
       Group Name: _______________  Message Center: rem-audix      ACD? n
            Queue: n                 Audix Extsinsion: _____       Vector? n
    Security Code? ____   Night Service Destination: _____         COR: 1
 ISDN Caller Disp: ________            Coverage Path: ___
```

Hunt Group Form (Page 1 of 6)

Implementation Note:

This is Page 1 when the Queue and ACD fields are "n" and Message Center field is "rem-audix".

```
                              HUNT GROUP                          Page 1 of 6

       Group Number: __                Group Extension: ____  Group Type: ucd
         Group Name: _______________    Message Center: none        ACD? y
              Queue? n                                          Vector? n
      Security Code: ____   Night Service Destination: ____        COR: 1
   ISDN Caller Disp: ________            Coverage Path: ___

          Measured? none              Supervisor Extension? _______
Priority on Intraflow? n
  Controlling Adjunct: asai            ASAI Link Extension: _____

First Announcement Extension: _____
```

Hunt Group Form (Page 1 of 6)

Implementation Note:

This is Page 1 when Controlling Adjunct is "asai" and the Vector and Queue fields are "n" and the ACD field is "y".

```
                                                          Page 1 of 6
                              HUNT GROUP
        Group Number: __              Group Extension: ____  Group Type: ucd
          Group Name: _____________  Message Center: none         ACD? y
               Queue? y                                       Vector? y
       Security Code: ____                                       COR: 1
     ISDN Caller Disp: ________

            Measured? none           Supervisor Extension? ______

    Controlling Adjunct: asai        ASAI Link Extension: _____

          Queue Length: 1
Calls Warning Threshold: __            Calls Warning Port: ______
 Time Warning Threshold: ___           Time Warning Port: ______
```

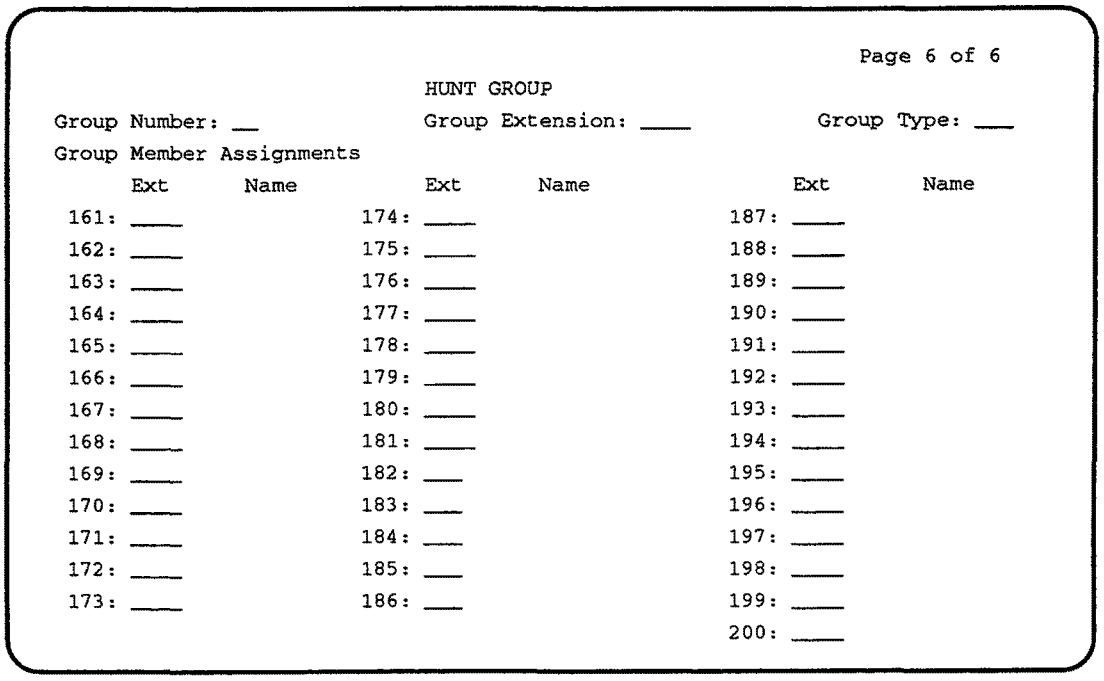
Hunt Group Form (Page 1 of 6)

Implementation Note:

This is Page 1 when Controlling Adjunct is "asai" and the Vector, Queue, and ACD fields are "y".

```
                                                          Page 2 of 6
                              HUNT GROUP
Group Number: __              Group Extension: ____          Group Type: ___
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: ____
```

Hunt Group Form (Pages 2 thru 5)



```
                                                          Page 6 of 6

                              HUNT GROUP
Group Number: __              Group Extension: ____       Group Type: ___
Group Member Assignments
      Ext      Name           Ext      Name               Ext      Name
 161: ____              174: ____                   187: ____
 162: ____              175: ____                   188: ____
 163: ____              176: ____                   189: ____
 164: ____              177: ____                   190: ____
 165: ____              178: ____                   191: ____
 166: ____              179: ____                   192: ____
 167: ____              180: ____                   193: ____
 168: ____              181: ____                   194: ____
 169: ____              182: ___                    195: ____
 170: ____              183: ___                    196: ____
 171: ____              184: ___                    197: ____
 172: ____              185: ___                    198: ____
 173: ____              186: ___                    199: ____
                                                    200: ____
```

Hunt Group Form (Page 6 of 6)

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.)

Up to 32 Dial Intercom groups can be assigned. A group can have up to 32 members. The total number of Intercom group members allowed in the System is 128.

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 and Error Messages (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	1-32 (or 'next')
change	intercom-group	1-32
display	intercom-group	1-32 ['print' or 'schedule']
list	intercom-group	['print' or 'schedule']
remove	intercom-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 each page of the form:

Pages 1 and 2 of the Form

- **Group Number** — Enter a 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*.
- **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 less than ten or "2" if group members are ten or more. Default is "1". (Page 2 is a display-only field.)

- **Ext** — Enter the extension number of each member of the group. Note that 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.
- **Name** — Make no entry. The name is assigned when the member's associated extension was administered.

```
                                                          Page 1 of 2
                              INTERCOM GROUP
                            Group Number: __
                         Length of Dial Code: 1
GROUP MEMBER ASSIGNMENTS
         Ext    DC   Name                        Ext    DC   Name
    1: _____  __                          9: _____  __
    2: _____  __                         10: _____  __
    3: _____  __                         11: _____  __
    4: _____  __                         12: _____  __
    5: _____  __                         13: _____  __
    6: _____  __                         14: _____  __
    7: _____  __                         15: _____  __
    8: _____  __                         16: _____  __
```

Intercom Group Form (Page 1 of 2)

```
                                                          Page 2 of 2
                              INTERCOM GROUP
                            Group Number: __
                         Length of Dial Code: 1
GROUP MEMBER ASSIGNMENTS
         Ext    DC   Name                        Ext    DC   Name
   17: _____  __                         25: _____  __
   18: _____  __                         26: _____  __
   19: _____  __                         27: _____  __
   20: _____  __                         28: _____  __
   21: _____  __                         29: _____  __
   22: _____  __                         30: _____  __
   23: _____  __                         31: _____  __
   24: _____  __                         32: _____  __
```

Intercom Group Form (Page 2 of 2)

Interface Links

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 OCM system, 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 and Error Messages (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.

Form Instructions

Make assignments as required for the following fields on the form:

- **Link** — This is a display-only field. Indicates the physical interface link number (1 through 8 for multi-carrier cabinet systems and 1 through 4 for single-carrier cabinet systems) that connects to another node in a DCS or ISDN network, a Message Server, CMS, an OCM, ISDN Gateway, or AUDIX. For multi-carrier cabinets, links 1 through 4 are located in a Processor Interface circuit pack mounted in Control Carrier A, Links 5 through 8 are located in a second Processor Interface circuit pack mounted in Control Carrier A.
- **Enable** — Enter "y" to enable the link. An entry of "n" suppresses any message flow over the link. Default is "n".

  Note that when administering the Interface Links form, all fields may be initially entered except the Enable field (must be "n"). After completing and administering the associated Processor Interface Data Module and Processor Channel Assignment forms for all links, recall the Interface Links form (via the *change* command) and then enable the appropriate links by entering "y" in the enable fields.
- **Est Conn** — 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 Modular Processor Data Modules

(MPDMs) or Modular Trunk Data Modules (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".

- **PI Ext** — This is the data extension assigned on the Processor Interface Data Module form. This field is a display-only. The System automatically assigns the extension number to this field when the Processor Interface data module is administered in System translations. If the data module has not been administered, this field will be blank.
- **Prot** — Enter the protocol type that is to be established on the link. Valid entries are "BX.25" and "ISDN". Default is "BX.25".
- **Destination** — 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, Trunk Access Code (TAC) (for DS1 data link), or "eia" (link 1 only)]:

  — 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:

  — For ISDN-PRI links, this field specifies a DS-1 board address which has already been administered as using ISDN signaling (either 24 channel or 32 channel). For 24 channel ISDN-PRI, channel 24 on the DS-1 board will be used as the D channel for ISDN signaling and cannot have been previously administered as a member of a trunk group. For 32 channel ISDN-PRI, channel 16 on the DS-1 board will be used as the D channel for ISDN signaling and cannot have been previously administered as a member of a trunk group.

In addition, a DS-1 board address coan only appear once as the destination address on the form.

- **DTE/DCE** — Enter "DTE" (Data Terminal Equipment) or "DCE" (Data Communication Equipment) 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. For an Outbound Call Management System interface, enter "DCE".
- **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.

Page 1 of 1

INTERFACE LINKS

Link	Enable	Est Conn	PI Ext	Prot	Destination Digits	Brd	DTE/ DCE	Identification
1:	n	_	_____	BX.25	_____	____	DTE	_____
2:	n	_	_____	BX.25	_____	____	DTE	_____
3:	n	_	_____	BX.25	_____	____	DTE	_____
4:	n	_	_____	BX.25	_____	____	DTE	_____
5:	n	_	_____	BX.25	_____	____	DTE	_____
6:	n	_	_____	BX.25	_____	____	DTE	_____
7:	n	_	_____	BX.25	_____	____	DTE	_____
8:	n	_	_____	BX.25	_____	____	DTE	_____

Interface Links Form (Page 1 of 1)

Inter-Exchange Carrier (IXC) Codes

Used to allow identification of the IXC in the SMDR 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 and Error Messages (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.

Form Instructions

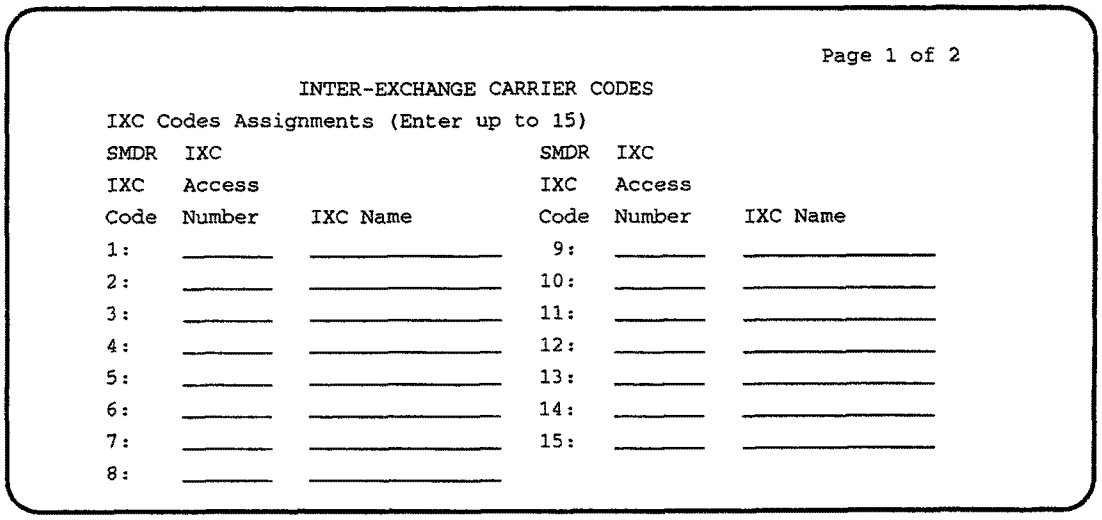
Make assignments as required for the following fields on the form:

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 inter-exchange carrier. No duplicate access numbers are allowed in the table.
- **IXC Name** — Enter 0 through 15 characters to identify the IXC. This description is for information purposes only.

Page 2 of the Form

- **IXC Prefix** — Enter a valid 2 to 3 digit prefix.
- **IXC Code Format** — Enter a valid 2 to 4 digit code format, or enter "x" or "X".



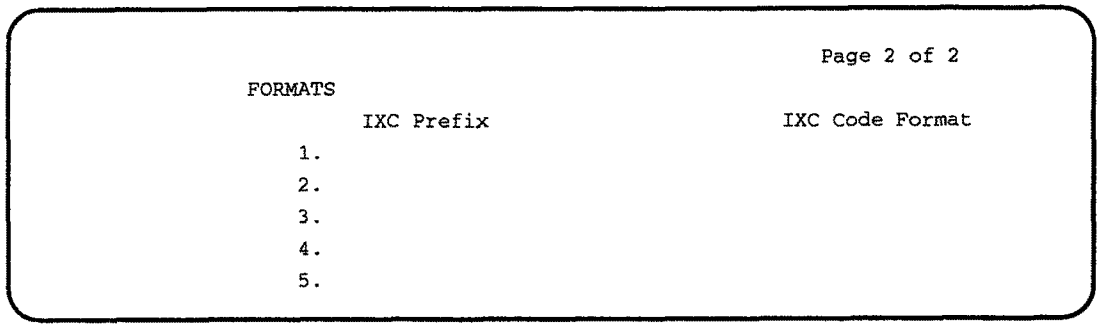
Page 1 of 2

INTER-EXCHANGE CARRIER CODES

IXC Codes Assignments (Enter up to 15)

SMDR IXC Code	IXC Access Number	IXC Name	SMDR IXC Code	IXC Access Number	IXC Name
1:	_____	_____	9:	_____	_____
2:	_____	_____	10:	_____	_____
3:	_____	_____	11:	_____	_____
4:	_____	_____	12:	_____	_____
5:	_____	_____	13:	_____	_____
6:	_____	_____	14:	_____	_____
7:	_____	_____	15:	_____	_____
8:	_____	_____			

Inter-Exchange Carrier Codes Form (Page 1 of 2)



Page 2 of 2

FORMATS

	IXC Prefix	IXC Code Format
1.		
2.		
3.		
4.		
5.		

Inter-Exchange Carrier Codes Form (Page 1 of 1)

Listed Directory Numbers

Allows up to eight 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 Generic 3i Global Feature Description*, 555-230-203, 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 and Error Messages (Chapter 2) for a complete listing of all administration commands, the command structure, and the use of abbreviated command words when entering a command.

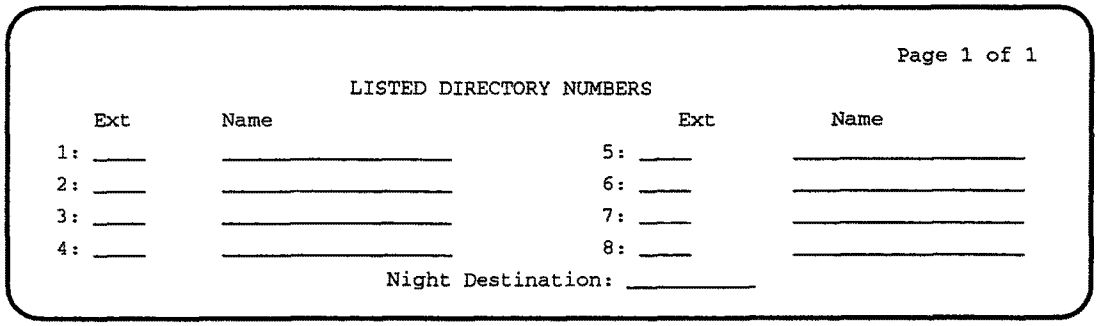
Action	Object	Qualifier*
change	listed-directory-numbers	—
display	listed-directory-numbers	['print' or 'schedule']

* Brackets [ ] indicate the qualifier is optional

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 through 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: _____

Listed Directory Numbers Form (Page 1 of 1)

Loudspeaker Paging and Code Calling Access

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 and Error Messages (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

Form Instructions

Make assignments as required for the following fields on the form:

Page 1 of the Loudspeaker Paging Access Form

- **SMDR** — Enter "y" to indicate if you want SMDR data collection on the paging ports; otherwise, enter "n". Default is "y".
- **Voice Paging Timeout (sec)** — Enter from 10 to 600. This is the number of seconds 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 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 five to six characters. For multi-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 20 depending on carrier type), and circuit number (01 through 24). For single-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 18 depending on cabinet type), and circuit number (01 through 31). 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 SMDR, 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) 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, for example, 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
                                    SMDR? y
                  Voice Paging Timeout (sec): ___
                  Code Calling Playing Cycles: _
PAGING PORT ASSIGNMENTS
                          Voice Paging      Code Calling
      Zone  Port          TAC      COR      TAC      COR      Location
        1: _____          ___      __       ___      __       PAGING_____
        2: _____          ___      __       ___      __       PAGING_____
        3: _____          ___      __       ___      __       PAGING_____
        4: _____          ___      __       ___      __       PAGING_____
        5: _____          ___      __       ___      __       PAGING_____
        6: _____          ___      __       ___      __       PAGING_____
        7: _____          ___      __       ___      __       PAGING_____
        8: _____          ___      __       ___      __       PAGING_____
        9: _____          ___      __       ___      __       PAGING_____
      ALL:                ___      __       ___      __
```

Loudspeaker Paging Access Form (Page 1 of 1)

```
                                                          Page 1 of 2

                            CODE CALLING IDs
ID ASSIGNMENTS
          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: ____
```

Code Calling IDs Form (Page 1 of 2)

Page 2 of 2

CODE CALLING IDs

ID ASSIGNMENTS

Id	Ext	Id	Ext	Id	Ext	Id	Ext	Id	Ext
411:	____	431:	____	451:	____	521:	____	541:	____
412:	____	432:	____	452:	____	522:	____	542:	____
413:	____	433:	____	453:	____	523:	____	543:	____
414:	____	434:	____	454:	____	524:	____	544:	____
415:	____	435:	____	455:	____	525:	____	545:	____
421:	____	441:	____	511:	____	531:	____	551:	____
422:	____	442:	____	512:	____	532:	____	552:	____
423:	____	443:	____	513:	____	533:	____	553:	____
424:	____	444:	____	514:	____	534:	____	554:	____
425:	____	445:	____	515:	____	535:	____	555:	____

Code Calling IDs Form (Page 2 of 2)

Miscellaneous System Parameters

Used to implement parameters associated with certain call characteristics.

Administration Commands

The following administration commands can be used to access the Miscellaneous System Parameters form. In some cases, just the most commonly used commands are shown. Refer to Administration Commands and Error Messages (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 miscellaneous	—
display	system-parameters miscellaneous	['print' or 'schedule']

* Brackets [ ] indicate the qualifier is optional.

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 3i Global Feature Description*, 555-230-203.

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **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 1.
- **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 3.
- **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 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.

  For CO trunks, this timer should be shorter than the Answer Supervision Timeout and/or Outgoing End of Dial Timer for the trunk group.

- **Unanswered DID Call Timer (seconds)** — Enter number between 10 and 1024 (or blanks) 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 60.

  The recommended value for this timer is 25 seconds or more to avoid dropping incoming calls that are forwarded to off-premises stations.

- **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" (default) to enable the Automatic Hold feature on a system-wide basis.

- **Attendant Tone** — Enter "y" (default) to provide call progress tones to the attendants.

- **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 new calls join conference call. Default is "n".

- **Intrusion Tone** — Enter "y" to apply an intrusion tone when an attendant intrudes on the call. Default is "n".

- **DID Busy Treatment** — Enter "attendant" or "tone" (default) to specify how to handle a DID call to a busy station. When "tone" is indicated, busy tone or call waiting tone is provided, as specified in the station translation.

The next three fields are 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.

Page 2 of the Form

- **Pull Transfer** — Enter "y" to enable the Pull Transfer feature on a system-wide 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". The entry "medium" is recommended when the Tone Detection field on the System Parameters Country Option form is equal to "normal broadband" or "wide broadband".
- **Wait Answer Supervision Timer** — Enter "y" to enable the Wait Answer Supervision Timer feature on a system-wide 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 to the night service station.
- **Outpulse Without Tone** — Enter "y" (default) to indicate that the switch will outpulse digits when an expected tone (dial tone) has not been received.
- **Network Feedback During Tone Detection** — Enter "y" (default) to provide audible feedback from the trunk to the user while the system attempts to detect dial tone; otherwise, enter "n".
- **Intercept Treatment on Failed Trunk Transfers** — Enter "y" to provide intercept treatment (tone, attendant, or announcement) to calls that fail trunk transfers; enter "n" (default) to drop these calls.
- **Vector Disconnect Timer(min)** — Enter 1-240, or blank, to ensure that trunks sent to a vector are disconnected within the number of minutes indicated. Default is blank.

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 which 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 which lasts for a period of time greater than or equal to this value will be regarded as a disconnect. An on-hook from a 2500 DTMF set that lasts only 100 msec is regarded as a recall flash. On-hooks less than the Disconnect Timing are ignored.

- **Flashhook Interval** — Enter "y" (default) to indicate that a flashhook interval (recall window) is required. If a "y" is entered, the Upper and Lower Bound fields will appear; if an "n" is entered, the Disconnect Timing field will appear.
- **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 milliseconds 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 system-wide 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".

```
                                                        Page 1 of 2
                    MISCELLANEOUS 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
                           Short Interdigit Timer (seconds): 3
                        Unanswered DID Call Timer (seconds): 60
                        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
```

Miscellaneous System Parameters (Page 1 of 2)

```
                                                              Page 2 of 2
                    MISCELLANEOUS 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
                                   Vector Disconnect Timer(min):
RECALL TIMING
        Flashhook Interval? n
  Disconnect Timing (msec): 150

ENHANCED DCS
     Enhanced DCS Enabled? y
  Apply Intercept Locally? y    Enforced PNT-to-PNT Restrictions? n
```

Miscellaneous System Parameters Form (Page 2 of 2)

Implementation Notes:

The Upper Bound and Lower Bound fileds 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".

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. Up to 160 conversion resources can be administered.

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 and Error Messages (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	[1-5]
change	modem-pool num	[1-5]
display	modem-pool num	[1-5] ['print' or 'schedule']
list	modem-pool num	['print' or 'remove']
remove	modem-pool num	[1-5]

* Brackets [ ] indicate the qualifier is optional.

Form Instructions:

Make assignments as required for the following fields on the form:

- **Group Number** — When completing a paper form, enter a number from 1 to 5. 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 enabled 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" (default) to allow the conversion resource to send 4 seconds of space before disconnecting; otherwise, enter "n". (This field is enabled only when Group Type is "integrated".)
- **Receive Space Disconnect** — Enter "y" (default) to allow the conversion resource to disconnect after receiving 1.6 seconds of space; otherwise, enter "n". (This field is enabled only when Group Type is "integrated".)

- **CF-CB Common** — Enter "y" (default) to indicate that the CF and CB leads on the conversion resource are logically connected; otherwise, enter "n". (This field is enabled only when Group Type is "integrated".)
- **Loss of Carrier Disconnect** — Enter "y" (default) to permit conversion resource to disconnect if it detects a dropped carrier; otherwise, enter "n". (This field is enabled 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 enabled 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.
- **Direction** — Enter the direction (incoming, outgoing or two way) of the call for which modem pool will operate. Default is "two-way".

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, 4800, 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 four characters to identify the port. 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).

PORT PAIR ASSIGNMENTS are optional on "combined" pooled modem forms only

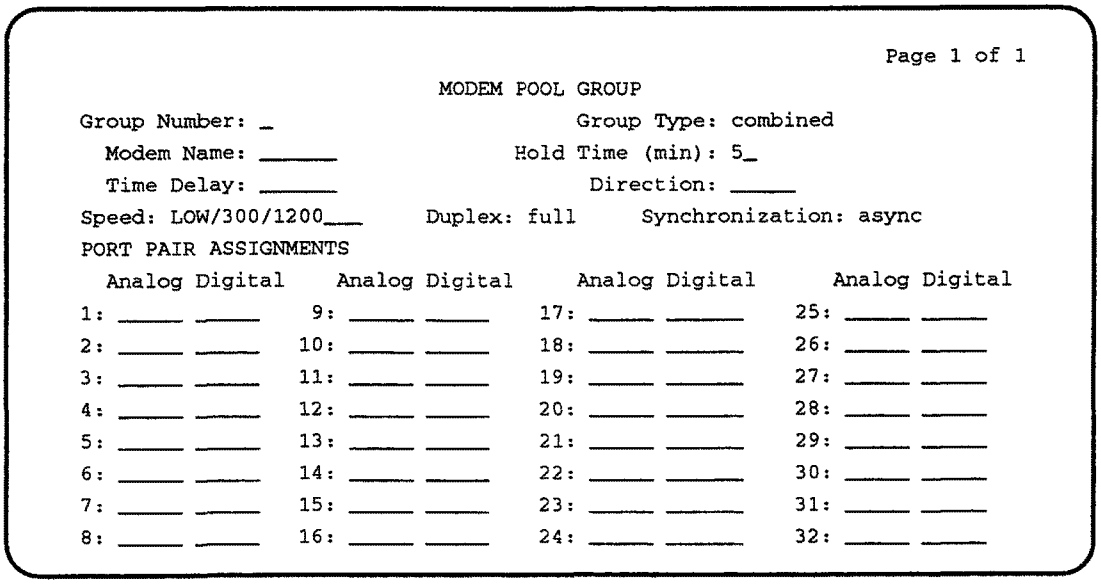
- **Analog Digital** — Enter the port numbers of the modem — TDM pair in a conversion resource. Enter four characters. The first character identifies the network (1 through 3, default is "1" if no entry); the second character identifies the carrier (A through E); the third and fourth characters identify 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). Note that 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 (min): 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   Circuit Pack
                              Location       Location
                              1: ___         9: ___
                              2: ___        10: ___
                              3: ___        11: ___
                              4: ___        12: ___
                              5: ___        13: ___
                              6: ___        14: ___
                              7: ___        15: ___
                              8: ___        16: ___
```

Integrated Modem Pool Group Form (Page 1 of 1)

Implementation Note

This is Page 1 of 1 when the Group Type field is "integrated".



```
                                                          Page 1 of 1
                              MODEM POOL GROUP
Group Number: _                              Group Type: combined
  Modem Name: _______                  Hold Time (min): 5_
  Time Delay: _______                       Direction: _____
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: _____ _____
```

Combined Modem Pool Group Form (Page 1 of 1)

Implementation Note

This is Page 1 of 1 when the Group Type field is "combined".

Pickup Groups

Used to implement up to 800 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. Up to 1600 members are allowed in the System.

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 and Error Messages (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
	change	pickup-group
	display	pickup-group
	list	pickup-group
	remove	pickup-group
With Hospitality Parameter Reduction Feature	add	pickup-group
	change	pickup-group
	display	pickup-group
	list	pickup-group
	remove	pickup-group

* 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

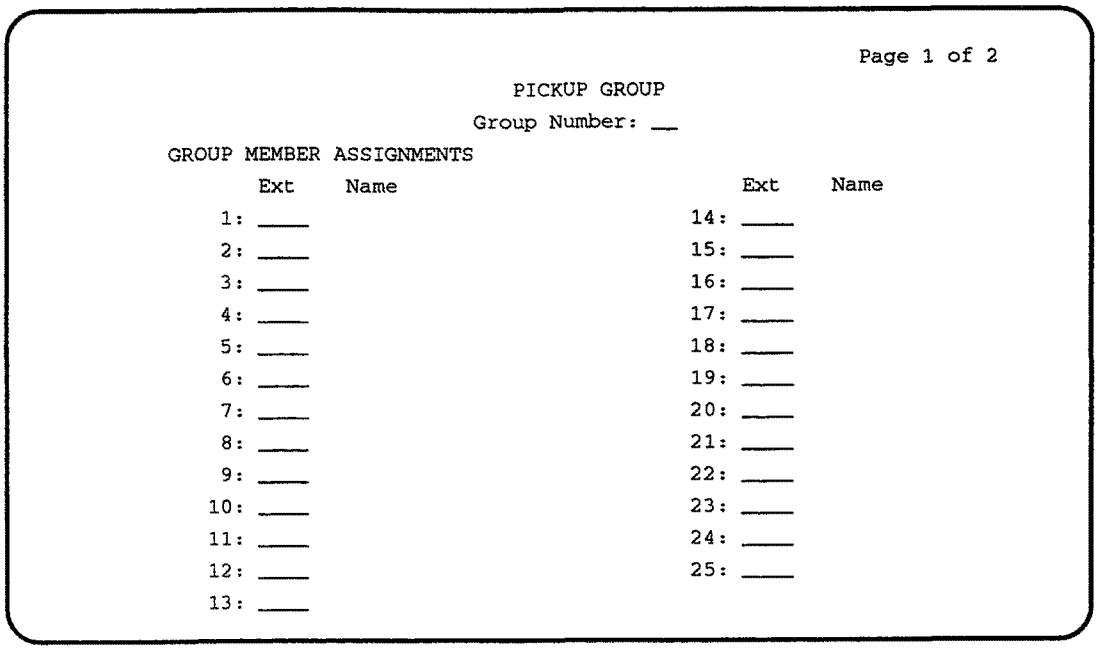
Form Instructions

Make assignments as required for the following fields on each page of the form:

Pages 1 and 2 of the Form

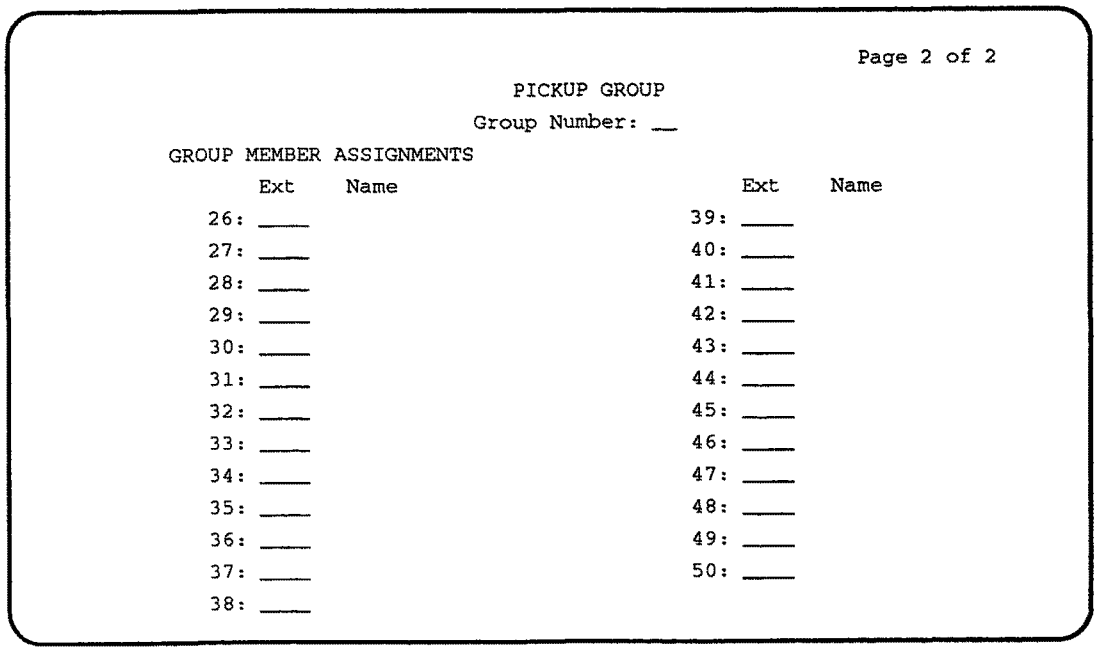
- **Group Number**—Enter a number from 1 to 800 when completing a paper form. This is a display-only field when the form is accessed using an administration command such as *add* or *change*. Note that if the Hospitality Parameters Reduction option is enabled on the System-Parameters Customer-Options form, only five (maximum) group numbers may be assigned.
- **Ext**—Enter the extension number of each user in the group. Note that 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: ____
```

Pickup Group Form (Page 1 of 2)



```
                                                          Page 2 of 2

                                  PICKUP GROUP
                                Group Number: __

GROUP MEMBER ASSIGNMENTS
       Ext    Name                                Ext    Name
  26: ____                                  39: ____
  27: ____                                  40: ____
  28: ____                                  41: ____
  29: ____                                  42: ____
  30: ____                                  43: ____
  31: ____                                  44: ____
  32: ____                                  45: ____
  33: ____                                  46: ____
  34: ____                                  47: ____
  35: ____                                  48: ____
  36: ____                                  49: ____
  37: ____                                  50: ____
  38: ____
```

Pickup Group Form (Page 2 of 2)

Processor Channel Assignment

Used to assign up to 64 Processor Channels to the System's interface links.

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 and Error Messages (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.

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. It is recommended that channels 1, 2, 3, 4, and 8 be reserved for Message Server Adjunct (MSA) connectivity since the MSA uses fixed channel numbers. Channel 10 should be reserved for MIS and Channel 59 for AUDIX.
- **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 that 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. Also note that when the Management Information System (MIS) adjunct processor is a Message 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 5-11. Processor Channel Applications

Appl. Entry	Processor Description	Channel	Priority
msamcs	MSA Message Center Service	1	high (h)
msahlwc	MSA High Priority Leave Word Calling	2	high (h)
msallwc	MSA Low Priority Leave Word Calling	3	low (l)
msaamwl	MSA Automatic Message Waiting Lamp	4	low (l)
msaclk	Switch/MSA Clock Synchronization	8	high (h)
dcs	DCS	-	high (h)
mis	MIS	10	low (l)
msamis	MSA/MIS	-	low (l)
audix	AUDIX	59	high (h)
isdn	ISDN-PRI	-	high
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".) Valid entries are 1 through 64 or leave blank.

  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—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. Valid entries are 1-64 or leave blank.

- **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".

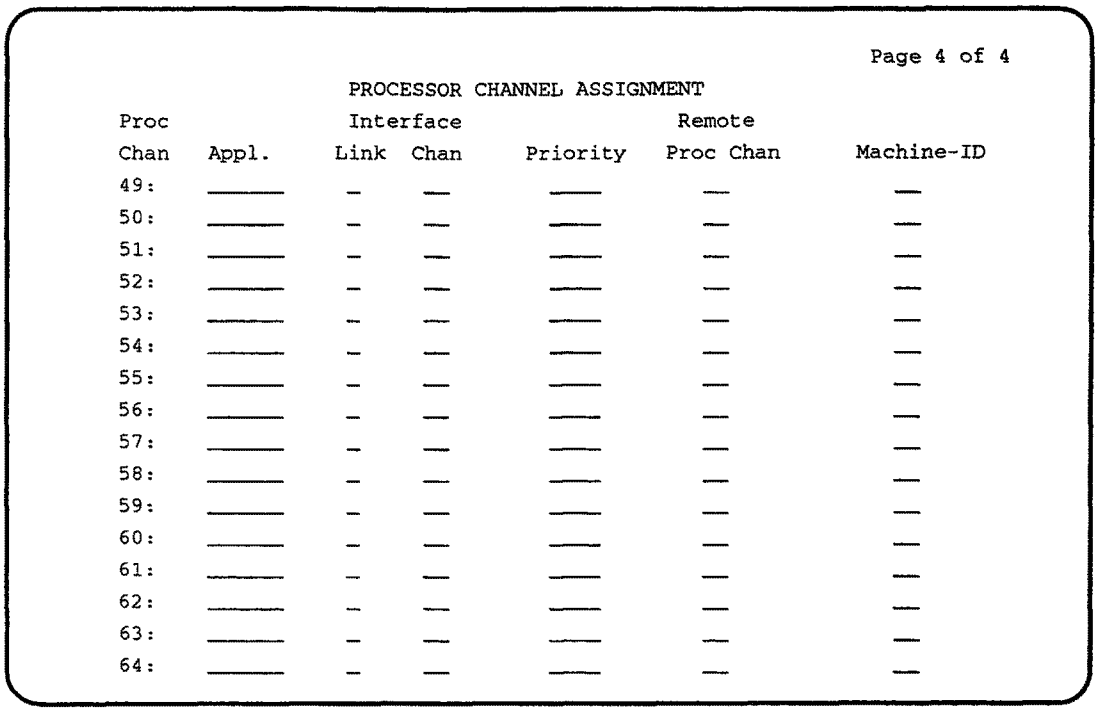
Page 1 of 4

PROCESSOR CHANNEL ASSIGNMENT

Proc Chan	Appl.	Interface Link	Interface Chan	Priority	Remote Proc Chan	Machine-ID
1:						
2:						
3:						
4:						
5:						
6:						
7:						
8:						
9:						
10:						
11:						
12:						
13:						
14:						
15:						
16:						

Processor Channel Assignment Form (Page 1 of 4)

(To reduce repetition, Pages 2 through 3 are not shown).



Page 4 of 4

PROCESSOR CHANNEL ASSIGNMENT

Proc Chan	Appl.	Interface Link	Interface Chan	Priority	Remote Proc Chan	Machine-ID
49:						
50:						
51:						
52:						
53:						
54:						
55:						
56:						
57:						
58:						
59:						
60:						
61:						
62:						
63:						
64:						

Processor Channel Assignment Form (Page 4 of 4)

Recorded Announcements

Used to assign up to 128 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.

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 Kbits per second (for 8 minutes and 32 seconds of announcement time), 32 Kbits per second (for 4 minutes and 16 seconds of announcement time), or 64 Kbits per second (for 2 minutes and 8 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 and Error Messages (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. Up to 128 extension numbers may be assigned on the form, one extension number for each announcement. 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" or "analog".

  If "integrated" is entered, the Protect and Rate fields must be completed. If "analog" 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.

- **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; otherwise, enter "n". Default is "n".

Page 1 of the Form Only

- **Queue Length** — Applicable if the Queue field is "y" and the Type field is "analog". Enter the number of calls that can be queued for this analog announcement. Valid entries are 1 through 150. The sum of the queue entries for all analog announcements cannot exceed 150. 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". Note that when the Type field is "analog", the Rate field is set to "N/A".

- **Rate** — Used to specify the recording speed when recording announcements on the TN750B Integrated circuit pack. Valid entries are "16", "32", "64". Default is "32". Note that when the Type field is "analog", the Rate field is set to "N/A".

- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 20 depending on carrier type), and circuit number (01 through 24). For single-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 18 depending on cabinet type), and circuit number (01 through 31). When the Type field entry is "integrated", "N/A" will be displayed in this field.

Page 1 of 8

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:	_____	_____	1_	_____	n				
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				

Recorded Announcements Form (Page 1 of 8)

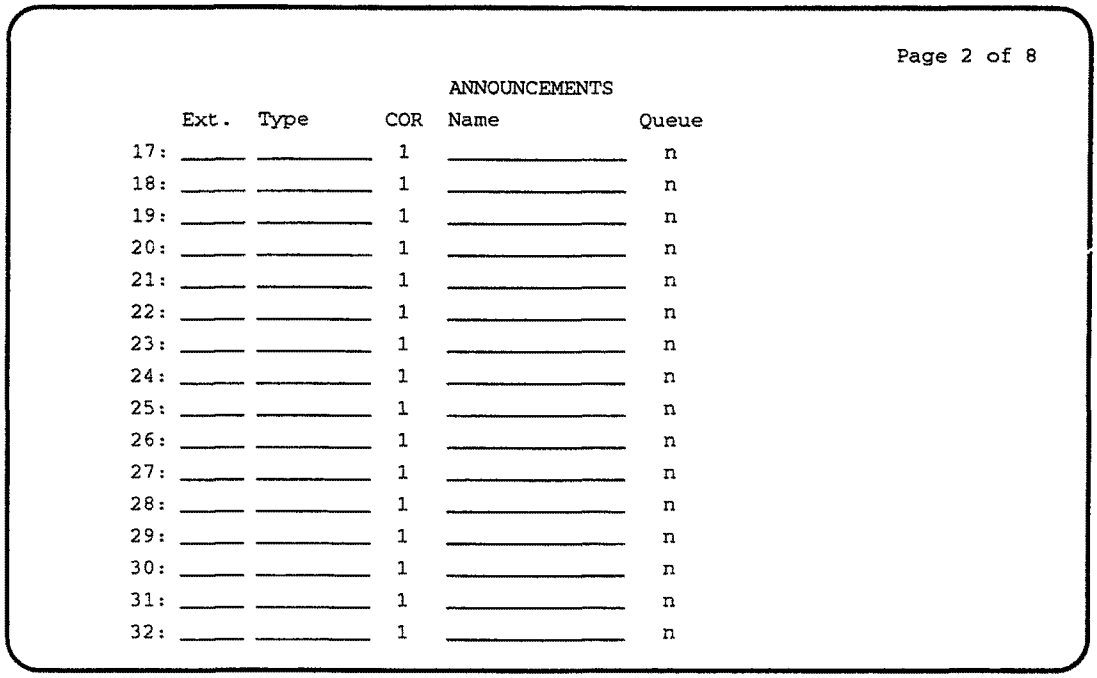
Implementation Note:

Announcements 1 and 2 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" and the Queue field is "y".

The Port field is only displayed when the Type field is "analog".

The Protect field is only displayed when the Type field is "integrated".

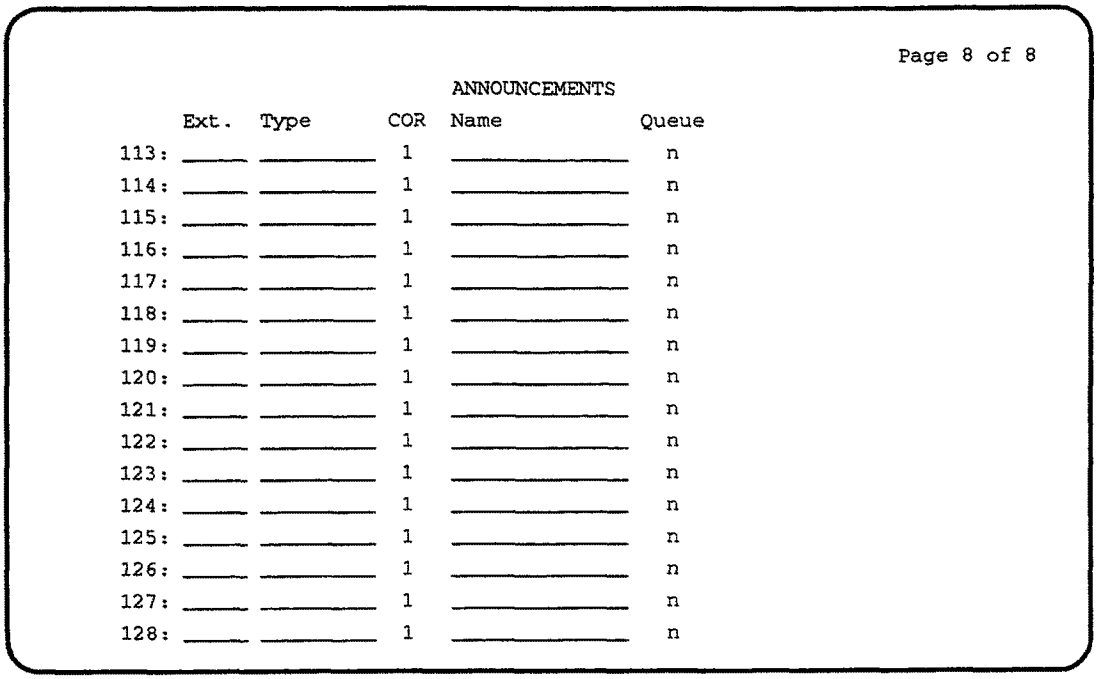


Page 2 of 8

ANNOUNCEMENTS

	Ext.	Type	COR	Name	Queue
17:			1		n
18:			1		n
19:			1		n
20:			1		n
21:			1		n
22:			1		n
23:			1		n
24:			1		n
25:			1		n
26:			1		n
27:			1		n
28:			1		n
29:			1		n
30:			1		n
31:			1		n
32:			1		n

(To reduce repetition, pages 3 through 7 are not shown).



Page 8 of 8

ANNOUNCEMENTS

	Ext.	Type	COR	Name	Queue
113:			1		n
114:			1		n
115:			1		n
116:			1		n
117:			1		n
118:			1		n
119:			1		n
120:			1		n
121:			1		n
122:			1		n
123:			1		n
124:			1		n
125:			1		n
126:			1		n
127:			1		n
128:			1		n

Recorded Announcements Form (Pages 2 and 8)

Remote Access

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.

After System dial tone is obtained, the Remote Access user is, for reasons of System security, required to dial a Barrier Code. One of up to ten Barrier Codes, each with a different class of restriction, can be assigned.

Refer to the "Remote Access Flow Chart" 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 and Error Messages (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.

Form Instructions

Make assignments as required for the following fields on the form:

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 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.

- **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 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 "0" (attendant) and administer the Remote Access extension as the Night Service extension. Incoming calls route 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".

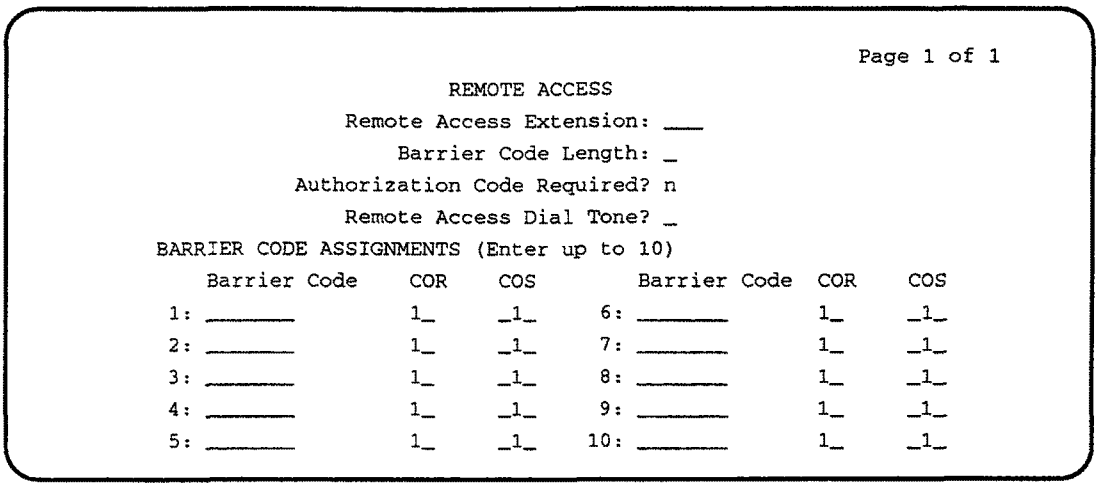
- **Authorization Code Required** — Enter "y" if an Authorization Code must be dialed by remote access users to access the System's facilities; otherwise, enter "n". Default is "n".

- **Remote Access Dial Tone** — This field is only displayed when the Authorization Code Required field is "y". Default is "n". 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).

- **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.

- **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".



```
                                                          Page 1 of 1

                              REMOTE ACCESS
                      Remote Access Extension: ___
                          Barrier Code Length: _
                    Authorization Code Required? n
                       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_
```

Remote Access Form (Page 1 of 1)

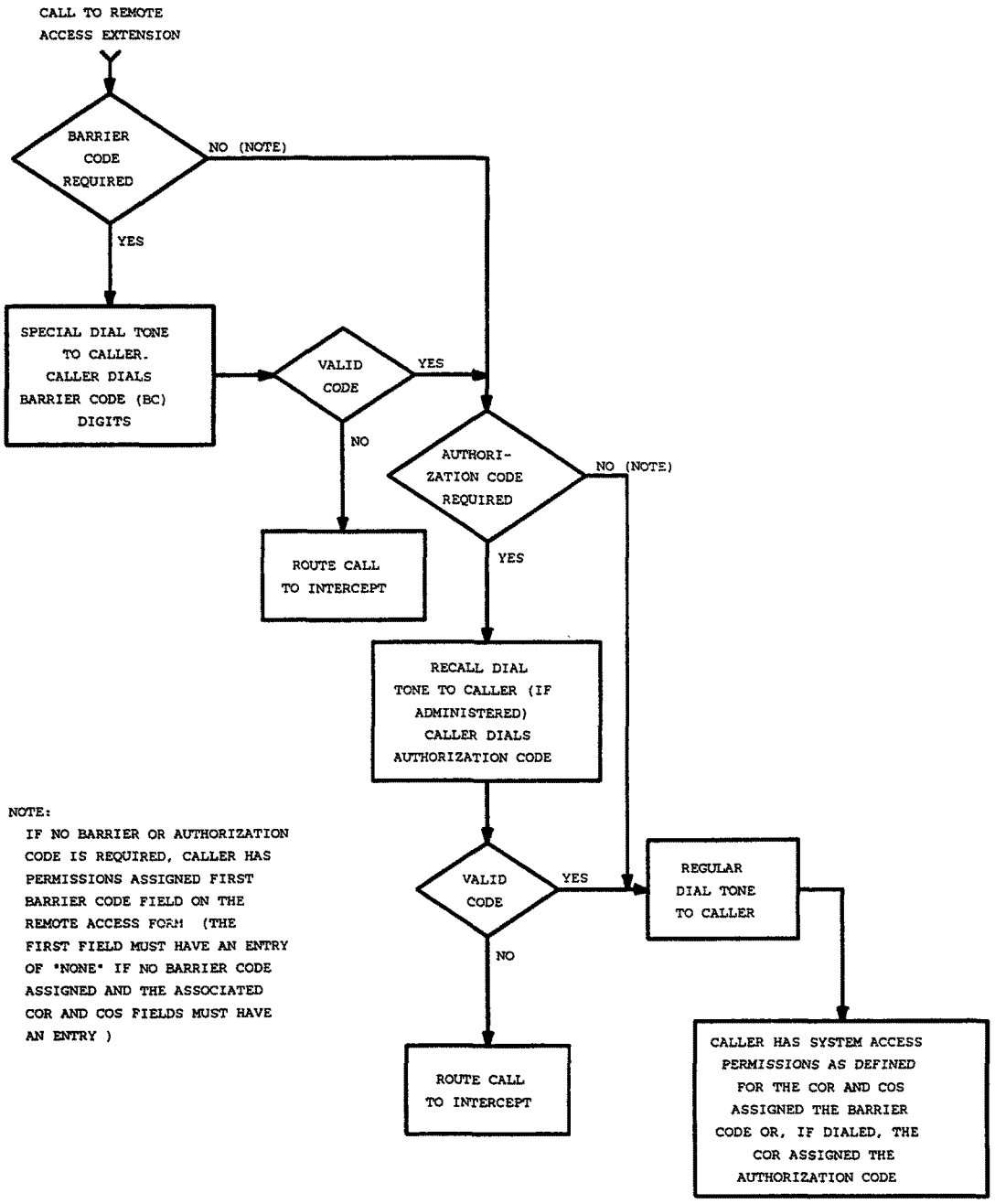


Figure 5-12. Remote Access Flow Chart

Special Information Tones

Provides 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 OCM-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 cases, just the most commonly used commands are shown. Refer to Administration Commands and Error Messages (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.

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".

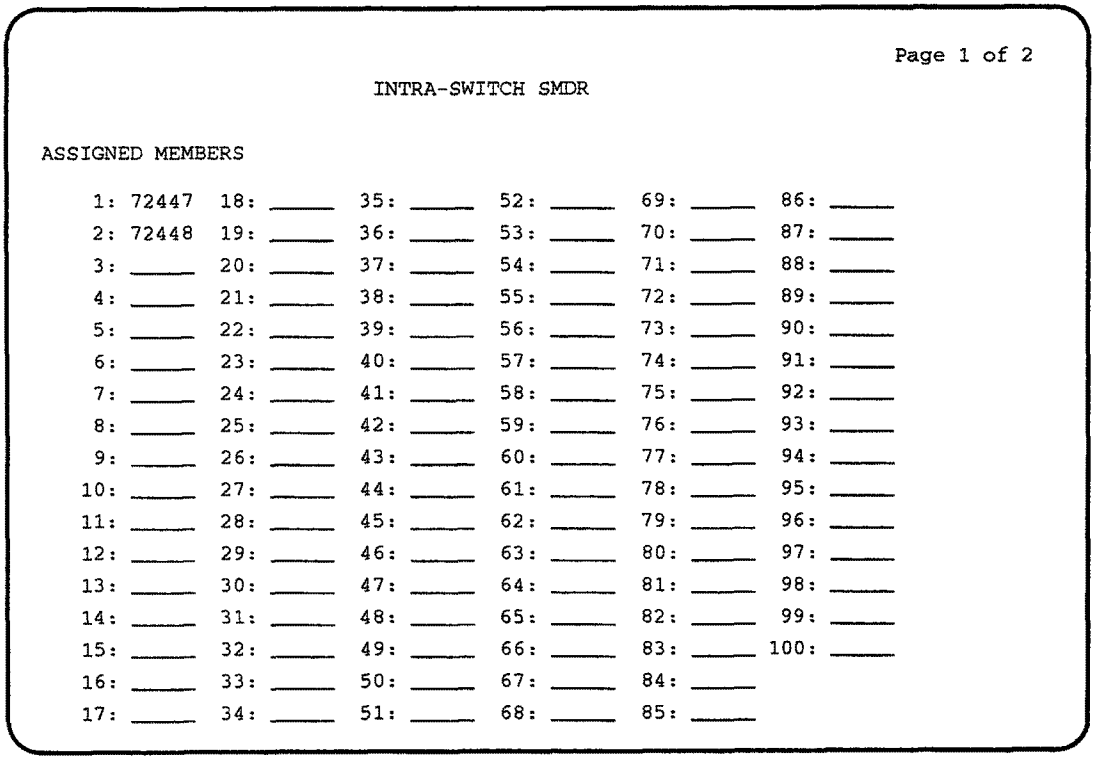
- **SIT No Circuit** — Sample announcement following this SIT — "All circuits are busy, please try to call again later'. Valid entries are "answered" and "dropped". Default is "dropped".
- **SIT Reorder** — Sample announcement following this SIT — "Your call did not go through, please hang up and dial 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
```

SIT Treatment For Call Classification Form

Station Message Detail Recording — Intra-switch

Used to administer extensions for which Inter-switch SMDR is to be enabled. Attendants are not allowed to be optioned for the Intra-switch SMDR feature. To add the Intra-switch SMDR feature to additional extensions, add the extension(s) to this form.



Page 1 of 2

INTRA-SWITCH SMDR

ASSIGNED MEMBERS

1: 72447	18:	35:	52:	69:	86:
2: 72448	19:	36:	53:	70:	87:
3:	20:	37:	54:	71:	88:
4:	21:	38:	55:	72:	89:
5:	22:	39:	56:	73:	90:
6:	23:	40:	57:	74:	91:
7:	24:	41:	58:	75:	92:
8:	25:	42:	59:	76:	93:
9:	26:	43:	60:	77:	94:
10:	27:	44:	61:	78:	95:
11:	28:	45:	62:	79:	96:
12:	29:	46:	63:	80:	97:
13:	30:	47:	64:	81:	98:
14:	31:	48:	65:	82:	99:
15:	32:	49:	66:	83:	100:
16:	33:	50:	67:	84:	
17:	34:	51:	68:	85:	

Intra-switch SMDR Form (Page 1 of 1)

Implementation Note:

A maximum of 100 (non-ASAI) extensions may be optioned.

The *change intra-switch-smdr* and *display intra-switch-smdr* commands with this feature.

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 Port Network and Expansion Port Networks) must be synchronized to the incoming data rate of 8000 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.

It should be noted that 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 and Error Messages (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.

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". Note that Stratum 3 capability is only possible when using a TN780 Tone Clock circuit pack. Default is "4".
- **Port** — Displayed when the Stratum field is "3". Enter the five or six character port network to which the Stratum 3 being used for synchronization is connected. For multi-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 20 depending on carrier type), and circuit number (01 through 24). For single-carrier cabinets, enter the port network (1

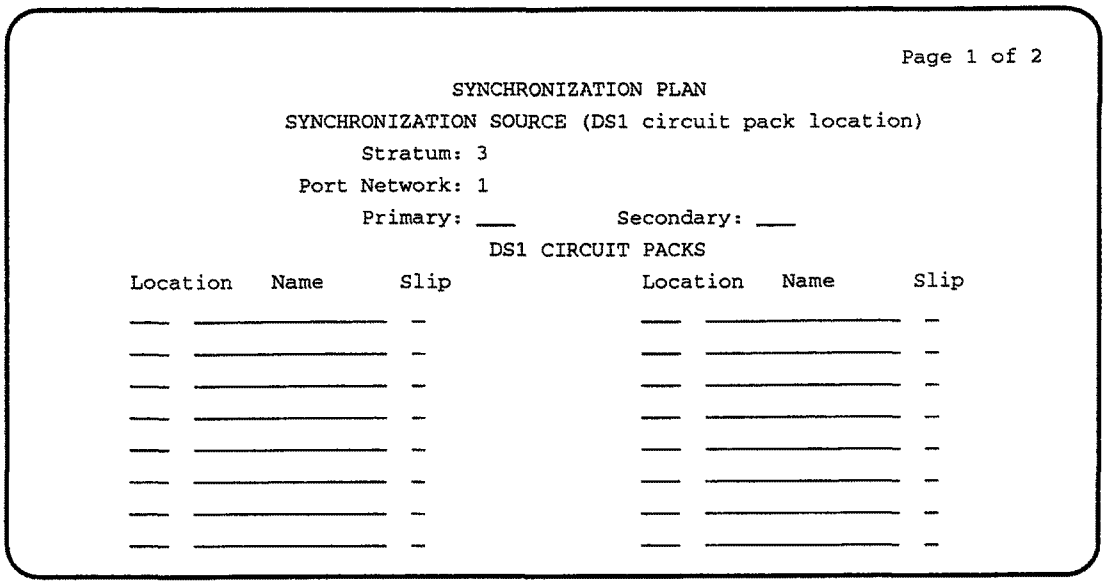
through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 18 depending on cabinet type), and circuit number (01 through 31).

- **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 Network (that is, PPN, EPN1, or EPN3). Enter a 4-character DS1 circuit pack location number for the DS1 circuit pack that will function as the primary synchronization source. The first character identifies the network (1 through 3, default is "1" if no entry), the second character identifies the carrier (A through E), and the last two identify the circuit pack slot number (01 through 20 for multi-carrier cabinets depending on carrier type or 01 through 18 for single-carrier cabinets depending on cabinet type). A blank entry means no external source. The clock circuit pack's 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 Network (that is, PPN, EPN1, or EPN3). Enter a 4-character DS1 circuit pack location number for the DS1 circuit pack that will function as a secondary synchronization source. The first character identifies the network (1 through 3, default is "1" if no entry), the second character identifies the carrier (A through E), and the last two identify the circuit pack slot number (01 through 20 for multi-carrier cabinets depending on carrier type or 01 through 18 for single-carrier cabinets depending on cabinet type). The system will automatically select the secondary circuit pack if the primary circuit has a failure.

Pages 1 and 2 of the Form

- **DS1 CIRCUIT PACKS — 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 Generic 3 DS1/CEPT1/ISDN-PRI Interface Service Manual*, 555-025-103.

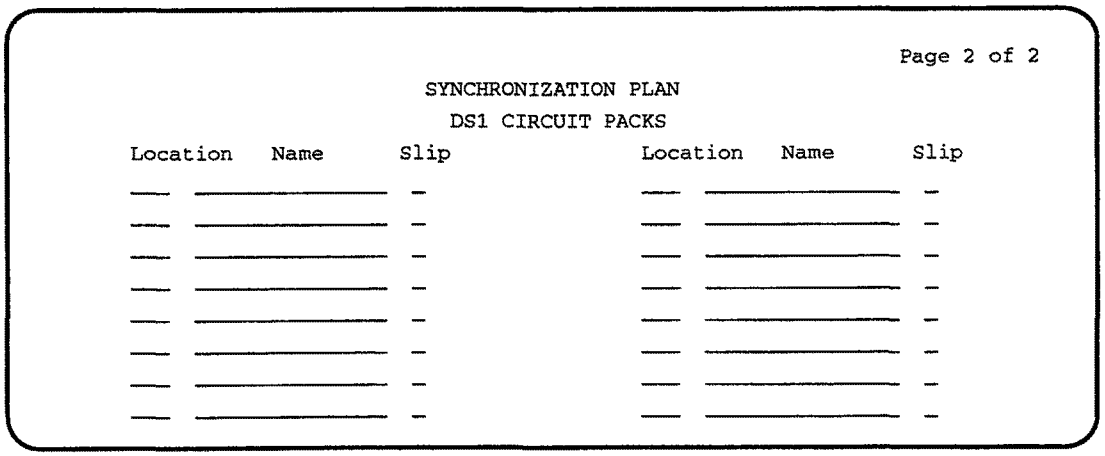


```
                                                          Page 1 of 2
                          SYNCHRONIZATION PLAN
                SYNCHRONIZATION SOURCE (DS1 circuit pack location)
                     Stratum: 3
                  Port Network: 1
                     Primary: ___        Secondary: ___
                              DS1 CIRCUIT PACKS
Location   Name       Slip              Location   Name       Slip
___  ______________  __                ___  ______________  __
___  ______________  __                ___  ______________  __
___  ______________  __                ___  ______________  __
___  ______________  __                ___  ______________  __
___  ______________  __                ___  ______________  __
___  ______________  __                ___  ______________  __
___  ______________  __                ___  ______________  __
___  ______________  __                ___  ______________  __
```

Synchronization Plan Form (Page 1 of 2)

Implementation Note:

If the Stratum field entry is "3" only the "Stratum" and "Port Network" entries are displayed. In addition, the Port Network field is only displayed if the Stratum field entry is "3".



```
                                                          Page 2 of 2
                          SYNCHRONIZATION PLAN
                            DS1 CIRCUIT PACKS
Location   Name       Slip              Location   Name       Slip
___  ______________  __                ___  ______________  __
___  ______________  __                ___  ______________  __
___  ______________  __                ___  ______________  __
___  ______________  __                ___  ______________  __
___  ______________  __                ___  ______________  __
___  ______________  __                ___  ______________  __
___  ______________  __                ___  ______________  __
___  ______________  __                ___  ______________  __
```

Synchronization Plan Form (Page 2 of 2)

System Parameters Country-Options

Used to implement parameters associated with certain 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 and Error Messages (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

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 3i Global Feature Description*, 555-230-203.

Make assignments as required for the following fields on each page of the form:

Page 1 of the Form

- **Companding Mode** — Enter "A-law" or "Mu-law" to identify the companding 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.

  NOTE:
  Codes 11, 12, and 13 are not yet supported.

- **440 Hz PBX Dial-Tone** — Enter "y" if you want the dial tone to be heard at 440 Hz. Default is "n".
- **440 Hz Secondary Dial-Tone** — Enter "y" if you want the secondary dial tone to be heard at 440 Hz. Default is "n".
- **Analog Ringing Cadence** — Enter a country code (1 through 16) to identify the ringing cadence to be used by analog phones in the system. Default is 1. (See note above.)

- **Digital Loss Plan** — Enter a country code (1 through 16) to identify the digital loss plan to be used by the system. Default is 1. (See note above.)
- **Version of Digital Loss Plan** — Appears when the Digital Loss Plan field is country code 10. Enter "A" or "B" to identify the version of a country's digital loss plan to be used. Default is B.

The next 3 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 greater) tone-detection board. 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 Decoder board)
  5. Imprecise wideband filter algorithm (valid with TN420C or later Tone Decoder board)

  For modes 4 and 5, the Tone Detection Level field on the Miscellaneous System Parameters form should be "medium". For modes 1, 2, and 3, the Tone Detection Level field should be "precise".

- **Dial Tone Validation Timer** — Enter the number of milliseconds (0 through 6375) 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 Decoder board.)
- **Interdigit Pause** — Enter "short" or "long" to specify the minimum recognized length of the interdigit pause. (Valid with TN420C or later Tone Decoder board.)

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 2 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-confirmation
- ringback
- secondary-dial

NOTE:
If 440 Hz is enabled for the PBX or secondary dial-tone, "PBX-dial" and "secondary-dial" cannot be entered here.

- **Cadence Step** — This is a display-only field which 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 which 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+450/-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 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 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.

```
                                                          Page 1 of 7
                     SYSTEM PARAMETERS COUNTRY-OPTIONS

          Companding Mode: A-law          Base Tone Generation Set: 2
  440-Hz PBX dial tone? n            440-Hz Secondary dial tone? n
     Digital Loss Plan: 2          Version of Digital Loss Plan: B
Analog Ringing Cadence: 2


TONE DETECTION PARAMETERS
        Tone Detection Mode: 4          Dial Tone Validation Timer: 600
           Interdigit Pause: short
```

Country-Options System Parameters Form (Page 1 of 7)

```
                                                          Page 2 of 7
                     SYSTEM PARAMETERS COUNTRY-OPTIONS

        Tone Name      Cadence       Tone
                        Step     (Frequency/Level)
    3-call-wait_____     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:       _____________
```

System Parameters Country-Options Form (Pages 2 through 7)

System-Parameters Customer-Options

The System-Parameters Customer-Options form is implemented in the system during the installation process. The form is not available for use after installation except when option changes are required by the customer. Procedures covering the use of the System-Parameters Customer-Options form are provided in *DEFINITY Communications System Generic 1 and Generic 3 Installation and Test*, 555-230-104, Issue 4i. Refer to Chapter 3 for a brief description of each optional feature or to *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203, for a detailed description of each feature.

The optional features that supplement the standard system voice/data feature package capabilities are as follows. Note that the System can be optioned for either ASAI or OCM — CPN/BN but not both.

- Abbreviated Dialing — Enhanced List
- ASAI (Adjunct/Switch Applications Interface)

  In addition, the following ASAI capability groups may be optioned separately if the ASAI Interface is enabled:

  — Adjunct Call Control Group — Allows the associated adjunct (for example, ICM) to invoke third party capabilities.

  — Adjunct Routing Group — Allows the associated adjunct to provide adjunct routing information to the switch for incoming calls.

  — Domain Control Group — Allows the associated adjunct to: (1) control and receive event reports for station sets and (2) receive logout event reports for 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", and "logout".

  — Set Value Group — Allows the adjunct to request status changes for Message Waiting lamps (that is, control the on/off state of the lamps).
- Authorization Codes
- Automatic Call Distribution (ACD)
- Automatic Route Selection (ARS)
- ARS/AAR Digit Conversion (requires ARS and Private Networking or Uniform Dial Plan to be enabled)
- ARS/AAR Partitioning
- Basic CMS Measurements
- Call Work Codes (CWC) (requires ACD to be enabled)

- Centralized Attendant Service (CAS) Branch
- Centralized Attendant Service (CAS) Main
- Distributed Communications System (DCS)
- Emergency Access to the Attendant
- Forced Entry of Account Codes
- Hospitality
- Hospitality Parameter Reduction (requires Hospitality to be enabled)
- Integrated Systems Digital Network — Primary Rate Interface (ISDN-PRI)
- Lookahead Interflow [requires ISDN-PRI and Vectoring (Basic) to be enabled]
- Multifrequency Signaling
- OCM-CPN/BN (Outbound Call Management-Calling Party Number/Billing Number)
- Private Networking
- Service Observing
- Time of Day Routing (requires Automatic Route Selection Partitioning and either Automatic Route Selection or Private Networking features to be enabled)
- Uniform Dial Plan
- Vectoring (Basic)
- Vectoring (Prompting)

After activation of an optional feature, the associated form(s) and fields on forms require completion to define the feature parameters and service criteria. The implementation procedures for all features are provided in this manual. However, if an optional feature is not provided, the associated implementation procedures are blocked.

NOTE:
The Expanded Port Network (EPN) and duplication option are optional features that do not need to be administered; these feature options are dependent upon the hardware configuration of the system. See *DEFINITY Communications System Generic 1 and Generic 3i System Description*, 555-230-200, for additional information on the EPN and the duplication option.

System Parameters Multifrequency Signaling

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 and Error Messages" 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']

- Specific parameter values that meet the requirements of particular countries are given in appendix B.
- 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 Chapter 3. 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" or "non-group-ii-mfc". This field defines the signal type that a CO uses to place an incoming call to the PBX. Default is "group-ii-mfc".

  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". This field defines the signal type that the PBX uses to place an outgoing call into a CO. Default is "none".

  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. The signals on this page are used for DOD calls that use MFC signaling. 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" 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. Default is "none."

- **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 is 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" 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. Default is n.
- **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)** — Enter a number between -15 and 3 to specify the loss/gain when the trunk port listens to the MFC port.
- **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 9 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".

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.

See Chapter 3 for the meaning of the MFC messages. Appendix B provides the messages that should be assigned to the message codes for each country.

- **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** — Assign a meaning to each code. Acceptable meanings are: "attendant", " busy-rt-attd", "data-call", "drop", "maint-call", "normal", and "send-intercept".

- **Backward tones to CO on Incoming Forward 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".
- **Backward tones to CO on Incoming Forward 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-ani", "end-of-digits", and "ani-not-avail". Use either "end-of-ani" or "end-of-digits" to indicate that there are no more digits to be sent, but do not use both signals interchangeably.
- **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 or these can only appear once in the group II column.
- **Backward tones from CO on Outgoing Forward 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".
- **Backward tones from CO on Outgoing Forward 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".

```
change system-parameters multifrequency-signaling                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
           Multifrequency Signaling DID Intercept Treatment? n
                         Received Signal Gain (-Loss)(dB): 0
                      Transmitted Signal Gain (-Loss)(dB): -3
                                               ANI Prefix: _____
                                             ANI for PBX: _________
```

Screen 5-1. System Parameters Multifrequency Signaling (Page 1 of 3)

Implementation Note:

- The Outgoing Forward Signal Present Timer appears only when the Outgoing Call Type field is equal to "group-ii-mfc".
- The Outgoing Forward Signal Absent Timer 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".

```
change system-parameters multifrequency-signaling                Page 2 of 3
              MULTIFREQUENCY-SIGNALING-RELATED SYSTEM PARAMETERS

  INCOMING FORWARD SIGNAL TYPES          INCOMING BACKWARD SIGNAL TYPES
  (Tones from CO)                        (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-path     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 5-2. System Parameters Multifrequency Signaling (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.

```
change system-parameters multifrequency-signaling                Page 3 of 3
              MULTIFREQUENCY-SIGNALING-RELATED SYSTEM PARAMETERS

 OUTGOING FORWARD SIGNAL TYPES          OUTGOING BACKWARD SIGNAL TYPES
 (Tones to CO)                          (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            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 5-3. System Parameters Multifrequency Signaling (Page 3 of 3)

Implementation Note:

The above page is displayed only if the Outgoing Call Type is "group-ii-mfc".

Terminating Extension Group

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 4 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 and Error Messages (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-ext-group	1-32 ['print' or 'schedule']
list	term-ext-group	['print' or 'schedule']
remove	term-ext-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 from 1 to 600 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.) Valid entries are 1 through 600 or leave blank.
- **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.
- **Ext** — Enter the extension number (may not be a VDN extension) for the members of this group.
- **Name** — Make no entry. The name is assigned to the preceding extension number when the TEG member's voice terminal is administered.

```
                                                          Page 1 of 1
                        TERMINATING EXTENSION GROUP

       Group Number: __                          Group Extension: _____
         Group Name: _______________               Coverage Path: ___
      Security Code: _______                                COR: 1_
ISDN Caller Display: _______

      GROUP MEMBER ASSIGNMENTS
               Ext      Name                      Ext      Name
           1: _____                           3: _____
           2: _____                           4: _____
```

Terminating Extension Group Form (Page 1 of 1)

Toll Analysis

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 SMDR Forced Entry of Account Codes feature (that is, 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 "SMDR Feac").

NOTE:
The Toll List associated with this form has neither relationship nor interaction with the ARS Toll Table described in Chapter 4.

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 and Error Messages (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' ['min' 1-23]
display	toll	Enter digits between 0-9, 'x', or 'X' ['min' 1-23] ['print' or 'schedule']
list	toll	['start' dialed-string] ['count' (1-1000)] [print]
list	toll restricted-call	['start' dialed-string] ['count' (1-1000)] [print]
list	toll unrestricted-call	['start' dialed-string] ['count' (1-1000)] [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:

- **Percent Full** — This is a 3-character display-only field. The field displays the percentage of the system memory resources that are being utilized. 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 (that is, 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 wild card character "x" or "X". The wild card 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, SMDR Forced Entry Account Code (SMDR FEAC), or Toll List.
- **Min** — Enter the minimum number of digits to collect (1 through 18). The user can actually dial up to 23 digits (match is on first 18). Valid entries are 1 through 18. Default is blank
- **Max** — Enter the maximum digits to collect. The value must be greater than or equal to the Min value. Valid entries are 1 through 23. Default is blank.
- **RCL** — Enter "x" to assign the Dialed String to the Restricted Call List (RCL). 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. Default is blank.
- **Toll List** — Enter "x" to assign the Dialed String to the Toll List. 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. Default is blank.

  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 set to "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 form 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 that this Toll List has no relationship to the ARS Toll Table described in Chapter 4.

  The next table shows the System's default toll list assignments.

Table 5-12. 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	10	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

- **SMDR FEAC** — Enter "x" to assign the dialed string to the SMDR Forced Entry of Account Code feature. 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 SMDR FEAC dialed string field will be required to enter an account code before the call will complete. Default is blank.
- **Unrestricted Call List** — Enter "x" in the appropriate field (1 through 10) to assign the dialed string to one of the System's Unrestricted Call Lists (UCL). A UCL (10 maximum 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 (1 through 10) 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 that 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. Default is blank for all fields.

The following Authorization Check Flow Chart (see figure) 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 flow chart, 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 set to "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 "tac-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 (1 through 10) 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.

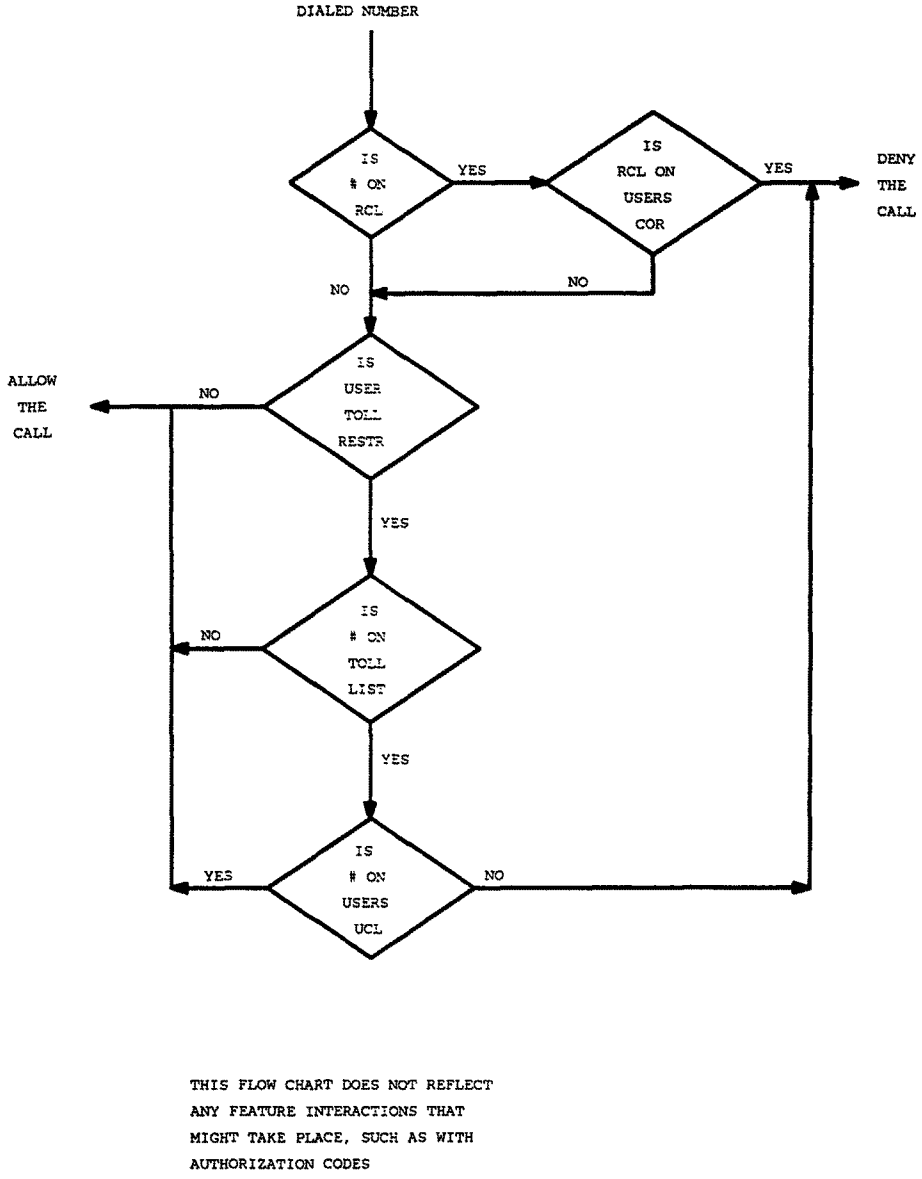


Figure 5-14. Authorization Check Flow Chart

TOLL ANALYSIS Percent Full:_

Dialed String	Min	Max	RCL	Toll List	SMDR FEAC	<--Unrestricted Call List--> 1	2	3	4	5	6	7	8	9	10

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.

Vector Directory Number

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 a direct dial CO trunk mapped to the VDN (incoming destination or night service extension), a Direct Inward Dial (DID) trunk, a Local directory Number (LDN) call. Note that the VDN may be Night Destination for LDN. A call vector consists of a set of commands that instruct the System on how to process calls to the VDN.

The System allows a maximum of 500 VDNs and 256 call vectors. For additional information, refer to the Call Vectoring feature description in *DEFINITY Communications System Generic 3i Global Feature Description*, 555-230-203. 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 and Error Messages (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)
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' 1-500) ['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

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 which 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 vdn xxxx" 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.

- **Display 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. If any subsequent VDNs are used to process this call, their names will not appear on the terminating display. 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. Default is "n".
- **Class of Restriction:** — Enter a 1- to 2-digit number which 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 256. The field cannot be blank.
- **Measured** — Enter "internal" to have change of state messages for the ACD split measured by the Basic Call Management System (internal to switch) and enter "external" to have measurements made by the 3B 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". Note that all BX.25 controlled splits (Controlling Adjunct field is "bx.25") must have the same entry in this field.
- **BCMS Acceptable Service Levels (sec.)** — Enter 0-9999 or blank to indicate the number of seconds within which BCMS calls should be answered. The percentage of calls answered within this interval is reported on the Monitor BCMS screen. This field is displayed when the contents of the Measured field is "internal" or "both".

```
                    VECTOR DIRECTORY NUMBER

                Extension:  XXXXX
                     Name:  _____________________
          Display Override?  n
                      COR:  1_
            Vector Number:  1__
                 Measured:  internal
BCMS Acceptable Service Level:
```

Vector Directory Number Form

Implementation Note:

The BCMS feature must have been optioned if the Measured field is set to "none". 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 next figure 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 Display Override field entry. As shown in the third example, the Display Override field set to "N" for VDN 4501 determines the name displayed on the terminating extension 7000.

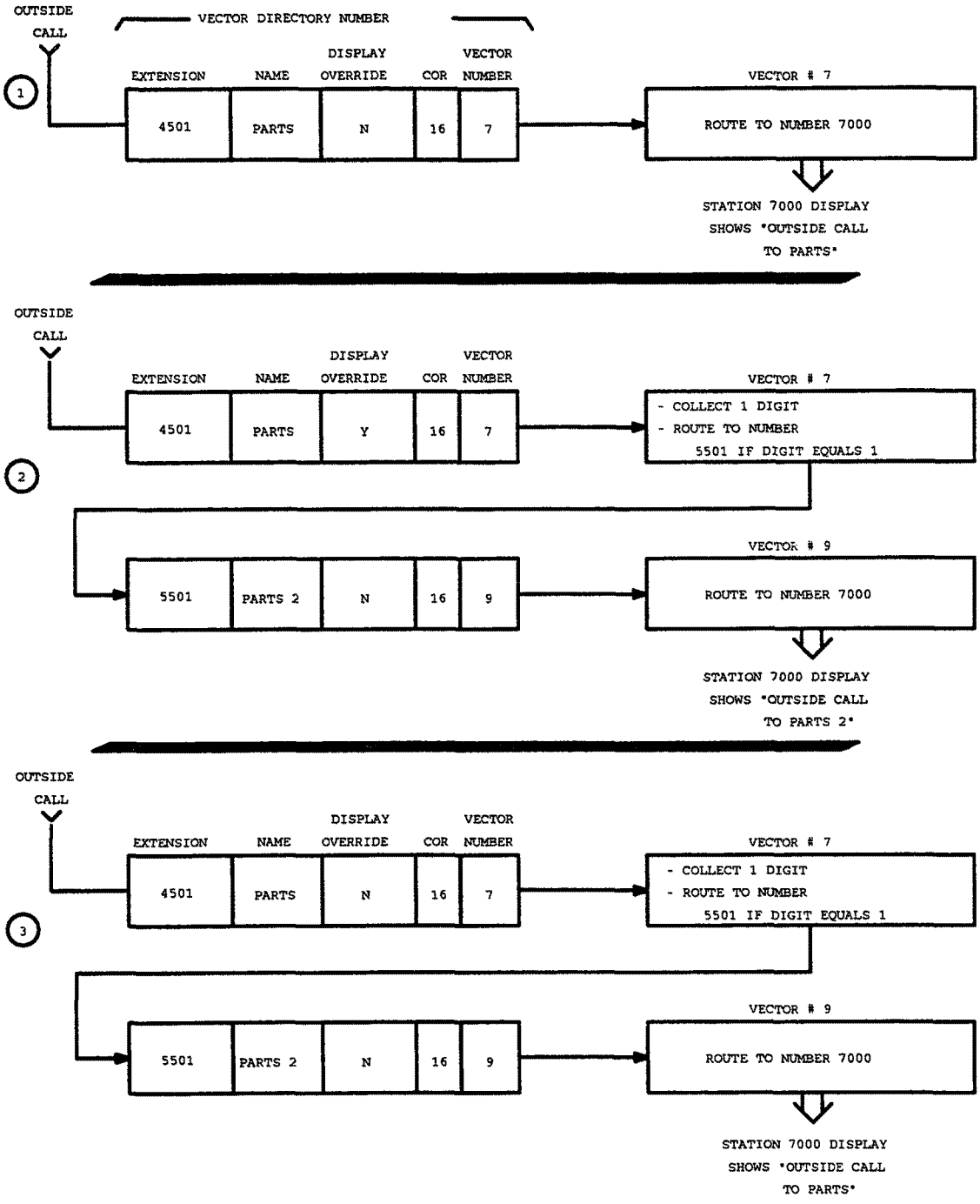


Figure 5-15. Typical VDN Call Processing Examples

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 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 that when assigning one of these buttons that 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 that depending on the voice terminal type (for example, 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 5-13. 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	7103A
	7104A	7104A
	DS1FD	DS1FD
Multi-Appearance Hybrid	7302H	7303S
	7303H	7303S
	7303S	7303S
	7305H01B or 7305H02B	7305S
	7305H03B	7305S
	7305H04B	7305S
	7305S	7305S
	7309H	7309H
Multi-Appearance Digital	7401D	7401D
	7403D	7403D
	7404D	7404D
	7405D	7405D
	7406D or 7406+	7406D
	7407D or 7407+	7407D
	7410D or 7410+	7403D
	7434D or 7434+	7434D
	"CALLMASTER" Terminal (602A1)	602A1
	IDT1	7406D
	IDT2	7403D
	AUDIX	7405D
Multi-Button Electronic Telephone (MET) Sets	10 Button	10MET
	10 Button With Built-In Speakerphone	10MET
	20 Button	20MET
	30 Button	30MET
Terminals	510D	510
	515BCT	515
ISDN-BRI Station	—	asai *
ISDN-BRI Station	7505D	7505D
	7506D	7506D
	7507D	7507D
	8503D or 8503T	8503D
	8510D	8510D
	8520D	8520D
PC/PBX	6300/7300	PC

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).

* "asai" is administered as the ISDN-BRI set type in support of an Adjunct Switch Applications Interface (ASAI) link. This interface supports use of 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.

NOTE:
In the preceding table, there is an "Administered As" column. To administer one terminal as another, either the terminals must be equated at the Alias Station form, or the equivalent station type must be entered at the Station form in lieu of the actual station type.

Table 5-14. Voice Terminal Feature Button Descriptions

Administration Name	Button Label	Description
abr-prog	AbrvDial 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.)
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 (*display button*): 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 (*display button*): 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.

(Continued on next page)

Table 5-14. 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 (*display button*): 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

(Continued on next page)

Table 5-14. 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 (*display button*): 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 (display button): 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.)
check-in ** ‡	Check In	Check In (*display button*): 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 (*display button*): 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 (*display button*): used in association with the Time of Day Routing feature to override the routing plan in effect for the activating user's partitioned group number. The routing 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.

(Continued on next page)

Table 5-14. Voice Terminal Feature Button Descriptions *(continued)*

Administration Name	Button Label	Description
consult	Consult	Consult: used by a covering 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 Msg Retrieve	Coverage Message Retrieval (*display button*): 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 (*display button*): used to display the current date and time. (One per-station maximum.)
delete-msg ‡	Delete Message	Delete Message (*display button*): used to delete a stored message that is currently on the station's display. (One per-station maximum.)
dial-icom	Dial Icom	Dial Intercom: used to access the intercom group assigned to the button. (One per group; otherwise, no per-station maximum.)
directory ‡	Integrtd Directory	Directory (*display button*): 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.

(Continued on next page)

Table 5-14. Voice Terminal Feature Button Descriptions *(continued)*

Administration Name	Button Label	Description
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-board 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 (*display button*): 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.)
flsh-pcorr	Flash CO	Flash Central Office: send a flash to the central office on the active trunk.
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 (*display button*): 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 (*display button*): 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.)

* 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.

(Continued on next page)

Table 5-14. 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.)
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 last number dialed to return the call to the originator. (One per-station maximum.)
major-alrm	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 (*display button*): 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.)
mj/mn-alrm	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.

(Continued on next page)

Table 5-14. Voice Terminal Feature Button Descriptions *(continued)*

Administration Name	Button Label	Description
msg-retr ‡	Message Retrieve	Message Retrieval (*display button*): 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 (*display button*): 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.)
normal ‡	Normal Mode	Normal (*display button*): 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 Alm	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.

(Continued on next page)

Table 5-14. 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.)
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.

(Continued on next page)

Table 5-14. 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.)
smdr1-alrm	SMDR 1 Failure	SMDR Alarm: associated status lamp is used to indicate that a failure in the interface to the primary SMDR output device has occurred. (One per-station maximum.)
smdr2-alrm	SMDR 2 Failure	SMDR Alarm: associated status lamp is used to indicate that a failure in the interface to the secondary SMDR output device has occurred. (One per-station maximum.)
stored-num ‡	Stored Number	Stored Number (*display button*): 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.)
stroke-cnt *	Stroke _	ACD stroke count: allows an agent to send a message to the Call Management System to intercept a stroke count number. Up to ten Stroke Count buttons (each associated with a different code number 0-9) may be administered on a voice terminal.
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.)

* 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.

(Continued on next page)

Table 5-14. Voice Terminal Feature Button Descriptions *(continued)*

Administration Name	Button Label	Description
timer ‡	Timer	Timer (*display button*): used to start a clock 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 (*display button*): used to identify the tac (trunk access code) and trunk member number associated with a call. (One per-station maximum.)
trunk-name ‡	Trunk Name	Trunk Name (*display button*): 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 5-15. 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	ac-alarm	1	
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	

* Refer to the previous table ("Voice Terminal Feature Button Descriptions") for feature button descriptions and notes.

** See Notes at end of table.

(Continued on next page)

Table 5-15. Voice Terminal Feature Button Characteristics *(continued)*

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
Automatic Call Distribution (Contd)	Work Code	work-code	1	
	Stroke _	stroke-cnt (Code:_)	10 per terminal	17
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	*Extension*	brdg-appr	N	
	Extension	abrdg-appr	N	
Busy Verification	Verify	verify	1	
Call Appearance	*Extension*	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	

* 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.

(Continued on next page)

Table 5-15. Voice Terminal Feature Button Characteristics *(continued)*

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
Call Park	Call Park	call-park	1	
Call Pickup	Call Pickup	call-pkup	1	
Call Prompting [display button]	Caller Info	callr-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	
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
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

* 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.

(Continued on next page)

Table 5-15. Voice Terminal Feature Button Characteristics *(continued)*

Feature Or Function	Recommended Button Label	Name Entered On Station Form	Maximum Allowed*	Notes **
Facility Test Calls [status lamp]	FTC Alarm	trk-ac-alm	10 per system	
Hardware Failure [status lamps]	Major Hdwe Failure	major-alrm	10 per system	
	Major/Minor Hdwe Failure	mj/mn-alrm	10 per system	
	DS1 (facility)	ds1-alarm	10 per system	
	PMS Failure	pms-alarm	1	
	PMS Ptr Alm	pr-pms-alm	1	
	SMDR 1 Failure	smdr1-alrm	1	
	SMDR 2 Failure	smdr2-alrm	1	
	Auto Wakeup Alm	pr-awu-alm	1	
	Sys Ptr Alm	pr-sys-alrm	1	
Inspect [display button]	Inspect Mode	inspect	1	2
Integrated Directory [display button]	Integrtd Directory	directory	1	2
Intercom- Automatic	AutoIcom (name or extension #)	auto-icom Grp:___ DC:___)	1 per Grp/DC	5
Intercom-Dial	DialIcom	dial-icom (Grp:___)	1 per Grp.	6
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.

(Continued on next page)

Table 5-15. 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	
	Cancel LWC	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	3 per Grp.	10
	Trunk Grp.	trunk-ns	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.

(Continued on next page)

Table 5-15. 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 (Grp:_)	1 per hunt group	13
Queue Status Indications [display buttons]	AQC	atd-qcalls	1	
	AQT	atd-qtime	1	
Ringer Cutoff	Ringer Cutoff	ringer-off	1	
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.

(Continued on next page)

Table 5-15. 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 (1 to 99).
4. TAC/Ext: Trunk or extension number of voice terminal to be monitored.
5. Grp: Dial Icom group number (1 to 32). This extension and destination extension number must be in the same group.
6. Grp: Dial Icom group number (1 to 32).
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 (1 to 99).
11. Grp: Trunk group number (1 to 99).

Table 5-15. Voice Terminal Feature Button Characteristics *(continued)*

12.	Grp:	CO line group number (1 to 40).
13.	Grp:	Group number of hunt group.
14.	Grp:	TEG Number (1 to 32).
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 (1 to 100 for "c," one to 99 for "h").
16		The extension may not be a VDN extension.
17.	Code:	Stroke count number (0 through 9).
18.	Flash:	Not administrable on Attendant Consoles.

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) to indicate that an adjunct supervises a port by sending an analog disconnect signal 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. This field only appears if the voice terminal type is "500" or "2500".
- **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 sends 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.
- **Auto Answer** — Enter "y" if this terminal has Auto Answer; otherwise, enter "n" (default). Auto Answer indicates if an incoming call will be automatically answered without any action by the user (that is, by an Automatic Call Distribution agent).
- **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 3i Global Feature Description*, 555-230-203, 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.

- **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". See Class of Service elsewhere in this chapter for additional information.
- **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 Path** — Enter a coverage path number (1 through 600) from a previously administered Call Coverage Path form. Leave blank if no coverage is desired.
- **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".
- **Display Language** — Displayed when Display Module is "y". Enter "English" (default), "French", "Italian", or "Spanish".
- **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. Enter "n" if this feature is not desired.
- **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 in order 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 re-used 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.

- **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 TEI. 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 light waiting 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 then 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 in order 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.
- **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 five to six characters. For multi-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 20 depending on carrier type), and circuit number (01 through 24). For single-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 18 depending on cabinet type), and circuit number (01 through 31). For DCP sets, the port may only be assigned once. ISDN-BRI provides multipoint configuration capability which 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.

NOTE:
A 1-character entry of "X" in the Port field may be used to indicate that there is no hardware associated with the port assignment (that is, Administration Without Hardware feature). This permits preadministration of stations that will be implemented at a later time. These stations are referred to as "phantom stations". The ISDN-BRI interface does not support this capability.

- **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 (for example, SLC carriers or impedance compensators) optioned for 600 ohm input impedance and the distance to the terminal equipment from the system is less than 3000 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; otherwise, enter "n".
- **Security Code** — Enter a 4-digit security code required by users to retrieve messages via the Demand Print or Voice Message Retrieval feature.
- **SMDR Privacy** — An administrable option which 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 system-wide 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".
- **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". (See the Flashhook Interval field on the Miscellaneous System Parameters form.)
- **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.
- **Type** — Enter the voice terminal type.
- **XID** — Appears for ISDN-BRI data modules. 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" for personal, "s" for system, "g" for group, or "e" for 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.

- **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.
- **Headset** — Enter "y" if this terminal has a headset; otherwise, enter "n" (default).
- **Jack** — Enter up to five characters that are used to identify the jack location the where the voice terminal is connected. This field may be left blank. See the Port Assignment Record.
- **Room** — Enter blanks or up to ten characters to identify the voice terminal's location. See the Port Assignment Record (Chapter 1).

  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.

Page x of the Form — Data Module

- **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. 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 3i Global Feature Description*, 555-230-203, 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 From above list** — 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** — Only displayed when the SPECIAL DIALING OPTION field is "hot-line". 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 on a Data Hot Line call.
- **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 fields only appear 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 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" (default), "M2_S", or "M3/2".

10-MET, 20-MET, and 30-MET Voice Terminals

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 and Error Messages (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	[xxxxx] ('count' 1-2400) type ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-2400) 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.

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 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
- abr-spchar
- abrdg-appr
- abrv-dial
- ac-alarm
- aca-call
- after-call
- assist
- aut-msg-wt
- auto-cback
- auto-icom
- auto-in
- aux-work
- brdg-appr
- busy-ind
- call-appr
- call-fwd
- call-park
- call-pkup
- cas-backup
- consult
- cov-cback
- data-ext
- dial-icom
- dn-dst
- ds1-alarm
- exclusion
- flash
- fish-pcorr
- goto-cover
- hunt-ns
- in-call-id
- last-numb
- link-alarm
- lwc-cancel
- lwc-store
- major-alrm
- man-msg-wt
- manual-in
- mj/mn alrm
- night-ser
- per-COline
- pms-alarm
- pr-awu-alm
- pr-pms-alm
- pr-sys-alm
- print-msgs
- priority
- q-calls
- q-time
- release
- ringer-off
- rs-alert
- send-calls
- send-term
- serv-obsrv
- signal
- smdr1-alrm
- smdr2-alrm
- stroke-cnt
- term-x-gr
- trk-ac-alm
- trunk-ns
- verify

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? n
          SMDR Privacy? n                     Data Restriction? n
 Redirect Notification? y              Idle Appearance Preference? n
 Bridged Call Alerting? n                Restrict Last Appearance? y
```

10 MET, 20 MET, and 30 MET Form (Page 1 of x)

Implementation Note:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

```
                                                          Page 2 of x
                                    STATION
NON-SWITCH DATA
     Room: _______                                  Headset? n
     Jack: _______
    Cable: _______
 ABBREVIATED DIALING
     List1: _______          List2: _______          List3: _______
 BUTTON ASSIGNMENTS
   1: call-appr_
   2: call-appr_
   3: call-appr_
   4: _________
   5: _________
```

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: _________
```

20- or 30-MET Sets Form (Page 3 of 3)

Implementation Note:

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.

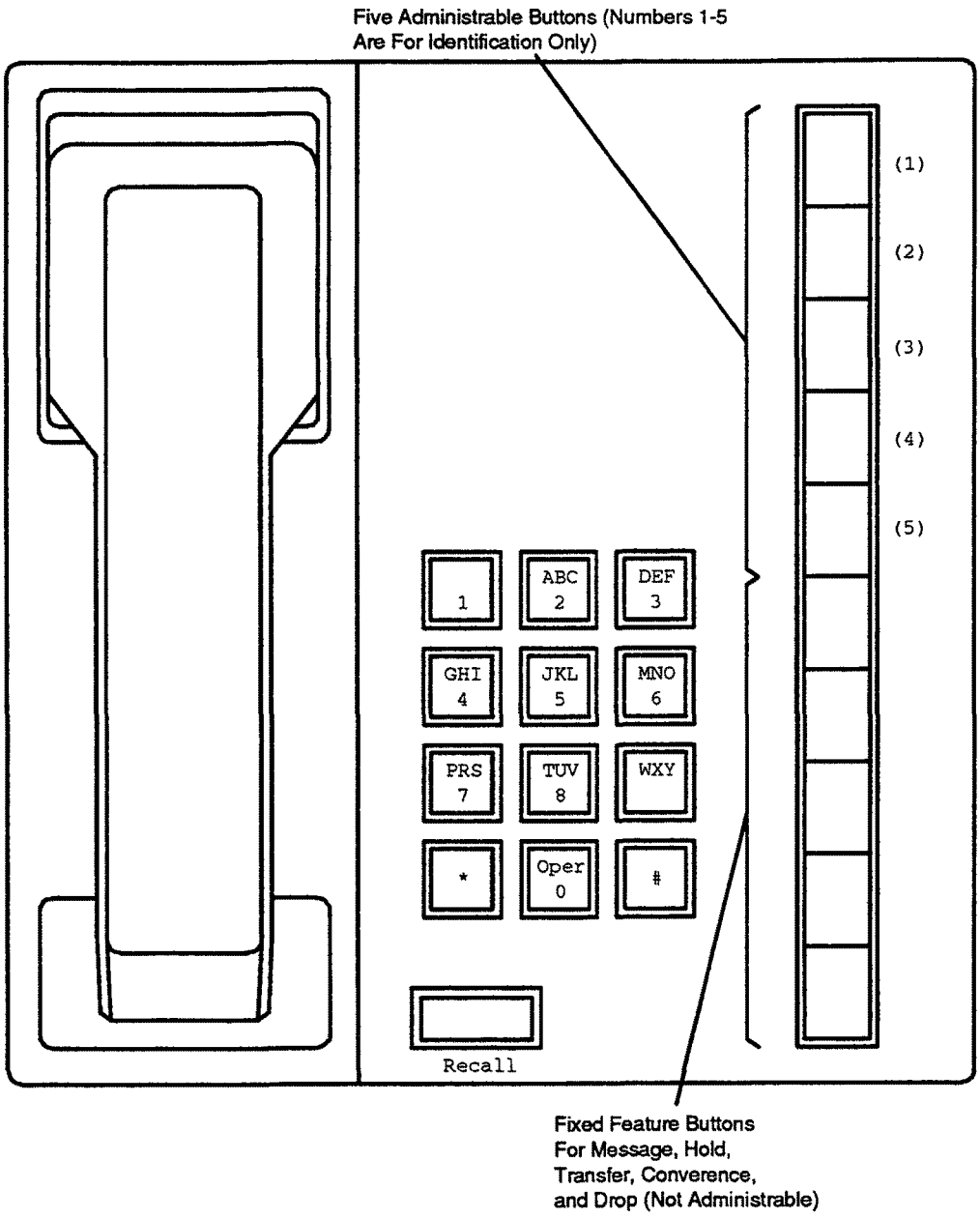


Figure 5-16. 10-MET Voice Terminal

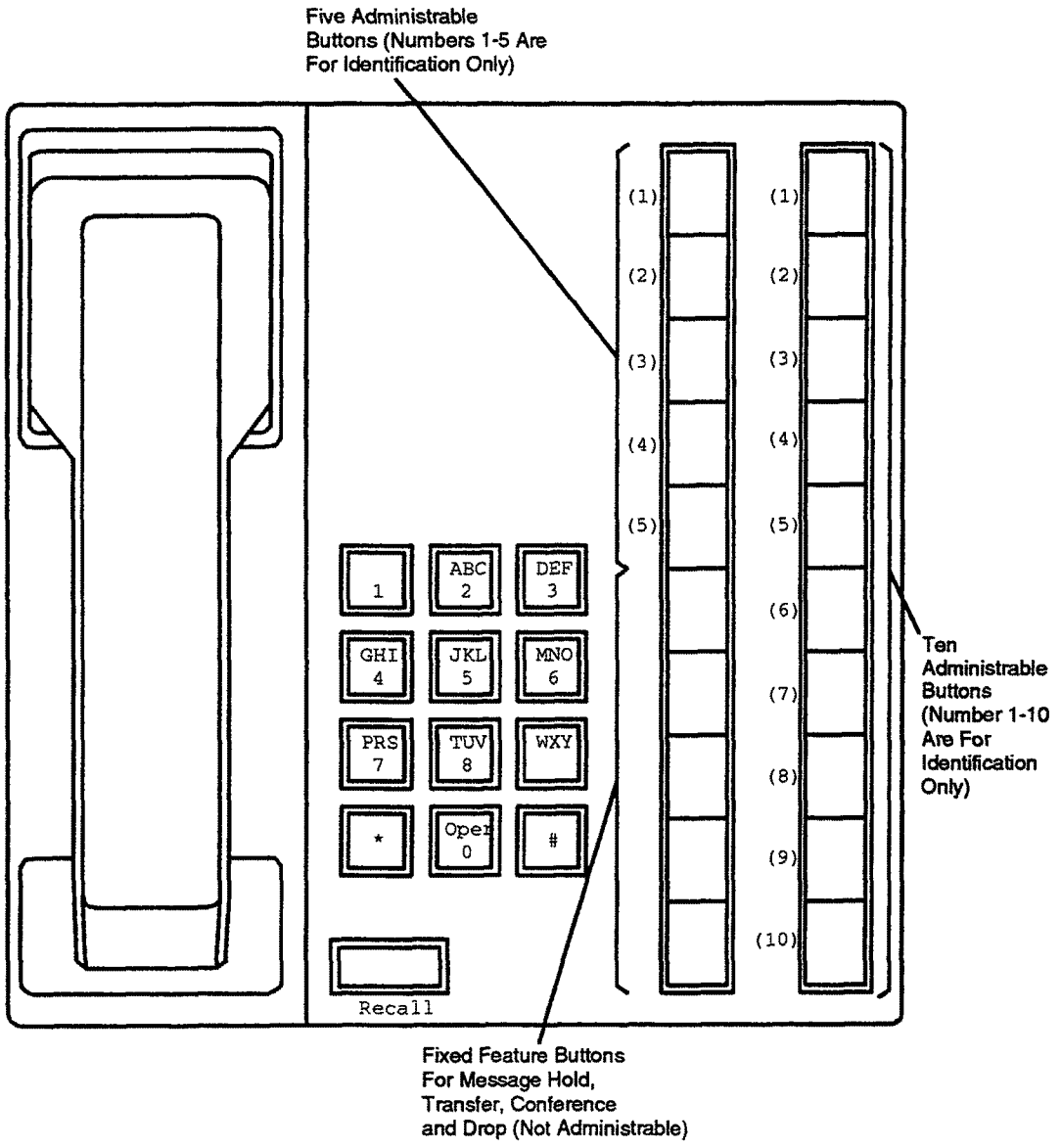


Figure 5-17. 20-MET Voice Terminal

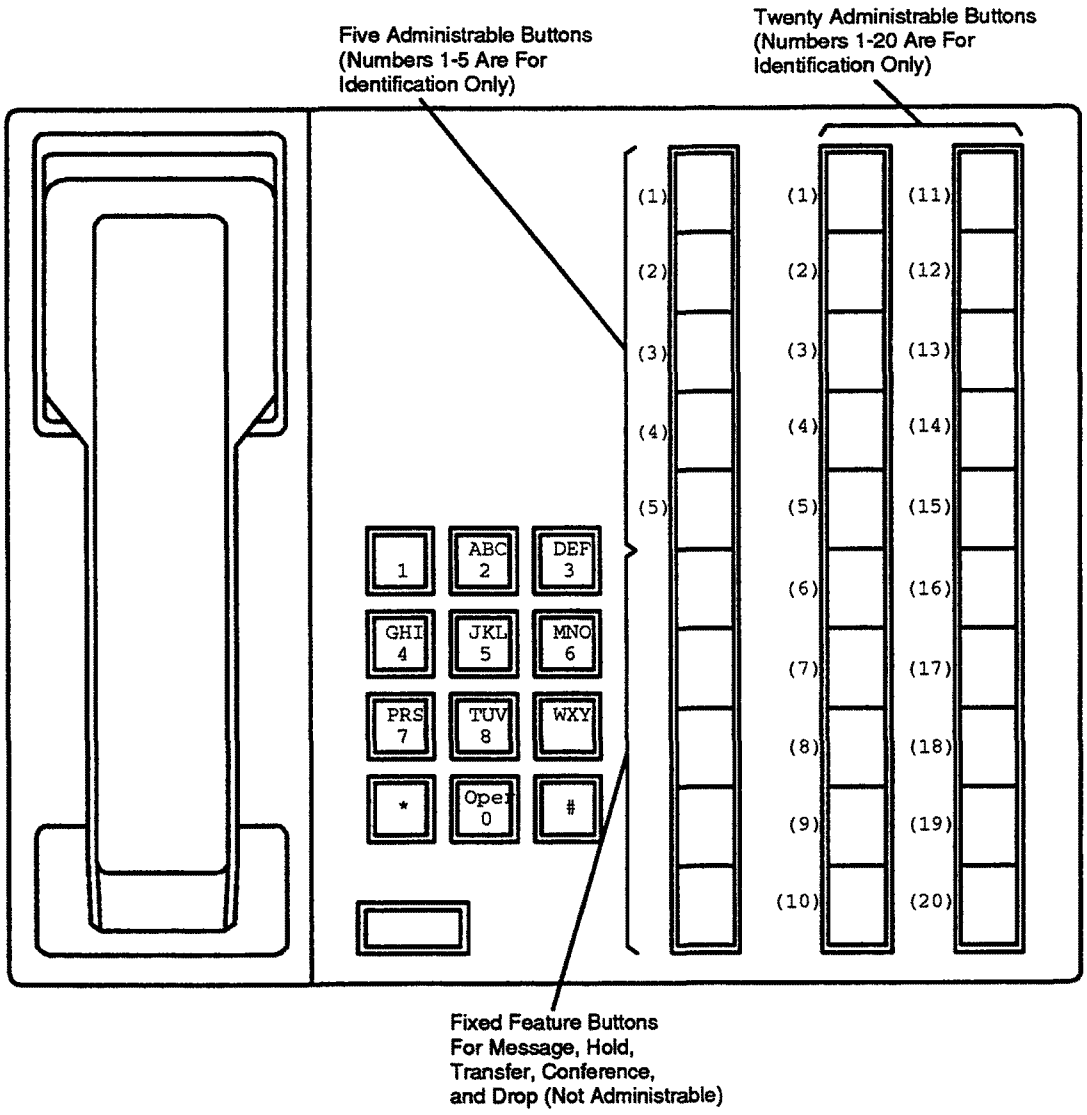


Figure 5-18. 30-MET Voice Terminal

500, 2500, 7101A, 7102A, 7103A, 7104A and DS1FD Voice Terminals

Used to implement a 500, 2500, 7101A, 7102A, 7103A, 7104A, or DS1FD single-line voice terminal. The terminals are shown in the figures immediately following the sample station forms in this section dealing with the 500, 2500, 7101A, 7102A, 7103A, 7104A, or DS1FD 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 and Error Messages (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	[xxxxx] ('count' 1-2400) type ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-2400) 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.

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 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), "7101A", "7103A", "7104A", or "DS1FD" , as appropriate. For a 7102A Voice Terminal, enter "7101A" in the Type field.

  ⇒ NOTE:
  For a 2500 DMGC voice terminal, enter "7101A" in the Type field. This enables the Recall button and switchhook flash functions.

The "DS1FD" designation is 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? n
         SMDR 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
```

Single-Line Station Form (Page 1 of 2)

Implementation Note:

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", or "7104D".

The Adjunct Supervision field is only displayed when the Type field is "500", "2500", or "DS1FD".

```
                                                          Page 2 of 2
                                  STATION
NON-SWITCH DATA
     Room: _______                                    Headset? n
     Jack: _______
    Cable: _______
ABBREVIATED DIALING
     List1: _______          List2: _________        List3: _________
HOT LINE DESTINATION
        Abbreviated Dialing List Number (From above 1, 2 or 3): _
                                                    Dial Code: __
```

Single-Line Station Form (Page 2 of 2)

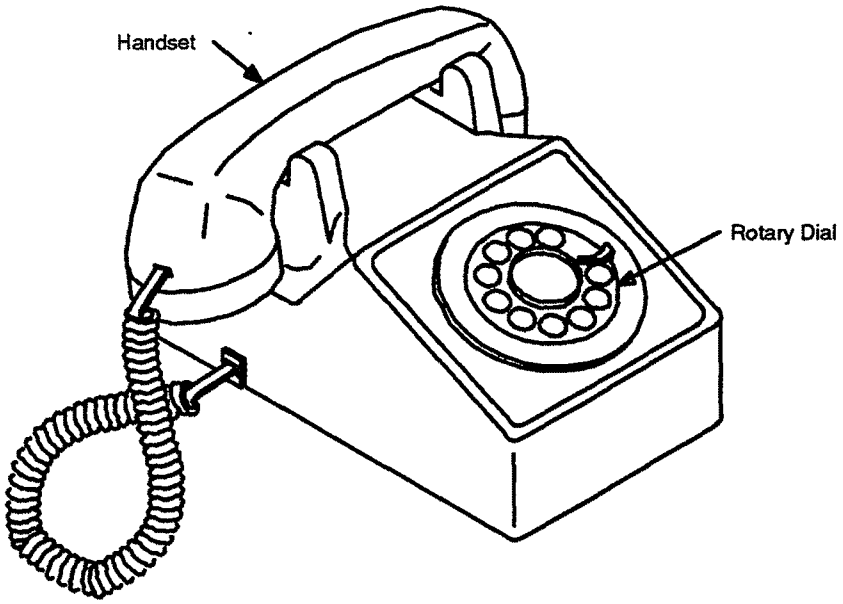


Figure 5-19. 500 Voice Terminal

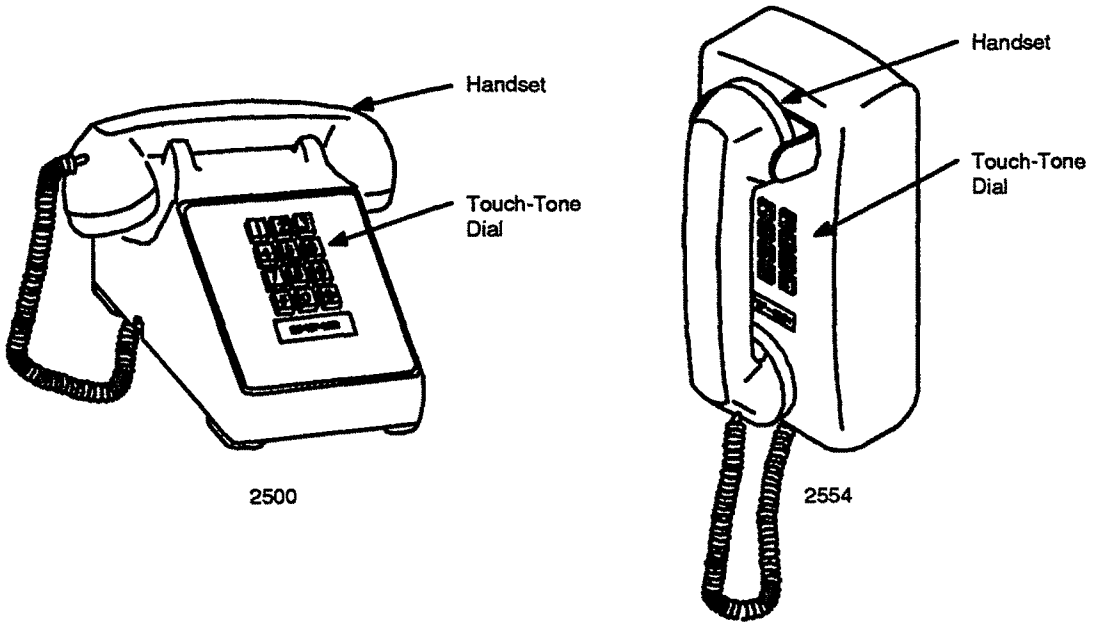


Figure 5-20. 2500 and 2554 Voice Terminals

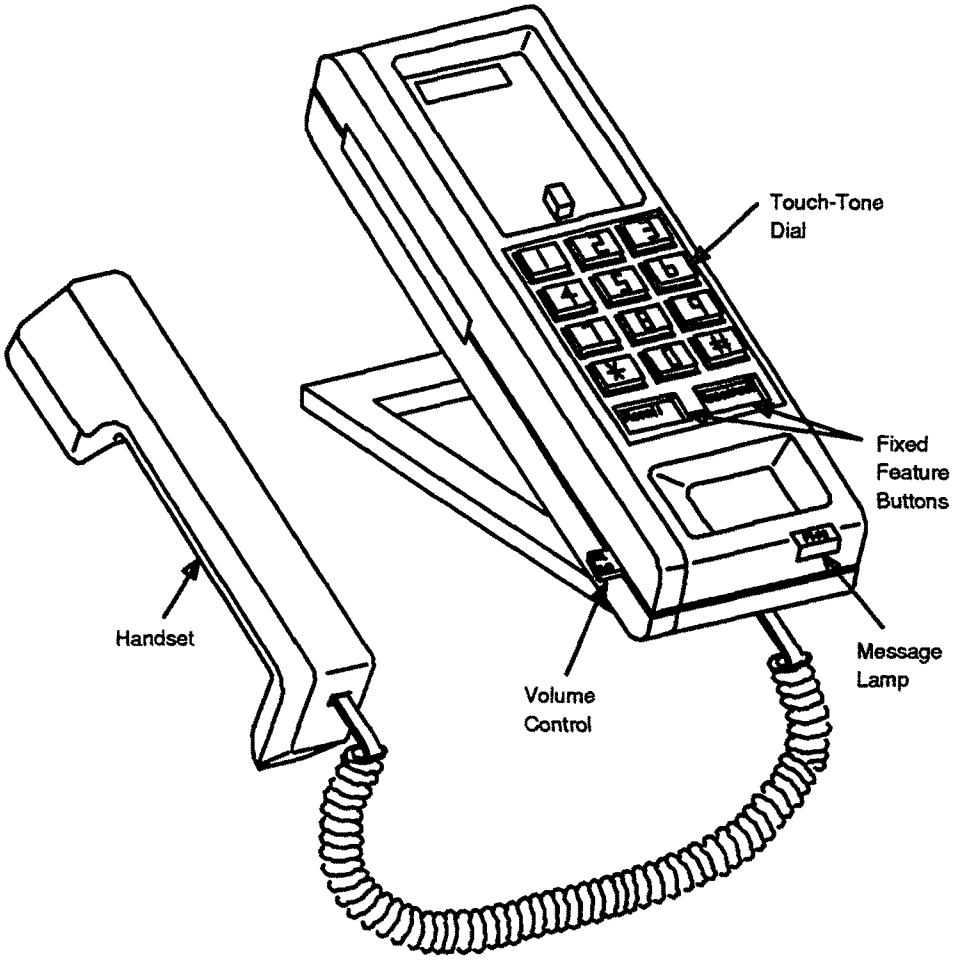


Figure 5-21. 7101A Voice Terminal

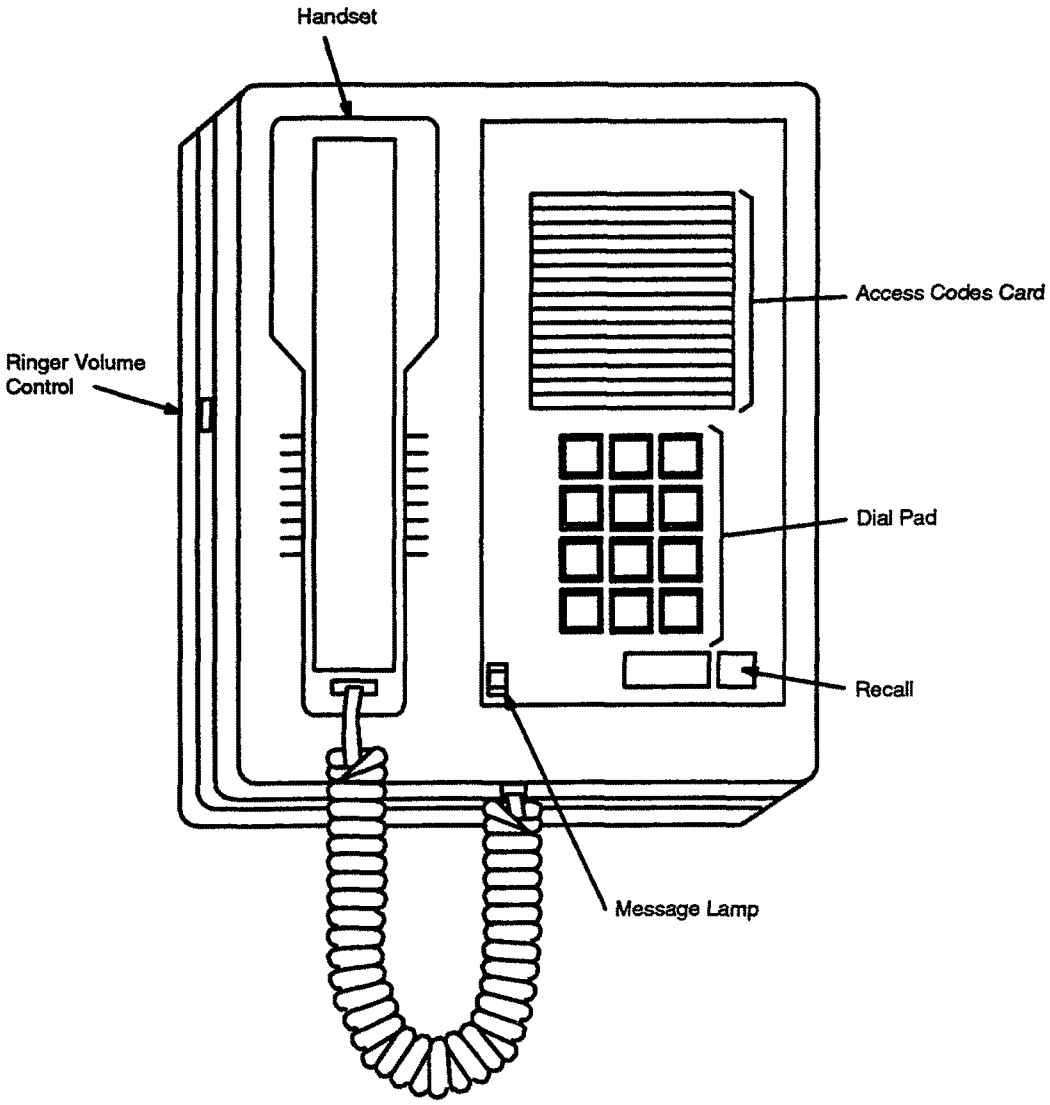


Figure 5-22. 7102A Voice Terminal

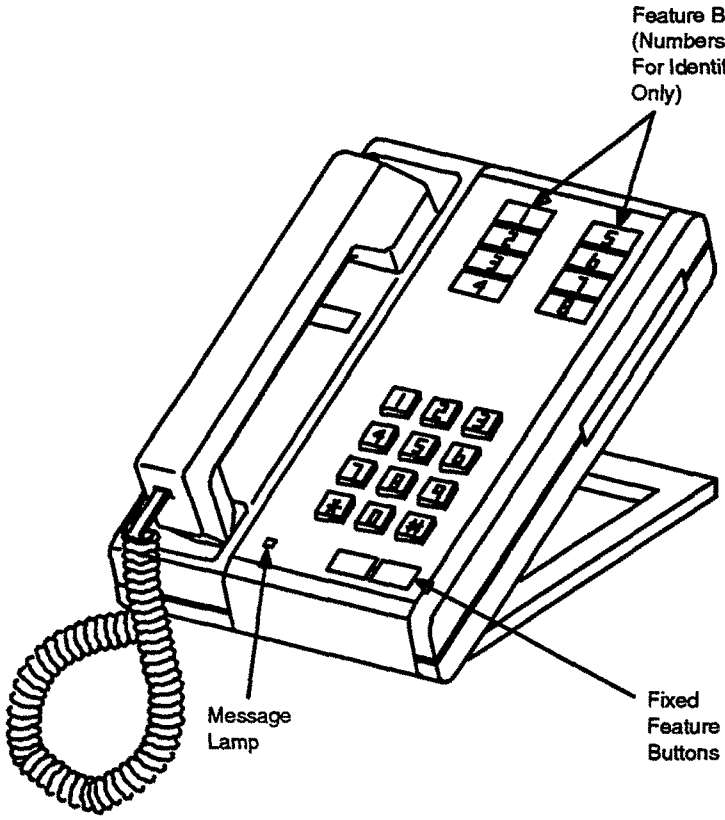


Figure 5-23. 7103A Voice Terminal

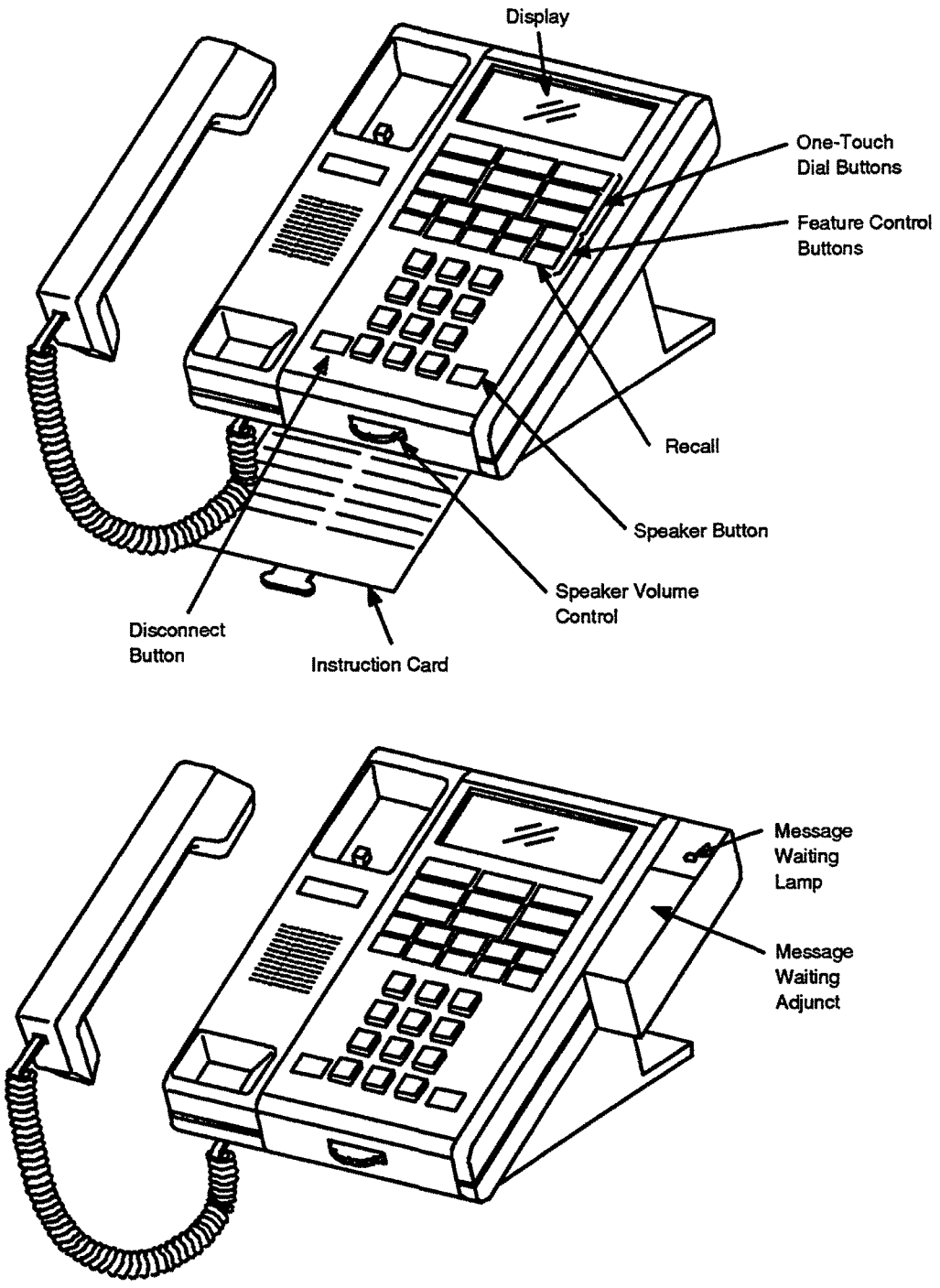


Figure 5-24. 7104A Voice Terminal

510D Personal Terminal and 515 Business Communications Terminal

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 and Error Messages (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	[xxxxx] ('count' 1-2400) type ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-2400) 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.

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 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

- **Port** — Enter five to six characters. For multi-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 20 depending on carrier type), and circuit number (01 through 24). For single-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 18 depending on cabinet type), and circuit number (01 through 31).
- **PCOL/TEG Call Alerting** — (510D only) Enter "y" if the user will be alerted of a PCOL/TEG call; otherwise, enter "n". 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".
- **Data Module** — Display-only field. Restricted to "y".
- **Display** — Display-only field. Restricted to "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
- abr-spchar
- abrdg-appr
- abrv-dial
- ac-alarm
- aca-call
- after-call
- assist
- atd-qcalls *
- atd-qtime *
- aut-msg-wt
- auto-cback
- auto-icom
- auto-in
- auto-wkup *
- aux-work
- brdg-appr
- busy-ind
- call-appr
- call-disp *
- call-fwd
- call-park
- call-pkup
- callr-info*
- cas-backup
- check-in *
- check-out *
- clk-overid *
- consult
- cov-cback
- cov-msg-rt *
- data-ext
- date-time *
- delete-msg *
- dial-icom
- directory *
- dn-dst
- ds1-alarm
- exclusion
- ext-dn-dst *
- flash
- flsh-pcorr
- goto-cover
- grp-dn-dst *
- hunt-ns
- in-call-id
- inspect *
- last-numb
- link-alarm
- lwc-cancel
- lwc-store
- major-alrm
- man-msg-wt
- man-overid *
- manual-in
- mj/mn alrm
- msg-retr *
- mwn-act *
- mwn-deact *
- next *
- night-ser
- normal *
- per-COline
- pms-alarm
- pr-awu-alm
- pr-pms-alm
- pr-sys-alm
- print-msgs
- priority
- q-calls
- q-time
- release
- ringer-off
- rs-alert
- send-calls
- send-term
- serv-obsrv
- signal
- smdr1-alrm
- smdr2-alrm
- stored-num *
- stroke-cnt
- term-x-gr
- timer *
- trk-ac-alm
- trunk-name *
- trunk-ns
- verify
- work-code

* 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: 510                    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? n
         SMDR Privacy? n                               Data Restriction? n
 Redirect Notification? y                  Idle Appearance Preference? n
PCOL/TEG Call Alerting? n
                                          Restrict Last Appearance? y
          Data Module? y
              Display? y
     Display Language: English
```

510D Personal Terminal Form (Page 1 of x)

Implementation Note:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

```
                                                              Page 1 of x
                                  STATION
Extension: _____              BCC: 0
     Type: 515                     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? n
                                                  Data Restriction? n
 Redirect Notification? y                 Idle Appearance Preference? n
 Bridged Call Alerting? n                   Restrict Last Appearance? y
          Data Module? y
              Display? y
     Display Language: English
```

515 Business Communications Terminal Form (Page 1 of x)

Implementation Note:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

```
                                                          Page 2 of x
                                    STATION
     NON-SWITCH DATA
          Room: _______                                   Headset? n
          Jack: _______
         Cable: _______
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: _________
```

510D and 515 BCT Form (Page 2 of x)

Implementation Note:

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: _____

510D Personal Terminal Form (Page 3 of x)

Page x of x

STATION

DISPLAY BUTTON ASSIGNMENTS

1: _____
2: _____
3: _____
4: _____
5: _____
6: _____
7: _____

510D and 515 BCT Display Button Assignments Form

```
                                                          Page x of x
                                  STATION
DATA MODULE
     Data Extension: ____                BCC: 2
               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:
```

510D and 515 BCT Data Module Form

Implementation Note:

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".

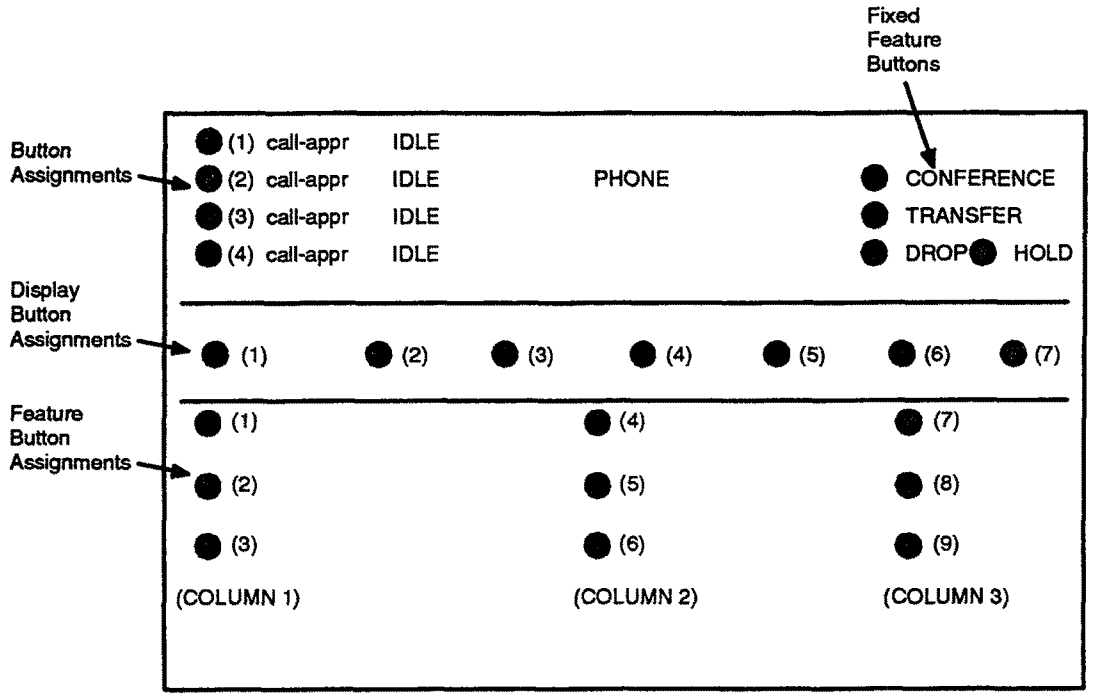


Figure 5-25. 510D Personal Terminal Administrable Screen Button Assignments

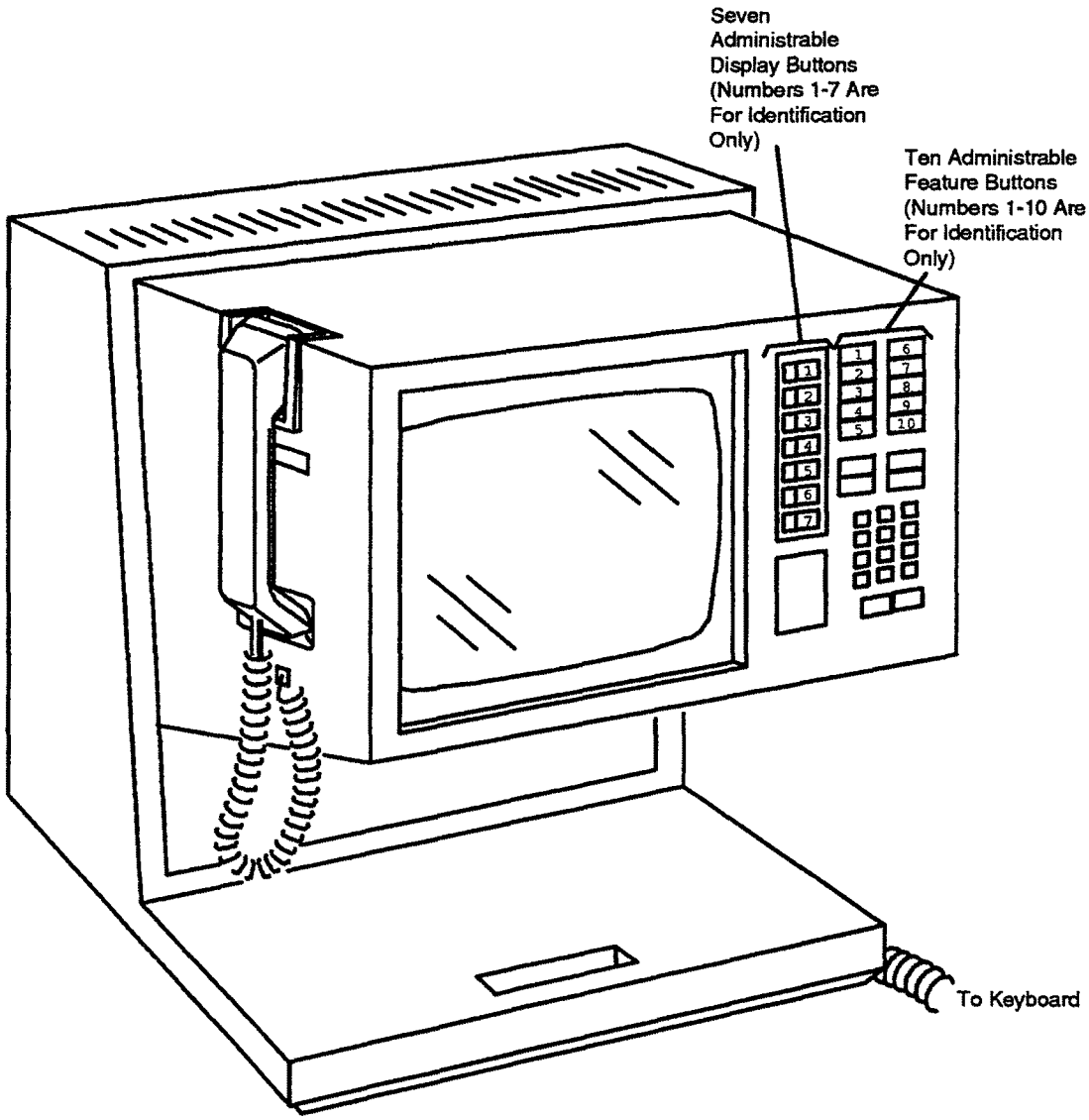


Figure 5-26. 515 Business Communications Terminal (BCT)

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 and Error Messages (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	[xxxxx] ('count' 1-2400) type ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-2400) 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.

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 that only the first 12 feature function buttons on Page 2 of the form apply. Of these 12 buttons, 8 have 2 lamps and 4 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 (2 lamps each) as single (green) lamp function buttons.

7303S, 7305S, and 7309H Voice Terminals

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 and Error Messages (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	[xxxxx] ('count' 1-2400) type ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-2400) 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

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 "7303S", "7305S", or "7309H" as appropriate.

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
- abr-spchar
- abrdg-appr
- abrv-dial
- ac-alarm
- aca-call
- after-call
- assist
- aut-msg-wt
- auto-cback
- auto-icom
- auto-in
- aux-work
- brdg-appr
- busy-ind
- call-appr
- call-fwd
- call-park
- call-pkup
- cas-backup
- consult
- cov-cback
- data-ext
- dial-icom
- dn-dst
- ds1-alarm
- exclusion
- flash
- fish-pcorr
- goto-cover
- hunt-ns
- in-call-id
- last-numb
- link-alarm
- lwc-cancel
- lwc-store
- major-alrm
- man-msg-wt
- manual-in
- mj/mn alrm
- night-ser
- per-COline
- pms-alarm
- pr-awu-alm
- pr-pms-alm
- pr-sys-alm
- print-msgs
- priority
- q-calls
- q-time
- release
- ringer-off
- rs-alert
- send-calls
- send-term
- serv-obsrv
- signal
- smdr1-alrm
- smdr2-alrm
- stroke-cnt
- term-x-gr
- trk-ac-alm
- trunk-ns
- verify

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? n
         SMDR Privacy? n                               Data Restriction? n
 Redirect Notification? y                    Idle Appearance Preference? n
 Bridged Call Alerting? n                  Personalized Ringing Pattern: _
                                              Restrict Last Appearance? y
```

7303S, 7305S, and 7309H Station Form — (Page 1 of x)

Implementation Note:

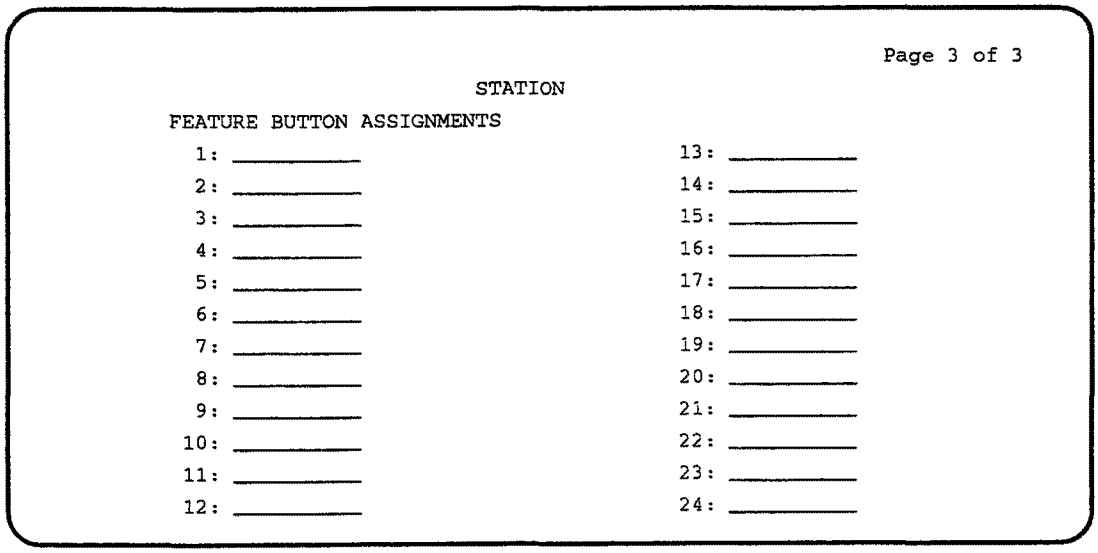
The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

For 7303S and 7309H voice terminals, this is a 2-page form.

For 7305S voice terminal, this is Page 1 of a 3-page form.

```
                                                              Page 2 of x
                                    STATION
 NON-SWITCH DATA
      Room: _______                                    Headset? n
      Jack: _______
     Cable: _______
 ABBREVIATED DIALING
      List1: _______          List2: _________        List3: _________
 BUTTON ASSIGNMENTS
   1: call-appr_                          6: _________
   2: call-appr_                          7: _________
   3: call-appr_                          8: _________
   4: _________                           9: _________
   5: _________                          10: _________
```

7303S, 7305S, and 7309H Station Form — (Page 2 of x)



Page 3 of 3

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:	_____

7305S Voice Terminal Form — (Page 3 of 3)

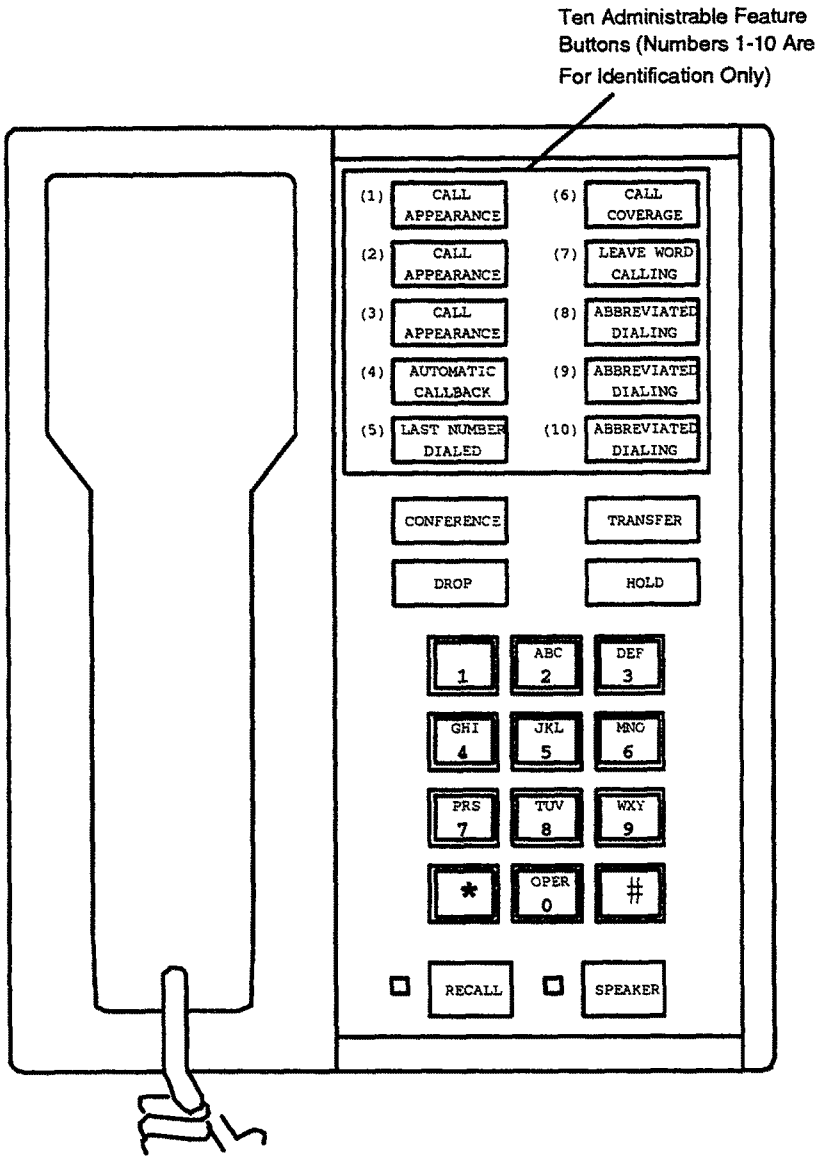


Figure 5-27. 7303S Voice Terminal

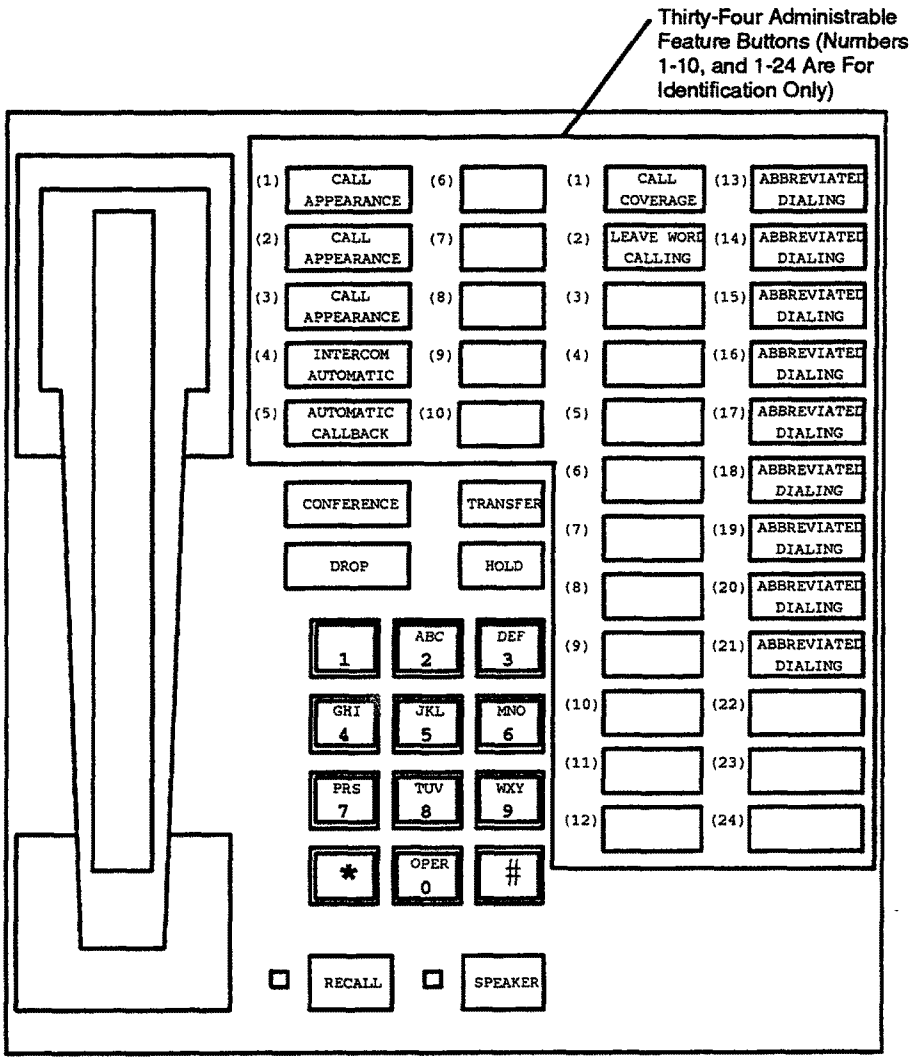


Figure 5-28. 7305S Voice Terminal

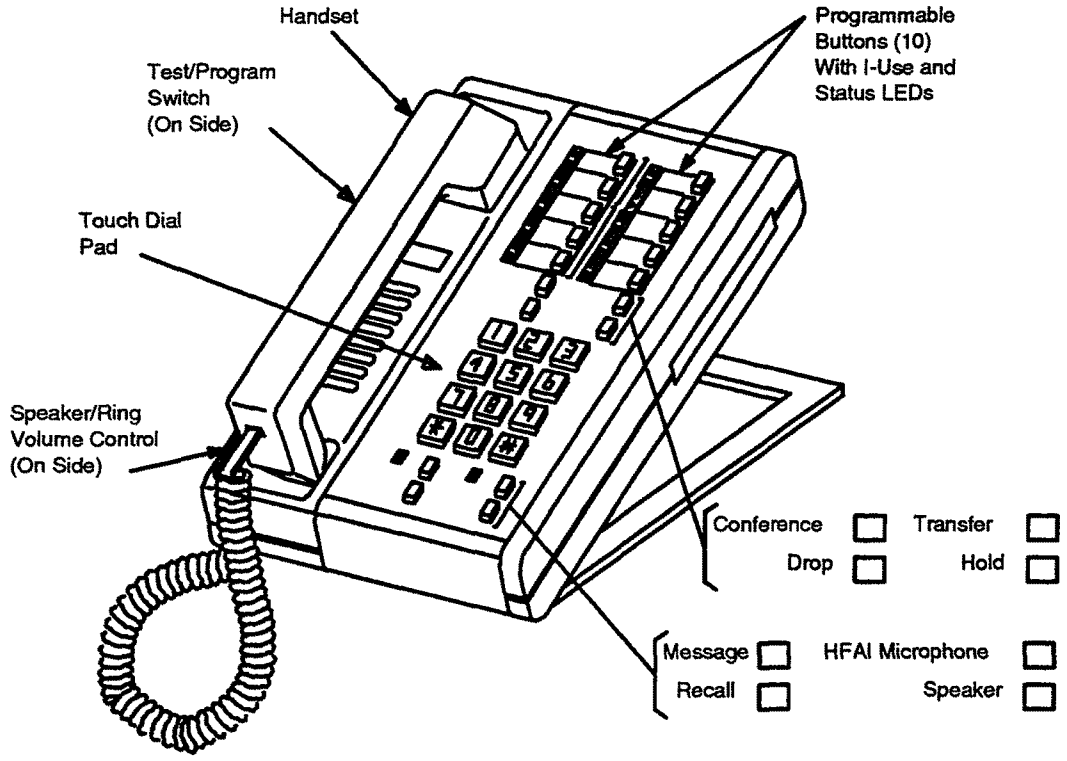


Figure 5-29. 7309H Voice Terminal

7401D, 7403D, and 7404D Voice Terminals

Used to implement a 7401D, 7403D, and a 7404D 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 and Error Messages (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	[xxxxx] ('count' 1-2400) type ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-2400) 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.

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. 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", "7403D", or "7404D" as appropriate.
- **PCOL/TEG Call Alerting** — (For 7401D Voice Terminal 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 and 7404D 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 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

- **Data Module** — For the 7401D, 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** — 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; otherwise, enter "n". Default is "n". If "y" is entered, the Display Language field and the Display Button Assignments form must be completed.

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; otherwise, enter "n". Default is "n".
- **BUTTON ASSIGNMENTS**

  The feature buttons that can be assigned to the 7401D, 7403D, or 7404D 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
- abr-spchar
- abrdg-appr **
- abrv-dial
- ac-alarm
- aca-call
- after-call
- assist
- atd-qcalls *
- atd-qtime *
- aut-msg-wt
- auto-cback
- auto-icom
- auto-in
- auto-wkup *
- aux-work
- brdg-appr **
- busy-ind
- call-appr **
- call-disp *
- call-fwd
- call-park
- call-pkup
- callr-info*
- cas-backup
- check-in *
- check-out *
- clk-overid *
- consult
- cov-cback
- cov-msg-rt *
- data-ext
- date-time *
- delete-msg *
- dial-icom
- directory *
- dn-dst
- ds1-alarm
- exclusion
- ext-dn-dst *
- flash
- flsh-pcorr
- goto-cover
- grp-dn-dst *
- hunt-ns
- in-call-id
- inspect *
- last-numb
- link-alarm
- lwc-cancel
- lwc-store
- major-alrm
- man-msg-wt
- man-overid *
- manual-in
- mj/mn alrm
- msg-retr *
- mwn-act *
- mwn-deact *
- next *
- night-ser
- normal *
- per-COline
- pms-alarm
- pr-awu-alm
- pr-pms-alm
- pr-sys-alm
- print-msgs
- priority
- q-calls
- q-time
- release
- ringer-off
- rs-alert
- send-calls
- send-term
- serv-obsrv
- signal
- smdr1-alrm
- smdr2-alrm
- stored-num *
- stroke-cnt
- term-x-gr
- timer *
- trk-ac-alm
- trunk-name *
- trunk-ns
- verify
- work code

* Display-type buttons (not administrable on 7401D or 7403D voice terminal)

** Not administrable on the 7401D voice terminal

For the 7401D voice terminal, BUTTON ASSIGNMENTS 3 through 9 are used to assign features to dialpad keys 1 through 7 (BUTTON ASSIGNMENT 3 corresponds to dialpad key 1, BUTTON ASSIGNMENT 4 corresponds to dialpad key 2, and so on). The call-appr buttons defaulted in BUTTON ASSIGNMENTS 1 and 2 are not administrable (display-only).

On the 7403D and 7404D 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: ____              BCC: 0
     Type: 7401D                   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? n
          SMDR Privacy? n                              Data Restriction? n
 Redirect Notification? y                   Idle Appearance Preference? n
PCOL/TEG Call Alerting? n                  Personalized Ringing Pattern: _
                                               Restrict Last Appearance? y
           Data Module? n
```

7401D Station Form (Page 1 of x)

Implementation Note:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

```
                                                          Page 1 of x
                                  STATION
Extension: _____              BCC: 0
     Type: 7403D                   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? n
         SMDR Privacy? n                            Data Restriction? n
 Redirect Notification? y                  Idle Appearance Preference? n
 Bridged Call Alerting? n
                                             Restrict Last Appearance? y
          Data Module? n
```

7403D Station Form (Page 1 of x)

Implementation Note:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

```
                                                              Page 1 of x
                                    STATION
Extension: ____                BCC: 0
     Type: 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? n
          SMDR Privacy? n                            Data Restriction? n
 Redirect Notification? y                  Idle Appearance Preference? n
 Bridged Call Alerting? n                Personalized Ringing Pattern: _
                                             Restrict Last Appearance? y
           Data Module? n
               Display? y
      Display Language: English
```

7404D Station Form (Page 1 of x)

Implementation Note:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form

```
                                                          Page 2 of x
                                STATION
     NON-SWITCH DATA
          Room: _______                                   Headset? n
          Jack: _______
         Cable: _______
ABBREVIATED DIALING
     List1: ________          List2: _________          List3: _________
BUTTON ASSIGNMENTS
  1: call-appr_                          6: _________
  2: call-appr_                          7: _________
  3: call-appr_                          8: _________
  4: _________                           9: _________
  5: _________                          10: _________
```

7401D, 7403D, 7404D Station Form (Page 2 of x)

Implementation Note:

Button Assignments:

- 7401D 1 through 9 only displayed. Buttons 1 and 2 not administrable (that is, assigned as "call-appr"). Button 3 may be assigned as required.
- 7403D 1 through 10 displayed.
- 7404D 1 through 6 only displayed. Buttons 1 through 3 must be assigned as "call-appr".

```
                                                    Page x of x
DISPLAY BUTTON ASSIGNMENTS
1: normal____
2: inspect___
3: msg-retr__
4: next______
5: call-disp_
6: delete-msg
7: date-time_
```

7404D Station Form (Page x of x)

Implementation Note:

This page is only displayed if the Display field on Page 1 is "y". Buttons 1 through 7, when administered, relate to function buttons (F1 through 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".

```
                                                          Page x of x
                                STATION
DATA MODULE
     Data Extension: ____                BCC: 2
               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:
```

7401D, 7403D, 7404D Data Module Form (Page x of x)

Implementation Note:

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".

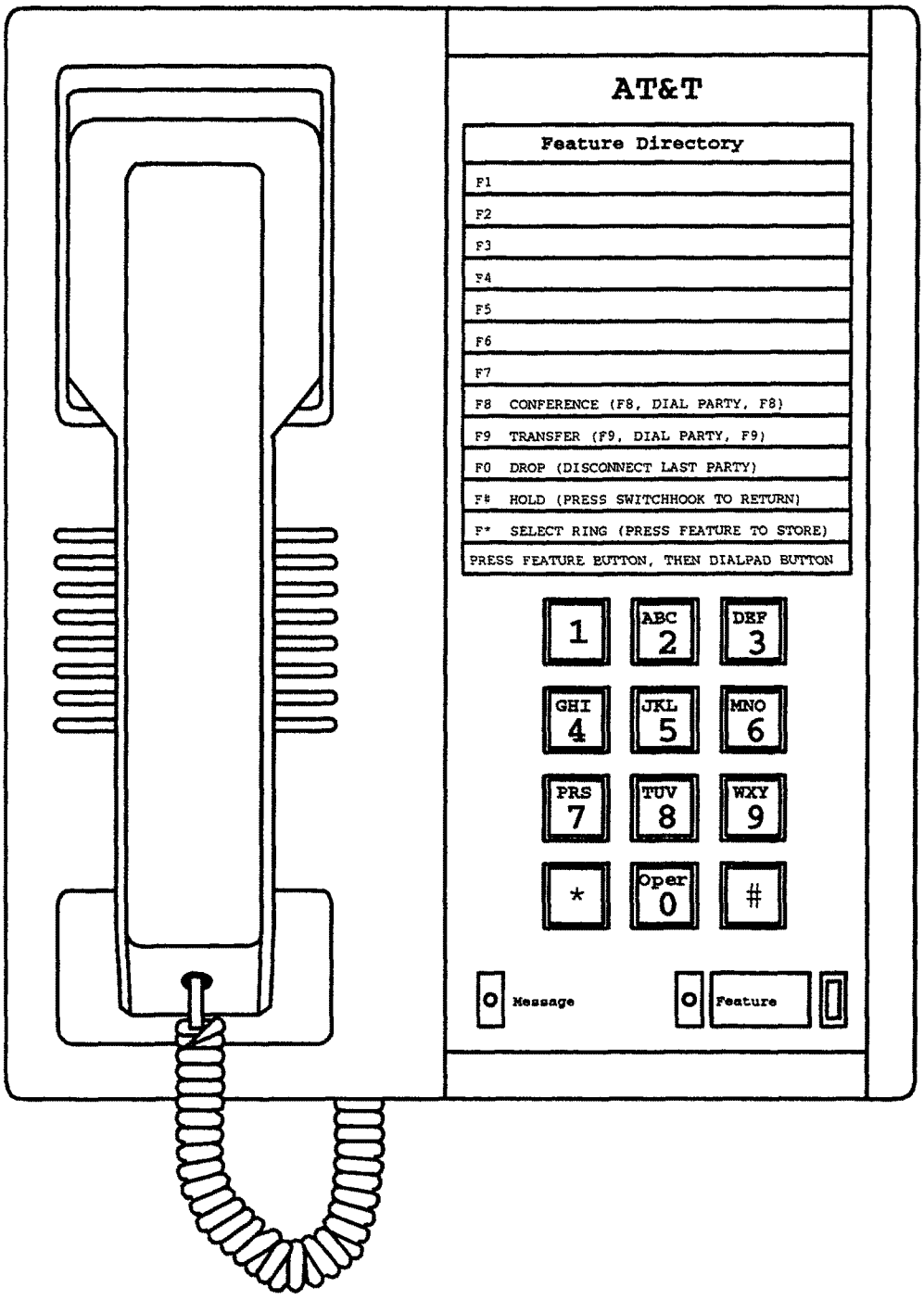


Figure 5-30. 7401D Voice Terminal

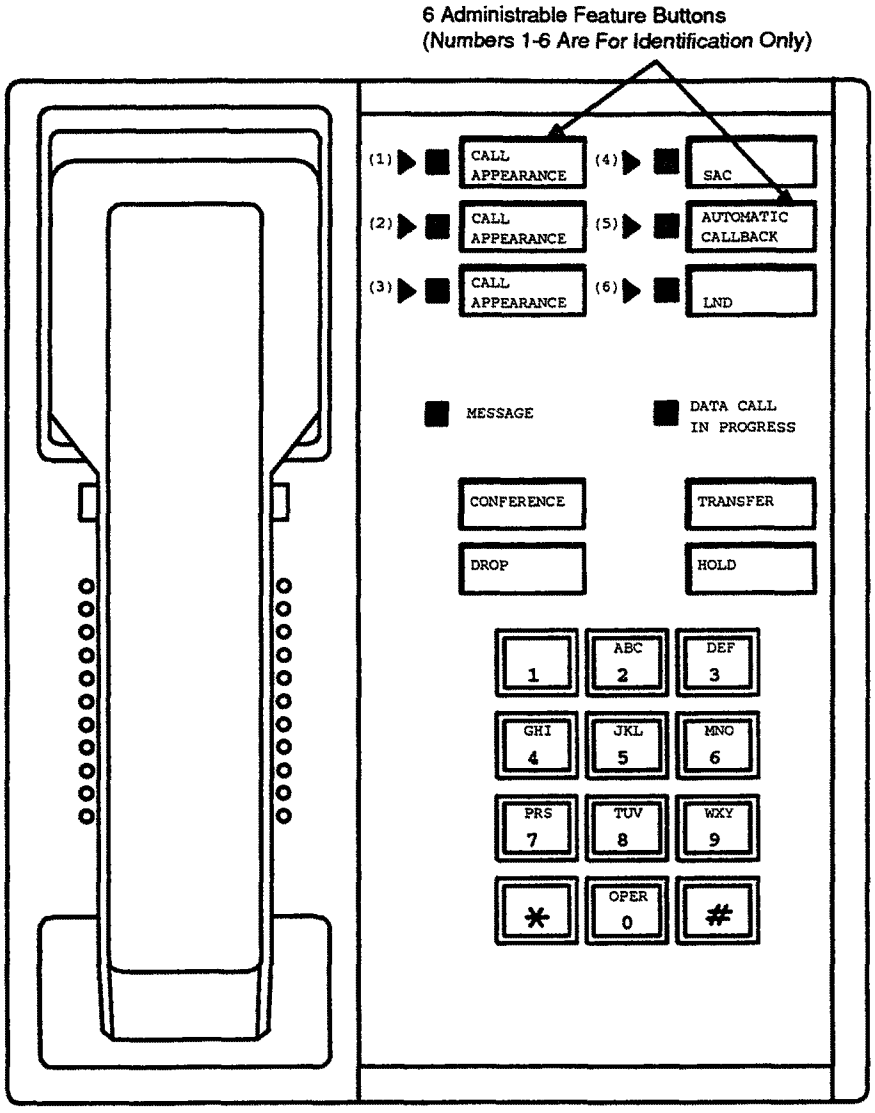


Figure 5-31. 7404D Voice Terminal

7405D Voice Terminal

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 and Error Messages (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	[xxxxx] ('count' 1-2400) type ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-2400) 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.

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 "7405D".
- **Data Module** — Enter "y" if this terminal is connected to an optional Digital Terminal Data Module (DTDM); otherwise, enter "n". 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 "n".
- **Display** — Enter "y" if the voice terminal is to have a display by an optional Digital Display Module; otherwise, enter "n". 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; otherwise, enter "n". 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".

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
- abr-spchar
- abrdg-appr
- abrv-dial
- ac-alarm
- aca-call
- after-call
- assist
- atd-qcalls *
- atd-qtime *
- aut-msg-wt
- auto-cback
- auto-icom
- auto-in
- auto-wkup *
- aux-work
- brdg-appr **
- busy-ind
- call-appr **
- call-disp *
- call-fwd
- cov-msg-rt *
- data-ext
- date-time *
- delete-msg *
- dial-icom
- directory *
- dn-dst
- ds1-alarm
- exclusion
- ext-dn-dst *
- flash
- flsh-pcorr
- goto-cover
- grp-dn-dst *
- hunt-ns
- in-call-id
- inspect *
- last-numb
- link-alarm
- lwc-cancel
- lwc-store
- night-ser
- normal *
- per-COline
- pms-alarm
- pr-awu-alm
- pr-pms-alm
- pr-sys-alm
- print-msgs
- priority
- q-calls
- q-time
- release
- ringer-off
- rs-alert
- send-calls
- send-term
- serv-obsrv
- signal
- smdr1-alrm
- smdr2-alrm
- stored-num *

- call-park
- call-pkup
- callr-info *
- cas-backup
- check-in *
- check-out *
- clk-overid *
- consult
- cov-cback
- major-alrm
- man-msg-wt
- man-overid *
- manual-in
- mj/mn alrm
- msg-retr *
- mwn-act *
- mwn-deact *
- next *
- stroke-cnt
- term-x-gr
- timer *
- trk-ac-alm
- trunk-name *
- trunk-ns
- verify
- work-code

* 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? n
         SMDR Privacy? n                               Data Restriction? n
 Redirect Notification? y                  Idle Appearance Preference? n
 Bridged Call Alerting? n
                                             Restrict Last Appearance? y
          Data Module? n                                 Feature Module? n
              Display? y                                 Coverage Module? n
     Display Language: English
```

7405D Station Form (Page 1 of x)

Implementation Note:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

```
                                                          Page 2 of x
                                STATION
    NON-SWITCH DATA
         Room: _______                                    Headset? n
         Jack: _______
        Cable: _______
ABBREVIATED DIALING
     List1: _______          List2: _________          List3: _________
BUTTON ASSIGNMENTS
  1: call-appr_                          6: _________
  2: call-appr_                          7: _________
  3: call-appr_                          8: _________
  4: _________                           9: _________
  5: _________                          10: _________
```

7405D Station Form (Page 2 of x)

Implementation Note:

At least two Button Assignments must be assigned as call-appr (call appearance.)

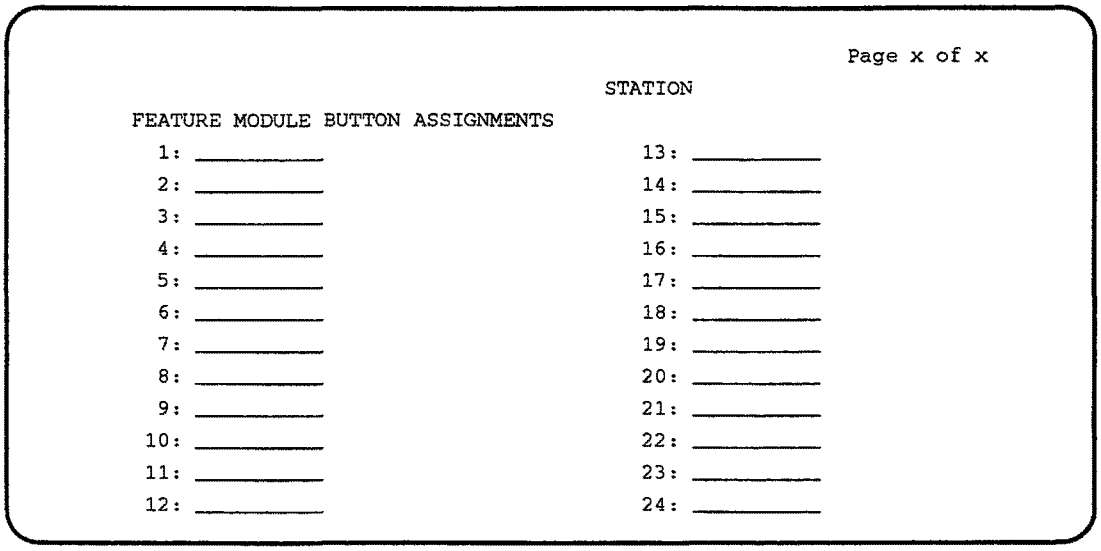
```
                                                          Page 3 of x
                                STATION
FEATURE BUTTON ASSIGNMENTS
  1: _________                          13: _________
  2: _________                          14: _________
  3: _________                          15: _________
  4: _________                          16: _________
  5: _________                          17: _________
  6: _________                          18: _________
  7: _________                          19: _________
  8: _________                          20: _________
  9: _________                          21: _________
 10: _________                          22: _________
 11: _________                          23: _________
 12: _________                          24: _________
```

7405D Station Form (Page 3 of x)

Implementation Note:

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).



Page x of x

STATION

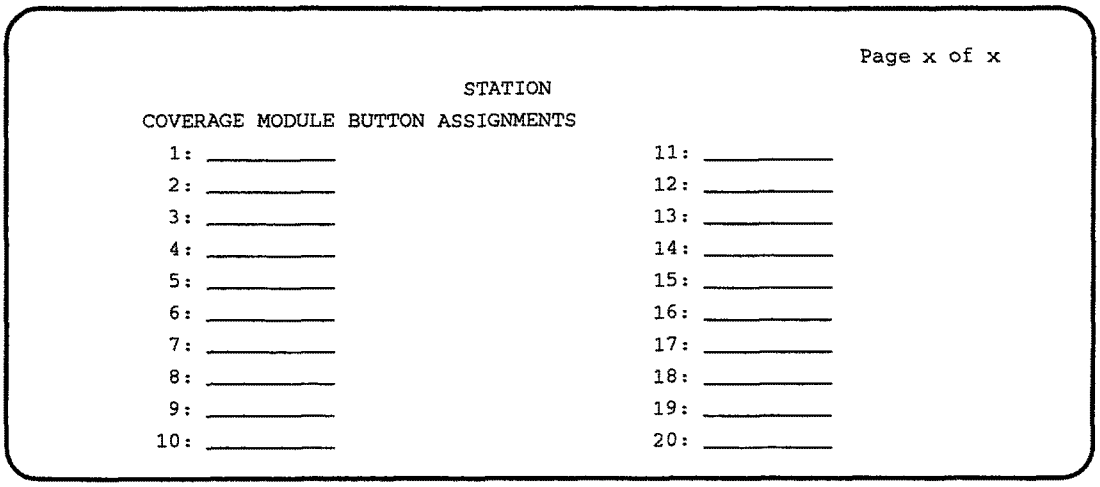
FEATURE MODULE BUTTON ASSIGNMENTS

1:	_____	13:	_____
2:	_____	14:	_____
3:	_____	15:	_____
4:	_____	16:	_____
5:	_____	17:	_____
6:	_____	18:	_____
7:	_____	19:	_____
8:	_____	20:	_____
9:	_____	21:	_____
10:	_____	22:	_____
11:	_____	23:	_____
12:	_____	24:	_____

7405D Feature Module Form

Implementation Note

Only displayed if the Feature Module field on Page 1 is "y".

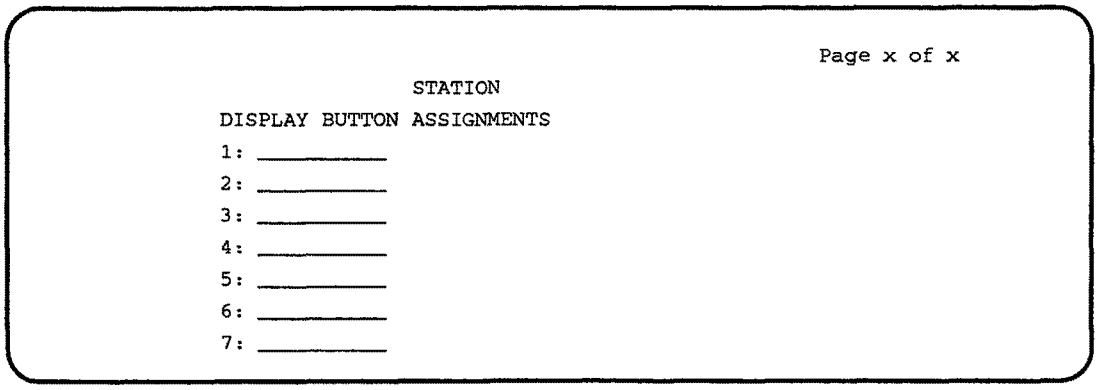


```
                                                        Page x of x
                                STATION
COVERAGE MODULE BUTTON ASSIGNMENTS
  1: _________                                  11: _________
  2: _________                                  12: _________
  3: _________                                  13: _________
  4: _________                                  14: _________
  5: _________                                  15: _________
  6: _________                                  16: _________
  7: _________                                  17: _________
  8: _________                                  18: _________
  9: _________                                  19: _________
 10: _________                                  20: _________
```

7405D Coverage Module Form (Page x of x)

Implementation Note

Only displayed if the Coverage Module field on Page 1 is "y".



```
                                                        Page x of x
                                STATION
DISPLAY BUTTON ASSIGNMENTS
  1: _________
  2: _________
  3: _________
  4: _________
  5: _________
  6: _________
  7: _________
```

7405D Display Form (Page x 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 x of x
                                  STATION
DATA MODULE
     Data Extension: _____              BCC: 2
               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:
```

7405D Data Module Form (Page x of x)

Implementation Note

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".

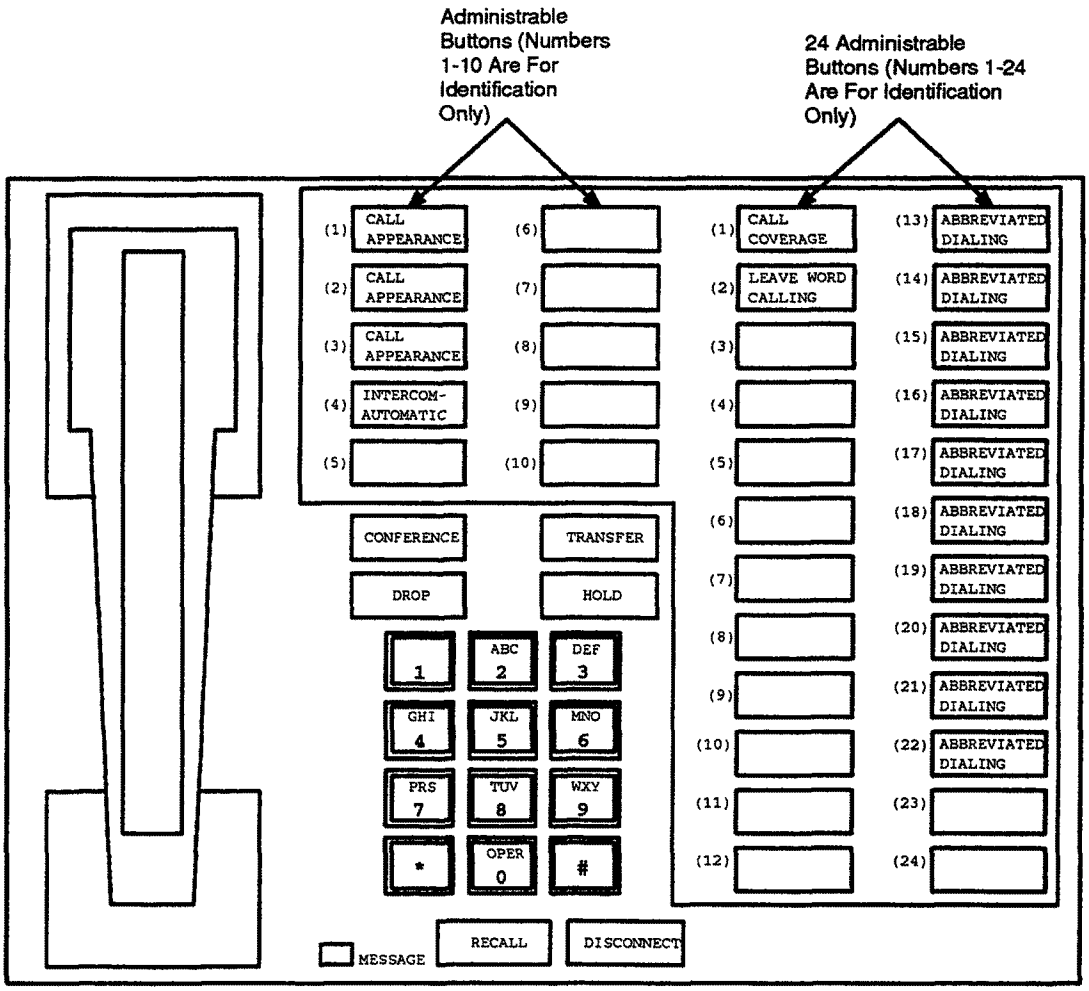


Figure 5-32. 7405D Voice Terminal

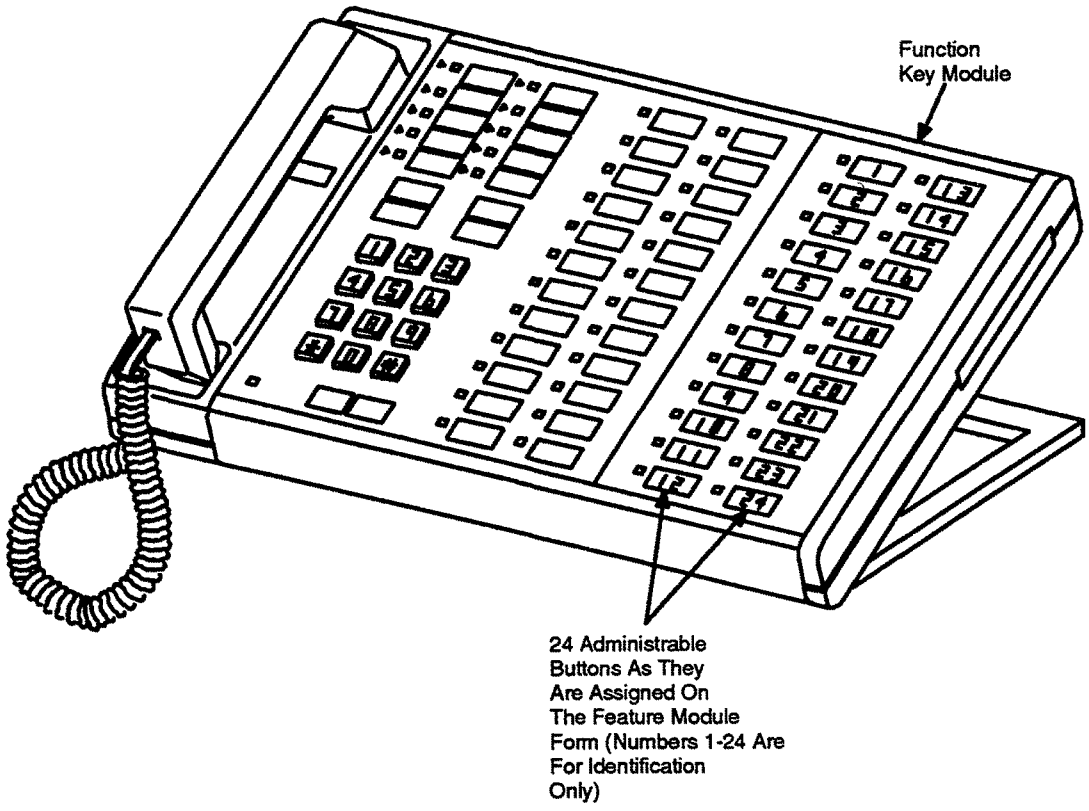


Figure 5-33. 7405D Voice Terminal With Optional Function Key Module

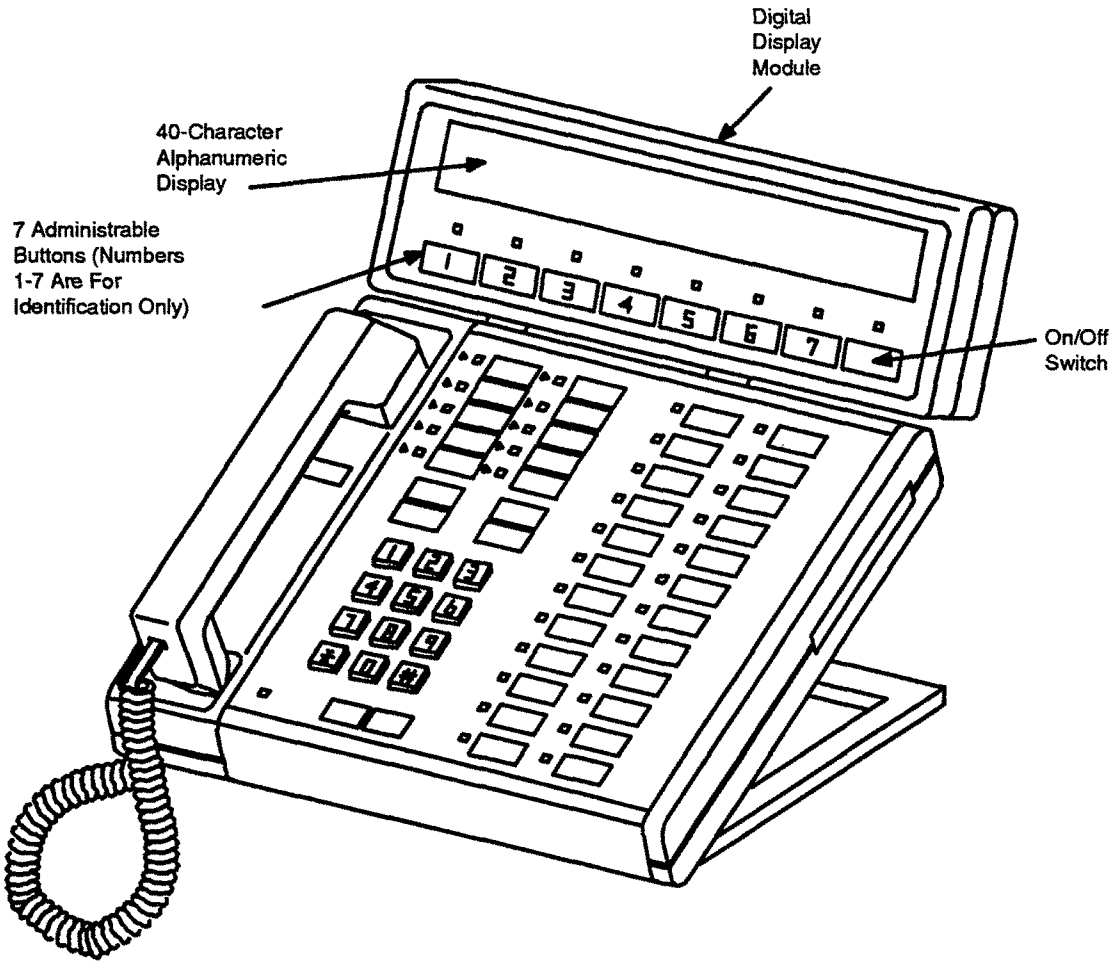


Figure 5-34. 7405D Voice Terminal With Optional Digital Display Module

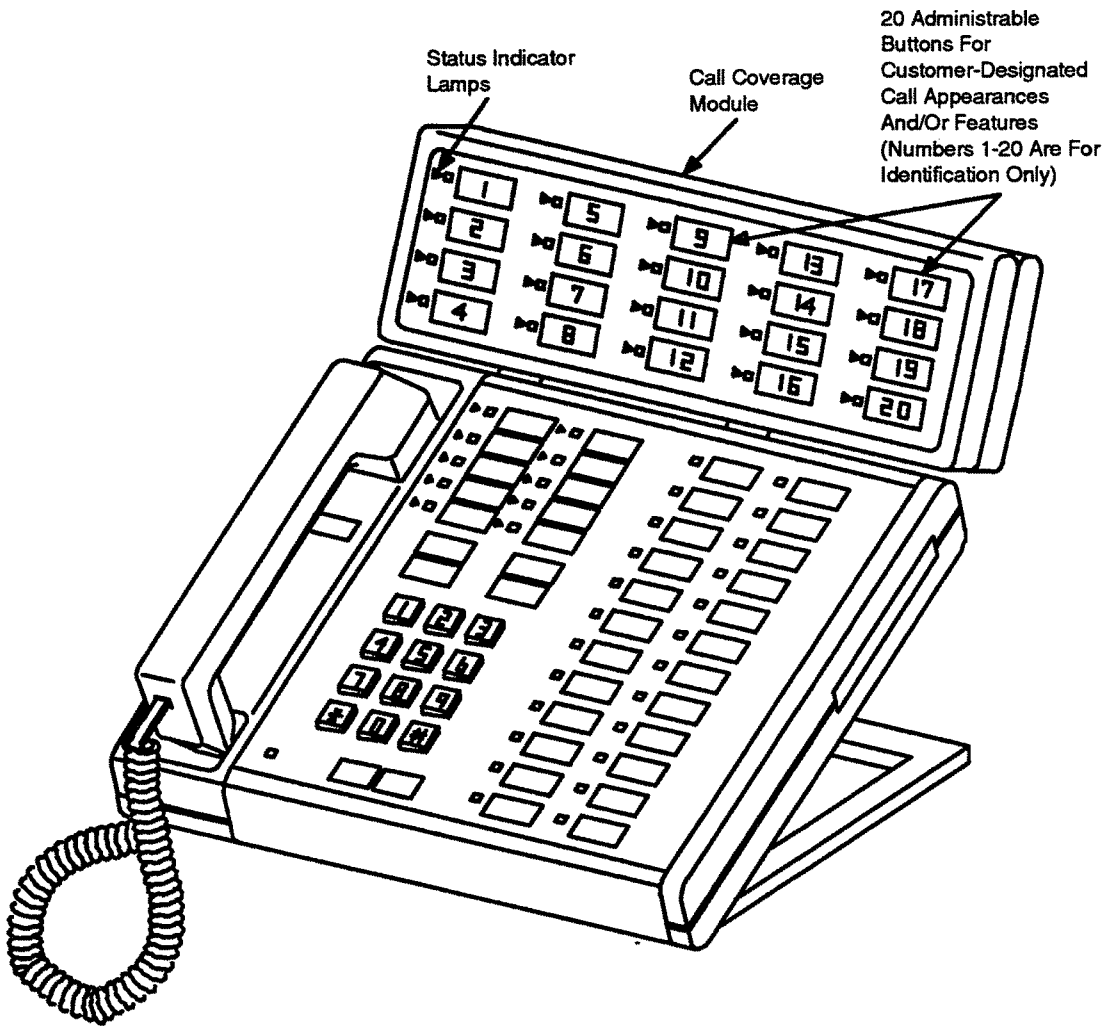


Figure 5-35. 7405D Voice Terminal With Optional Call Coverage Module

7406D and 7407D Voice Terminals

Used to implement a 7406D and 7407D 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 and Error Messages (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	[xxxxx] ('count' 1-2400) type ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-2400) 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.

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 "7406D" or "7407D" as appropriate.
- **Display Cartridge** (7406D Only) — Enter "y" if this terminal is to have a display via an associated data terminal.
- **Data Module** — Enter "y" if this voice terminal is equipped with an optional 703A Data Stand (7406D), a 702AL1-DSU (7407D), or 7400B Data Module (7406D or 7407D) 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** — Display-only field (set to "y") for the 7407D. For the 7406D, enter "y" if the voice terminal is equipped with an optional digital display; otherwise, enter "n".

For the 7407D form, the Display Button Assignments form must be completed. Default is "n".

Page 2 of the Form

- **Headset** — For the 7406D, enter "y" if a headset is to be used; otherwise, enter "n". Note that the 7407D cannot have a headset. Default is "n".
- **BUTTON ASSIGNMENTS**

  The feature buttons that can be assigned to the 7406D or 7407D 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
- abr-spchar
- abrdg-appr
- abrv-dial
- ac-alarm
- aca-call
- after-call
- assist
- atd-qcalls *
- atd-qtime *
- aut-msg-wt
- auto-cback
- auto-icom
- auto-in
- auto-wkup *
- aux-work
- brdg-appr
- busy-ind
- call-appr
- call-disp *
- call-fwd
- cov-msg-rt *
- data-ext
- date-time *
- delete-msg *
- dial-icom
- directory *
- dn-dst
- ds1-alarm
- exclusion
- ext-dn-dst *
- flash
- flsh-pcorr
- goto-cover
- grp-dn-dst *
- hunt-ns
- in-call-id
- inspect *
- last-numb
- link-alarm
- lwc-cancel
- lwc-store
- night-ser
- normal *
- per-COline
- pms-alarm
- pr-awu-alm
- pr-pms-alm
- pr-sys-alm
- print-msgs
- priority
- q-calls
- q-time
- release
- ringer-off
- rs-alert
- send-calls
- send-term
- serv-obsrv
- signal
- smdr1-alrm
- smdr2-alrm
- stored-num *

- call-park
- call-pkup
- callr-info *
- cas-backup
- check-in *
- check-out *
- clk-overid *
- consult
- cov-cback
- major-alrm
- man-msg-wt
- man-overid *
- manual-in
- mj/mn alrm
- msg-retr *
- mwn-act *
- mwn-deact *
- next *
- stroke-cnt
- term-x-gr
- timer *
- trk-ac-alm
- trunk-name *
- trunk-ns
- verify
- work-code

* 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 or 7407D voice terminal administrable buttons are the same as those listed for BUTTON ASSIGNMENTS above.

  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.

Page x of the Form (DISPLAY BUTTON ASSIGNMENTS)

- Only displayed if the "Display Cartridge" or "Display" field on Page 1 (7406D form) is "y" or the Type field on Page 1 is "7407D". 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? n
         SMDR Privacy? n                           Data Restriction? n
 Redirect Notification? y                  Idle Appearance Preference? n
 Bridged Call Alerting? n                Personalized Ringing Pattern: 1
                                             Restrict Last Appearance? y
          Data Module? n                            Display Cartridge? _
              Display? y
     Display Language: English
```

7406D Station Form (Page 1 of x)

Implementation Note:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

```
                                    STATION
    NON-SWITCH DATA
         Room: _______                                      Headset? n
         Jack: _______
        Cable: _______
ABBREVIATED DIALING
     List1: ________          List2: _________          List3: _________
BUTTON ASSIGNMENTS
  1: call-appr_                              4: _________
  2: call-appr_                              5: _________
  3: call-appr_
```

7406D Station Form (Page 2 of x)

Page 3 of x

STATION

FEATURE BUTTON ASSIGNMENTS

1:	_____	2:	_____
5:	_____	3:	_____
6:	_____	4:	_____
7:	_____	12:	_____
8:	_____	13:	_____
9:	_____	14:	_____
10:	_____	15:	_____
11:	_____	16:	_____
		17:	_____
		18:	_____

7406D Station Form (Page 3 of x)

Implementation Note:

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.

```
                                                              Page 1 of x
                                    STATION
Extension: ____              BCC: 0
     Type: 7407D                   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? n
          SMDR Privacy? n                           Data Restriction? n
 Redirect Notification? y                    Idle Appearance Preference? n
 Bridged Call Alerting? n                  Personalized Ringing Pattern: _
                                             Restrict Last Appearance? y
           Data Module? n
               Display? y
      Display Language: English
```

7407D Station Form (Page 1 of x)

Implementation Note:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

```
                                                              Page 2 of x
                                    STATION
     NON-SWITCH DATA
          Room: _______                                     Headset? n
          Jack: _______
         Cable: _______
ABBREVIATED DIALING
     List1: _________          List2: _________          List3: _________
BUTTON ASSIGNMENTS
  1: call-appr_                          6: _________
  2: call-appr_                          7: _________
  3: call-appr_                          8: _________
  4: _________                           9: _________
  5: _________                          10: _________
```

7407D Voice Terminal Form (Page 2 of x)

```
                                                    Page 3 of x
                                STATION
FEATURE BUTTON ASSIGNMENTS
  1: _____                              2: _____
  3: _____                             14: _____
  4: _____                             15: _____
  5: _____                             16: _____
  6: _____                             17: _____
  7: _____                             18: _____
  8: _____                             19: _____
  9: _____                             20: _____
 10: _____                             21: _____
 11: _____                             22: _____
 12: _____                             23: _____
 13: _____                             24: _____
```

7407D 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 x of x
                                STATION
DISPLAY BUTTON ASSIGNMENTS
1: _____
2: _____
3: _____
4: _____
5: _____
6: _____
7: _____
```

7406A, 7406D, and 7407D Station Form (Page x of x)

Implementation Note:

This page is only displayed when the Display Cartridge field on Page 1 (7406D form) is "y" or the Type field on Page 1 is "7407D".

```
                                                          Page x of x
                                  STATION
DATA MODULE
     Data Extension: _____              BCC: 2
               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:
```

7406D and 7407D Data Module Form (Page x of x)

Implementation Note:

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".

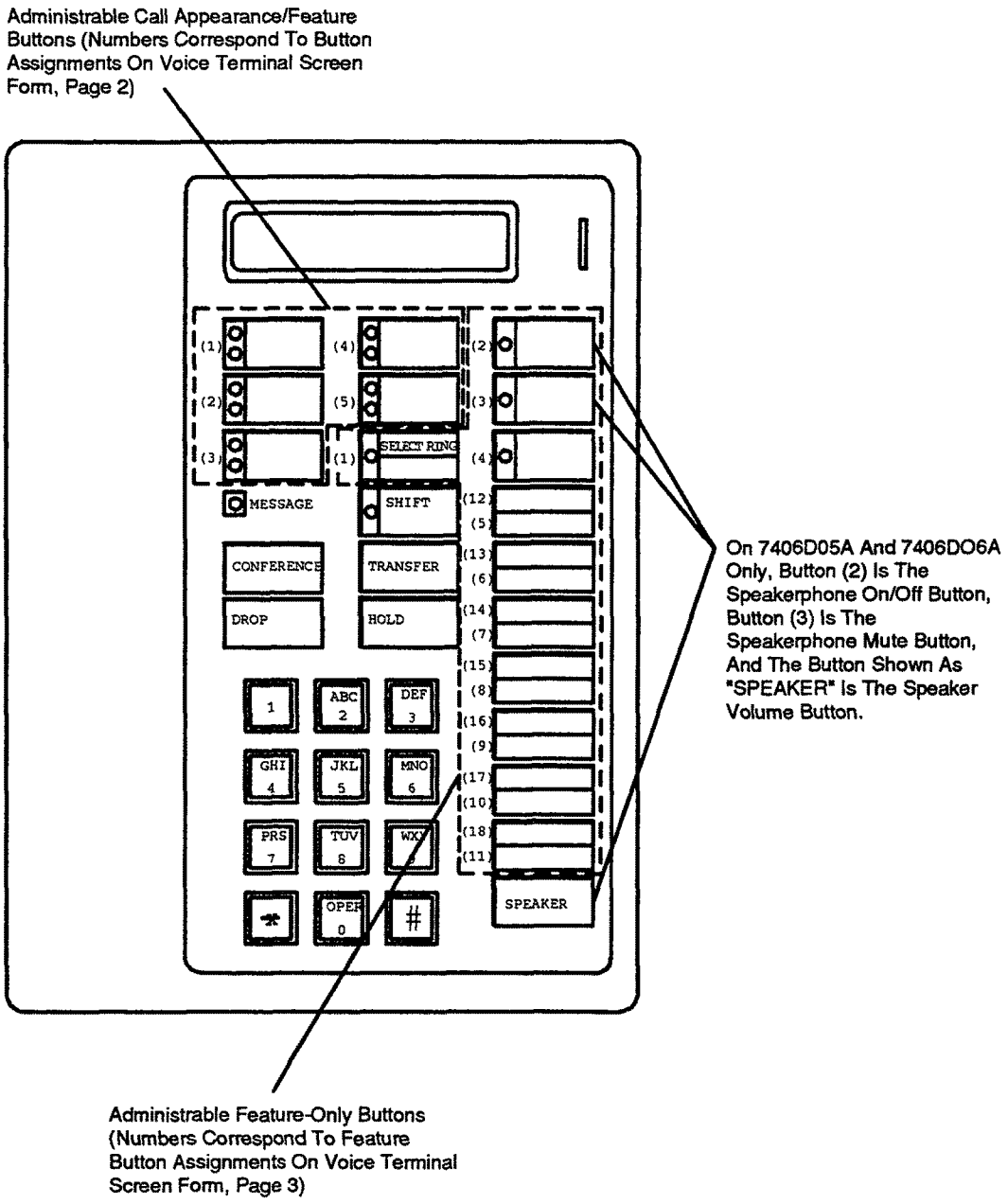


Figure 5-36. 7406D Voice Terminal

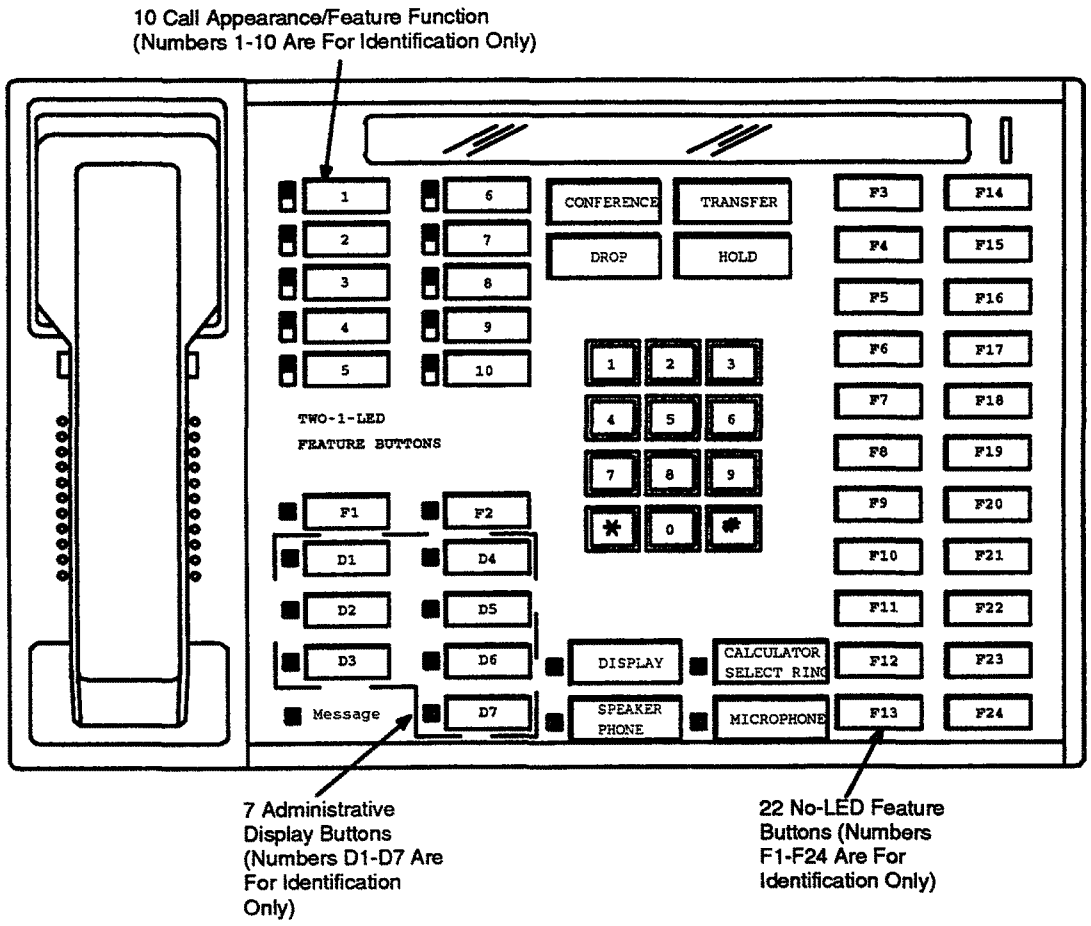


Figure 5-37. 7407D Voice Terminal

7410D Voice Terminal

Used to implement a 7410D 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 and Error Messages (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	[xxxxx] ('count' 1-2400) type ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-2400) 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

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 "7410D".
- **Data Module** — Enter "y" if this terminal is to be connected to a data terminal via optional 7400B Data Module; otherwise, enter "n". If "y" is entered, the Data Module form must be completed. Valid entries are "y" or "n". Default is "n".
- **Display** — Enter "y" if the voice terminal is to have a display via a 7400B Data Module and associated data terminal; otherwise, enter "n". Default is "n". If "y" is entered, the Display Button Assignments form must be completed.

Page 2 of the Form

- **BUTTON ASSIGNMENTS**

  The feature buttons that can be assigned to the 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
- abr-spchar
- abrdg-appr
- abrv-dial
- ac-alarm
- aca-call
- after-call
- assist
- atd-qcalls *
- atd-qtime *
- aut-msg-wt
- auto-cback
- auto-icom
- auto-in
- auto-wkup *
- aux-work
- brdg-appr
- busy-ind
- call-appr
- call-disp *
- call-fwd
- call-park
- call-pkup
- callr-info *
- cas-backup
- cov-msg-rt *
- data-ext
- date-time *
- delete-msg *
- dial-icom
- directory *
- dn-dst
- ds1-alarm
- exclusion
- ext-dn-dst *
- flash
- flsh-pcorr
- goto-cover
- grp-dn-dst *
- hunt-ns
- in-call-id
- inspect *
- last-numb
- link-alarm
- lwc-cancel
- lwc-store
- major-alrm
- man-msg-wt
- man-overid *
- manual-in
- night-ser
- normal *
- per-COline
- pms-alarm
- pr-awu-alm
- pr-pms-alm
- pr-sys-alm
- print-msgs
- priority
- q-calls
- q-time
- release
- ringer-off
- rs-alert
- send-calls
- send-term
- serv-obsrv
- signal
- smdr1-alrm
- smdr2-alrm
- stored-num *
- stroke-cnt
- term-x-gr
- timer *
- trk-ac-alm

- check-in *
- check-out *
- clk-overid *
- consult
- cov-cback
- mj/mn alrm
- msg-retr *
- mwn-act *
- mwn-deact *
- next *
- trunk-name *
- trunk-ns
- verify
- work code

* Display-type buttons

The figure entitled "7410D Voice Terminal" show the 7410D voice terminal button number assignments in relation to the button numbers on the Voice Terminal 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: 7410D                  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? n
         SMDR Privacy? n                               Data Restriction? n
 Redirect Notification? y                  Idle Appearance Preference? n
 Bridged Call Alerting? n
                                             Restrict Last Appearance? y
          Data Module? n
```

7410D Station Form (Page 1 of x)

Implementation Note:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

```
                                                          Page 2 of 2
                                  STATION
DATA MODULE
     Data Extension: ____                BCC: 2
               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:
```

7410D Data Module Form (Page 2 of 2)

Implementation Note:

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"

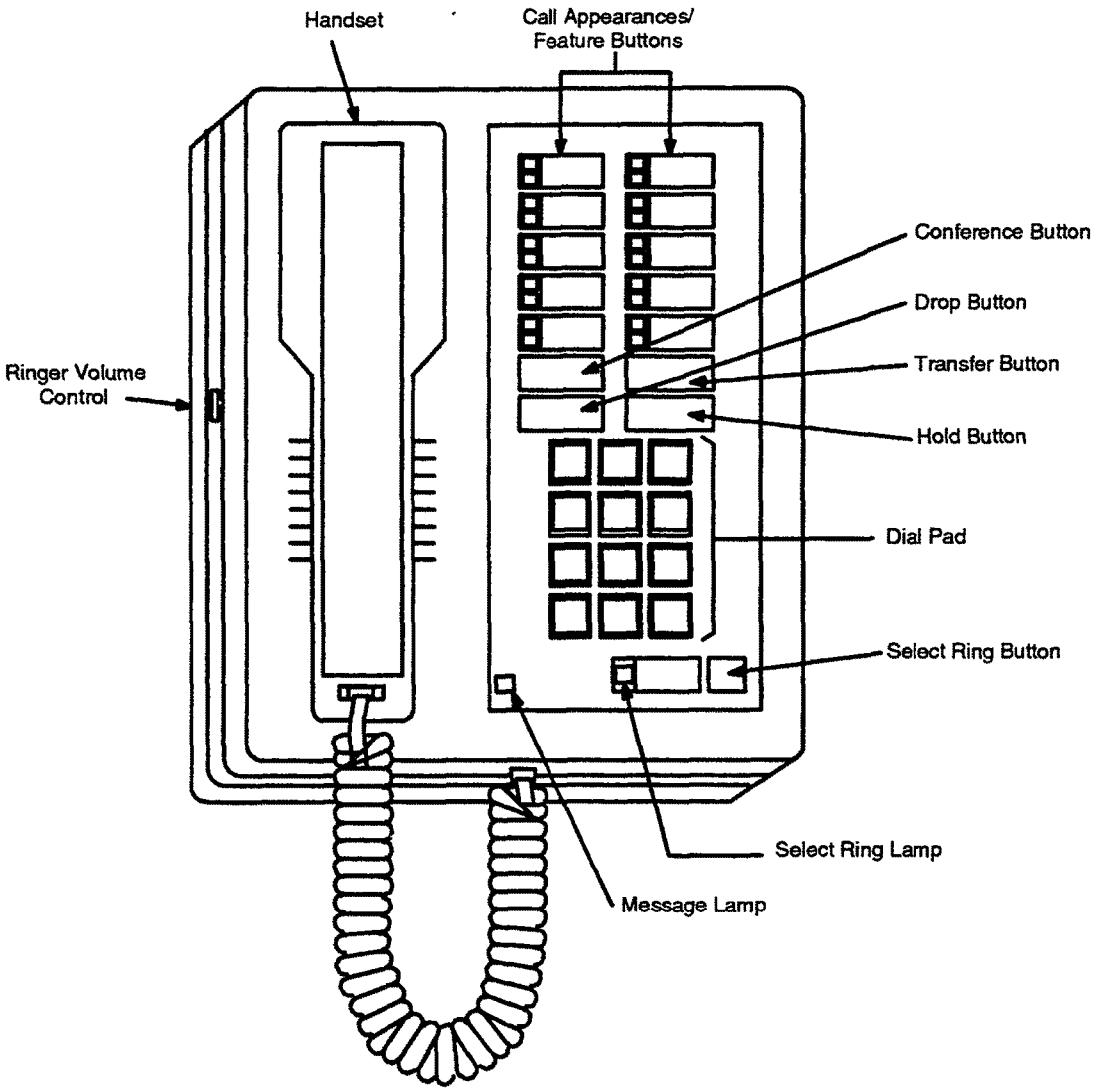


Figure 5-38. 7410D Voice Terminal

7434D Voice Terminal

Used to implement a 7434D 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 and Error Messages (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	[xxxxx] ('count' 1-2400) type ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-2400) 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.

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 "7434D".
- **Data Module** — Enter "y" if this terminal is connected to an optional 7400B Data Module; otherwise, enter "n". If a "y" is entered, the Data Module form (page x) must be completed. Default is "n".
- **Display** — Enter "y" if the voice terminal is to have a display by an optional Digital Display Module; otherwise enter "n". 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, otherwise enter "n". 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".

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
- abr-spchar
- abrdg-appr
- abrv-dial
- ac-alarm
- aca-call
- after-call
- assist
- atd-qcalls *
- atd-qtime *
- aut-msg-wt
- auto-cback
- auto-icom
- auto-in
- auto-wkup *
- aux-work
- brdg-appr
- busy-ind
- call-appr
- call-disp *
- call-fwd
- call-park
- call-pkup
- callr-info *
- cas-backup
- cov-msg-rt *
- data-ext
- date-time *
- delete-msg *
- dial-icom
- directory *
- dn-dst
- ds1-alarm
- exclusion
- ext-dn-dst *
- flash
- flsh-pcorr
- goto-cover
- grp-dn-dst *
- hunt-ns
- in-call-id
- inspect *
- last-numb
- link-alarm
- lwc-cancel
- lwc-store
- major-alrm
- man-msg-wt
- man-overid *
- manual-in
- night-ser
- normal *
- per-COline
- pms-alarm
- pr-awu-alm
- pr-pms-alm
- pr-sys-alm
- print-msgs
- priority
- q-calls
- q-time
- release
- ringer-off
- rs-alert
- send-calls
- send-term
- serv-obsrv
- signal
- smdr1-alrm
- smdr2-alrm
- stored-num *
- stroke-cnt
- term-x-gr
- timer *
- trk-ac-alm

- check-in *
- check-out *
- clk-overid *
- consult
- cov-cback
- mj/mn alrm
- msg-retr *
- mwn-act *
- mwn-deact *
- next *
- trunk-name *
- trunk-ns
- verify
- work-code

* 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 of ten 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? n
          SMDR Privacy? n                               Data Restriction? n
 Redirect Notification? y                  Idle Appearance Preference? n
 Bridged Call Alerting? n                 Personalized Ringing Pattern: 1
                                             Restrict Last Appearance? y
           Data Module? n
               Display? y                              Coverage Module? n
     Display Language: English
```

7434D Station Form (Page 1 of x)

Implementation Note:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

```
                                                          Page 2 of x
                                STATION
    NON-SWITCH DATA
         Room: _______                                    Headset? n
         Jack: _______
        Cable: _______
ABBREVIATED DIALING
     List1: _________        List2: _________        List3: _________
BUTTON ASSIGNMENTS
  1: call-appr_                    6: _________
  2: call-appr_                    7: _________
  3: call-appr_                    8: _________
  4: _________                     9: _________
  5: _________                    10: _________
```

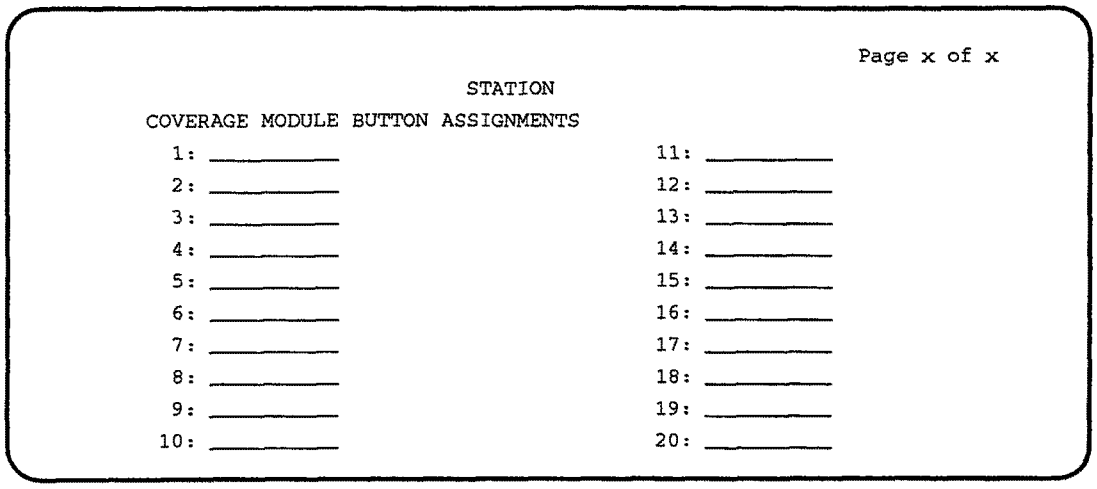
7434D Station Form (Page 2 of x)

```
                                                          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: _________
```

7434D 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).



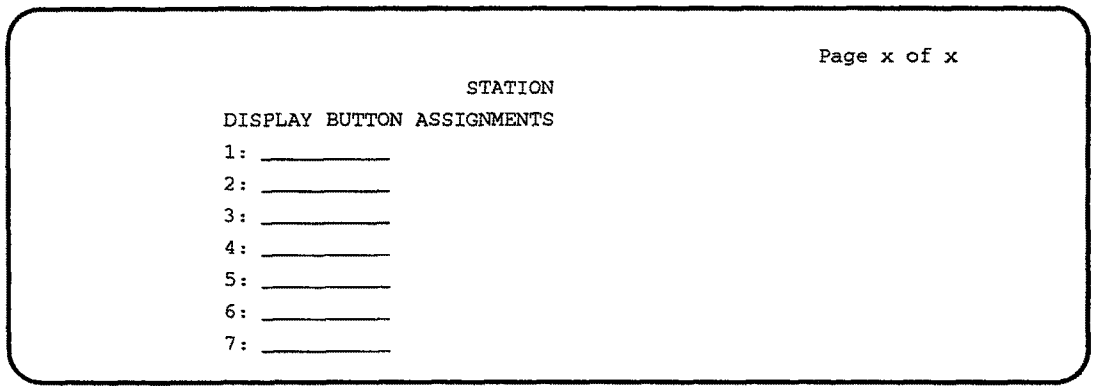
```
                                                        Page x of x
                                STATION
COVERAGE MODULE BUTTON ASSIGNMENTS
  1: _____                                  11: _____
  2: _____                                  12: _____
  3: _____                                  13: _____
  4: _____                                  14: _____
  5: _____                                  15: _____
  6: _____                                  16: _____
  7: _____                                  17: _____
  8: _____                                  18: _____
  9: _____                                  19: _____
 10: _____                                  20: _____
```

7434D Coverage Module Form

Implementation Note:

Only displayed if the Coverage Module field on Page 1 is "y".

Do not administer display-type buttons (for example, inspect, normal) on this form.



```
                                                        Page x of x
                                STATION
DISPLAY BUTTON ASSIGNMENTS
  1: _____
  2: _____
  3: _____
  4: _____
  5: _____
  6: _____
  7: _____
```

7434D Display Form

Implementation Note:

Only displayed if the Display field on Page 1 is "y". Button locations (1 thorugh 7) are associated with buttons 1 through 7 on the optional Digital Display Module.

```
                                                          Page x of x
                                  STATION
DATA MODULE
     Data Extension: ____                 BCC: 2
               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:
```

7434D Data Module Form (Page x of x) Form

Implementation Note:

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".

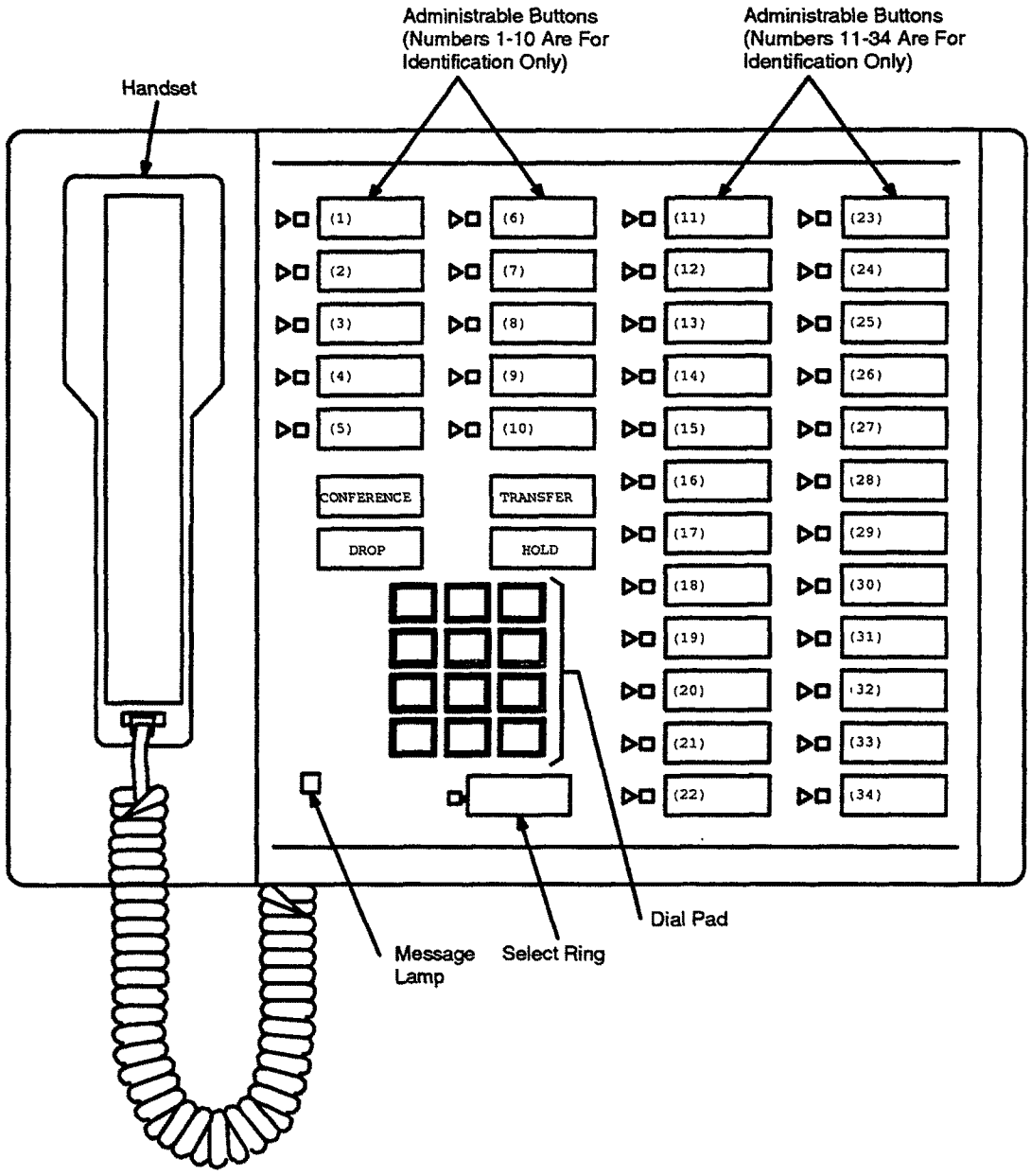


Figure 5-39. 7434D Voice Terminal

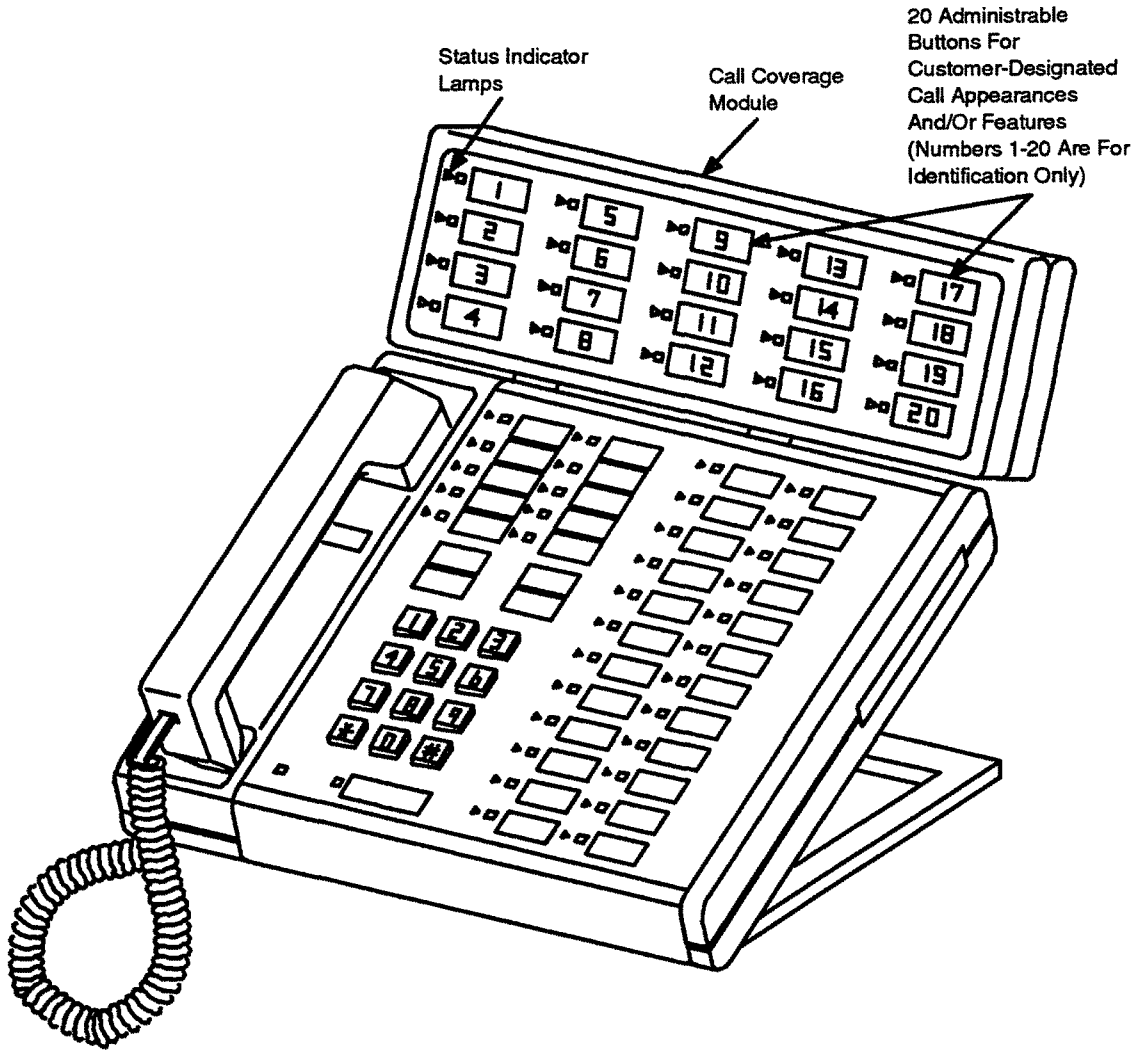


Figure 5-40. 7434D Voice Terminal With Optional Call Coverage Module

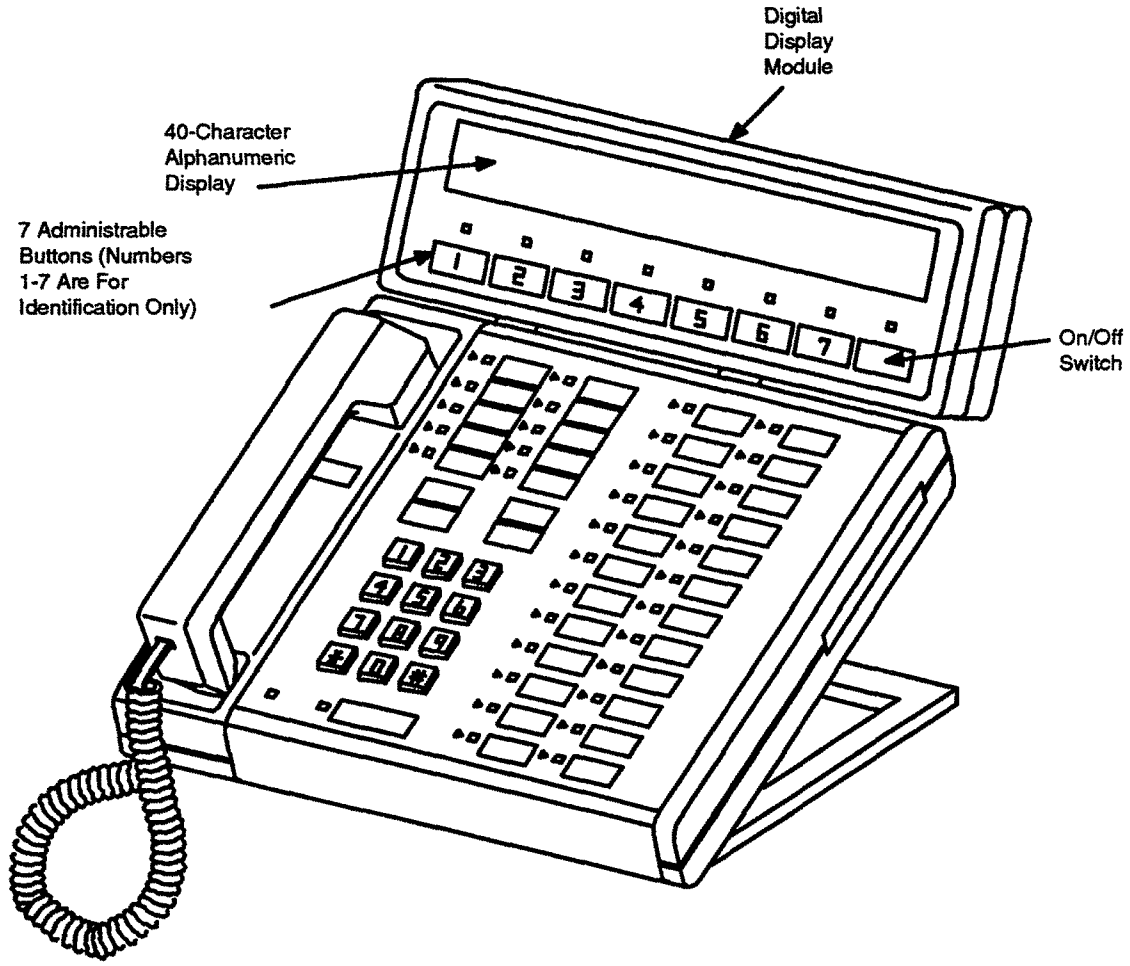


Figure 5-41. 7434D Voice Terminal With Optional Digital Display Module

7505D, 7506D, 7507D, 8503D, 8510D, and 8520D Voice Terminals

Used to implement the 7505D, 7506D, 7507D, 8503D, 8510D, 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 and Error Messages (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) ['count' 1-16] ['start' extension] ['Board' address] ['one-ep']
list	station	[xxxxx] ['count' 1-2400] ['type' station type] ['port' port number] ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-2400) 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

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

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 five to six characters. For multi-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 20 depending on carrier type), and circuit number (01 through 24). For single-carrier cabinets, enter the port network (1 through 3, default is 1), the carrier letter (A through E), the slot numbers (01 through 18 depending on cabinet type), and circuit number (01 through 31).

  ISDN-BRI provides multipoint configuration capability which 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 fixed 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, that includes terminals which have no SPID initialization capability.

  NOTE:
  A 1-character entry of "X" in the Port field **may not be used** to indicate that there is no hardware associated with the port assignment (that is, Administration Without Hardware feature). The Administration Without Hardware feature does not support ISDN-BRI-type stations.

- **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".
- **Endpoint Initialization** — 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 re-used 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 then endpoint initialization. Valid entries are "y" or "n". Default is "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
- abr-spchar
- abrdg-appr
- abrv-dial
- ac-alarm
- aca-call
- after-call
- assist
- atd-qcalls *
- cov-msg-rt * **
- date-time * **
- delete-msg * **
- dial-icom
- directory * **
- dn-dst
- ds1-alarm
- exclusion
- ext-dn-dst * **
- night-ser
- normal* **
- per-COline
- pms-alarm
- pr-awu-alm
- pr-pms-alm
- pr-sys-alm
- print-msgs
- priority

- atd-qtime *
- aut-msg-wt
- auto-cback
- auto-icom
- auto-in
- auto-wkup * **
- aux-work
- brdg-appr
- busy-ind
- call-appr
- call-disp * **
- call-fwd
- call-park
- call-pkup
- callr-info * **
- cas-backup
- check-in * **
- check-out * **
- clk-overid * **
- consult
- cov-cback
- flash
- flsh-pcorr
- goto-cover
- grp-dn-dst * **
- hunt-ns
- in-call-id
- inspect * **
- last-numb
- link-alarm
- lwc-cancel
- lwc-store
- major-alrm
- man-msg-wt
- man-overid * **
- manual-in
- mj/mn alrm
- msg-retr * **
- mwn-act * **
- mwn-deact * **
- next * **
- q-calls
- q-time
- release
- ringer-off
- rs-alert
- send-calls
- send-term
- serv-obsrv
- signal
- smdr1-alrm
- smdr2-alrm
- stored-num * **
- stroke-cnt
- term-x-gr
- timer * **
- trk-ac-alm **
- trunk-name * **
- trunk-ns
- verify
- work-code

* 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 (for example, the ADM)]. For AT&T ISDN-BRI data modules, the default settings should be used.

  Applicable only to 7505D, 7506D, 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 "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**

  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? n
         SMDR 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
```

7505D, 7506D, 7507D, 8503D*, 8510D*, and 8520D* Station Form (Page 1 of x)

Implementation Note:

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. Acceptable entries are "English", "French", "Italian", and "Spanish".

```
                                                          Page 2 of x
                                  STATION
    NON-SWITCH DATA
         Room: _______                                    Headset? n
         Jack: _______
        Cable: _______
ABBREVIATED DIALING
     List1: _________        List2: _________        List3: _________
BUTTON ASSIGNMENTS
  1: call-appr_                          6: _________
  2: call-appr_                          7: _________
  3: call-appr_                          8: _________
  4: _________                           9: _________
  5: _________                          10: _________
```

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
    NON-SWITCH DATA
         Room: _______                                    Headset? n
         Jack: _______
        Cable: _______
ABBREVIATED DIALING
     List1: _________        List2: _________        List3: _________
BUTTON ASSIGNMENTS
  1: call-appr_
  2: call-appr_
  3: call-appr_
```

8503D Station Form (Page 2 of x)

Page 3 of x

STATION

FEATURE BUTTON ASSIGNMENTS

1: _____ 4: _____
2: _____ 5: _____
3: _____ 6: _____
7: _____

7505D and 7506D Station Form (Page 3 of x)

Page 3 of x

STATION

BUTTON ASSIGNMENTS

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: _____

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 x of x
                                  STATION
DATA MODULE
     Data Extension: ____
               Name: ________________        COR: 1_        COS: 1_
ABBREVIATED DIALING
 List1: _________
SPECIAL DIALING OPTION: hot-line
   HOT LINE DESTINATION

       Abbreviated Dialing Dial Code (From above list): _
CIRCUIT SWITCHED DATA ATTRIBUTES
  Default Duplex:  full   Default Mode: async     Default Speed: 1200
DATA MODULE CAPABILITIES
                              Origination Default Data Application? M2_A
```

7505D, 7506D, and 7507D ISDN-BRI Data Module Form (Page x of x)

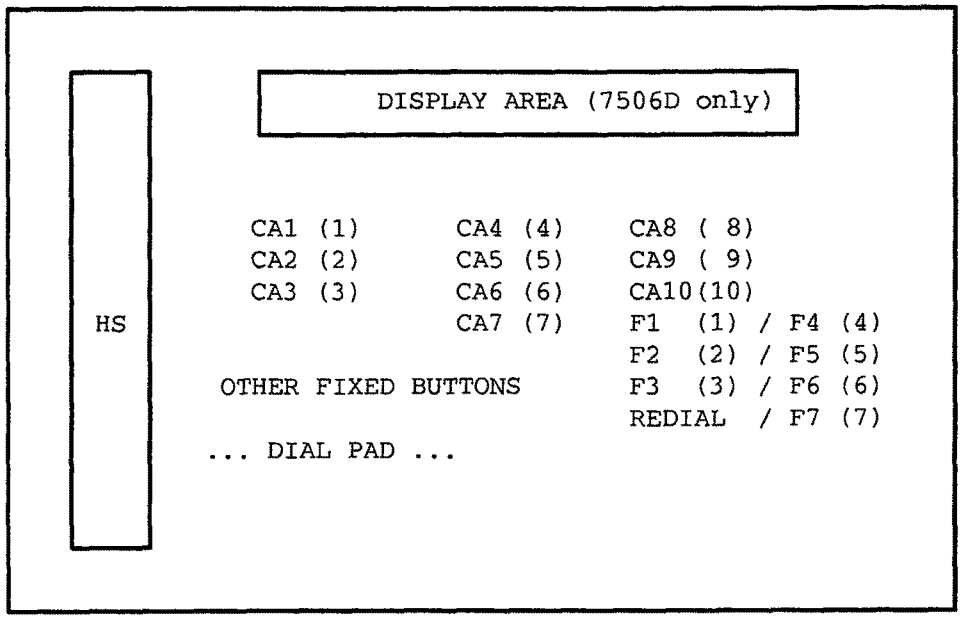
Implementation Note:

This page is only displayed if the Data Module field on Page 1 is "y".

HOT LINE DESTINATION only displayed when "hot-line" is entered in the SPECIAL DIALING OPTION field.

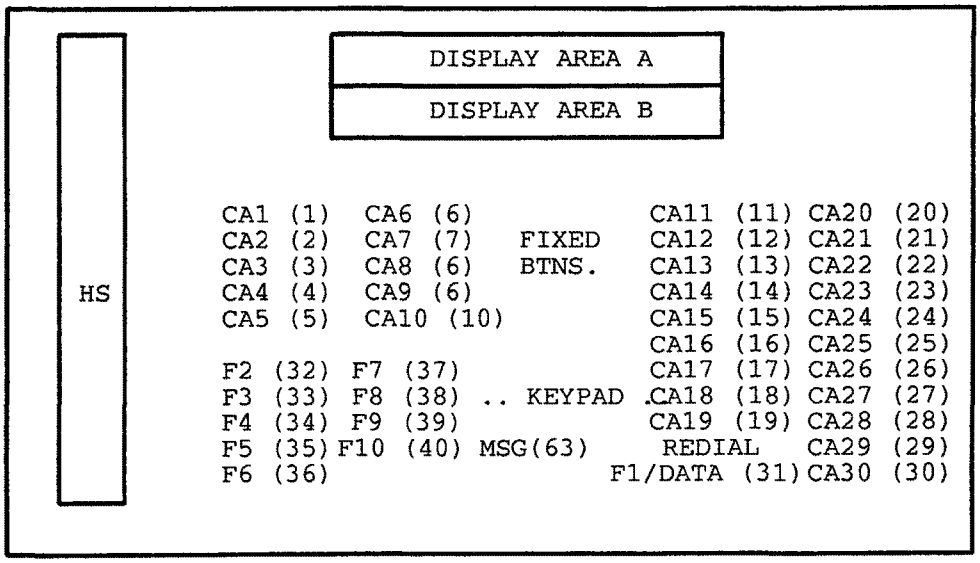
DEFAULT DIALING only displayed when "default" is entered in the SPECIAL DIALING OPTION field.

Abbreviated Dialing Dial Code only displayed when SPECIAL DIALING OPTION is "hot-line" or "default".



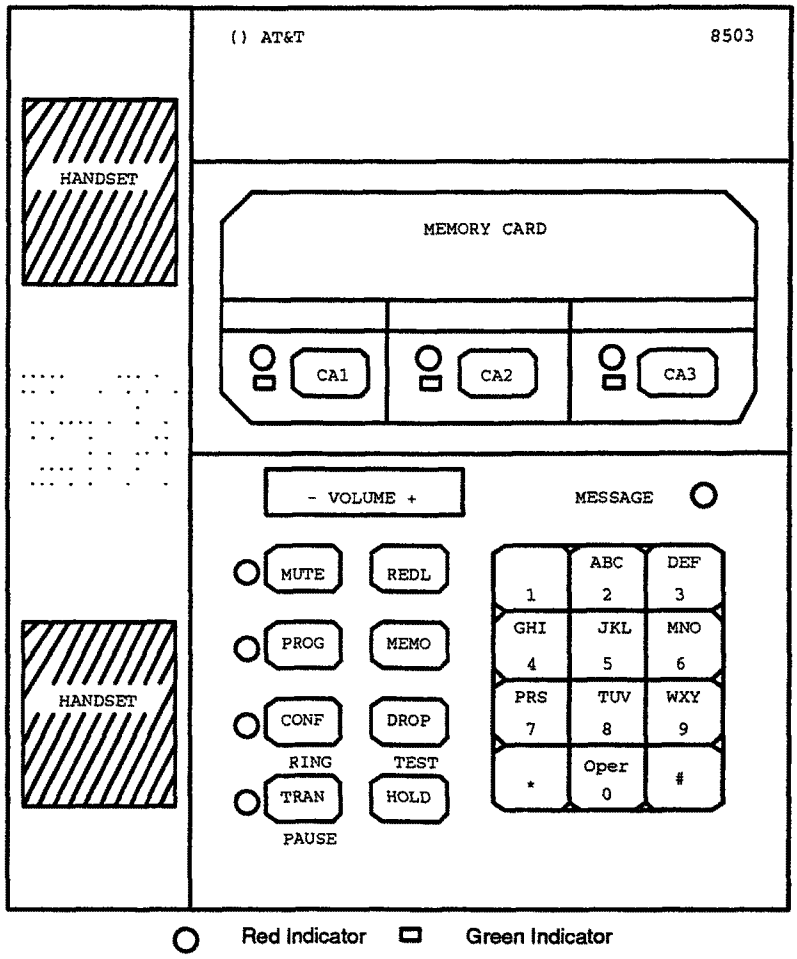
Where: (.) represent the set button number
CA1, CA2, CA3... are call appearance buttons which appear on page one of the station form.
F1, F2, F3... are the feature buttons.
Note: Buttons F4-F6 are accessed by shifting buttons F1-F3. Button F7 is accessed by shifting fixed REDIAL button.

Figure 5-42. 7505D and 7506D Voice Terminal Feature Button Layout



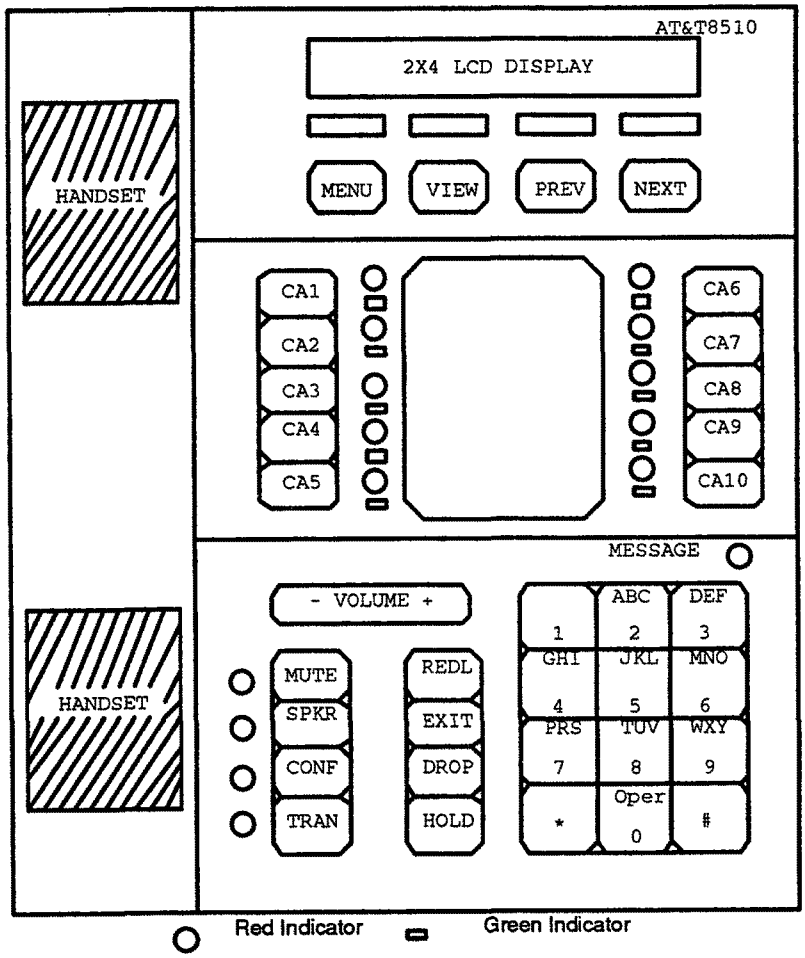
Where: (.) represent the set button number
CA1, CA2, ..., CA30 are call appearance buttons
(2 lamp buttons)
F1, F2, F3... are the feature buttons (one LED).
Note: The 7507D terminal supports 31 buttons with two LEDs, however, the software will only support administration of 30 of these as call appearance buttons
(buttons CA1-CA30).
The system maximum of 10 call appearance buttons still applies.Buttons CA1-CA30 which are not used as Call Appearance buttons can be administered as Bridged Appearance buttons.

Figure 5-43. 7507D Voice Terminal Feature Button Layout



Note: 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 5-44. 7507D Voice Terminal Feature Button Layout



Note 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
Note 2: The EXIT button is treated as a fixed "normal" button.

Figure 5-45. 8503D Voice Terminal Feature Button Layout

```
                                    Page 3 of x
                                         STATION
FEATURE BUTTON ASSIGNMENTS
  11: normal
```

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: _____                          16: _____
12: _____                          17: _____
13: _____                          18: _____
14: _____                          19: _____
15: _____                          20: _____
                                   21: normal
```

8520D Station Form (Page 3 of x)

NOTE:
Button 21 is a fixed "normal" button on the 8520D voice terminal.

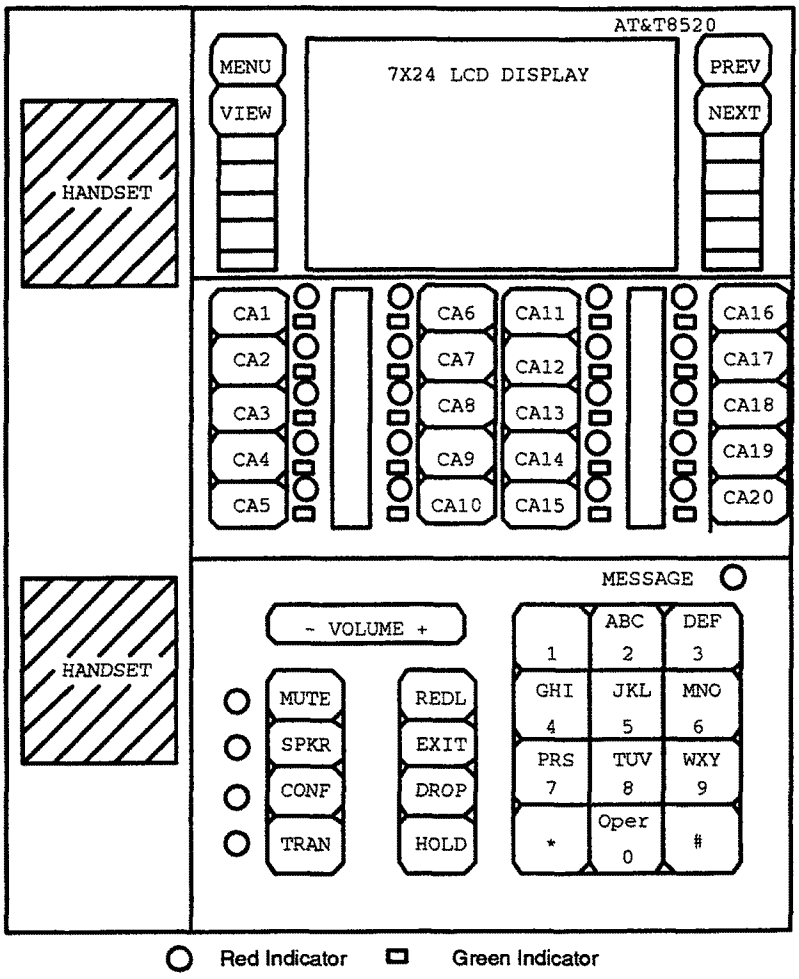


Figure 5-46. 8520D Station Set Layout

Notes:

1. CA1, CA2, ..., 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 which are not used as Call Appearance buttons can be administered as Bridged Appearance buttons.

3. The 8520D has 7X24 LCD display. However, 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.
4. The EXIT button is treated as a fixed "normal" button.

CALLMASTER Voice Terminal

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 and Error Messages (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	[xxxxx] ('count' 1-2400) type ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-2400) 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.

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 "602A1".
- **Data Module** — Enter "y" if this terminal is connected to a data terminal via 7400B Data Module, otherwise, enter "n". If "y" is entered, the Data Module form must be completed. Valid entries are "y" or "n". Default is "n".
- **Display** — Display-only field; restricted to "y". Display-type buttons are administered on Page 3 of the form.

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
- abr-spchar
- abrdg-appr
- abrv-dial
- ac-alarm
- aca-call
- after-call
- assist
- atd-qcalls *
- atd-qtime *
- aut-msg-wt
- auto-cback
- auto-icom
- auto-in
- auto-wkup *
- aux-work
- brdg-appr
- busy-ind
- call-appr
- call-disp *
- call-fwd
- call-park
- call-pkup
- callr-info *
- cas-backup
- cov-msg-rt *
- data-ext
- date-time *
- delete-msg *
- dial-icom
- directory *
- dn-dst
- ds1-alarm
- exclusion
- ext-dn-dst *
- flash
- fish-pcorr
- goto-cover
- grp-dn-dst *
- hunt-ns
- in-call-id
- inspect *
- last-numb
- link-alarm
- lwc-cancel
- lwc-store
- major-alrm
- man-msg-wt
- man-overid *
- manual-in
- normal *
- per-COline
- pms-alarm
- pr-awu-alm
- pr-pms-alm
- pr-sys-alm
- print-msgs
- priority
- q-calls
- q-time
- release
- ringer-off
- rs-alert
- send-calls
- send-term
- serv-obsrv
- signal
- smdr1-alrm
- smdr2-alrm
- stored-num *
- stroke-cnt
- term-x-gr
- timer *
- trk-ac-alm
- trunk-name *

- check-in *
- check-out *
- clk-overid *
- consult
- cov-cback
- mj/mn alrm
- msg-retr *
- mwn-act *
- mwn-deact *
- next *
- night-ser
- trunk-ns
- verify
- 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? n
          SMDR Privacy? n                               Data Restriction? n
 Redirect Notification? y                   Idle Appearance Preference? n
 Bridged Call Alerting? n                 Personalized Ringing Pattern: _
                                             Restrict Last Appearance? y
           Data Module? n
               Display? y
      Display Language: English
```

602A1 Station Form (Page 1 of x)

Implementation Note:

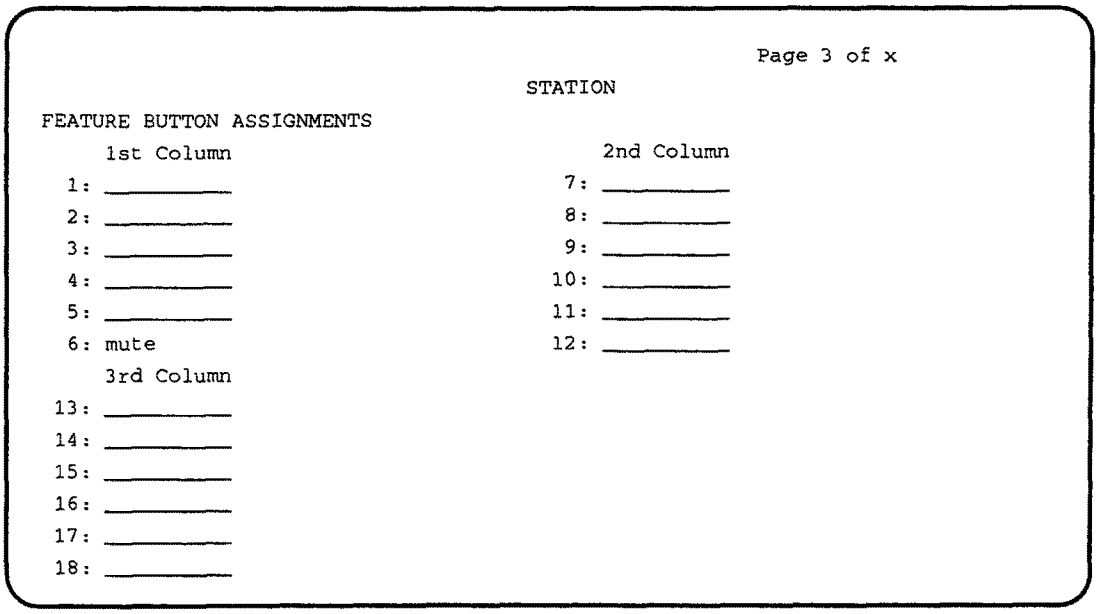
The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

```
                                                          Page 2 of x
                                  STATION
     NON-SWITCH DATA
          Room: _______                                   Headset? n
          Jack: _______
         Cable: _______
ABBREVIATED DIALING
      List1: _______          List2: _______          List3: _______
BUTTON ASSIGNMENTS
  1: _call-appr                        6: _________
  2: _call-appr                        7: _________
  3: _call-appr                        8: _________
  4: _________                         9: _________
  5: _________                        10: _________
```

602A1 Station Form (Page 2 of x)

Implementation Note:

At least two BUTTON ASSIGNMENTS buttons must be assigned to call-appr (call appearance.)



```
                                                    Page 3 of x
                                    STATION

FEATURE BUTTON ASSIGNMENTS
     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: _____
```

602A1 Station Form (Page 3 of x)

Implementation Note:

Feature button #6 is preassigned as a mute button (not administrable).

```
                                                          Page x of x
                                  STATION
DATA MODULE
     Data Extension: ____                BCC: 2
               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:
```

602A1 Data Module Form (Page x of x)

Implementation Note:

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".

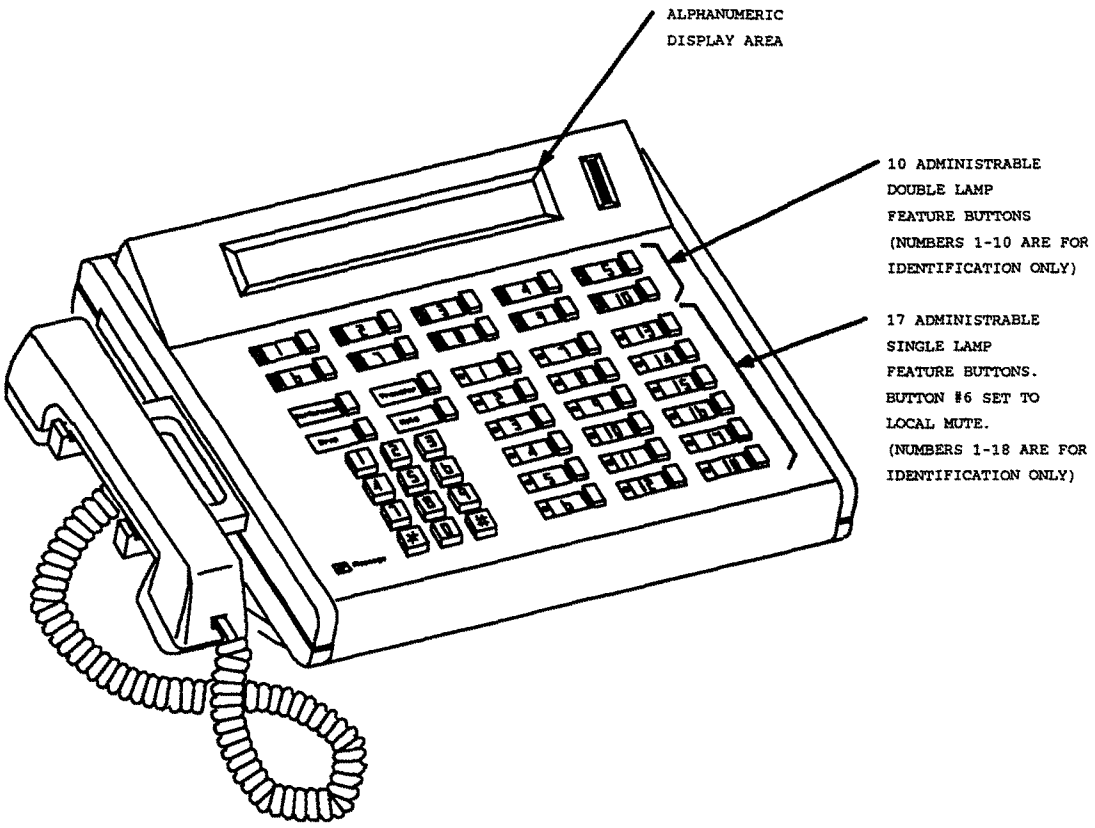


Figure 5-47. CALLMASTER Digital Voice Terminal

Personal Computer (PC) — 6300 PC/PBX Connection

Used to implement a PC/PBX Connection. The PC can be either an AT&T PC 6300 Personal Computer (or other compatible PC) which 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 and Error Messages (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	[xxxxx] ('count' 1-2400) type ['print' or 'schedule']
list	station	[xxxxx] ('count' 1-2400) 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

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 "pc".
- **Set** — Enter the digital voice terminal type the PC is connected to. Valid entries are "7401D", "7403D", "7404D", "7405D", "7406D", "7407D", 7434D, and "602A1".
- **PCOL/TEG Call Alerting** — Enter "y" if the PC user will be alerted on an incoming PCOLG/TEG call; otherwise, enter "n". Default is "n".

- **Data Module** — Display-only (set to "y").
- **Display** — Display-only (set to "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
- abr-spchar
- abrdg-appr
- abrv-dial
- ac-alarm
- aca-call
- after-call
- assist
- atd-qcalls *
- atd-qtime *
- aut-msg-wt
- auto-cback
- auto-icom
- auto-in
- auto-wkup *
- aux-work
- brdg-appr
- busy-ind
- call-appr
- call-disp *
- call-fwd
- call-park
- cov-msg-rt *
- data-ext
- date-time *
- delete-msg *
- dial-icom
- directory *
- dn-dst
- ds1-alarm
- exclusion
- ext-dn-dst *
- flash
- flsh-pcorr
- goto-cover
- grp-dn-dst *
- hunt-ns
- in-call-id
- inspect *
- last-numb
- link-alarm
- lwc-cancel
- lwc-store
- major-alrm
- normal *
- per-COline
- pms-alarm
- pr-awu-alm
- pr-pms-alm
- pr-sys-alm
- print-msgs
- priority
- q-calls
- q-time
- release
- ringer-off
- rs-alert
- send-calls
- send-term
- serv-obsrv
- signal
- smdr1-alrm
- smdr2-alrm
- stored-num *
- stroke-cnt
- term-x-gr

- call-pkup
- callr-info *
- cas-backup
- check-in *
- check-out *
- clk-overid *
- consult
- cov-cback
- man-msg-wt
- man-overid *
- manual-in
- mj/mn alrm
- msg-retr *
- mwn-act *
- mwn-deact *
- next *
- night-ser
- timer *
- trk-ac-alm
- trunk-name *
- trunk-ns
- verify
- 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? n
          SMDR Privacy? n                                Data Restriction? n
 Redirect Notification? y                    Idle Appearance Preference? n
PCOL/TEG Call Alerting? n
                                             Restrict Last Appearance? y
           Data Module? y
        Display Module? y
      Display Language: English
```

PC Station Form (Page 1 of x)

Implementation Note:

The BCC field is only displayed if the ISDN-PRI option is enabled on the System-Parameters Customer-Options form.

```
                                                          Page 2 of x
                                  STATION
    NON-SWITCH DATA
         Room: _______                                    Headset? n
         Jack: _______
        Cable: _______
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: _________   (F7)                    9: _________  (AF2)
  5: _________   (AF1)                  10: _________  (AF4)
```

PC Station Form (Page 2 of x)

Implementation Note:

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: _________
```

PC Station Form (Page 3 of x)

```
                                                    Page x of x
                              STATION
        DISPLAY BUTTON ASSIGNMENTS
        1: _____________  (CF1)
        2: _____________  (CF2)
        3: _____________  (CF3)
        4: _____________  (CF4)
        5: _____________  (CF5)
        6: _____________  (leave blank)
        7: _____________  (leave blank)
```

PC Station Form (Page x of x)

```
                                                    Page x of x
                                  STATION
DATA MODULE
     Data Extension: ____                BCC: 2
               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:
```

PC Data Module Form (Page x of x)

Implementation Note:

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".

A. SPID Installation

SPID Installation

A

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 terminal 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 terminals 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 "I" 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 "#".

B. Application Notes

Application Notes

B

This appendix contains information concerning how DEFINITY Generic 3i — Global should be hardware configured and administered for operation in each supported country.

Also included is information about how certain features (for example, 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 system-wide options (for example, tone plan country codes) presented in Table format.
- Specific sections covering each of the countries supported by G3i — Global.

Each country's section provides a brief background on key aspects of that country's Public Network (PN) (for example, major analog and digital standards, availability of PPM, dial-pulse ratios, and so on). This is followed by sub-sections 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 G3i — Global as well as the hardware administration of the Country Code assignments.

Circuit Pack Support

The following tables list the circuit packs (CPs) available in G3i — Global 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 G3i — Global 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. G3i — Global 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	A	TN748C TNT48D	TN780	TN744v.7	TN725B	TN750B	TN763D
Australia	A	TN420C TN420B	TN780 TN419B	n/a	TN457	TN750B	TN763D TN417
Belgium	A	TN420C	TN780v.4	TN744	TN457	TN750B	TN763D
CIS	A	TN420C	TN780		TN457	TN750B	TN763D
Czechoslovakia	A	TN420C	TN780		TN457	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
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	TN744	TN725B	TN750B TN750	TN763D TN763C
Netherlands	A	TN420C	TN780v.4	n/a	TN457	TN750B	TN763D
Saudi Arabia	μ[1]	TN748D TN756	TN780 TN756	TN744	TN725B	TN750B	TN763D TN763C
Singapore	μ[1]	TN748D TN756	TN780 TN756	TN744	TN725B	TN750B TN750	TN763D TN763C
Spain	A	TN420C	TN780	TN744[2]	TN457	TN750B	TN763D
Taiwan	μ	TN748D TN756	TN780 TN756	n/a	TN725B	TN750B	TN763D TN763C
UK	A	TN420C TN420B	TN780 TN419B	n/a	TN457	TN750B	TN763D TN417
Venezuela	μ[1]	TN748D TN756	TN780 TN756	TN744	TN725B	TN750B TN750	TN763D TN763C

Notes:

1 National standard is A-Law

2 This circuit pack 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 G3i — Global country, each such CP does not support all speech synthesis applications. The following table shows applications supported by each speech synthesis CP in G3i — Global.

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 G3i — Global.

Table B-3. Trunk CPs Supported on G3i— Global

Country	Trunk Type								Encoding A/μ
	Analog DID	Analog CO (no PPM)	Analog CO (w/PPM)	4W Tie	2W Tie	Digital Trunks CO/DID	Digital Trunks TIE	Digital Trunks 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	A
Australia	TN436B TN436	TN2147	TN438B	TN437B TN437	TN439	n/a	TN464D TN464C	TN464D TN464C	A
Belgium	TN2146[2]	TN2147	n/a	TN760Dv11[6]	n/a	TN464D[2]	TN464D	TN464D	A
CIS	TN753v17	TN747Bv12	TN465	TN760Dv11		TN464v 3	TN464D	n/a	A
Czechoslovakia	TN753v17	TN747Bv12		TN760Dv11		TN464v.2	TN464D	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]
Italy	TN2139	n/a	TN2138	TN2140	TN497	TN464D TN464C TN464B	TN464D TN464C TN464B	n/a	A
Japan	TN429	TN429 TN465	n/a	TN760D	TN439	TN464D[4] TN464C[4] TN767[4]	TN464D TN464C TN767	TN464D[4] TN464C[4]	μ
Mexico	n/a	TN747B[1]	TN465	TN760D		TN464D	TN464D TN464C	n/a	μ[3]
Netherlands	TN2146	TN2147	TN2138	TN760Dv11[6]		TN464D	TN464D	TN464D	A
Saudi Arabia	TN753[2]	TN747B[1]		TN760D		n/a	TN464D TN464C TN464B	n/a	μ[3]
Singapore	TN753[2]	TN747B[1]		TN760D			TN464D TN464C	TN464D TN464C	μ[3]
Spain	n/a	TN2147	TN2148	n/a	n/a	TN464Dv.2[8]	n/a	TN464D	A
Taiwan	TN753	TN747B[1]		TN760D			TN464D TN464C TN767	n/a	μ
U.K.	TN459B TN459	TN2147	TN447	TN458		TN464D[5]	TN464D TN464C	TN464D[7]	A
Venezuela	TN753[2]	TN747B	TN465	TN760D	TN439	n/a	TN464D TN464C	n/a	μ[3]

Notes:

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-LI 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 G3i— Global

Country	8p An Line	16p An Line	Dig Line	Data Line	Encoding A/μ
U.S. & Canada	**TN742**	**TN746B**	**TN754B**	**TN726B**	μ
Argentina	**TN742**	**TN746B**	**TN754B** TN2136	**TN726B**	μ
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
Greece	TN742	**TN746B**	**TN754B**	**TN726B**	μ[1]
Hong Kong	TN742	**TN746B**	**TN754B**	**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
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
U.K.	TN467	**TN468B** TN468	**TN754B** TN413	**TN726B**	A
Venezuela	TN742	**TN746B**	**TN754B** TN413	**TN726B**	μ[1]

Notes:

1 National standard is A-Law.

2 This circuit pack will be enhanced to meet special Spanish PTN criteria The circuit pack TN designation may be augmented with a vintage number or suffix

The following table contains a summary of CP functionality for all Trunk and Line CPs supported by G3i — Global.

Table B-5. Trunk/Line CP Functionality Summary

CP Name	Description	# Ports	Supports Administrable Timers	Encoding A/μ
TN413	Digital Line	8		A
TN417	Aux Trunk	4	No	A
TN429	LS-DIOD	8	Yes	Cμ
TN436	DID	8	Yes	CA
TN436B	DID (Aust., TN753 Made-from)	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	Cμ
TN447	GS-CO 50 Hz PPM	8	Yes	CA
TN448	Analog Line	16		A
TN458	4w E&M Tie	4	Yes	CA
TN459	DID Current Source	8	Yes	CA
TN459B	DID (UK, TN753 Made-from)	8	Yes	CA
TN464B	32 Ch DS1	32	Yes	CA
TN464C	24/32 UDS1	24/32	Yes	CA
TN464D	UDS1	24/32	Yes	CA
TN465	LS-CO 16kHz PPM	8	Yes	CS
TN465M	LS-CO 12 KHz PPM	8	Yes	CS
TN465B	Analog CO Trunk 12 & 16 kHz PPM	8	Yes	CA
TN467	Analog Line ONS/OPS	8		CA
TN468	Analog Line ONS	16		A
TN468B	Analog Line	16		CA
TN479	Analog Line	16		μ
TN497	2w Tie	4	Yes	CA
TN556B	ISDN-BRI Companding View		N/A	Cμ

(Continued on the next page)

Table B-5. Trunk/Line CP Functionality Summary *(continued)*

CP Name	Description	# Ports	Supports Administrable Timers	Encoding A/μ
TN722B	DS1 Tie	24	No	
TN726	Data Line	8		
TN726B	Data Line	8		
TN742	Analog Line	8		μ
TN746	Analog Line	16		μ
TN746B	Analog Line	16		Cμ
TN747	Analog CO	8		μ
TN747B v12	CO w Polarity Rev.	8	Yes	Cμ
TN753	DID	8	No	Cμ
TN754	Digital Line	8		μ
TN754B	Digital Line CP	8		Cμ
TN760C	Tie	4	No	μ
TN760D	4w E&M Tie	4	Yes (≥V 15)	Cμ
TN762B	Hybrid Line	8		μ
TN763B	Aux Trunk	4		μ
TN763C	Aux Trunk	4		μ
TN763D	Aux Trunk	4	No	Cμ
TN767	DS1	24	Yes	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	16		CA
TN2146	DID (Belg, Neth.)	8	Yes	CA
TN2147	Low Cost CO (UK,BG,Aus,Neth)	8	Yes	CA
TN2148	Analog CO Trunk 12 & 16 KHz PPM	8	Yes	CA
TN2149	Analog Line	16	Yes	CA
TN2180	Analog Line	16	Yes	CA

Notes:

CS - Software controlled - Switch controlled default
CA - Software controlled - A-Law default.
Cμ - Software controlled - μ-Law default

The following table lists the Processing and Environmental circuit packs supported by G3i — Global.

Table B-6. Processing/Environmental CP per Country Support

Country	Environmental Circuits							
	Memory Board	Processor Board	Tape Drive	Maintenance Board	Interface Expansion	AC Power Supply	DC Power Supply	Network Control
Argentina Australia Belgium Canada CIS Greece Hong Kong Italy Japan Mexico Saudi Arabia Singapore Spain Taiwan U.S. Venezuela	TN770	TN773 TN786 TN786B	TN774	TN775	TN776	†	676B	TN777B TN777
Czechoslovakia Netherlands U.K.	TN770	TN773 TN786 TN786B	TN774	TN775	TN776	PEC3981 UK	676B	TN777B TN777

Notes:

† The following CPs are used for every country indicated: WP 91153 L2, 644A, 645B

Hardware Administration Country Codes

G3i — Global 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 (Russia)
16	Argentina
17	Greece

Although all country codes may be entered at the administration screens, not all countries require unique administration at a given screen. Therefore, at some administration screens, particular country codes map to other country codes. For example, at the DS1 administration screen, the country code for Australia (2) maps to the country code for the Netherlands (5). In addition, at the same screen, the country code for Japan (3) maps to the country code for the United States (1).

Even though a particular country code maps to another country code, the administrator should enter the assigned country code, as shown in the table above. If no country code has been assigned to a particular country, then the administrator should enter the code for the country to which the country maps.

Two aspects of country codes must be considered:

1. What are the recommended country codes that should be entered by a system administrator when configuring the system, and
2. What are the mappings between countries and assigned country codes on particular screens.

Although item [1] is covered in the Individual Country Sections of this document, a summary table is provided next.

Table B-8. Recommended Country Codes to be Entered by Administrators

Country	Tone Gen	ISDN	Dig. Xmit	Tone Det	Trk Grp Country	Ana.Ring Cadence	Tone Det. Precision
U S. & Canada	1	1	1	1	1	1	Precise
Australia	2	2	2	2	2	-	Precise
Japan	3	3	3	1	3	3	Broadband
Italy	4	4	4	1	4	4	Precise
Netherlands	5*	5	5	5	5	5	Medium
Singapore	6*	6	6	1	6	6	Precise
Mexico	7*	-	7	1	7	7	Precise
Belgium	8*	8	5	5	8	-	Medium
Saudi	9	-	9	1	9	9	Precise
UK OTR001	10B	10B	10B	3	10B	-	Precise
UK Non-OTR001	10A	10A	10A	3	10A	-	Precise
Spain	11	-	11	4	11	11	Medium
Czechoslovakia	14	-	14	14	14	4	Broadband
CIS	15	-	15	15	15	4	Medium
Argentina	16	16	16	1	16	16	Broadband
Greece	17	-	17	17	17	1	Broadband
Hong Kong	1	5	1	1	1	-	Precise
Taiwan	1	3	1	1	1	1	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)
- - 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

The next table describes the internal mappings of the country codes when entered into specific fields.

The list below describes the shortened phrases used in the table.

Country Opt	Country Options Parameters Screen
DS1	DS1 Administration Form
Trunk Grp	Trunk Group Screen
Base	Base Tone Generation Set *Field*
Analog	Analog Ringing Cadence *Field*
Co. Prot.	Country Protocol *Field*
Loss	Digital Loss Plan *Field*

For every screen in which the country code is entered, equivalent mappings are shown. For example:

The country code to be administered for Saudi Arabia is 9; however, at the country options screen, in the base tone generator field either a 1 (US) or 9 (Saudi Arabia) may be entered. That is, both 1 and 9 result in the base tone generator treatment.

Table B-10. Internal Country Code Mappings

Screen Field	Cntry Opt Base	Cntry Opt Analog	DS1 Co. Prot.		DS1 Co. Prot.	Cntry Opt Loss	Cntry Opt Loss	Trunk Grp Country	
Internal Meanings	Tone Gen*	An. Ring§ Cadence	ISDN† L3	L2	CO/DID Signal	Dig. Xmit	Tone Loss	Ana.Xmit☛ (DSLAC)	
Value	Internally Mapped Equivalent Country Codes								Country
1	1	1	1	Opt 1	1	1	1	1	US & Canada
2	2	1	2	Opt 2	1	2	2	2	Australia
3	3	3	3	Opt 4	1	1	1	1	Japan
4	4	1	4	Opt 4	4	4	4	4	Italy
5	8	1	5	Opt 4	5	5	5	5	Netherlands
6	2*	1	5	Opt 4	1	1	6	1	Singapore
7	4*	1	5	Opt 4	7	1	7	1	Mexico
8	8	1	5	Opt 4	8	8	8	8	Belgium
9	1	1	5	Opt 4	1	1	6	1	Saudi
10A	10A	1	5	Opt 4	1	10A	10A	10A	UK Non-OTR001
10B	10B	1	5	Opt 4	1	10B	10B	10B	UK OTR001
11	8*	3	-	-	11	8	11	11	Spain
14	4*	1	-	-	14	1	1	1	Czechoslovakia
15	8	1	-	-	15	1	1	1	CIS (Russia)
16	1	1	5	Opt 4	16	1	1	1	Argentina
17	1	1	-	-	17	1	1	1	Greece

Notes:

* Needs additional customized tone administration to meet country requirements (This admin detail is covered in individual country sections of this document.)

** Non-bold entries mean the TN420 is not used for tone detection Since only the TN420 is sensitive to this parameter, the non-bold values will be ignored.

§ Non-bold entries mean that the TN746B analog line CP is not used Since only this CP provides selectable ringing cadences, non-bold values will be ignored

† Non-bold entries mean this feature is not applicable/available. Therefore, non-bold values are used only for internal switch software consistency

☛ This value is used with the TN465B, TN2146, TN2147, and the TN464C/D (in Italy only) The DSLAC coefficients are derived from the Country code as well as up to 2 other parameters In Italy, the DSLAC parameters are used **not** to calculate a DSLAC coefficient for the TN464C/D, but they are used to perform error checking and correct protocol selection

ISDN Type Approval

To date, only 2 countries have granted DEFINITY ISDN type approval, and these countries are Australia and the United Kingdom. The other network ISDN protocols that are suggested for administration in this document have **NOT** yet received Type Approval. In countries where Type Approval has not been received, the protocols suggested by this document are not yet running in the public network.

Country-Specific Configuration and Administration

The following sections present information for how G3i — Global 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 G3i — Global functionality is available with upgrade CPs.

United States & Canada

All domestic circuit packs, as summarized in the table below, may be used with G3i — Global.

Table B-11. 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	
TN746B	Analog Line	
TN747 TN747B	Analog CO Analog CO	 B or C Vintage needed for ACD
TN748 TN748B TN748D	Tone Detector Tone Detector Tone Detector	 C Vintage needed for OCM
TN750B	Announcement	
TN753	DID Trunk	
TN754 TN754B	Digital Line Digital Line	
TN756	Tone Detector	Used in XE only
TN758	Pooled Modem	
TN760D	Tie Trunk	CAS needs ≥ B V.6
TN762	Hybrid Line	
TN763 TN763B TN763D	Aux Trunk (DA) Aux Trunk (DA) Aux Trunk	 AUDICHRON requires B, C or D Vintage
TN767 TN464 TN464B TN464C TN464D	DS1 Interface DS1 Interface DS1 Interface DS1 Interface DS1 Interface	
TN768	Tone Clock	Used with SE+
TN769	Analog Line (with Neon)	
TN780	Tone Clock	

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, US.[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-12. Recommended and Available CPs in Argentina

Number	Function	Comments
TN750B	Announcement	
TN763D	Aux Trunk	
TN754B **TN2136**	Digital Line	
TN726B	Data Line	
TN748C **TN748D**	Tone Det	
TN780	Tone Gen Clock	
TN744v.7	Call Classifier	R2MFC
TN725	Speech Synth	
TN747B	Analog CO Trunk	
TN760D	4W Tie Trunk	
TN464D	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 in order 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.
- Miscellaneous Parameters
  - 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: **Yes**[2]
  - 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
- Country Options Parameters
  - Companding Mode: **mu-law**

2. Although not a Type Approval issue, this represents the convention for this country.

- Base Tone Generation Set: **16**
- Tone Detection Mode: **1**
- Interdigit Pause: **short**
- Digital Loss Plan: **16**
- Analog Ringing Cadence: **16**

- Multifrequency Signaling Parameters
  - Incoming Call Type: **non-group-ii-mfc**
  - Outgoing Call Type: **none**
  - Maintenance Call Type: **none**
  - Incoming Interdigit Timer: **10**
  - Multifrequency Signaling DID Intercept Treatment: **n**
  - Incoming Received Level (dB): **0**
  - Outgoing Transmitted Level (dB): **-3**
  - Incoming Group I Signals: **use defaults**
  - Incoming Group A Signals: **use defaults**

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: **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.)

— 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: **5200** ms
- Incoming Seizure: **130** ms
- Outgoing End-of-Dial: **10** sec
- Outgoing Seizure Response: **5** sec
- Programmed Dial Pause: **1300** msec
- 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: **mfc**
- 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.)

— 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: **300** 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
  - — DS1[3] 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**
  - — 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**
  - — 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)

3. DS1 is also analogous to the term *E1* which has been coined for the European T1 or 2 mbit interface

- Bit Rate: **2.048**
- Interface Companding: **A-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: **2.048**
  - — Interface Companding: **A-law**
  - — Line Coding: **HDB3**
  - — Signaling Mode: **isdn-pri**
  - — Country Protocol: **16**
  - — Connect: **pbx**
  - — Interface: **user**
  - — 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 an administrable item)
  - — Bit Rate: **2.048**
  - — Interface Companding: **A-law**

- — Line Coding: **HDB3**
- — Signaling Mode: **isdn-pri**
- — Country Protocol:
- — Connect: **Network**
- — 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**

Australia

Recommended and available circuit packs are shown in the following Table:

Table B-13. 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
TN468B 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 in order 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
- Miscellaneous Parameters
  - 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**[4]
  - 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**

- Country Options Parameters
  - Companding Mode: **A-law**
  - Base Tone Generation Set: **2**
  - Tone Detection Mode: **2**
  - Interdigit Pause: **short**
  - Digital Loss Plan: **2**
  - Analog Ringing Cadence: **2**
- Multifrequency Signaling Parameters

  Currently, this information is not available.

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: **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.)

— 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**
- 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: **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**
- 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.)

— 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 (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**
  - — 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**
- — 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-14. 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	
TN760Dv11	Analog Tie	Prescom TS-X 1276 converter required
TN464D	Digital CO	
TN464D	Digital DID	MFC only
TN464D	Digital Tie	
TN464D	ISDN CO	Not yet TAed
TN2149	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 in order 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**
- Feature Parameters
  - DID/TIE/ISDN Intercept Treatment: **Attendant**
- Miscellaneous Parameters
  - 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: **Yes**[5]
  - 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**

- Country Options Parameters
  - 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

    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)|(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)

- Multifrequency Signaling Parameters
  - Incoming Call Type: **non-group-ii-mfc**
  - Outgoing Call Type: **none**
  - Maintenance Call Type: **none**

- — Incoming Interdigit Timer: **10**
- — Multifrequency Signaling DID Intercept Treatment: **n**
- — Incoming Received Level (dB): **0**
- — Outgoing Transmitted Level (dB): **-3**
- — Incoming Group I Signals: **use defaults**
- — Incoming Group A Signals: **use defaults**

Analog Trunk Administration

- CO Trunks
  - — Trunk Group Screen
    - Group Type: **CO**
    - Direction: **two-way**
    - Digit Absorption List: **blank**
    - Country Code: **8**
    - Trunk Gain: **high**
    - Dial Access: **No**
    - Prefix-1: **No**
    - Trunk Type: **loop-start**
    - Outgoing Dial Type: **tone** or **rotary**
    - Trunk Termination: **rc** (complex impedance)
    - 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:

      Analog Trunks: **no**
      Digital Trunks: **yes**

    - Suppress # Outpulsing: **600** msec

- 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**

— 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
- Disconnect Signal Error: **240** sec
- End-To-End Signaling Pause: **150** ms (accept default)
- End-To-End Signaling Tone: **350** ms (accept default)
- PPM: **yes**
- Frequency: **16 kHz**
- Flash Length: **100** ms

- DID Trunks

— Trunk Group Screen

- Group Type: **DID**
- Country Code: **8**

- Trunk Gain: **high**
- Digit Absorption List: **blank**
- Incoming Dial Type: **MFC**
- 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**
- Terminal Balanced: **no**
- RA Trunk Loss: **0dB**
- Extended Loop Range: (Used Only with TN459) **no**
- Drop Treatment: **silence**
- Disconnect Supervision:

  Analog: **no**
  Digital: **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**

— 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**
  - — 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**
  - — 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**
      - — 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
    - Bit Rate: **2.048**
    - Interface Companding: **A-law**
    - Line Coding. **HDB3**
    - Signaling Mode: **isdn-pri**
    - Country Protocol: **8**
    - 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**

Station Administration

- Type: **2500**
- Switchhook Flash: **yes**

Switch Maintenance

Disable Test 0 to turn off dial tone test on CO trunks.

Call Vector Adminstration

- ASAI Routing: **no**
- Basic: **yes**
- Prompting: **yes**
- Wait Time 6 sec. hearing ringback
- Announcement Extension: installation dependent
- Route to Number: installation dependent

Commonwealth of Independent States

Recommended and available circuit packs are shown in the following Table:

Table B-15. 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	
TN744v.x **TN746B**	Call Classifier 16p Analog Line	Vintages tbd Used only for MFC ani xmit
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 in order 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.
- Miscellaneous Parameters
  - 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**[6]
  - 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**

6. 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.
- Country Options Parameters
  - — Companding Mode: **A-law**
  - — Base Tone Generation Set: **15**
  - — Tone Detection Mode: **2**
  - — 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: **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.)

— 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**
    - Direction: **incoming**
    - Protocol Type: **intol** or **inloc**
    - Trunk Gain: **high**
    - 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**
- 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.)

— 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
    - — DS1[7] Administration Screen

7. DS1 is also analogous to the term *E1* which has been coined for the European T1 or 2 mbit interface.

- 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**

— 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**

  — 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
    - Bit Rate: **2.048**
    - Interface Companding. **A-law**
    - Line Coding: **HDB3**
    - Signaling Mode: **CAS**
    - Country Protocol: **15**
    - 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**
  - — 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**

Czechoslovakia

Recommended and available circuit packs are shown in the following Table:

Table B-16. Recommended and Available CPs in Czechoslovakia

Number	Function	Comments
TN420C	Tone Detector	
TN457	Speech Synth	V2 CP to be sold
TN464D	Digital Tie	
TN465	CO w/PPM	
TN726B	Data Line	
TN744v.x	Call Classifier	Vintage tbd
TN746B	16p Analog Line	V4 CP to be sold
TN747v.12	CO w/o PPM	
TN750B	Announcement	
TN753v.17	DID Trunk	
TN754B TN2136	Digital Line	
TN760Dv11	Analog Tie	
TN763D	Aux Trunk	
TN780	Tone Gen/Clock	

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 in order 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
- Miscellaneous Parameters
  - 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: **Yes**[8]
  - 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
- Country Options Parameters
  - Companding Mode: **A-law**
  - Base Tone Generation Set: **14**

8 Although not a Type Approval issue, this represents the convention for this country

— 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)|(Step)]

► Reorder (Congestion):

1. (425/-5)(100)
2. (silence)(100)
3. (goto)(1)

► CO 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)

- Multifrequency Signaling Parameters
  - Incoming Call Type: **group-ii-mfc**
  - Outgoing Call Type: **group-ii-mfc**
  - Maintenance Call Type: **none**
  - Incoming Interdigit Timer: **20**
  - Outgoing Forward Signal Present Timer: **15**
  - Outgoing Forward Signal Absent Timer: **27**
  - Multifrequency Signaling DID Intercept Treatment: **y**
  - Incoming Received Level (dB): **0**
  - Outgoing Transmitted Level (dB): **-3**
  - Incoming Group I Signals:

Signal	Meaning
I.11	Drop
I.12	Drop
I.13	Drop
I.14	Drop
I.15	End of Dial

  - Incoming Group II Signals:

Signal	Meaning
II.1	Normal User
II.2	If busy, route to an attendant
II.3	Normal User
II.4	Normal User
II.5	Attendant
II.6	Data
II.7	Normal User
II.8	Normal User
II.9	If busy, route to an attendant
II.10	Normal User
II.11	Normal User
II.12	Normal User
II.13	Normal User
II.14	Normal User
II.15	Normal User

— Incoming Group A Signals:

Signal	Meaning
A.1	N+1
A.3	End of dial

— Incoming Group B Signals:

Meaning	Signal
Free	B.6
Busy	B.3
Congestion	B.4
Intercept	B.5

— Outgoing Group I Signals: **use defaults**

— Outgoing Group II Signals:

Meaning	Signal
Normal User	II.1
Attendant	II.5
Data	II.6

— Outgoing Group A Signals:

Signal	Meaning
A.1	N+1
A.2	N-1
A.3	End of dial
A.4	Drop
A.5	Group II and ANI
A.6	Setup speech path
A.7	N-2
A.8	N-3
A.9	Congestion
A.10	Congestion
A.11	Congestion
A.12	Congestion
A.13	Congestion
A.14	Congestion
A.15	Congestion

— Outgoing Group B Signals:

Signal	Meaning
B.1	Congestion
B.2	Congestion
B.3	Busy
B.4	Congestion
B.5	Intercept
B.6	Free
B.7	Free
B.8	Congestion
B.9	Congestion
B.10	Congestion
B.11	Congestion
B.12	Congestion
B.13	Congestion
B.14	Congestion
B.15	Congestion

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: **mfc**
    - 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: **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.)

— 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** 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: **yes**
- Frequency: **16 kHz**

- 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: **mfc**
- 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.)

— 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

- — DS1[9] 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**
  - CRC?: **No**
  - Idle Code: **01010100**
- — 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**
  - — 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
    - Bit Rate: **2.048**
    - Interface Companding: **A-law**
    - Line Coding: **HDB3**

9. DS1 is also analogous to the term *E1* which has been coined for the European T1 or 2 mbit interface

- 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**
  - — 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**

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	
TN464Cv.3	Digital CO/DID Trunk	
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 in order 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.
- Miscellaneous Parameters
  - 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**[12]
  - 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**
- Country Options Parameters
  - Companding Mode: **μ-law**

12 Although not a Type Approval issue, this represents the convention for this country

- — 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: **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: **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.)

— 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**
- PPM 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**
- 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.)

— 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** Mbps
  - — 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** Mbps
  - 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: **μ-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
      - Bit Rate: **2.048**
      - Interface Companding: **A-law**
      - Line Coding: **HDB3**
      - Signaling Mode: **isdn-pri**

- — Country Protocol. **1**
- — Connect: **pbx**
- — Interface: **user**
- — 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	Speech Synth	V2 CP to be sold
TN750B TN750	Announcement	
TN763D TN763C	Aux Trunk	
TN753	DID Trunk	
TN747B (Ver.12) TN465	CO w/o PPM	
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 in order 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.
- Miscellaneous Parameters
  - 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: **Precise**
  - Outpulse Without Tone: **Yes**

13. Although not a Type Approval issue, this represents the convention for this country

- (Station-to-switch) Recall Timing:
  - Flashhook Interval: **Yes**
  - Upper Bound: **1000**
  - Lower Bound: **200**

- Country Options Parameters
  - Companding Mode: **μ-law**
  - Base Tone Generation Set: **1**
  - Tone Detection Mode: N/A
  - Interdigit Pause: N/A
  - 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: **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.)

— 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**
- 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.

— 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 (or TN464C,B 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: **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 (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**
      - 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.

Italy

Recommended and available circuit packs are shown in the following Table:

Table B-19. 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 in order 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.
- Miscellaneous Parameters
  - 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**[16]
  - 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**

16 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: **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.)

— 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**
- PPM 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**
- 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.)

— 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

— If the TN2140 is used as tie trunk interface CP, the signaling type is continuous, and the trunk is a T1, then set group and signaling type fields as follows:

- Group Type: **tie, tandem access, aplt** or **rlt**
- Signaling Type: **cont**
- Trunk Type: **cont/cont**
- Send Release: **y**
- Receive Release: **y**
- Send Answer Supervision: **n**
- Receive Answer Supervision: **n**

— If the TN2140 is used as tie trunk interface CP, the signaling type is continuous, and the trunk is a T2, then set group and signaling type fields as follows:

- Group Type: **tie, tandem access, aplt** or **rlt**
- Signaling Type: **cont**
- Trunk Type: **immed/immed**
- Send Release: **y**
- Receive Release: **y**
- Send Answer Supervision: **y**
- Receive Answer Supervision: **y**

— If the TN2140 is used as tie trunk interface CP, the signaling type is discontinuous, and the trunk is a T1, then set group and signaling type fields as follows:

- Group Type: **tie, tandem access, aplt** or **rlt**
- Signaling Type: **dis**
- Trunk Type: **immed/immed**
- Send Release: **y**
- Receive Release: **y**
- Send Answer Supervision: **n**
- Receive Answer Supervision: **n**

— If the TN2140 is used as tie trunk interface CP, the signaling type is discontinuous, and the trunk is a T2, then set group and signaling type fields as follows:

- Group Type: **tie, tandem access, aplt** or **rlt**
- Signaling Type: **dis**
- Trunk Type: **disc/disc**
- Send Release: **n**
- Receive Release: **n**
- Send Answer Supervision: **y**
- Receive Answer Supervision: **y**

— If the TN2140 is used as tie trunk interface CP, the signaling type is discontinuous, and the trunk is a T3, then set group and signaling type fields as follows:

- Group Type: **tie, tandem access, aplt** or **rlt**
- Signaling Type: **dis**
- Trunk Type: **immed/immed**

- Send Release: **n**
- Receive Release: **n**
- Send Answer Supervision: **y**
- Receive Answer Supervision: **y**

— If the TN2140 is used as tie trunk interface CP, the signaling type is discontinuous, and the trunk is a T4, then set group and signaling type fields as follows:

- Group Type: **tie, tandem access, aplt** or **rlt**
- Signaling Type: **dis**
- Trunk Type: **disc/disc**
- Send Release: **n**
- Receive Release: **n**
- Send Answer Supervision: **n**
- Receive Answer Supervision: **n**

— If the TN2140 is used as tie trunk interface CP, the signaling type is discontinuous, and the trunk is a T5, then set group and signaling type fields as follows:

- Group Type: **tie, tandem access, aplt** or **rlt**
- Signaling Type: **dis**
- Trunk Type: **immed/immed**
- Send Release: **n**
- Receive Release: **n**
- Send Answer Supervision: **n**
- Receive Answer Supervision: **n**

— If the TN497 is used as tie trunk interface CP then set group and signaling type fields as follows:

- Group Type: **tie**
- Signaling Type: **tge tgu** or **tgi**

— 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: **800** 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[17]
- 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**

17. 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.

- Signaling Mode: **CAS**
- Country Protocol: **4**
- Interconnect: **CO**
- CRC?: **No**
- Idle Code: **01010100**

— Timing

Digital trunk timing values should be set as for analog CO trunks.

- 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**
  - — 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**

— 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**
  - — 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-20. Recommended and Available CPs in Japan

Number	Function	Comments
TN748D TN756	Tone Detector	V2 CP to be sold
TN780 TN756	Tone Gen/Clock	
TN725B	Speech Synth	V2 CP to be sold
TN750B TN750	Announcement	
TN763D TN763C	Aux Trunk	
TN429	DID Trunk	
TN429 TN465	CO w/o PPM	
TN760D	4-w Analog Tie	
TN439	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 in order 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.
- Miscellaneous Parameters
  - 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**

19. Although not a Type Approval issue, this represents the convention for this country.

- — Outpulse Without Tone: **Yes**
- — (Station-to-switch) Recall Timing.
  - ► Flashhook Interval: **Yes**
  - ► Upper Bound: **1000 ms**
  - ► Lower Bound: **200 ms**

- Country Options Parameters
  - — Companding Mode: **μ-law**
  - — Base Tone Generation Set. **3**
  - — Tone Detection Mode: N/A
  - — Interdigit Pause: N/A
  - — 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 **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.)

— 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**
    - 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.)
  - — 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: **μ-law**
    - Line Coding: **B8ZS**
    - Line Compensation: **1**
    - Framing Mode: **esf**
    - Signaling Mode: **common-chan**
    - Country Protocol: **1**
    - 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**
      - 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: **μ-law**
  - Line Coding: **B8ZS**
  - Line Compensation: **1**
  - Framing Mode: **esf**
  - Signaling Mode: **isdn-pri**
  - Country Protocol: **3**
  - Connect: **Network**
  - Idle Code: **11111111**
  - DMI-BOS? **Yes**
- 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-21. Recommended and Available CPs in Mexico

Number	Function	Comments
TN748D TN756	Tone Detector	V2 CP to be sold
TN780 TN756	Tone Gen/Clock	
TN744	R2-MFC Service	
TN725B	Speech Synth	V2 CP to be sold
TN750B TN750	Announcement	
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 in order 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

- System Parameters Features Administration

  Only those feature-related parameters that may have a Type Approval or basic connectivity implication for a particular country are listed here.

  - Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.

- Miscellaneous Parameters
  - 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**
- Country Options Parameters
  - Companding Mode. **μ-law**
  - Base Tone Generation Set. **7**

20 Although not a Type Approval issue, this represents the convention for this country.

- Tone Detection Mode: **1**
- Interdigit Pause: **short**
- Digital Loss Plan: **7**
- Analog Ringing Cadence: **7**
- 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)|(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)

- Multifrequency Signaling Parameters
  - Incoming Call Type: **group-ii-mfc**
  - Outgoing Call Type: **group-ii-mfc**
  - Maintenance Call Type: **none**

— Incoming Interdigit Timer: **15**

— Outgoing Forward Signal Present Timer: **15**

— Outgoing Forward Signal Absent Timer: **27**

— Multifrequency Signaling DID Intercept Treatment: **n**

— Incoming Received Level (dB): **-2**

— Outgoing Transmitted Level (dB): **-3**

— Incoming Group I Signals: **use defaults**

— Incoming Group II Signals: **use defaults**

— Incoming Group A Signals: **use defaults**

— Incoming Group B Signals:

Meaning	Signal
Free	B.1
Busy	B.2
Congestion	B.4
Intercept	B.5

— Outgoing Group I Signals: **use defaults**

— Outgoing Group II Signals:

Meaning	Signal
Normal User	II.2
Attendant	II.2
Data	II.2

— Outgoing Group A Signals:

Signal	Meaning
A.1	N+1
A.2	Restart
A.3	End of dial
A.4	Congestion
A.5	Congestion
A.6	Congestion
A.7	Congestion
A.8	Congestion
A.9	Congestion
A.10	Congestion
A.11	Congestion
A.12	Congestion
A.13	Congestion
A 14	Congestion
A 15	Congestion

— Outgoing Group B Signals:

Signal	Meaning
B.1	Free
B.2	Busy
B.3	Congestion
B.4	Congestion
B.5	Intercept
B.6	Congestion
B.7	Congestion
B.8	Congestion
B.9	Congestion
B.10	Congestion
B.11	Congestion
B.12	Congestion
B.13	Congestion
B.14	Congestion
B.15	Congestion

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. **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.)

— 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**
- PPM 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
    - Bit Rate: **2.048**
    - Interface Companding: **A-law**
    - Line Coding: **HDB3**
    - Signaling Mode: **CAS**
    - Country Protocol: **7**
    - Interconnect: **CO**
    - CRC?: **No**
    - Idle Code: **11111111**
  - Timing

    Digital trunk timing values should be set as for analog CO trunks.
- DID Trunks
  - DS1 Administration Form
    - Circuit Pack: TN464D
    - Bit Rate: **2.048**
    - Interface Companding: **A-law**
    - Line Coding: **HDB3**
    - Signaling Mode: **CAS**
    - Country Protocol: **7**
    - CRC?: **No**
    - Idle Code: **11111111**
    - Interconnect: **CO**
- 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: **7**
    - 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**
  - — 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-22. Recommended and Available CPs in The Netherlands

Number	Function	Comments
TN420C	Tone Detector	
TN780v.4	Tone Gen/Clock	
TN457	Speech Synth	V2 CP to be sold
TN750B	Announcement	
TN763D	Aux Trunk	
TN2146	DID Trunk	
TN2147	CO w/o PPM	Polarity-Rev. Signal.
TN2138	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 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 in order 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.
- Miscellaneous Parameters
  - 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. **Yes**

21. 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
- Country Options Parameters
  - — Companding Mode: **A-law**
  - — Base Tone Generation Set: **5**
  - — Tone Detection Mode: **2**
  - — Interdigit Pause: **short**
  - — 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: **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: **no**
    - 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.)

— 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: **254** sec
- Outgoing Seizure Response: **5** (not needed in The Netherlands)
- 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: **5**
    - 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.)

— 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
  - — DS1[22] Administration Screen
    - Circuit Pack: TN464D (not entered as an administrable item)

22. DS1 is analogous to the term *E1* which has been coined for the European T1 or 2 mbit interface.

- Bit Rate: **2.048**
- Interface Companding. **A-law**
- Line Coding. **HDB3**
- Signaling Mode: **CAS**
- Country Protocol: **5**
- Interconnect: **CO**
- CRC?: **No**
- Idle Code: **01010100**

— 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**
    - Interconnect: **CO**
    - CRC?: **No**
    - Idle Code: **01010100**

  — 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: **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 (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**
  - — 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 an 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**

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-23. Recommended and Available CPs in Saudi Arabia

Number	Function	Comments
TN748D TN756	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN744	Call Classifier	R2MFC
TN725B	Speech Synth	
TN750B	Announcement	
TN763D TN763C	Aux Trunk	
TN753	DID Trunk	MFC needed
TN747B (Ver.12)	CO w/o PPM	
TN760D	Analog Tie	
TN464D TN464C TN464B	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 in order 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.
- Miscellaneous Parameters
  - 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**[25]
  - 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**

25. Although not a Type Approval issue, this represents the convention for this country

- Outpulse Without Tone: **Yes**
- (Station-to-switch) Recall Timing:
  - Flashhook Interval: **Yes**
  - Upper Bound: **1000 ms**
  - Lower Bound: **200 ms**

- Country Options Parameters
  - Companding Mode: **μ-law**
  - Base Tone Generation Set: **9**
  - Tone Detection Mode: N/A
  - Interdigit Pause: N/A
  - Digital Loss Plan: **9**
  - Analog Ringing Cadence: **9**
- Multifrequency Signaling Parameters
  - Incoming Call Type: **group-ii-mfc**
  - Outgoing Call Type: **none**
  - Maintenance Call Type: **none**
  - Incoming Interdigit Timer: **10**
  - Multifrequency Signaling DID Intercept Treatment: **n**
  - Incoming Received Level (dB): **-3**
  - Outgoing Transmitted Level (dB): **-9**
  - Incoming Group I Signals:

Signal	Meaning
I.11	Drop
I.12	Ignore
I.13	Maintenance
I.14	Ignore
I.15	Ignore

— Incoming Group II Signals:

Signal	Meaning
II.1	Normal User
II.2	If busy, route to an attendant
II.3	Normal User
II.4	Normal User
II.5	If busy, route to an attendant
II.6	Data
II.7	Normal User
II.8	Data
II.9	If busy, route to an attendant
II.10	If busy, route to an attendant
II.11	Normal User
II.12	If busy, route to an attendant
II 13	Normal User
II.14	If busy, route to an attendant
II.15	Normal User

— Incoming Group A Signals: **use defaults**

— Incoming Group B Signals:

Meaning	Signal
Free	B.6
Busy	B.3
Congestion	B.4
Intercept	B.5

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: **no**
- Disconnect Timing: **500** ms (This field will not 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.)

— 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: **MFC**
- 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.)

— 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 (or TN464B)
    - 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 (or TN464B from upgrades)
      - Bit Rate: **2.048**
      - Interface Companding: **A-law**
      - Line Coding: **HDB3**
      - Signaling Mode: **isdn-pri**
      - Country Protocol: **9**
      - Connect: **pbx**
      - Interface: **user**
      - 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-24. Recommended and Available CPs in Singapore

Number	Function	Comments
TN748D TN756	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN744	Call Classifier	R2-MFC
TN725B	Speech Synth	
TN750B	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 in order 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.
- Miscellaneous Parameters
  - 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: **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**

26. Although not a Type Approval issue, this represents the convention for this country.

- Country Options Parameters
  - Companding Mode: **μ-law**
  - Base Tone Generation Set: **6**
  - Tone Detection Mode: N/A
  - Interdigit Pause: N/A
  - Digital Loss Plan: **6**
  - Analog Ringing Cadence: **6**
- Multifrequency Signaling Parameters
  - Incoming Call Type: **group-ii-mfc**
  - Outgoing Call Type: **none**
  - Maintenance Call Type: **none**
  - Incoming Interdigit Timer: **10**
  - Multifrequency Signaling DID Intercept Treatment: **n**
  - Incoming Received Level (dB): **-3**
  - Outgoing Transmitted Level (dB): **-9**
  - Incoming Group I Signals: **use defaults**
  - Incoming Group II Signals: **use defaults**
  - Incoming Group A Signals: **use defaults**
  - Incoming Group B Signals:

Meaning	Signal
Free	B.1
Busy	B.2
Congestion	B.5
Intercept	B.7

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: **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.)

— 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: **MFC**
    - 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.)
  - — 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,B)
    - 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: **6**
      - Connect: **pbx**
      - Interface: **user**
      - 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: **6**
  - Connect: **Network**
  - 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**

Spain

Recommended and available circuit packs are shown in the following Table:

Table B-25. Recommended and Available CPs in Spain

Number	Function	Comments
TN420C	Tone Detector	Modified for use in Spain
TN744x	Call Classifier	MFE CP
TN780	Tone Gen/Clock	
TN457	Speech Synth	
TN750B	Announcement	
TN763D	Aux Trunk	
TN2147	Analog CO	
TN2148	Analog CO w/PPM	12 KHz
TN464Dv.2	Digital CO/DID	PTT & IBERCOM compatible;Needs MFE
TN464D	ISDN CO	
TN2135 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 in order 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.
- Miscellaneous Parameters
  - 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: **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

    - ► Repetitive Call Waiting Tone: **Yes**
- 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 Time: **1500** msec

— 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)|(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)

► Multifrequency Signaling Parameters

Currently, multifrequency signaling requirements for this country are unavailable.

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: **Yes**
  - — 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

- Incoming Dial Guard: **20** 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: **60** sec
- Outgoing Seizure Response: **5** 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**
- PPM 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**

— Timing

Digital trunk timing values should be set as for analog CO trunks.

- 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**

— 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: TN464C
- 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-26. 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 in order 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.
- Miscellaneous Parameters
  - 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: **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**

27. Although not a Type Approval issue, this represents the convention for this country

- Country Options Parameters
  - — Companding Mode: **μ-law**
  - — Base Tone Generation Set: **1**
  - — Tone Detection Mode: N/A
  - — Interdigit Pause: N/A
  - — 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: **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.)

— 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**
- 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.)

— 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: **μ-law**
- Line Coding: **B8ZS**

- Line Compensation: **1**
- Framing Mode: **esf**
- Signaling Mode: **common-chan**
- Country Protocol: **5**
- 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**
  - — 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-27. 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 in order 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 Parameter Features Administration
  - Trunk-to-Trunk Transfer: Permitted by country's regulations - Selection is customer's choice.
- Miscellaneous Parameters
  - 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 (G3i — Global) 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:
      - ► **no** (for LCGC Trunks)
      - ► **yes** (for Earth Calling Trunks)
    - 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.)

— 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: **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**
    - Terminal Balanced: **yes**
    - Extended Loop Range: (Used Only with TN459) **no**
    - Drop Treatment: **silence**
    - Disconnect Supervision: **yes**
    - Incoming Rotary Timeout (sec): **5** sec
  - — 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

  There are no digital CO trunks in the United Kingdom

- 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: **1**
    - Interconnect: **CO**
    - CRC?: **No**
    - Idle Code: **01010100**
  - 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**
  - 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**
  - Interface: **user**
  - 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-28. Recommended and Available CPs in Venezuela

Number	Function	Comments
TN748D TN756	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN744	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	
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 in order 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.
- Miscellaneous Parameters
  - 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**

28. 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: **μ-law**
  - — Base Tone Generation Set: **1**
  - — Tone Detection Mode: N/A
  - — Interdigit Pause: N/A
  - — Digital Loss Plan: **1**
  - — Analog Ringing Cadence: **1**
- Multifrequency Signaling Parameters
  - — Incoming Call Type: ***non-group-ii-mfc***
  - — Outgoing Call Type: **none**
  - — Maintenance Call Type: **none**
  - — Incoming Interdigit Timer: **10**
  - — Multifrequency Signaling DID Intercept Treatment: **n**
  - — Incoming Received Level (dB): **0**
  - — Outgoing Transmitted Level (dB): **-3**
  - — Incoming Group I Signals: **use defaults**
  - — Incoming Group A Signals: **use defaults**

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: **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.)

— 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**
- PPM Frequency: **16kHz**

- DID Trunks
  - — Trunk Group Screen
    - Group Type: **DID**
    - Country. **1**
    - Trunk Gain: **high**
    - Digit Absorption List: **blank**
    - Incoming Dial Type: **MFC**
    - 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.)
  - — 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,B)
    - 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**
      - 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.

C. References

References

C

The following is an abbreviated listing of Generic 1 documents. Included is a brief description of each document in the list. User instructions are also available for all terminals used with the system.

To order copies of any of these documents, refer to the address on the back of the title page.

Business Communications Systems Publications Catalog **555-000-010**

Provides a list of publications that support AT&T business communications systems. Also provides a brief description of each publication listed.

DEFINITY® Communications System Generic 1 and Generic 3 — DS1/CEPT1/ISDN-PRI — Reference **555-025-103**

A detailed technical description of digital trunks in the DEFINITY Communications Systems. This includes trunks conforming to the DS1 standard (1.544 Mbps) and the CEPT1 standard (2.048 Mbps) and all 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 It provides both domestic and international information

DEFINITY® Communications System Generic 3i-Global — Feature Description **555-230-203**

Provides a technical description of the system features and parameters For each feature, the following information is provided:

- Limitations/considerations
- Feature interactions
- Administration requirements
- Hardware and software requirements

DEFINITY® Communications System Generic 1 and Generic 3 — Planning/Configuration **555-230-600**

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.

DEFINITY® Communications System Generic 1 and Generic 3 — Console Operations **555-200-700**

G3i-Global — Supplement **555-230-790**

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 — Installation and Test **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 3i-Global — Maintenance **555-204-105**

Provides the information necessary for monitoring, testing, and maintaining DEFINITY Generic 3i. It is intended to cover many of the faults and troubles that can occur in the system.

DEFINITY® Communications System Generic 1 and Generic 3i — Upgrades and Additions **555-204-106**

G3i-Global — Supplements **555-204-190**

Provides procedures and information required to upgrade a System 75 V1, V2, or V3 to a DEFINITY Generic 1, Generic 3i, and Generic 3i-Global system and make additions to an operational system, after the initial switch installation.

DEFINITY® Communications System Generic 1 and Generic 3 — System Description **555-230-200**

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 3i-Global — Implementation **555-230-652**

Provides the procedures and associated forms for collecting system and terminal software information for G3i-Global systems. This information is used to initialize the system using the DEFINITY Manager I Terminal (G1) or G3 Management Terminal. Also included is Implementation Forms (555-230-652B).

DEFINITY® Communications System Generic 1 and Generic 3 — System Management **555-230-500**

G3i-Global — Supplement **555-230-590**

Describes Manager I terminal types, function keys, and other Manager I operations. Also describes various administrative tasks such as logon/logoff, changing of password, remote administration, and so on.

DEFINITY® Communications System Generic 1 and Generic 3 — System Reports **555-230-510**

G3i-Global — Supplement **555-204-590**

Explains switch-based measurement, traffic, performance, and summary reports. Descriptions include the overall purpose and uses for each report, complete definitions for each field, correlations with other reports, and possible actions that can be taken to further diagnose situations and remedy unsatisfactory conditions.

AT&T Network and Data Connectivity Reference **555-025-201**

A description of the voice and data networking capabilities of System 75, System 85, DIMENSION, DEFINITY Communications Systems and various data networking products. Included is information on voice and data network fundamentals, applications, system management, features, and trunking characteristics. Electronic Tandem Network (ETN), Distributed Communications System (DCS), and main/satellite networks are covered in detail. It provides both domestic and international information.

DEFINITY® Communications System Generic 3 Call Vectoring Guide **555-230-520**

G3i-Global — Supplement **555-230-591**

This describes Call Vectoring in two parts. The first is a tutorial that provides a step-by-step approach to writing and implementing a basic call vector script. The second part provides detailed descriptions of vectoring features, vector management, vector administration, adjunct routing, troubleshooting, and interaction with information management systems

Abbreviations

Abbreviations

AB

A

AAR	Automatic Alternate Routing
AAS	Automatic Available Split
AC	Alternating Current
ACA	Automatic Circuit Assurance
ACD	Automatic Call Distribution
ACDC	Automatic Call Distribution Console
ACU	Automatic Call Unit
ACW	After Call Work
AD	Abbreviated Dialing
ADU	Asynchronous Data Unit
AFRL	Alternate Facility Restriction Level
AIM	Asynchronous Interface Module
AISC	Attendant Incoming Serial Calling
ALM-ACK	Alarm Acknowledge
AMW	Automatic Message Waiting
ANI	Automatic Number Identification
AP	Applications Processor
APLT	Advanced Private Line Termination

ARS	Automatic Route Selection
ASCII	American Standard Code for Information Interchange
ASAI	Adjunct Switch Applications Interface
ATB	All Trunks Busy
AUDIX®	Audio Information Exchange
AVD	Alternate Voice Data
AWT	Average Work Time

B

BCC	Bearer Capability Class
BCMS	Basic Call Management System
BCT	Business Communications Terminal
BHCC	Busy Hour Calls Completions
BLF	Busy Lamp Field
BOS	Bit Oriented Signaling
BRI	Basic Rate Interface
BTU	British Thermal Unit

C

CAMA	Centralized Automatic Message Accounting
CACR	Cancellation of Authorization Code Request
CAG	Coverage Answer Group
CAS	Centralized Attendant Service
CBC	Call-by-Call
CC	Country Code
CCITT	Consultative Committee for International Telephone and Telegraph
CCMS	Common Channel Message Set
CCS	Hundred Call Seconds
CCSA	Common Control Switching Arrangement
CDM	Channel Division Multiplexing
CDOS	Customer-Dialed and Operator Serviced
CEM	Channel Expansion Multiplex
CMDR	Centralized Message Detail Recorder

CMS	Call Management System
CO	Central Office
COR	Class of Restriction
COS	Class of Service
CP	Circuit Pack
CPE	Customer Provided Equipment
CPN/BN	Calling Party Number/Billing Number
CPTR	Call Progress Tone Receiver
CRC	Cyclical Redundancy Checking
CSA	Canadian Safety Association
CSM	Centralized System Management
CSSO	Customer Services Support Organization

D

DC	Direct Current
DCE	Data Communications Equipment
DCIU	Data Communications Interface Unit
DCP	Digital Communications Protocol
DCS	Distributed Communications System
DDC	Direct Department Calling
DDD	Direct Distance Dialed
DDS	Digital Data System
DID	Direct Inward Dialed
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 Dialed
DOSS	Delivery Operations Support System
DP	Dial Plan
DS1	Data Services Level 1
DSU	Data Service Unit
DTDM	Digital Terminal Data Module

DTE	Data Terminal Equipment
DTGS	Direct Trunk Group Selection
DTMF	Dual Tone Multifrequency
DXS	Direct Extension Selection

E

E&M	Ear and Mouth (Receive and Transmit)
EBCDIC	Extended Binary Coded Decimal Interexchange Code
EDA	Extended Digit Analysis
EI	Expansion Interface
EIA	Electronic Industries Association
EMI	Electro-Magnetic Interference
ENC	Extension Number Conversion
ENP	Extension Number Portability
EPN	Expansion Port Network
EPROM	Erasable Programmable Read Only Memory
EPSCS	Enhanced Private Switched Communications Services
ESF	Extended Superframe Format
ETA	Enhanced Terminal Administration (sometimes called Alias Station)
ETA	Extended Trunk Access
ETN	Electronic Tandem Network

F

FAC	Feature Access Code
FAS	Facility Associated Signaling
FCC	Federal Communications Commission
FEAC	Forced Entry Account Code
FIC	Facility Interface Codes
FNPA	Foreign Numbering Plan Area
FRL	Facility Restriction Level
FRS	Fully Restricted Service
FX	Foreign Exchange

G

G3-MA	DEFINITY® Communications System Generic 3 Management Application
G3-MT	DEFINITY Communications System Generic 3 Management Terminal
GPTR	General Purpose Tone Receiver
GRS	Generalized Route Selection

H

HNPA	Home Numbering Plan Area Code

I

IAS	Inter-PBX Attendant Service
ICC	Inter Carrier Cable
ICDOS	International Customer Dialed Operator Serviced
ICI	Incoming Call Identifier
ICM	Inbound Call Management
IDDD	International Direct Distance Dialing
IE	Information Element
INADS	Initialization and Administration System
INS	ISDN Network Service
INWATS	Inward Wide Area Telephone Service
ISDN	Integrated Services Digital Network
ISN	Information Systems Network
ITC	Information Transfer Capability
IXC	Inter-Exchange Carrier Code

K

KBPS	Kilo-Bits Per Second

L

LAN	Local Area Network
LAPD	Link Access Procedure D
LATA	Local Access and Transport Area
LDN	Listed Directory Number

LED	Light-Emitting Diode
LND	Last Number Dialed
LSU	Local Storage Units
LWC	Leave Word Calling

M

MA-UUI	Message Associated User-to-User Signaling
M-Bus	Memory Bus
MBPS	Mega-Bits Per Second
MCC	Multi-Carrier Cabinet
MCS	Message Center Service
MCT	Malicious Call Trace
MDM	Modular Data Module
MDR	Message Detail Record
MET	Multibutton Electronic Telephone
MIM	Management Information Message
MIS	Management Information System
MISCID	Miscellaneous Identification
MNCR	Multi-National Call Routing
MOS	Message Oriented Signaling
MS	Message Server
MSA	Message Servicing Adjunct
MPDM	Modular Processor Data Module
MTDM	Modular Trunk Data Module
MTP	Maintenance Tape Processor
MWL	Message Waiting Lamp

N

NANP	North American Numbering Plan
NAU	"Network Access Unit"
NCOSS	Network Control Operations Support Center
NEC	National Engineering Center
NFAS	Non-Facility Associated Signaling
NID	Network Inward Dialing

NIPM	Non-channelized ISDN Packet Mode
NN	National Number
NNR	Node Number Routing
NPA	Numbering Plan Area
NPE	Network Processing Element
NQC	Number of Queued Calls
NSE	Night Service Extension
NSF	Network Specific Facility
NSU	Network Sharing Unit
NXX	Public Network Office Code

O

OA	Operator Assisted
OPS	Off-Premises Station
OQT	Oldest Queued Time
OSHA	Occupational Safety and Health Act
OTQ	Outgoing Trunk Queuing
OTTOTT	Outgoing Trunk To outgoing Trunk Transfer

P

PBX	Private Branch Exchange
PC	Personal Computer
PCOL	Personal Central Office Line
PCOLG	Personal Central Office Line Group
PCM	Pulse Code Modulated
PCS	Permanent Switched Calls
PDM	Processor Data Module
PDS	Premises Distribution System
PGATE	Packet Gateway
PGN	Partitioned Group Number
PI	Processor Interface
PIB	Processor Interface Board
PL	Private Line
PMS	Property Management System

PN	Port Network
PNDN	Port Network Destination Number
PPN	Processor Port Network
PRI	Primary Rate Interface
PSC	Premises Service Consultant
PSDN	Packet Switch Public Data Network
PT	Personal Terminal

R

RAM	Random Access Memory
RCL	Restricted Call List
RHNPA	Remote Home Numbering Plan Area
RLT	Release Link Trunk
RNX	Private Network Office Code
ROM	Random Access Memory
RPN	Routing Plan Number
RSC	Regional Support Center

S

SAKI	Sanity and Control Interface
SCC	Single Carrier Cabinet
SCI	Switch Communications Interface
SCO	System Control Office
SDN	Software Defined Network
SDDN	Software Defined Data Network
SID	Station Identification Number
SIT	Special Information Tones
SM	System Management
SMDR	Station Message Detail Recording
SMDRR	Station Message Detail Recording and Reporting
SMDRU	Station Message Detail Recording Utility
SPE	Switch Processing Element
SSI	Standard Serial Interface

STARLAN	Star-based Local Area Network
SVC	Switched Virtual Circuit
SXS	Step-by-Step

T

TAAS	Trunk Answer From Any Station
TAC	Trunk Access Code
TCM	Traveling Class Mark
TDM	Trunk Data Module
TEG	Terminating Extension Group
TOD	Time of Day
TOP	Task Oriented Protocol
TTI	Terminal Translation Initialization
TTR	Touch Tone Receiver
TTTN	Tandem Tie Trunk Network
TTY	Teletypewriter

U

UAP	Usage Allocation Plan
UCD	Uniform Call Distribution
UCL	Unrestricted Call List
UDP	Uniform Dial Plan
UNP	Uniform Numbering Plan
UPS	Uninterruptible Power Supply
USOP	User Service Order Profile

V

VDN	Vector Directory Number

W

WATS	Wide Area Telecommunications Service
WCC	World Class Core

Glossary

Glossary

GL

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 non-signaling channel on a DS1 interface or a non-signaling port on an Analog Tie Trunk circuit pack that is assigned a unique extension.

Access Tie Trunks

Tie trunks used to handle normal ETN calls between Main and Tandem switches.

ACD split

An ACD split is a UCD/DDC hunt group in a system where ACD has been optioned by the customer and the hunt group has been administered as used for ACD. ACD Splits are capable of being measured, i.e., data concerning the split and its members' status will be sent to the CMS.

Adjunct

Any processor connected to the switch and capable of controlling certain functionalities.

Adjunct-Controlled Split

An ACD split that is administered to be under adjunct control. Login to such split is under adjunct control. When an ACD agent is logged into an adjunct-controlled split, the ACD agent's voice set is locked.

Administer

To access and change the parameters associated with the services or features of the system.

Administered Connection

An end-to-end connection between two access endpoints or two data modules that is automatically established whenever the system is restarted or the administered connection (AC) is administered and the AC is due to be active.

Agent

An agent is a member of a hunt group. The term "ACD agent" is used to specify that the hunt group in question is an ACD split.

Alphanumeric Dialing

Allows a terminal user to place a data call using Data Terminal Dialing (see Data Call Setup feature) and an alphanumeric dialing string or alpha name for the call destination address.

Announcements

Announcements are prerecorded messages that give the caller information If the first announcement given to a caller is played before the call is queued to any split, it is a Forced First Announcement

Answer-Back Code

A code dialed to retrieve a parked call.

Answer Supervision

Answer supervision is a signal, sent from the switch to the serving CO, that tells the CO to begin recording toll charges for a call. However, while a call waits in queue, AT&T ACD software often delays sending answer supervision so that the ACD owner/operator or caller can avoid excessive toll charges. Call vectoring commands work in a similar manner, several steps behave differently depending on whether answer supervision has been supplied. The Call Vectoring commands that most notably affect or depend upon answer supervision are the announcement, busy, disconnect, and wait commands.

Appearance

See Call Appearance.

Applications Processor

A minicomputer used to support several user-controlled applications such as traffic analysis and electronic documentation.

ARS/AAR Digit Conversion

ARS Digit Conversion replaces the initial digits of a number dialed after the ARS access code (or of a call crossed over from AAR) with another digit string. The call is then routed as if the modified digits were dialed after the AAR access code.

AAR Digit Conversion replaces the initial digits of a number dialed after the AAR access code with another digit string. The call is then routed as if the modified digits were dialed after the AAR access code.

ASAI Adjunct

Any adjunct that makes use of the ASAI (Adjunct-Switch Application Interface) protocol, including adjuncts that perform Inbound Call Management (ICM) functions.

Asynchronous Data Transmission

A scheme for transmitting data where each character is preceded by a start bit and followed by a stop bit, thus permitting data elements to occur at irregular intervals. This type transmission is advantageous when transmission is not regular (characters typed at a keyboard).

Asynchronous Data Unit

A data communications equipment (DCE) type device that allows direct connection between RS-232C equipment and the system digital switch

Attendant

The operator of the Attendant Console. Individual who handles the processing of various types of internal, incoming, and outgoing calls May also manage and monitor some of the System's operations.

Attendant Console

An electronic call-handling position with pushbutton control. Used by attendants to answer and place calls and to manage and monitor some of the system operations. Two console types are supported; Basic Attendant Console (301A) and Enhanced Attendant Console (302A).

Audio Information Exchange

A unit that provides voice mail service to users.

Authorization Codes

Authorization Codes have three purposes. First, certain trunk groups that receive incoming calls can be administered to require authorization codes for incoming calls. Secondly, Remote Access to PBX Services users can be required to enter an authorization code instead of, or in addition to, a barrier code when accessing local PBX facilities Lastly, they can be used for re-routing ARS/AAR calls that were blocked because the default FRL was not high enough to continue routing.

Auto-In

Auto-In is an ACD agent work mode that makes the agent available to receive calls and allows the agent to receive a new ACD call immediately after disconnecting from the previous call.

Automatic Alternate Routing

Used to route calls over alternate private and public network facilities in the order of preference specified by the customer. The preference order is specified by translating a group of trunks into a routing pattern that is used for calls to a particular network location. AAR also provides privilege checking that allows the customer to restrict access to particular trunk groups to a limited set of users. This is done by comparing the Facility Restriction Level (FRL) of the calling party with the FRL of the particular routing pattern entry.

Automatic Call Distribution

Automatic Call Distribution (ACD) provides automatic termination of incoming calls to agents that have been administered into hunt groups called splits. Calls are distributed according to the algorithm selected by the customer, either Uniform Call Distribution (UCD) or Direct Department Calling (DDC).

Automatic Route Selection

Automatic Route Selection provides automatic routing of outgoing calls over customer trunk facilities with transparent access to an Inter-Exchange Carrier (IXC) based on the Direct Distance Dialing (DDD) number. Alternate trunk groups are selected during peak demand periods when the primary trunk groups are busy The alternate trunk groups are selected in decreasing order of preference for making the calls

Automatic Route Selection

ARS Partitioning provides for up to eight different user groups having access to their own or shared trunk groups in ARS patterns.

Automatic Trunk

A trunk that does not require the sending or receiving of digits. 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 system attendant group.

Automatic Restoration

A service that restores disrupted connections between access endpoints (non-signaling trunks) and data endpoints (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.

Auxiliary Work

Auxiliary Work is an ACD agent work mode that makes the agent unavailable to receive any ACD calls for the specified split It is used when an agent is performing non-ACD related activities such as going on a break.

Available Agent

An ACD agent is considered available to receive a call through an ACD split if logged in and not on a call, and in the Auto-In or Manual-In mode.

Barrier Code

A security code used with the Remote Access feature to prevent unauthorized access to the system.

Basic Call Management

The Basic Call Management System (BCMS) provides traffic reports for Automatic Call Distribution (ACD). The reports are a subset of the adjunct CMS applications.

Bearer Capability Class

The Bearer Capability Class (BCC) identifies the type of a call, e.g., voice and different types of data. Determination of BCC is based on the call originator's characteristics for non-ISDN endpoints and on signaling in the D-channel for ISDN endpoints. There are five Bearer Capability Classes (0-4), based on voice and data Modes 0,1,2,3 capabilities.

Bit (Binary Digit)

One unit of information in binary notation (having two possible states or values, 0 or 1).

Bridge (Bridging)

The appearance of a voice terminal's extension at one or more other voice terminals.

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

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.

Bus

A multi-conductor electrical path used to transfer information over a common connection from any of several sources to any of several destinations.

Bus, Time Division

See Time Division Multiplex Bus.

Business Communications Terminals

An advanced series of semi-intelligent terminals.

Bypass Tie Trunks

One-way, outgoing tie trunks from a Tandem switch to a Main switch in an ETN. These 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 bits, 8 bits long, that is usually shorter than a word. A word is 16 bits long

Call Appearance, Attendant

Six buttons, labeled a through f, used to originate, receive, and hold calls Each button has two associated lamps to show the status of the call appearance.

Call Appearance, Voice

A button labeled with an extension number used to place outgoing calls, receive incoming calls, or hold calls. Two lamps next to the button show the status of the call appearance or status of the call.

Call Classification

The function of receiving and/or detecting call progress tones and call outcomes (ringing, busy, answered) and notifying the adjunct responsible for recording the call status. Call classification may be done by the switch automatically or done by the user listening to call progress tones.

Call Management System

An adjunct processor that collects data from an ACD and generates reports to be stored or displayed concerning status of agents, splits, and trunks.

Callback Call

A call that is automatically returned to a voice terminal user who activated the Automatic Callback or Ringback Queuing feature.

Call Vector

A set of up to 15 vector commands to be performed for an incoming or internal call.

Call Vectoring

A flexible call handling method of managing incoming calls that gives unique treatment to a particular call type based on dialed number or trunk terminating to a vector. Vector commands dictate the treatment given to callers.

Call Vector Step

Vectors are made up of 15 steps that are processed sequentially unless a "GoTo" vector command is encountered or vector processing stops.

Call Waiting Ringback

A low-pitched tone identical to the ringback tone except the tone decreases the last 0.2 second. This 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 ACD agents to record the occurrence of customer-defined events (such as account codes, social security numbers, or phone numbers) on ACD calls.

Central Office

The location housing telephone switching equipment that provides local telephone service and access to toll facilities for long-distance calling.

Central Office Codes

The first three digits of a 7-digit public network telephone number. These codes are typically numbered from 200 through 999.

Central Office Trunk

A telecommunications channel that provides access from the system to the public network through the local central office.

Channel

A communications path for transmitting voice and data.

Circuit Pack Vintage

The vintage of a circuit pack is a numeric tag to identify the Read Only Memory that resides on that pack. It is used to facilitate record keeping and maintainability.

Class of Restriction

A number (0 through 63) that specifies the restrictions assigned to voice terminals, voice terminal groups, data modules, and trunk groups.

Class of Service

A number (0 through 15) that specifies if voice terminal users can activate the Automatic Callback, Call Forwarding—All Calls, Data Privacy, or Priority Calling features.

Common Control Switching

A private telecommunications network using dedicated trunks and a shared switching for interconnecting company locations.

Confirmation Tone

Three short bursts of tone followed by silence; indicates that the feature activated, deactivated, or canceled has been accepted

Console

See Attendant Console.

Controlled Outward Restriction

A calling party with this feature activated is restricted from dialing outgoing exchange network calls. Restricted calls are routed to the attendant, coverage, or intercept.

Controlled Restrictions

The controlled restrictions are distinct from the calling and called restrictions administered through the COR. Controlled Restrictions are activated by an attendant or by a station with the "Console Permission" COS. The controlled restrictions are activated for an individual terminal or for a pre-defined group of terminals. The COR is used to pre-define a group of terminals.

Controlled Station-to-Station Restriction

A calling party or called party with this feature activated is restricted from placing or receiving station-to-station calls. Restricted calls are routed to the attendant, coverage, or intercept.

Controlled Termination Restriction

A called party with this feature activated is restricted from receiving any calls. Restricted calls are routed to the attendant, coverage, or intercept. This form of controlled restriction is used in the Do Not Disturb feature to prevent termination to a user. It may be overridden only by a priority call.

Controlled Total Restriction

A calling party or called party with this feature activated is restricted from placing or receiving any calls. DID or APLT calls to a station with Controlled Total Restriction active are routed to the attendant or to a recorded announcement All other calls are routed to intercept.

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

The attendant positions (as a group), Direct Department Calling group, Uniform Call Distribution group, Coverage Answer Group, a voice terminal extension, or Message Center Hunt Group designated as an alternate answering position in a coverage path

Covering User

The person at an alternate answering position who answers a coverage call.

Data Channel

A communications path between two points used to transmit digital signals.

Data Communications Equipment

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.

Data Endpoint

Data Endpoints refer to the various Data Terminal Equipment (DTE) and Data Communications Equipment (DCE) that are connected to the System. They are associated with an extension. In the switching environment, they can be analog or digital endpoints serving as the interface between a host computer port and the switch, or between a data network and the switch.

Data Terminal Equipment

Equipment comprising the source or link of data, or both, that also provides communication control functions (protocol). DTE is any piece of equipment at which a communications path begins or ends.

D-Channel Pair

Refers to a pair of D-Channels, where one is designated as the primary D-Channel, and the other is the secondary D-Channel

DCS

Distributed Communications System—a private network of distributed switches linked together with private trunks and data links.

Default Dialing

Enhances Data Terminal 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. (See "Data Call Setup" in chapter 4.)

Delay-Dial Trunk

After a request for service (called a seizure) is detected on an incoming trunk, the system sends a momentary signal followed by a steady tone over the trunk This informs the calling party that dialing can start. This type of trunk allows dialing directly into the system. That is, the digits are received as they are dialed.

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.

Dialed Number Identification

Provides an indication (display) to the answering agent of the service (or project) or number called by the caller so that agents grouped in one split may answer calls appropriately for many different services

Digital Communications Protocol

Defines the capability for providing simultaneous voice and data transmission over the same channel

Digital Data Endpoints

Digital data endpoints include the following

- 510D Personal Terminal or 515-Type Business Communications Terminal
- 7404D Terminals
- 7406D or 7407D Equipped With Optional Data Module Base
- Asynchronous Data Units
- Digital Terminal Data Modules
- (Modular) Processor Data Modules
- (Modular) Trunk Data Modules
- 3270 Data Modules
- Internal Data Channels

Digital Multiplexed Interface

Specifies the remote interface requirements for multiplexed data communications between a host computer and a private switching system.

Digital Terminal Data

An adjunct to Model 7403D or 7405D voice terminals. Provides the required interface between the system and a data terminal such as a 513 Business Communications Terminal.

Digital Trunk

A circuit in a telecommunications channel designed to handle digital voice and data.

Digit Conversion

A process used to convert specific dialed numbers into other dialed numbers. ARS uses Digit Conversion to convert public network numbers (ARS) to private network numbers (AAR) in order to save toll charges. AAR uses Digit Conversion to convert private network numbers (ARS) to other private or public network numbers (AAR).

Direct-Agent Calls

A special type of ACD call directed to a particular agent, rather than any available agent in the split.

Direct Agent Calling

An entry is provided in the COR to allow originating and receiving of direct-agent calls. A direct-agent call is a special type of ACD call directed to a particular agent, rather than any available agent in the split

A calling party that is DAC restricted is denied the ability to originate direct-agent calls. A called party that is DAC restricted is denied the ability to receive direct-agent calls. Restricted calls are routed to intercept

Direct Extension Selection

An option at the attendant console that allows an attendant direct access to voice terminals by pressing a Group Select button and a DXS button.

Distributed Communications System

The Distributed Communications System is a private network of distributed switches linked together with trunks to form a DCS complex. The switches in the complex are connected with data links that allow call processing information to be passed from one switch to another. This provides feature transparency so that certain features are perceived by users to be the same whether they are talking to a station served by the same switch or to a station on a different switch in the complex.

DS1

A DS1 trunk multiplexes up to twenty-four 64 kbps digital channels over a 4-wire interface for data or voice. The 64 kbps capacity is achieved by having 8000 frames of 8 bit data per second. This trunk can be used as a timing reference for the switch or by an external Stratum 3 clock.

Electronic Tandem Network

A special tandem tie trunk network that has automatic call routing capabilities based on the number dialed and 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

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

Enhanced Private Switched

A private telecommunications network that provides advanced voice and data telecommunications services to companies with many locations.

Expansion Interface

Used to connect an EPN to the PPN TDM Bus and provide connectivity between the TDM Buses on the PPN and EPNs. This circuit pack carries synchronization information between the two cabinets that it connects and also provides connectivity between the packet buses on the PPN and EPNs.

Expansion Port Network

A cabinet that contains port circuit packs but no processor. Up to two EPNs may be connected to a Processor Port Network (PPN).

Extension Number

A 1- to 5-digit number assigned to each voice terminal, certain system groups, data modules, and various other facilities on the switch. The number is used in call processing to access the facility.

External Call

A connection between a system user and a party on the public telephone network or on a tie trunk.

Facility

A general term used for the telecommunications transmission pathway and associated equipment.

Facility Restriction Level

The Facility Restriction Level is used to determine the accessibility of a user trunk groups in a routing pattern. When searching for a routing pattern, the originator's FRL must be greater than or equal to the FRL for the accessed trunk group.

FAS/NFAS

Facility-Associated Signaling (FAS)—describes the type of signaling in which an ISDN DS1 interface D-Channel carries signaling information for only those B-Channels located on the same DS1 facility as the D-Channel.

Non-Facility Associated Signaling—describes the type of signaling in which an ISDN DS1 interface D-Channel carries signaling information on one DS1 facility for B-Channels located on another DS1 facility.

Feature

A specifically defined function or service provided by the system.

Feature Button

A labeled button on a voice terminal or attendant console designating a specific feature.

Foreign Exchange (FX)

A central office 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 other than its local central office

Foreign Numbering Plan

An area code other than the local area code. The foreign area code must be dialed to call outside the local geographical area.

Ground-Start Trunk

On outgoing calls, the system transmits a request for services to the distant switching system by grounding the trunk ring lead. When the distant system is ready 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. (Tip and ring are common nomenclature to differentiate between ground-start trunk leads.) On incoming calls, detection of ground on the ring lead is sufficient to cause the call to route to a predetermined destination, normally the system attendant group. No digits are received.

Handshaking Logic

A format used to initiate a data connection between two data module devices.

Home Numbering Plan

The local area code The area code does not have to be dialed to call numbers within the local geographical area

Hospitality

Hospitality features, such as Automatic Wakeup and Do Not Disturb, are those required for the administration of stations considered to be "guests" or "clients" of the customer. Additionally, these features allow the customer to connect the System to a Property Management System (PMS), which is used to collect and manage guest room information.

Hospitality Parameter Reduction

Provides the user with a reduced set of system parameters. Namely, the number of trunks, number of hunt-groups, number of pick-up groups and the number of coverage paths.

Host

A customer processor that, when connected to the switch using ASAI, for example, is considered an adjunct.

Hunt Group

A group of stations which answer calls that are distributed using a routing algorithm. An ACD split is a special type of hunt group.

Immediate-Start Tie Trunk

After establishing a connection with the distant switching system for an outgoing call, the system waits a nominal 65 milliseconds before sending the digits of the called number. This allows time for the distant system to prepare to receive the digits. Similarly, on an incoming call, the system has less than 65 milliseconds to prepare to receive the digits.

Information Exchange

The exchange of data between users of two different systems (DEFINITY Generic 1 and host computer) over a local area network.

Initialization and Administration

An AT&T Network Operations Division (NOD) services alarm reception and trouble tracking system.

Integrated Services Digital

ISDN-PRI is an internationally accepted standard interface that provides end-to-end digital connectivity. It uses a high-speed interface which provides service independent access to switches services. It uses a T1 Interface and supports twenty-three 64 kbps voice or data "B-Channels" and one 64 kbps signaling "D channel" (on the 24th channel when using Facility Associated Signaling) or 24 "B-Channels" on one DS1 facility and a "D-Channel" on a separate DS1 facility (when using Non-facility Associated Signaling) for a total bandwidth of 1.544 MB.

Intercept Tone

An alternating high and low tone; indicates a dialing error or denial of the service requested.

Interface

A common boundary between two systems or pieces of equipment.

Interflow

Interflow allows calls directed or redirected to one split to be redirected to an external destination.

Internal Call

A connection between two users within the system

Interworking

The linking of dissimilar networks to provide an end-to-end call. In public networks interworking might include a Common Channel Interoffice Signaling (CCIS) path, which does not support ISDN In private networks, a tandeming PBX might interface an existing analog facility to an ISDN facility to provide calls end-to-end.

Intraflow

Intraflow allows calls that are unanswered within a predefined time, at a split to be redirected to other splits on the same switch

In-Use Lamp

A red lamp on a multi-appearance voice terminal that lights 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.

Inward Restriction

A called party is that inward restricted is denied the ability to receive incoming exchange network calls, attendant originated calls, and attendant completed calls.

A call that is denied because of termination or inward restriction is routed to intercept, the attendant, or a recorded announcement depending on the calling party. If the calling party is a DID, APLT or tie trunk, the call is routed to the attendant or recorded announcement, at the customer's option. In all other cases the call is routed to intercept.

ISDN—Basic Rate Interface

ISDN-BRI is one of the two standard ISDN frame formats. The ISDN Basic Rate Interface is typically used to connect telephones or work stations to an ISDN capable switching system. It provides one 16 kbps signaling and data channel (D-channel) and two 64 kbps information channels (B-channels). The primary purpose of the signaling channel is to convey Q.931 message oriented signaling for the setup and tear down of calls carried by the B-Channels on the BRI interface.

For G1.2 Systems, ISDN-BRI is only used to provide an ASAI link to the switch in support of the Inbound Call Management feature.

ISDN Gateway

An adjunct network that forwards information from the switch to a host for data screen delivery to agents in an ACD split.

Link

A transmitter-receiver channel or system that connects two locations.

Listed Directory Number

A Listed Directory Number (LDN) is a publically listed telephone number for an organization. These numbers are administered as special extensions, each associated with a fifteen character name. Direct Inward Dialing (DID) for any of these extensions causes routing of the call to the attendant group with the terminating attendant display indicating an LDN call and the name associated with the dialed extension.

Local Clock

The tone/clock circuit pack that has a local oscillator that can be used to maintain timing for the switch if DS1's are not used or if both DS1 primary and secondary clock references fail.

Lookahead Interflow

Lookahead Interflow is an enhancement to Call Vectoring that checks the status of remote ACD locations that calls may be interflowed to. For example, calls under vector control will not interflow to a remote ACD location that is not accepting calls. This capability will be provided via the use of a private or public network ISDN-PRI connection with the receiving switch having the capability to reject or accept the call.

Loop-Start Trunk

After establishing a connection with the 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. On incoming calls, the received request for service is sufficient to cause the call to route to a predetermined destination, normally the system attendant group No digits are received.

Main/Satellite/Tributary

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 a single switch, with a single Listed Directory Number (LDN). A Tributary is a switch,

connected to the Main via tie trunks, but which has its own attendant position(s) and its own LDN.

Manual-In

Manual-In is an ACD agent work mode that makes the agent available to receive calls and automatically puts the agent into After Call Work mode after disconnecting from an ACD call.

Manual Terminating Line

A called party that has manual terminating line service is only allowed to receive calls originated or extended by an attendant. Termination of all other calls is denied.

Message Center

An answering service for calls that might otherwise go unanswered; an agent accepts and stores messages for later retrieval.

Message Center Agent

A member of the Message Center Hunt Group who takes and retrieves messages for voice terminal users.

Miscellaneous Station Restriction

A calling party can be disallowed access to pre-selected groups of terminals. The term miscellaneous refers to this grouping of terminals. Any or all terminals can be in a given miscellaneous station restriction group. This restriction is controlled by the CORs assigned to the calling party and to the terminal being accessed. All terminals in a given miscellaneous station restriction group must be assigned the same COR. A calling party is restricted by its COR which denies permission to call the terminal's COR Restricted calls are routed to intercept.

Miscellaneous Trunk Restriction

A calling party can be disallowed access to pre-selected groups of trunk groups. The term miscellaneous refers to this pre-selected grouping of trunk groups. Any or all trunk groups can be in a given miscellaneous trunk restriction group. This restriction is controlled by the CORs assigned to the calling party and to the trunk group being accessed. All trunk groups in a given miscellaneous trunk restriction group must be assigned the same COR. A calling party is restricted by its COR which denies permission to call the trunk group's COR. Restricted calls are routed to intercept

Modular Processor Data

See Processor Data Module.

Modular Trunk Data

See Trunk Data Module

Modem Pooling

Provides shared-use conversion resources that eliminate the need for a dedicated modem when a data module accesses, or is accessed by, an analog line or trunk

Multi-Appearance Voice Terminal

A terminal equipped with several call appearance buttons for the same extension number Allows the user to handle more than one call, on that same extension number, at the same time.

Multiplexer

A device for simultaneous transmission of two or more signals over a common transmission medium

Offhook

Term used for the switchhook up, or the Speakerphone turned on, or the Headset plugged in For multi-appearance stations, the term offhook also includes choosing a call appearance on which to originate the call.

Off-Net

Off-Net facilities (e.g., WATS, FX, or CO trunk groups) are not part of a customer's private network, but may be utilized to carry private network calls. Whenever the call uses Off-Net facilities, it is called an Off-Net call.

Onhook

Term used for a depressed switchhook, the Speakerphone turned off, or the Headset unplugged. Also, depression of the DISCONNECT button sends an onhook message, followed by an offhook message

On-Net

On-Net facilities (e.g., TIE trunks, private ISDN-PRI trunks) are dedicated to a customer's private network. Whenever the call is routed over the customer's private trunking facilities, it is called an On-Net call.

Outward Restriction

A calling party that is outward restricted is denied the ability of directly accessing the exchange network.

Network

An arrangement of inter and/or intra location circuits designed to perform specific functions.

Non-Facility Associated Signaling

(see FAS/NFAS)

Paging Trunk

A telecommunications channel used to access an amplifier for loudspeaker paging.

Partitioned Group Number

A Partitioned Group Number (PGN) is a number (1-8) assigned to different groups of users. The PGN is used to determine the AAR/ARS services to be provided on a call. A PGN is not used directly to restrict the user, it is only used as a method to indicate the choice of call routing tables (AAR/ARS Analysis forms) to be used to process a call.

Pickup Group

A group of individuals authorized to answer any call directed to an extension number within the group.

Port

A designation of the location of a circuit that provides an interface between the system and lines and/or trunks.

Port Network

May be either an EPN or a PPN.

Primary Reference

A DS1 circuit pack facility used as a reference for clock timing synchronization; the primary reference should be chosen to be a more reliable DS1 link.

Primary/Secondary D-Channel

The D-Channel Backup feature 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. The reason for this distinction is that at certain times during the D-Channel Backup procedures, both D-Channels are in the same state, and it is imperative in order to avoid a deadlock situation that both switches at opposite ends of the PRI select the same D-Channel to be put into service. In these case, the primary D-Channel is given precedence over the secondary D-Channel.*

Principal (User)

In terms of Call Coverage, a person for whom a call was originally intended.

Priority Queuing

An entry is provided in the COR to allow priority queuing. The queuing priority of a call can be raised such that when a call with increased priority is queued, it is queued ahead of calls of normal priority. This priority queuing is for non-vector controlled calls and non-direct-agent calls.

Private Networking

A Private Network is a network of customer switches linked with private lines that carry voice and data communication throughout the network. A Private Network is characterized by a uniform numbering plan that includes the assignment of a unique number to each station in the network. The Automatic Alternate Routing (AAR) Analysis table is used to route private network calls.

Private Network Office

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.

Privileged Station

A station that has been administered with console privileges allowing it to perform functions normally associated with an attendant

Processor Data Module

Provides the required interface between the system and an EIA computer or data terminal.

Processor Port Network

The cabinet in which the switch processor resides. Only one of these per switch is allowed.

Property Management System

A stand-alone computer that Lodging and Health Services organizations use for services such as reservations, housekeeping, billing, etc.

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.

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.

Random Access Memory

A storage arrangement whereby information can be retrieved at a speed independent of the location of the stored information.

Read Only Memory

A storage arrangement primarily for information retrieval applications.

Recall Dial Tone

Three short bursts of tone followed by steady dial tone; indicates the system has completed some action (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.

Remote Access Barrier

Used with remote access trunks to limit access to the System. When a call comes in on a remote access trunk, the user may be required to dial a barrier code to gain access. If the user dials an invalid barrier code, the call is routed to intercept.

A barrier code has an associated COR that defines call restriction features and COS that defines feature restrictions. The use of barrier codes is a customer option. If barrier codes are used, they apply to all remote access trunk groups in a given System. If they are not required, the default barrier code's COR is used. There may be more than one barrier code in the System.

Remote Home Numbering

A foreign numbering plan area code that is treated as a home area code by the Automatic Route Selection feature. Calls can be allowed or denied based on the area code and the dialed central office code rather than just the area code. If the call is allowed, the Automatic Route Selection pattern used for the call is determined by these six digits.

Removable Mass Storage

A tape storage device that stores the software information for the system.

Reorder Tone

A fast-busy tone repeated 120 times a minute, indicates that at least one of the facilities, such as a trunk or a digit transmitter, required for the call was not available at the time the call was placed.

Restricted Call List

A list of digit strings that can be assigned to any COR.

Routing Pattern

A routing pattern is a list of up to six trunk groups that ARS and AAR use to try to select a trunk when routing outgoing calls. There are a maximum of 640 routing patterns that can be assigned. The patterns can be shared between the AAR and ARS features.

Trunk groups are arranged in the routing pattern in descending order of desirability (most desirable first). If the first choice route (usually the least expensive facility) is unavailable, a call is attempted over the second choice route. This procedure continues until an available route is found, or all routing preferences are exhausted.

Secondary Reference

The secondary reference is a backup DS1 facility used as a clock timing reference for synchronization in case the primary reference fails or has too many slips.

Service Observing

Service observing allows users to monitor calls Once the feature is activated and a station call is being monitored, the activating user has the capability to toggle back and forth between a listen-only connection and a listen/talk connection on the call. Subsequent calls at the station can be monitored without having to reactivate the feature.

Signaling Groups

Refers to a group of B-Channels for which a given D-Channel (or D-Channel Pair) will carry the signaling information.

Single-Line Voice Terminals

Voice terminals served by a single-line tip and ring circuit (e.g., models 500, 2500, 7101A, 7103A).

Software

A set of computer programs that accomplish one or more tasks.

Special Information Tones

Tones that precede certain recorded announcements provided by the network. Such announcements are used when the caller encounters a condition that requires an explanation (e.g., "no such number").

Split

A condition whereby a caller is temporarily separated from a connection with the attendant. This split condition automatically occurs when the attendant, active on a call, presses the Start button.

Standard Serial Interface

A communications protocol developed by AT&T Teletype Corporation for use with the 500 Business Communications Terminals and the 400-series printers.

Status Lamp

A green lamp that shows the status of a call appearance or a feature button by the state of the lamp (lighted, flashing, fluttering, broken flutter, or dark).

Stratum 3 Clock

This is the most accurate clock supported by the System; it is duplicated and has a holdover of 24 hours. The implementation requires external hardware to provide timing to the TN780 Tone/Clock circuit pack.

Stroke Counts

Method used by ACD agents to record up to nine customer-defined events on a per call basis when the Call Management System (CMS) is active.

Suffix

A suffix is an alphabetic character (e g., A, B, C) that is sometimes appended to a circuit pack code (TN number) It indicates additional feature functionality of a particular circuit pack.

Switchhook

The button(s) on a voice terminal located under the receiver.

Switch Processing Element

The complex of circuit packs that provide high level processing functions within the switch.

Synchronous Data Transmission

A scheme for sending and receiving data, where data elements may occur only at regular specified times. Sending and receiving devices must operate in step with each other.

System Manager

A person responsible for specifying and administering features and services for the system.

System Reload

A process that allows stored data to be written from a tape into the system memory (normally after a power outage).

Tandem Switch

A switch within an ETN that provides the logic to determine the best route for a network call, possibly modifies the digits outpulsed, 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

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.

Terminal Alarm Notification

A method of customer alarm notification using lamps associated with feature buttons on multi-appearance digital or hybrid voice terminals or attendant console terminals or both.

Termination Restriction

A called party that is termination restricted is denied the ability to receive any calls at any time.

Third Party Call

ASAI capabilities that allow a host/adjunct to take control of a call, to transfer the call, etc.

Tie Trunk

A telecommunications channel that directly connects two private switching systems.

Time Division Multiplex

A special bus that is time shared by preallocating short time slots to each transmitter on a regular basis. In a PBX, all port circuits are connected to the time division multiplex bus permitting any port to send a signal to any other port

Time Division Multiplexed

A switching technique of splitting a large bandwidth into many small channels (called time slots) in the time domain.

Time of Day

Time of Day Routing allows the routing of calls economically, based on time of day and day of week. The customer has the option of changing the routing plan up to six times each day for each day of the week. The choice of routing plan is made from a pool of routing plans. These routing plans are used in conjunction with the routing of Automatic Route Selection (ARS) and Automatic Alternate Routing (AAR) calls.

Toll Restriction

A calling party that is toll restricted cannot make calls to certain numbers defined on the Toll List unless the number is contained on a UCL defined on the Toll analysis form and associated with the calling party's COR.

Tone/Clock

The Tone/Clock circuit pack provides tone generation and timing for the TDM bus. The active Tone/Clock circuit pack is currently providing service for the cabinet in a duplicated system whereas the standby tone/clock is a backup circuit pack in the event the active tone/cock fails

Tone Ringer

A device with a speaker, used in electronic voice terminals to alert the user.

Trunk

A telecommunications channel between two switching systems.

Trunk Data Module

Provides the required interface between the system and a data set (modem) or data service unit connected to a private or switched data line.

Trunk Group

Telecommunications channels assigned as a group for certain trunking functions.

Uniform Dial Plan

A feature that allows a unique 4- or 5-digit number assignment for each terminal in a multi-switch configuration, such as a Distributed Communications System (DCS) or Main/Satellite/Tributary configuration

Unrestricted Call List

A list of digit strings that can be accessed by a user.

Vector Controlled Split

A hunt group or ACD split is vector controlled when the field "Vector" is enabled on the Hunt Group form. Only vector controlled hunt groups or vector controlled ACD splits are accessible via the vector commands "queue to main" and "check backup".

Vector Directory Number

A number that can be dialed to access a vector. Several VDNs may map into the same vector.

Vectoring (Basic)

Allows the customer to specify the treatment of calls coming into the switch based upon the dialed number. Vectoring (Basic) allows incoming calls to be placed in a queue for a hunt group or split and may specify the delay treatment given to the caller.

Vectoring (Prompting)

Allows a call vector to collect digits from a user and use that information in routing the call.

Voice Terminal

A single-line or multi-appearance voice terminal (telephone).

Wide Area Telecommunications

A service that allows calls to a certain area or areas for a flat-rate charge based on expected usage

Wink-Start Tie Trunk

After establishing 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

Write Operation

The process of putting information onto a storage medium such as magnetic tape.

Zip Tone

Single burst tone is provided with auto-answering operation when an agent answers an ACD call.

800 Service

A service that allows incoming calls from a certain area or areas to an assigned number for a flat-rate charge based on usage

Index

Index

A

B

C

D

E

F

G

H

I

J

L

M

N

O

P

Q

R

S

T

U

V

W