Lucent Technologies
Bell Labs Innovations

DEFINITY®
Enterprise Communications Server
Release 5
Installation and Upgrades for Compact Single-Carrier Cabinets

Notice
Every effort was made to ensure that the information in this book was complete and accurate at the time of printing. However, information is subject to change.

Your Responsibility for Your System's Security
Toll fraud is the unauthorized use of your telecommunications system by an unauthorized party, for example, persons other than your company's employees, agents, subcontractors, or persons working on your company's behalf. Note that there may be a risk of toll fraud associated with your telecommunications system and, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

You and your system manager are responsible for the security of your system, such as programming and configuring your equipment to prevent unauthorized use. The system manager is also responsible for reading all installation, instruction, and system administration documents provided with this product in order to fully understand the features that can introduce risk of toll fraud and the steps that can be taken to reduce that risk. 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.

Lucent Technologies Fraud Intervention
If you *suspect that you are being victimized* by toll fraud and you need technical support or assistance, call Technical Service Center Toll Fraud Intervention Hotline at 1 800 643-2353.

Federal Communications Commission Statement
Part 15: Class A Statement. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio-frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Part 68: Network Registration Number. This equipment is registered with the FCC in accordance with Part 68 of the FCC Rules. It is identified by FCC registration number AS593M-13283-MF-E. Refer to "Federal Communications Commission Statement" in "About This Book" for more information regarding Part 68.

Canadian Department of Communications (DOC)
Interference Information
This digital apparatus does not exceed the Class A limits for radio noise emissions set out in the radio interference regulations of the Canadian Department of Communications.

Le Présent Appareil Nomérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A préscrites dans le reglement sur le brouillage radioélectrique édicté par le ministére des Communications du Canada.

Trademarks
See the preface of this document.

European Union Declaration of Conformity
The "CE" mark affixed to the DEFINITY® equipment described in this book indicates that the equipment conforms to the following European Union (EU) Directives:
- Electromagnetic Compatibility (89/336/EEC)
- Low Voltage (73/23/EEC)
- Telecommunications Terminal Equipment (TTE) i-CTR3 BRI and i-CTR4 PRI

For more information on standards compliance, contact your local distributor.

Comments
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Contents

Contents

Contents

Contents

About This Book

This document provides procedures to install and upgrade a DEFINITY® Enterprise Communications Server Release 5vs system.

This document covers information related to DEFINITY ECS Release 5, and includes all incremental releases up to and including Release 5.4. For details about changes for Release 5.4, refer to *DEFINITY Enterprise Communications Server Release 5.4.0, Change Description*.

This document is intended for use by a trained installation technician.

Conventions Used in This Document

- Information you type is shown in the following typeface:

  save announcements

- Information displayed on the screen is shown in the following typeface:

  `login:`

- Keyboard keys are shown as follows: Enter.

- Circuit pack codes (for example, TN772 or TN777B) are shown with the *minimum acceptable* alphabetic suffix (like the "B" in the code "TN777B").

  Generally, an alphabetic suffix higher than the one shown is also acceptable. However, not every *vintage* of either the minimum suffix or a higher suffix code is necessarily acceptable.

  ⇒ **NOTE:**
  Refer to *Technical Monthly: Reference Guide for Circuit Pack Vintages and Change Notices*, for current information about the usable vintages of specific circuit pack codes (including the suffix) in a Release 5 system.

The following conventions describe the systems referred to in this document.

- The word *system*, is a general term encompassing Release 5 and includes references to the DEFINITY Enterprise Communications Server.

- DEFINITY Systems are called: G3V4, G3vsV4, Release 5, and Release 5vs.

- A DEFINITY Communications System Generic 3vs is referred to as G3vs.

- All occurrences of G3vsV4 and Release 5vs are called Release 5vs unless a specific configuration is required to differentiate between product offerings.

- Information in this document is applicable for G3V4 and Release 5, unless otherwise specified.

- DEFINITY Enterprise Communications Server is abbreviated as DEFINITY ECS.

- All physical dimensions in this book are in English (Foot Pound Second) (FPS) followed by metric (Centimeter Grams Second) (CGS) in parenthesis. Wire gauge measurements are in AWG followed by the diameter in millimeters in parenthesis.

Related Documents

As supplemental information, the following documents may be required to perform upgrades and additions to DEFINITY ECS Release 5 systems:

- *BCS Products Security Handbook*, 555-025-600

- *DEFINITY Communications System Generic 3 V1.1 and V2 Upgrades and Generic 3 Additions*, 555-230-107

- *DEFINITY Enterprise Communications Server Release 5 Upgrades and Additions for R5vs/si,* 555-230-120

- *DEFINITY Enterprise Communications Server Release 5 Installation for Adjuncts and Peripherals, 555-230-125*

- *DEFINITY Communications System Generic 2 to DEFINITY Enterprise Communications Server Release 5 Transition Reference*

- *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description, 555-230-522*

- *DEFINITY Enterprise Communications Server Release 5 Maintenance for R5vs/si, 555-230-123*

- *DEFINITY Enterprise Communications Server Release 5 System Description Pocket Reference, 555-230-207*

- *DEFINITY Communications System and System 75 and System 85 Terminals and Adjuncts, 555-015-201*

How to Order Documentation

In addition to this book, other description, installation and test, maintenance, and administration books are available. A complete list of DEFINITY books can be found in the *Business Communications System Publications Catalog*, 555-000-010.

This document and any other DEFINITY documentation can be ordered directly from the Lucent Technologies Business Communications System Publications Fulfillment Center at 1-317-361-5353 or toll free at 1-800-457-1235.

How to Comment on This Document

Lucent Technologies welcomes your feedback. Please fill out the reader comment card found at the front of this manual and return it. Your comments are of great value and help improve our documentation.

If the reader comment card is missing, FAX your comments to 1-303-538-1741 or to your Lucent Technologies representative, and mention this document's name and number, *DEFINITY Enterprise Communication Server Release 5 Installation and Upgrades for R5vs,* 555-230-124.

Where to Call for Technical Support

Use the following telephone numbers for the region in which the system is being installed:

Region	Phone Number
Streamlined Implementation (for missing equipment)	1-800-772-5409
Technical Service Center (INADS Database Administration)	1-800-248-1111
Asia/Pacific Regional Support Center	65-872-8686
Western Europe/South Africa/Middle East	441-252-391-889
Eastern/Central Europe	361-270-5160
Latin/Central America & Caribbean - ITAC	303-538-4666

Trademarks

This document contains references to the following Lucent Technologies trademarked products:

- ACCUNET®
- AUDIX®
- Callmaster®
- CallVisor®
- CONVERSANT®
- DEFINITY®
- FORUM™
- MEGACOM®
- TRANSTALK™

The following products are trademarked by their appropriate vendor:

- Audichron® is a registered trademark of Audichron Company.
- LINX™ is a trademark of Illinois Tool Works, Incorporated.
- Music Mate® is a registered trademark of Harris Corporation.
- PagePac® is a registered trademark of Harris Corporation, Dracon Division.
- PORTA™ Systems is a trademark of PORTA Systems Corporation.
- Shockwatch® is a registered trademark of Media Recovery, Incorporated.
- Styrofoam® is a registered trademark of Styrofoam Corporation.
- Tiltwatch® is a registered trademark of Media Recovery, Incorporated.
- Zone Mate® is a registered trademark of Harris Corporation.

Security Issues

To ensure the customer of the greatest security possible, Lucent Technologies offers services that can reduce toll fraud liabilities. Contact your Lucent Technologies representative for more security information.

Login security is an attribute of the DEFINITY Enterprise Communications Server (ECS) software. Advise customers that their existing passwords expire 24 hours after the upgrade. Also explain that the new passwords must conform to strict requirements.

Standards Compliance

The equipment presented in this document complies with the following (as appropriate):

- ITU-T (Formerly CCITT)
- ECMA
- ETSI
- IPNS
- DPNSS
- National ISDN-1
- National ISDN-2
- ISO-9000
- ANSI
- FCC Part 15 and Part 68
- EN55022
- EN50081
- EN50082
- CISPR22
- Australia AS3548 (AS/NZ3548)
- Australia AS3260
- IEC 825
- IEC950
- UL 1459
- UL1950
- CSA C222 Number 225
- TS001

Contact your Lucent Technologies representative for more information.

Electromagnetic Compatibility Standards

This product complies with and conforms to the following:

- Limits and Methods of Measurements of Radio Interference Characteristics of Information Technology Equipment, EN55022 (CISPR22), 1993

- EN50082-1, European Generic Immunity Standard

- FCC Parts 15 and 68

- Australia AS3548

> ### NOTE:
> The system conforms to Class A (industrial) equipment. Voice terminals meet Class B requirements.

- Electrostatic Discharge (ESD) IEC 1000-4-2

- Radiated radio frequency field IEC 1000-4-3

- Electrical Fast Transient IEC 1000-4-4

- Lightning effects IEC 1000-4-5

- Conducted radio frequency IEC 1000-4-6

- Mains frequency magnetic field IEC 1000-4-8

- Low frequency mains disturbance

The system conforms to the following:

- Electromagnetic compatibility General Immunity Standard, part 1; residential, commercial, light industry, EN50082-1, CENELEC, 1991

- Issue 1 (1984) and Issue 2 (1992), Electrostatic discharge immunity requirements (EN55024, Part 2) IEC 1000-4-2

- Radiated radio frequency field immunity requirements IEC 1000-4-3

- Electrical fast transient/burst immunity requirements IEC 1000-4-4

European Union Standards

Lucent Technologies Business Communications Systems declares that the DEFINITY equipment specified in this document bearing the "CE" mark conforms to the European Union Electromagnetic Compatibility Directives.

The "CE" (Conformité Europeénne) mark indicates conformance to the European Union Electromagnetic Compatibility Directive (89/336/EEC) Low Voltage Directive (73/23/EEC) and Telecommunication Terminal Equipment (TTE) Directive (91/263/EEC) and with i-CTR3 Basic Rate Interface (BRI) and i-CTR4 Primary Rate Interface (PRI) as applicable.

The "CE" mark is applied to the following Release 5 products:

- Global AC powered Multi-Carrier Cabinet (MCC)

- DC powered Multi-Carrier Cabinet (MCC) with 25 Hz ring generator

- AC powered Single-Carrier Cabinet (SCC) with 25 Hz ring generator

- AC powered Compact Single-Carrier Cabinet (CSCC) with 25 Hz ring generator

- Enhanced DC Power System

Administration

A terminal connected to the control cabinet is used to administer the system. Commands are entered at the terminal to access and display screens (forms). The forms are used to list data, and to add, change, and remove system and voice terminal features.

System administration is detailed in *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*.

Upgrade Path

The upgrade path described in this document assumes the current system is at the level of a G3 V1.1, V2, V3, or V4, with an I386 processor. To upgrade prior systems to this starting point, refer to the *DEFINITY Communications System Generic 3vs/s/i Upgrades and Addition*s.

Federal Communications Commission Statement

Part 68: Statement

Part 68: Answer-Supervision Signaling. Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 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

This equipment is capable of providing users access to interstate providers of operator services through the use of access codes. Modification of this equipment by call aggregators to block access dialing codes is a violation of the Telephone Operator Consumers Act of 1990.

This equipment complies with Part 68 of the FCC Rules. On the rear of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed 5.0. To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.

NOTE:
REN is not required for some types of analog or digital facilities.

Means of Connection

Connection of this equipment to the telephone network is shown in the following table.

Manufacturer's Port Identifier	FIC Code	SOC/REN/ A.S. Code	Network Jacks
Off/On Premises Station	OL13C	9.0F	RJ2GX, RJ21X, RJ11C
DID Trunk	02RV2-T	0.0B	RJ2GX, RJ21X
CO Trunk	02GS2	0.3A	RJ21X
CO Trunk	02LS2	0.3A	RJ21X
Tie Trunk	TL31M	9.0F	RJ2GX
1.544 Digital Interface	04DU9-B,C	6.0P	RJ48C, RJ48M
1.544 Digital Interface	04DU9-BN,KN	6.0P	RJ48C, RJ48M
120A2 Channel Service Unit	04DU9-DN	6.0P	RJ48C

If the terminal equipment (DEFINITY® System) causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment, for repair or warranty information, please contact the Technical Service Center at 1-800-248-1234. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

It is recommended that repairs be performed by Lucent Technologies certified technicians.

The equipment cannot be used on public coin phone service provided by the telephone company. Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

This equipment, if it uses a telephone receiver, is hearing aid compatible.

Install and Connect the Cabinets

1

Check Circuit Packs

Ensure all circuit packs are fully inserted into the proper slots according to the Customer Service Document (CSD). Report any discrepancies in circuit pack type or quantity to your Lucent Technologies representative. For detailed circuit pack descriptions, refer to *DEFINITY Enterprise Communications Server Release 5 System Description Pocket Reference*.

Release 5vs systems contain a RISC-based TN790 Processor circuit pack.

Check Customer's Order

Check the customer's order and the shipping packing lists to confirm all equipment is present. If any equipment is missing, report the information to your Lucent Technologies representative. Check the system adjuncts for damage and report all damage according to local shipping instructions.

How to Correct Shipping Errors

Defective equipment and over-shipped equipment must be red-tagged and returned per the nearest Material Stocking Location (MSL) instructions.

Short-shipped reports must also be directed to the nearest Material Stocking Location (MSL). Contact the appropriate location for specific instructions. For Streamlined Implementation in the United States, call 1-800-772-5409.

Unpack and Inspect

Verify the label near the circuit breaker on the power supply at the rear of the cabinet corresponds to the local voltage type.

> ⚠ **DANGER:**
> *If the label is different than the voltage type at the site, notify your Lucent Technologies representative immediately for a replacement unit. Do **not**, under any circumstances, connect an incorrect power supply to power.*

Approved Grounds

An approved ground is the closest acceptable medium for grounding the building entrance protector, entrance cable shield, or single-point ground of electronic telephony equipment. If more than one type of approved ground is available on the premises, the grounds must be bonded together as required in Section 250-81 of the National Electrical Code.

Grounded Building Steel — The metal frame of the building where it is effectively grounded by one of the following grounds: acceptable metallic water pipe, concrete encased ground, or a ground ring.

Acceptable Water Pipe — A metal underground water pipe, at least 1/2-inch (1.27 cm) in diameter, in direct contact with the earth for at least 10 feet (3 m). The pipe must be electrically continuous (or made electrically continuous by bonding around insulated joints, plastic pipe, or plastic water meters) to the point where the protector ground wire is connected. A metallic underground water pipe must be supplemented by the metal frame of the building, a concrete encased ground, or a ground ring. If these grounds are not available, the water pipe ground can be supplemented by one of the following types of grounds:

- Other local metal underground systems or structures — Local underground structures such as tanks and piping systems

- Rod and pipe electrodes — A 5/8-inch (1.58 cm) (solid rod) or 3/4-inch (1.9 cm) (conduit or pipe) electrode driven to a minimum depth of 8 feet (2.43 m).

- Plate electrodes — Must have a minimum of 2 square feet (0.185 square m) of metallic surface exposed to the exterior soil

Concrete Encased Ground — An electrode encased by at least 2 inches (5.08 cm) of concrete and located within and near the bottom of a concrete foundation or footing in direct contact with the earth. The electrode must be at least 20 feet (6.1 m) of one or more steel reinforcing bars or rods 1/2-inch (1.27 cm) in diameter, or at least 20 feet (6.1 m) of bare, solid copper, 4 AWG (5.189 mm) wire.

Ground Ring — A buried ground that encircles a building or structure at a depth of at least 2.5 feet (0.76 m) below the earth's surface. The ground ring must be at least 20 feet (6.1 m) of 2 AWG (6.543 mm), bare, copper wire.

APPROVED FLOOR GROUNDS

Approved floor grounds are those grounds on each floor of a high-rise building suitable for connection to the ground terminal in the riser closet and to the cabinet equipment single-point ground terminal. Approved floor grounds may include the following:

- Building steel

- The grounding conductor for the secondary side of the power transformer feeding the floor

- Metallic water pipes

- Power feed metallic conduit supplying panel boards on the floor

- A grounding point specifically provided in the building for the purpose

> ⚠ **WARNING:**
> *If the approved ground or approved floor ground can only be accessed inside a dedicated power equipment room, then connections to this ground should be made by a licensed electrician.*

Anti-Static Protection

> ⚠ **CAUTION:**
> *When handling circuit packs or any components of a DEFINITY System, always wear an authorized wrist ground strap. Connect the strap to an approved ground such as an unpainted metal surface on the DEFINITY System.*

Install System Cabinet

> ⚠ **CAUTION:**
> *A fully loaded system weighs 48 pounds (22 kg). Use lifting precautions.*

Figure 1-1 shows a completed installation. The system cabinet mounts to the equipment room wall, at eye level. Note that the Main Distribution Frame installs directly behind the system cabinet.

cadfmd2 KLC 111596

Figure Notes
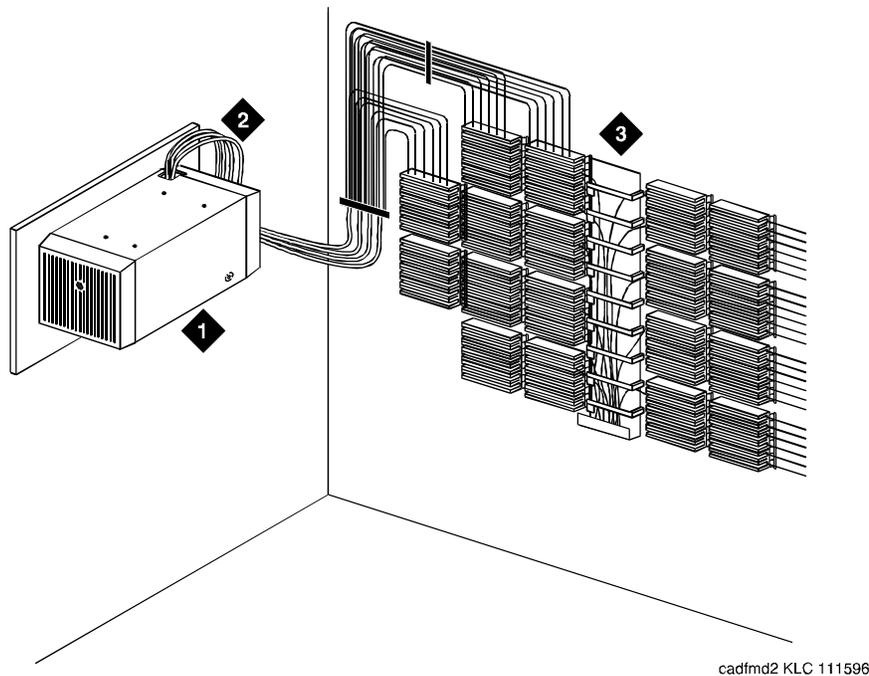
1. System Cabinet
2. 25-Pair Cables to System Cabinet
3. Main Distribution Frame (MDF)

Figure 1-1.   Typical 110A-Type Terminal Blocks

1. Attach a 3/4-inch (19 mm) thick piece of plywood sheet in the desired location in the equipment room. The plywood and all required hardware to mount the plywood is installer-supplied.

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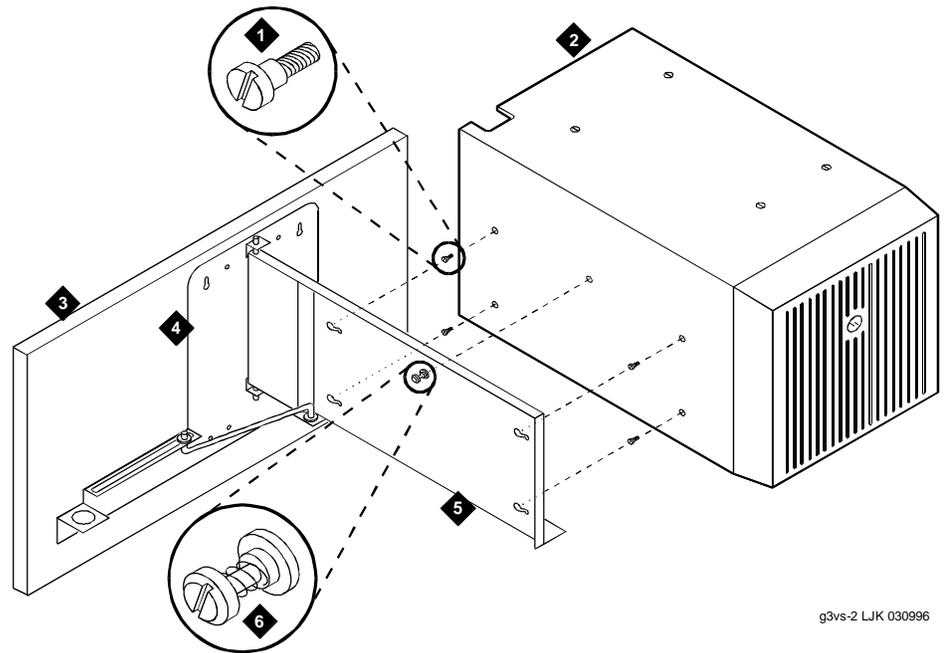
Figure Notes

1. Shoulder Screws

2. Compact Single-Carrier Cabinet

3. Plywood Sheet

4. Wall Mounting Plate Showing Keyhole Slots

5. Cabinet Support Bracket

6. Spring-Loaded Housing Locking Screws

Figure 1-2.   Compact Single-Carrier Cabinet Installation

2. Thread the four supplied shoulder screws into the cabinet. See Figure 1-2. Tighten the screws securely.

3. Align the four shoulder screws with the keyhole slots in the mounting plate and slide the cabinet forward.

g3vsalgn LJK 030896
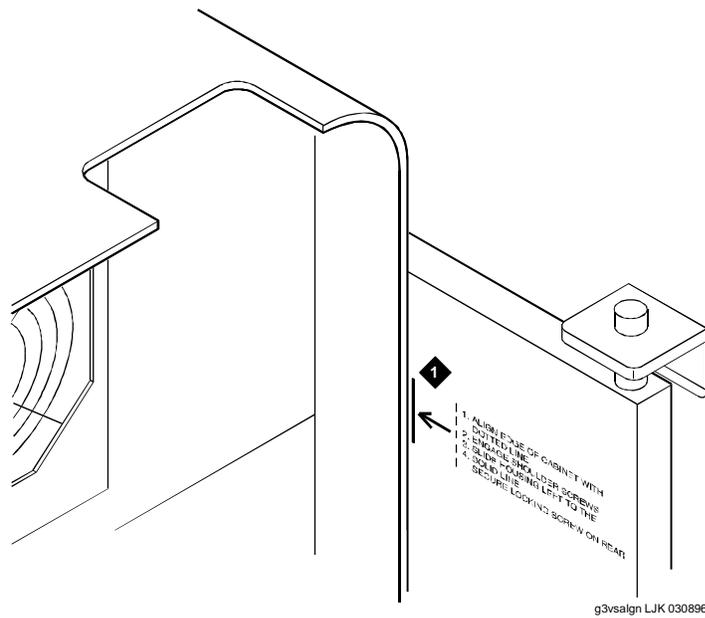
Figure Notes

1. Align Edge of Cabinet with Dotted Line. Engage Shoulder Screws. Slide Housing Left to the Solid Line. Secure Locking Screw on Rear.

Figure 1-3.   Rear Edge of Cabinet

> ⚠ **CAUTION:**
> *To prevent equipment damage and possible injury, the locking screw must be securely fastened to the cabinet.*

4. Align the spring-loaded housing locking screw with the mounting hole in the cabinet.

5. Tighten the locking screw securely.

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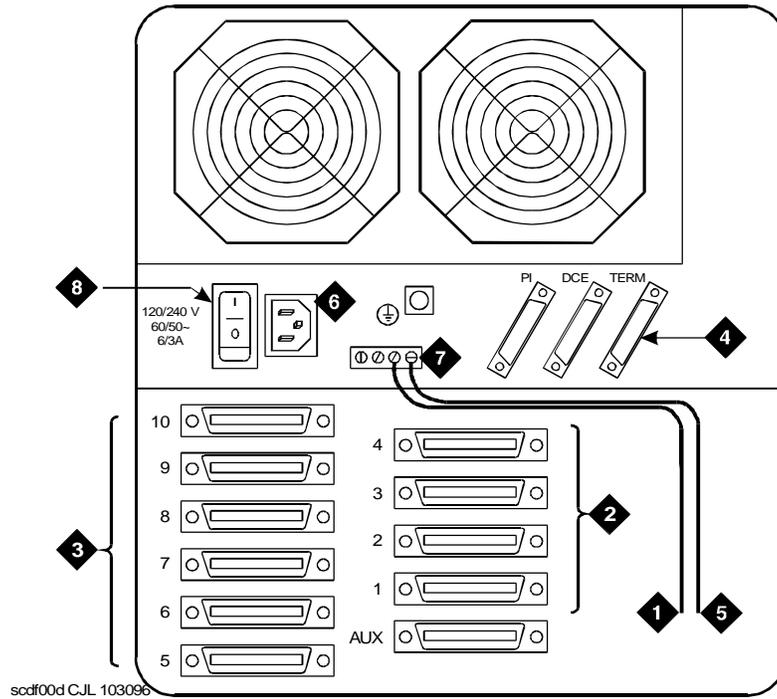
Figure Notes

1. 10 AWG (#25) (2.5 mm) Wire to Coupled Bonding Conductor (CBC)

2. Backplane Connectors 1-4

3. Backplane Connectors 5-10

4. TERM Connector

5. 6 AWG (#40) (4 mm) Wire to Approved Ground

6. AC Power Receptacle

7. Ground Block

8. Circuit Breaker

Figure 1-4.   System Cable Connections

6. Set the circuit breaker OFF.

7. Plug the AC power cord into the AC power receptacle.

8. Connect the system cables to connectors 1-10.

9. Connect the supplied 25-pin DTE cable (H600-426) to the TERM connector. This cable connects to the management terminal.

10. Route the system cables and DTE cable up through the cable cut-out, and to the MDF.

11. Install the rear cover onto the cabinet. Tighten the cover screw securely.

Check Commercial AC Power

The Compact Single-Carrier Cabinet uses an auto-ranging 90 to 260 VAC power supply.

- For United States installations, the AC power supply uses single-phase, 120 VAC, with neutral. The AC load center circuit breakers must be rated at 15 Amps.

- For non United States installations, the AC power supply uses a single-phase of 220 VAC or a single phase of 240 VAC. The AC load center circuit breakers must be rated at 7 Amps.

Before powering up the system, check the AC power in the equipment room using a KS-20599 digital voltmeter (DVM) (or equivalent).

1. Set the DVM to a voltage range that will allow proper measurement of the AC line voltage.

2. Carefully measure the voltage between the hot and neutral side of the receptacle. The neutral wire is white, the hot wire is black.

3. For United States installations, verify the meter reads 90 to 132 VAC. If not, have a qualified electrician correct the problem.

   For non United States installations, verify the meter reads 180 to 264 VAC. If not, have a qualified electrician correct the problem.

4. Measure the voltage between the neutral and ground side of the receptacle. The ground wire is green.

5. Verify the meter reads 0 VAC. If not, have a qualified electrician correct the problem.

6. If the above measurements are correct, plug the cabinet's AC power cord into the AC receptacle.

   ⚠ **CAUTION:**
   Do not power up the system at this time. System power up is performed after installing the MDF cables and after installing the management terminal.

Install Telecommunications Cabling

2

Equipment Room Hardware

Refer to *DEFINITY Communications System Generic 1 and Generic 3 Main Distribution Field Design*, 555-230-630, for more information.

Figure 2-1 shows a detailed example of cables connecting system cabinets and satellite closets to the Main Distribution Frame (MDF). The figure shows the cross-connections for one example station circuit.

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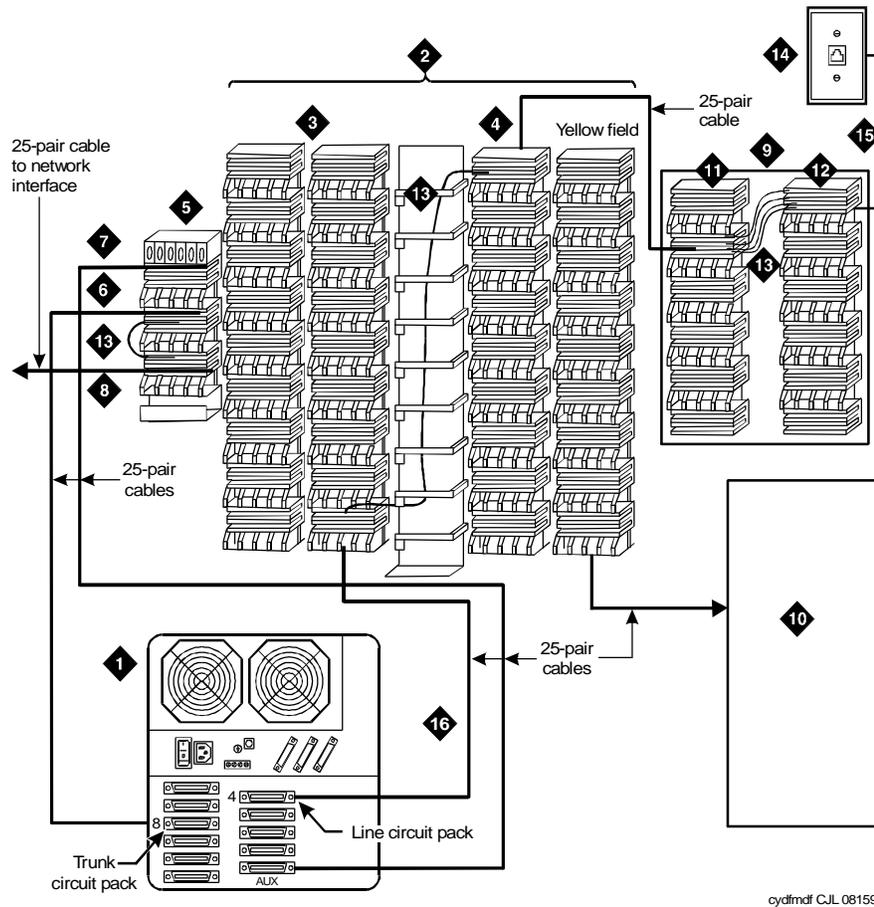
Figure Notes

1. Rear of Cabinet
2. Main Distribution Frame (MDF)
3. Port Distribution Field (Purple Field)
4. Station Distribution Field (White Field)
5. Trunk/Auxiliary Field
6. Purple Field
7. Yellow Field
8. Green Field

9. Satellite Closet
10. Auxiliary Cabinet (Yellow Field)
11. White Field
12. Blue Field
13. Cross-Connect Jumpers
14. 103A or Modular Wall Jack
15. 4-Pair Line Cord
16. To Line Circuit Pack

Figure 2-1.   Example MDF Connections

Cross-Connect Fields

The trunk/auxiliary field contains three cross-connect areas:

1. *The green field* terminates the network interface leads from the Central Office (CO) and provides the terminals to cross-connect the leads to the purple or yellow fields as required. A single row of the 110-type terminal block can terminate twenty-four 1-pair, eight 3-pair, or twelve 2-pair trunks.

2. *The purple field* terminates the trunk circuits from the system with WP-90929, List 1 or 3 concentrator cables. Also, 25-pair cables can be used to terminate trunk circuits from the system with each trunk circuit pack connecting to one 25-pair row of the 110-type terminal block. Each terminal block row can terminate twenty-four 1-pair, eight 3-pair, or twelve 2-pair trunks.

3. *The yellow field* provides cross-connect terminals for all miscellaneous leads from the system, such as alarm monitors, emergency transfer relay power, and attendant console power. This field is used for emergency transfer wiring, paging equipment, music sources, and so forth.

The distribution field contains four cross-connect areas:

1. *The purple field* (port field) terminates 25-pair cables from the system. Each line circuit pack connects to one 25-pair row of the 110-type terminal block. One 25-pair cable is required for each line circuit pack.

   ⇒ **NOTE:**
   The 16-port analog line circuit pack requires an adapter cable to connect from one connector on the system to two 25-pair connectors on a terminal block. Two MET circuit packs require a concentrator cable to connect from two connectors on the system to one 25-pair connector on a terminal block.

2. *The yellow field* (auxiliary field) terminates all 25-pair cables from the auxiliary cabinet and the Processor Interface. The yellow field is located in the lower right-hand corner of the distribution field.

3. *The white field* (station field) terminates the station wiring. The white field indicates 3-pair station circuits (eight circuits per 25-pair cable) routed through a satellite closet.

4. *The blue field* (station field) also terminates station wiring. The blue field indicates 3- and/or 4-pair station circuits (eight or six circuits, respectively, per 25-pair cable). The fourth pair, of the 4-pair station circuit provides adjunct power from the cross-connect field on an as-needed basis to terminals within 250 feet (76.2 m) of the MDF.

Main Distribution Frame

Locate the Main Distribution Frame (MDF) directly behind the cabinet. Figure 2-1 shows a typical installation using 110A-type terminal blocks.

cadfmd1 KLC 111596
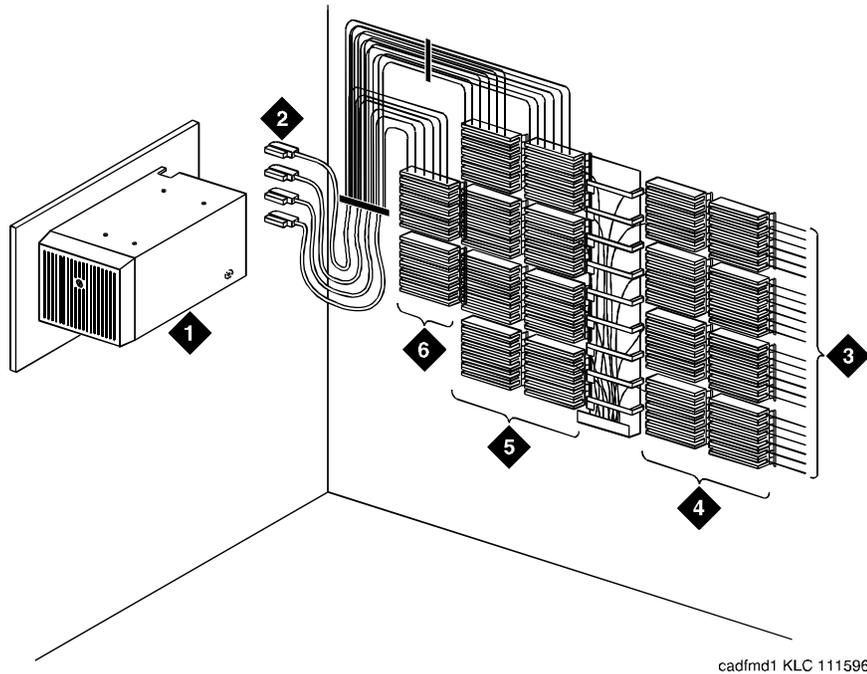
Figure Notes

1. System Cabinet (Rear Cover Not Shown)
2. 25-Pair Cables to System Cabinet
3. Station Cables
4. Station Distribution Field
5. Port Distribution Field
6. Trunk/Auxiliary Field

Figure 2-2.   Typical 110A-Type Terminal Blocks

Install the Main Distribution Frame

1. Mount the trunk/auxiliary field and the distribution field on the same wall. Each 110P-type terminal block is 8.5 inches (21.6 cm) wide. Vertical patch cord troughs are 5.31 inches (13.4 cm) wide and horizontal patch cord troughs are 23 inches (58.4 cm) wide.

   Each 110A-type terminal block is 10.81 inches (27.4 cm) wide; however, no horizontal patch cord troughs are used and the blocks are shorter than 110P-type terminal blocks. This allows the 110A-type terminal blocks to be stacked. The 110A-type hardware requires less space than the 110P-type hardware on a per-station basis.

2. Route the cables from the system cabinet to the MDF and connect.

Install Sneak Fuse Panels

Sneak current protection is required between the incoming RJ21X or RJ2GX network interface and the system for both trunk and off-premise circuit packs.

The Model 507B sneak current fuse panel, or equivalent, is recommended for sneak current protection. See Figure 2-3. The panel contains two 25-pair connectors, fuse removal tool, and fifty 220029 Sneak Fuses (and two spares).

Approximately eight inches (20 cm) of horizontal wall space is required for each column of sneak fuse panels. Connector cables (B25A male-to-female) connect the network interface to the sneak fuse panel. Also, use 157B connecting blocks equipped with SCP-110 protectors for sneak current protection.

Sneak Fuse Panel Ordering Information

Description	Comcode
157B Connecting Block	403613003
SCP-110 Protector	406948976
507B Sneak Current Fuse Panel	107435091
220029 Sneak Current Fuse	407216316

➡ **NOTE:**

Sneak current protectors with a rating of 350 mA at 600 Volts must be UL listed for United States installations and CSA certified for Canadian installations. The 507B includes 52 sneak fuses and two cables and can be ordered using PEC code 63210. Use the SCP-110 protectors with 110-type hardware and on the 507B Sneak Fuse Panel. The SCP-110 Protectors can be ordered separately and installed on the 157B connecting block. Fifty protectors are required per block.

sneak CJL 032096
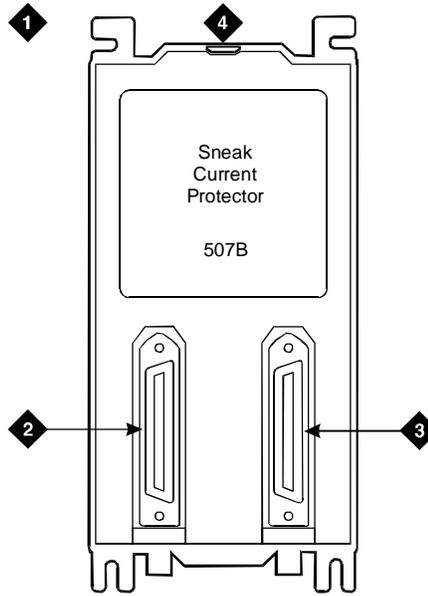
Figure Notes

1. Sneak Fuse Panel
2. 25-Pair Male Connector (In)
3. 25-Pair Female Connector (Out)
4. 220029 Fuses (Inside Panel). Use Small Screwdriver to Pry Top Cover Off

Figure 2-3. Model 507B Sneak Fuse Panel

1. Install the 507B near the network interface or MDF with locally obtained #12 x 3/4-inch screws (or equivalent).

Table 2-1 is a pinout of the cable wiring and associated fuse numbers.

Table 2-1. Sneak Fuse Connector Pinout

Connector Pin Numbers	Pair/Fuse Number
26/1	1
27/2	2
28/3	3
29/4	4
30/5	5
31/6	6
32/7	7
33/8	8
34/9	9
35/10	10
36/11	11
37/12	12
38/13	13
39/14	14
40/15	15
41/16	16
42/17	17
43/18	18
44/19	19
45/20	20
46/21	21
47/22	22
48/23	23
49/34	24
50/25	25

2. Secure the B25A cable to the panel with the captive screw on the connector and a supplied cable tie.

Install Coupled Bonding Conductor

Maintain a minimum of 12 inches (30.48 cm) spacing between the CBC and other power and ground leads. See Figure 2-4.

1. Route the 10 AWG (#25) (2.5 mm) wire from the cabinet along the 25-pair cables connecting to the trunk/auxiliary field, and tie wrap to the 25-pair cables.

2. Connect the wire to the MDF Coupled Bonding Conductor ground block.

cbc_gnd RBP 032896
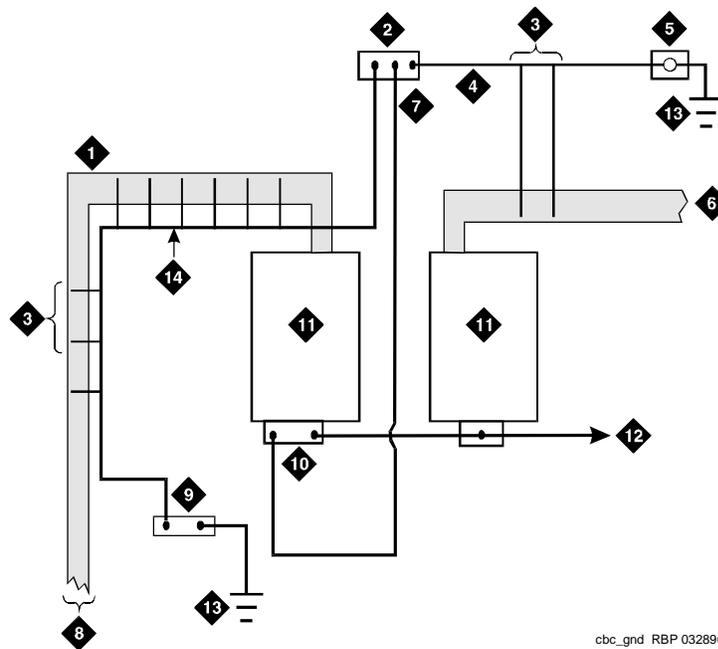
Figure Notes

1. 25-Pair Tip & Ring Cables to Cabinets
2. Coupled Bonding Conductor (CBC) Terminal Block
3. Tie Wraps
4. Cable Shield or Six Spare Pairs
5. Ground on Carbon Block Protector or Equivalent
6. Trunk Cable to Network Interface
7. 10 AWG (#25) (2.5 mm) Wire

8. To Network Cabinets
9. Single-Point Ground
10. Cross-Connect Ground Block
11. Main Distribution Frame (MDF)
12. To Other Cross-Connect Ground Blocks
13. Approved Ground
14. Coupled Bonding Conductor (CBC)

Figure 2-4.   Coupled Bonding Conductor

Label the Main Distribution Frame

Figure 2-5 shows the graphic symbols used on labels for the system, cross-connections, information outlets, and cables. The labels are color-coded to identify system wiring:

- Green — To Central Office (CO)

- Purple — To system ports

- Yellow — To auxiliary equipment and miscellaneous system leads

- Blue — To information outlets

- White — From Main Distribution Frame to satellite locations (3-pair)

r758422i LJK 050996
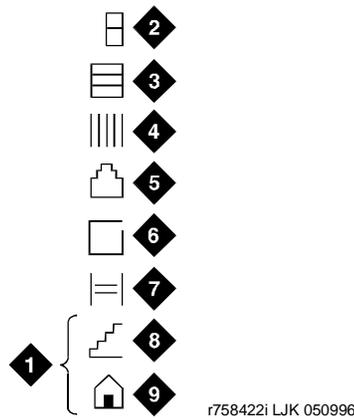
Figure Notes

1. Write Floor or Building Identification on Label as Required

2. Cabinet

3. Carrier

4. Slot

5. Information Outlet

6. Site/Satellite Closet

7. Tie Circuit

8. Floor

9. Building

Figure 2-5.   Label Graphic Symbols and Nomenclature

Label code number 220A (comcode 103970000) contains all required labels.

Install Management Terminal and Activate System

3

This chapter contains procedures for installing the management terminal and bringing the system up to a "no red LEDs" state. This chapter details how to:

- Install the Management Terminal
- Activate the System
- Power Up the System
- Administer the System
- Register the System

> ⚠ **CAUTION:**
> *To prevent unnecessary trouble tickets, do not enable the system alarms (Alarm Origination feature) before completing all installation and administration procedures. This chapter describes basic system start-up procedures only and is not intended to identify all system alarms or error conditions.*

Install Management Terminal

Locate the management terminal within 50 feet (15.2 m) of the system. It may be necessary to reduce the maximum distance limitation if higher gauge wire is used or if the capacitive load on the line is increased.

The following types of terminals can connect to a system:

- 715 BCS
- 2900/715 BCS
- 715 BCS-2

This chapter emphasizes terminal installation in Release 5 and later systems.

An optional printer may be connected using a locally obtained EIA cord. See Appendix A, "Option Switch Settings" for printer option switch settings.

Unpack and Inspect

Remove and retain the installation and usage instructions from the carton. These instructions are needed to set up the terminal after it is installed.

Install a 715 BCS Terminal

1. Plug the keyboard cable into the 6-pin mini-DIN jack on the rear of the terminal. See Callout 2 in Figure 3-1.
2. Plug the supplied 25-pin DTE cable into the P2 port (center connector) on the rear of the terminal.

Install a 715 BCS Terminal (2900/715)

1. Plug the keyboard cable into the 6-pin RJ-11 jack on the left side of the terminal. An adapter cable is available to convert a 6-pin mini DIN jack to an RJ-11 jack to allow a 715 BCS keyboard to be used (comcode 847489895 or 847489903).
2. Plug the 25-pin DTE cable into the P2 port (right side connector). See Callout 4 in Figure 3-1.

Install a 715 BCS-2 Terminal

1. Plug the keyboard cable into the modular keyboard jack on the rear of the terminal. See Callout 5 in Figure 3-1. This is a unique cable and must be connected to the 715 BCS-2 only.

2. Plug the supplied 25-pin DTE cable (H600-426) into the COM1 port (right side connector).
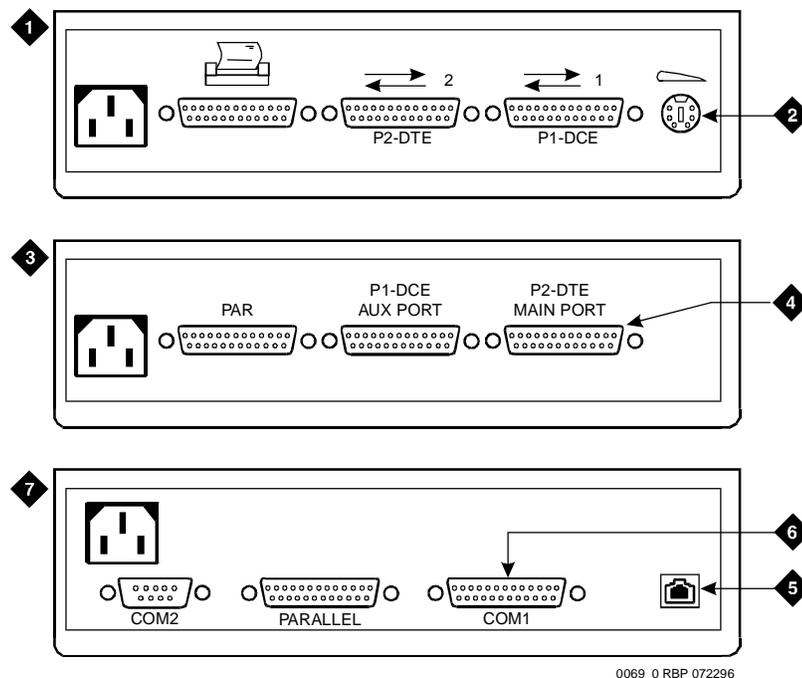
0069_0 RBP 072296

Figure Notes

1. Rear Panel of 715 BCS Terminal
2. 6-Pin Mini DIN Connector
3. Rear Panel of 2900/715 BCS Terminal

4. P2-DTE Port
5. Modular Keyboard Jack
6. COM 1 Port
7. Rear Panel of 715 BCS-2 Terminal

Figure 3-1. Rear Panels on Management Terminals

1. Set the terminal power switch to the **ON** position.

Remotely Connect Terminal

Typical remote connections are shown in Figure 3-2.

4_4 THC 031496
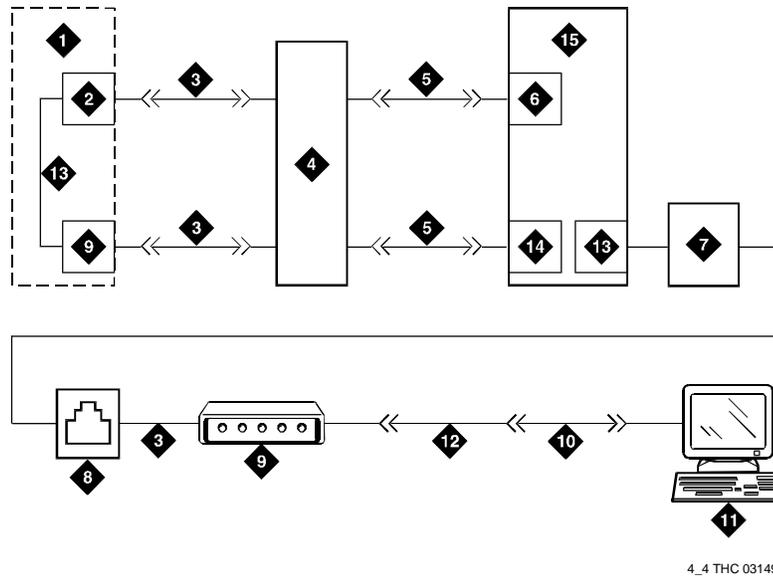
Figure Notes

1. External Modem Pool

2. 7400A Data Module

3. Line Cord

4. Main Distribution Frame (MDF)

5. B25A Cable (Male to Female)

6. TN754 Digital Line 4-Wire Circuit Pack

7. Public Switched Telephone Network

8. 103A or Modular Wall Jack

9. ModemA DB9 to DB25 Converter (ED3-1-70, G115) May Be Required on a PC

10. Remote Management Terminal or Other Remote Device (Call Detail Recording Utility, CAS+, Property Management System, Basic Call Management System, System Journal Printers, Cost Allocator)

11. M25A Cable

12. Can Be Any of the Following Trunk Circuit Packs: TN747, TN753, TN760, TN767, TN464, TN2147, TN465, and so forth.

13. Can Be Any Analog Line Circuit Pack

14. Compact Single-Carrier Cabinet

Figure 3-2.   Typical Connections to Remote Devices

Set Up Management Terminal

Each management terminal requires a different setup procedure. Refer to the installation and usage instructions packed with the management terminal.

Activate the System

Install Translation Card

1. Verify the write switch on the translation card is positioned down. See Figure 3-3.
2. Insert the translation card into the TN777B Network Control circuit pack.

Power Up System

1. Set the associated circuit breakers on the AC power panel (at the AC load center) to ON.
2. Set the system circuit breakers to ON. This starts the system initialization and test.

netcon KLC 053196
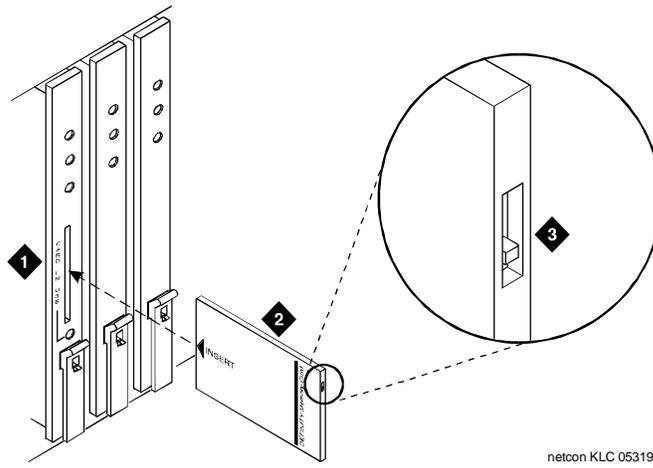
Figure Notes

1. Slot in TN777B Network Control Circuit Pack

2. Insert Card in Direction of Arrow

3. Write Switch Positioned Down

Figure 3-3.   Write Switch on Translation Card

Verify Messages on Terminal

1. After several minutes, verify all tests pass. Screen 3-1 displays the screen of a typical Release 5vs system.

⇒ NOTE:

If any of the terminal messages indicate a test has failed, refer to *DEFINITY Enterprise Communications Server Release 5 Maintenance for R5vs/si* to clear the trouble.

```
INTERNAL REGISTER TEST              PASSED
LOOP DATA TEST                      PASSED
DUART TEST                          PASSED
ROM CHECKSUM TEST                   PASSED
CONTROL STATUS TEST                 PASSED
DCACHE TEST                         PASSED
ICACHE TEST                         PASSED
WRITE BUFFER TEST                   PASSED
BTO TEST                            PASSED
MEM CONFIG TEST                     PASSED
MEMORY FUNCTIONAL TEST              PASSED
MEMORY MODULE A STUCK BIT TEST      PASSED
MEMORY MODULE A PARITY TEST         PASSED
MEMORY MODULE A BURST TEST          PASSED
MEMORY MODULE B STUCK BIT TEST      PASSED
MEMORY MODULE B PARITY TEST         PASSED
MEMORY MODULE B BURST TEST          PASSED
MEMORY MODULE C STUCK BIT TEST      PASSED
MEMORY MODULE C PARITY TEST         PASSED
MEMORY MODULE C BURST TEST          PASSED
VIRTUAL MEMORY TEST                 PASSED
EXCEPTION TEST                      PASSED
TIMER TEST                          PASSED
MTP TEST                            PASSED
SANITY TIMER TEST                   PASSED
ADDRESS MATCHER TEST                PASSED
FLASH TEXT CHECKSUM TEST            PASSED
RAM DATA CHECKSUM TEST              PASSED

RESET 4 (REBOOT PERFORMED)
```

Screen 3-1.   Typical Start-up Messages

2. About two minutes after REBOOT PERFORMED is displayed, verify the screen displays: Login:

Administer the System

Refer to *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description* to administer the system.

Log into the System

1. Verify the screen displays: `Login:`

2. Type **craft** and press Enter.

3. Verify the screen displays: `password:`

4. Type **crftpw** and press Enter. For security reasons, the password is not displayed as it is typed. The system verifies a valid login and password name were entered. If an invalid login or password name was entered, the screen displays:

   `login incorrect:`

   In this case, repeat the procedure using the correct login and matching password.

   If the system recognizes the login and password name, the screen displays the software version.

5. Verify the screen display is similar to:

   `Terminal Type (513, 715, 4410, 4425, VT220): [513]`

6. Type the number of the management terminal and press Enter.

7. Verify the screen displays: `command:`

> **NOTE:**
> The following sections describe some of the procedures used to access and change certain options. These sections are not intended to replace or modify the instructions provided in *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*.

Check System Status

The system status may suggest problem areas. Specific tests provide more specific diagnostic information. Refer to *DEFINITY Enterprise Communications Server Release 5 Maintenance for R5vs/si*.

1. Verify the terminal screen displays:

   `command:`

2. Type **status system all-cabinets** and press Enter.

3. Verify the screen displays a service state of `in` for all appropriate areas.

Change Customer Options

The following features are part of the basic software package and do not need to be activated. They default to y (yes) on the Optional Features form.

- ARS/AAR Partitioning

- Emergency Access to Attendant

- Hospitality (Basic)

- Service Observing

Use the following procedure to change the customer's optional features.

1. At the command: prompt, enter **change system-parameters customer-options** and press Enter. A display similar to Screen 3-2 appears.

```
                                                    Page   1 of   5

                              OPTIONAL FEATURES

               G3 Version: V5                  Maximum Ports:  300

      Abbreviated Dialing Enhanced List? y                    CAS Main? y
 A/D Grp/Sys List Dialing Start at 01? y  Cvg Of Calls Redirected Off-net? n
Answer Supervision by Call Classifier? n                   DCS (Basic)? y
                                  ARS? y               DCS Call Coverage? y
                   ARS/AAR Partitioning? y                    DS1 MSP? n
                        ASAI Interface? y    Emergency Access to Attendant? y
         ASAI Proprietary Adjunct Links? y         Extended Cvg/Fwd Admin? y
                                 ATMS? y      External Device Alarm Admin? y
               Audible Message Waiting? y                Flexible Billing? n
                   Authorization Codes? y    Forced Entry of Account Codes? y
                          CAS Branch? y       Global Call Classification? n
                                                       Hospitality (Basic)? y
                                          Hospitality (G3V3 Enhancements)? n
                                          Hospitality Parameter Reduction? n
```

Screen 3-2.   Typical Customer-Options Form (Page 1 of 5)

2. Using the Customer Order, enable the optional features purchased by the customer (as shown by PEC codes on the Customer Order).

In Release 5 systems, a separate screen offers ASAI capability groups for selection in cases where the ASAI interface has been enabled. Change this screen in the same manner as Page 1 of the customer-options form.

Set Country Options

Certain country options need to be set to turn red failure indication LEDs off.

1. Verify the screen displays: command:

2. Type **change system-parameters country options** and press Enter.

   A screen similar to Screen 3-3 is displayed on the terminal. The cursor is set on the Companding Mode line.

```
change system parameters country-options          Page   1  of  21
                   SYSTEM-PARAMETERS COUNTRY-OPTIONS

         Companding Mode: Mu-Law          Base Tone Generator Set: 1
     440Hz PBX-dial Tone? n               440Hz Secondary-dial Tone? n
        Digital Loss Plan: 1
  Analog Ringing Cadence: 1      Set Layer 1 timer T1 to 30 seconds? n
Analog Line Transmission: 1    Enhanced 84xx Display Character Set? n

TONE DETECTION PARAMETERS
         Tone Detection Mode: 5   Dial Tone Validation Timer (msec): 600
            Interdigit Pause: short


```

Screen 3-3.   Typical System Parameters Country-Options Screen

3. The default companding mode is mu-Law. If the country uses A-Law companding, type A-Law.

4. Press Enter when this information is correct.

   Other items eventually need to be entered on this screen, but this is all that must be done to turn the red alarm LEDs off. Refer to Table 3-1 for a list of the country codes.

Table 3-1. Country Codes

Country	Code	Country	Code
USA	1	France	12
Australia	2	Germany	13
Japan	3	Czechoslovakia	14
Italy	4	Russia	15
The Netherlands	5	Argentina	16
Singapore	6	Greece	17
Mexico	7	China	18
Belgium	8	Hong Kong	19
Saudi Arabia	9	Thailand	20
United Kingdom	10	Macedonia	21
Spain	11		

5. If all red LEDs do not go off, reseat (unplug and reinsert) any *purple*-labeled circuit packs displaying red LEDs.

> ⚠️ **CAUTION:**
> *To avoid a disk crash, **never** reseat the DEFINITY AUDIX System without first shutting it down. Shut down the DEFINITY AUDIX System (and allow the disk to completely spin down) before unplugging the assembly. See "DEFINITY AUDIX System Power Procedures" on page 3-21 for the proper procedures.*

6. If the red LEDs still do not go off, refer to *DEFINITY Enterprise Communications Server Release 5 Maintenance for R5vs/si*.

> ➡️ **NOTE:**
> Ignore the red alarm indication LED on the TN767 or TN464 DS1 circuit pack until after the DS1 circuit pack is administered. Alarms will appear in the Alarm Log when power is applied to the system before all equipment connecting to port circuit packs is installed. Normally, some alarms will be logged when power is applied to the system, but should be resolved quickly. If no equipment is connected to the port circuit packs, alarms associated with these ports can take up to four hours to log, but will clear automatically after all equipment is installed and operating correctly.

Change Craft Password

The password for the craft login *must be changed* by the installing technician to prevent unauthorized administration changes.

⚠ CAUTION:
After the password is changed, the new password must be safeguarded so no unauthorized administration changes can be made. This password MUST NOT BE REVEALED to the customer or to any unauthorized person.

Passwords are changed using the Change Password Screen. See Screen 3-4. To change the "craft" password, perform the following.

1. Verify the screen displays: `command:`

2. `Type` **change password craft**. `Press` Enter.

```
change password craft                                           Page 1 of 1
                            PASSWORD ADMINISTRATION

   Password For Login Making Change:


   LOGIN BEING CHANGED
                      Login Name: craft
   LOGIN'S PASSWORD INFORMATION
                Login's Password:
                Reenter Login's Password:
```

Screen 3-4.   Typical Change Password Screen

3. Verify the screen displays the Change Password Screen. The cursor is positioned on "`Password for Login Making Change:`"

4. Type the password assigned to the craft login (assigned as *crftpw* when system is shipped) and press Enter. The cursor is positioned on "`Login's Password:`".

5. Enter new password. Valid passwords consist of a combination of from four to eleven alpha or numeric characters. At least one letter and one number must be used in each password.

6. Press Enter. The cursor is positioned on "`Reenter Login's Password:`".

7. Type new password again and press Enter.

8. Verify the screen displays:

   command successfully completed

   command:

Set Date and Time

1. Verify the screen displays command:

2. Type **set time** and press Enter.

3. Verify the screen displays Set Date and Time Screen.

   The cursor is positioned on Day of the Week: field.

```
set time                                    Page 1 of 1

                  DATE AND TIME

DATE

  Day of the Week: _____      Month: _____
  Day of the Month: __            Year: ____

TIME

          Hour: __          Second: xx
        Minute: __
```

Screen 3-5.   Typical Date and Time Screen

4. Type the day of the week in English (Sunday through Saturday) and press
   Tab to move to next field. See Table 3-2 for English day of the week names.

Table 3-2. English Day of the Week Names

Day Number	Day Name
1	Sunday
2	Monday
3	Tuesday
4	Wednesday
5	Thursday
6	Friday
7	Saturday

5. The cursor is positioned on the `Month:` field. Type the current month in English (January through December). See Table 3-3 for English month names. After the month is entered, press Tab to move to next field.

Table 3-3. English Month Names

Month Number	Month Name
1	January
2	February
3	March
4	April
5	May
6	June
7	July
8	August
9	September
10	October
11	November
12	December

6. The cursor is positioned on the `Day of the Month:` field. Type the day of month (1 through 31) and press Tab to move to the next field.

7. The cursor is positioned on the `Year:` field. Type the current year and press TAB to move to the next field.

8. The cursor is positioned on the `Hour:` field. Type the current hour for a 24-hour clock. See Table 3-4. Press Tab to move to the next field.

9. The cursor is positioned on the `Minute:` field. Type current minute (0 through 59). Seconds cannot be set.

10. Press Enter when the information is correct.

Table 3-4. Conversion to 24-Hour Clock

Standard Time		Standard Time	
12-Hour	**24-Hour**	**12-Hour**	**24-Hour**
12:00 midnight	0000	12:00 noon	1200
1:00 am	0100	1:00 pm	1300
2:00 am	0200	2:00 pm	1400
3:00 am	0300	3:00 pm	1500
4:00 am	0400	4:00 pm	1600
5:00 am	0500	5:00 pm	1700
6:00 am	0600	6:00 pm	1800
7:00 am	0700	7:00 pm	1900
8:00 am	0800	8:00 pm	2000
9:00 am	0900	9:00 pm	2100
10:00 am	1000	10:00 pm	2200
11:00 am	1100	11:00 pm	2300

11. Verify the screen displays:

    ```
    command successfully completed
    command:
    ```

12. Type **display time** and press Enter to verify date/time data.

Circuit Pack Administration

After the equipment is installed (including circuit packs), the circuit packs must be administered. Refer to *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description* for more information.

The following information describes general administration information:

- Us e the Circuit Packs form to administer circuit packs to carrier slots. The circuit packs must be installed (or assigned using the Circuit Packs form) before administering voice terminals, attendant consoles, or trunks.

- Each page of the form represents one carrier in the cabinet shown on the command line. For Release 5vs, all carriers and slots appear even if they are not included in the hardware.

- It is not necessary to fill in the Circuit Packs form if the circuit packs are installed at the time of administration.

- Refer to *DEFINITY Communications System Generic 3 Planning and Configuration*, 555-230-601, for more information about circuit pack administration and port assignment records (the DS1 circuit pack and translation are covered in Chapter 2 and Chapter 3).

- For initial installation, assign circuit packs to slots using the hardware configuration layout record from the factory or Customer Services Organization. Do not arbitrarily assign circuit packs to slots.

- When a circuit pack in a slot differs from what has been administered on the form, a "#" displays between the "Sfx" and "Name" fields.

Set System Maintenance Parameters

If the system does not contain a TN778 Packet Control circuit pack, skip to "Administer Attendant Console."

1. Verify the terminal screen displays: `command:`

2. Type **change system-parameters maintenance** and press Enter. A screen similar to Screen 3-6 appears. Refer to *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description* for a description of each field in the forms.

```
change system-parameters maintenance                    Page   1 of   2
                  MAINTENANCE-RELATED SYSTEM PARAMETERS

OPERATIONS SUPPORT PARAMETERS
              Product Identification: 1000000000
            First OSS Telephone Number:              Abbrev Alarm Report? y
           Second OSS Telephone Number:              Abbrev Alarm Report? n
      Alarm Origination to OSS Numbers: neither
            Cleared Alarm Notification? n
               Restart Notification? n
             Test Remote Access Port? n
          CPE Alarm Notification Level: none
                 Packet Bus Activated? y
        Customer Access to INADS Port? n
         Repeat Dial Interval (mins): 7


  SCHEDULED MAINTENANCE
                     Start Time: 01 : 00              Stop Time: 06 : 00
              Daily Maintenance: daily          Save Translation: daily
      Control Channel Interchange: no     System Clocks Interchange: no
                 SPE Interchange: no
```

sddfcsp KLC 112796

Screen 3-6.   Typical Display System-Parameters Maintenance Screen (Page 1)

⚠ **CAUTION:**
To prevent unnecessary trouble tickets, do not enable the system alarms (Alarm Origination feature) until all installation and administration procedures are completed.

3. Move the cursor by pressing `TAB` to move down the screen from field to field and enter `y` in the `Packet Bus Activated?` field to indicate a TN778 circuit pack is installed. This is the only field needing change on this screen to turn the red LEDs off.

4. Press Enter when the information is correct.

Administer Attendant Console

1. Log in as "craft" at the `login:` prompt.

2. Enter **display system-parameters country-options** and press Enter to verify the system's companding mode for its local stations is set to the desired value (usually, A-Law for Europe and mu-Law for North America and Japan).

   ➡ **NOTE:**
   Refer to *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*, for a description of these forms.

3. If necessary, enter **change terminal-parameters 603/302B1** and press Enter to change the default system-level parameters and audio levels for these terminals.

   ➡ **NOTE:**
   For information about changing the default parameters and audio levels, refer to *DEFINITY Application Notes* available through the International Technical Assistance Center (ITAC).

4. Administer other forms listed under Attendant Console in *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*.

Change Site-Data

This form initializes the building, floor, and color data to make them available later in help messages that refer to site information.

Save Translations

This command copies the current system translations onto the translation card. For standard reliability systems, one translation card plus one backup is required. For high or critical reliability systems, two translation cards plus two backups are required.

Use the following procedure to save system translations on the original card and to make a backup card:

1. Type **save translation** and press Enter.

2. Verify a **0** is displayed in the Error Code column for each SPE. A 0 indicates the save translation was successfully completed. If not, the save translation did not complete. Record the "error code number" and the "error message" and notify your Lucent Technologies representative.

3. Remove the original card from the TN777B and replace with backup card.

4. Repeat Steps 1 and 2 for the backup card(s).

5. Remove the backup card and replace with the original card.

6. Label the backup card with the date and time of the backup and store in a secure place.

Add Translations

1. Refer to *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description* to add new terminals to the system.

2. Type **save translation** and press Enter to merge these translations with the contents of flash memory.

Installation Completion

The telephones and other equipment must be installed. See Chapter 4, "Install and Wire Telephones and Other Equipment".

The system is then administered by adding the customer data to match the wiring, telephones, and other equipment. See *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*.

After the system is administered, the telephones and other equipment are tested. See *DEFINITY Enterprise Communications Server Release 5 Maintenance for R5vs/si*.

Resolve Alarms

Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 5 Maintenance for R5vs/si*.

Contact INADS to Enable Customer Options and Alarm Origination

Be sure the system is part of the existing INADS database by calling the INADS Database Administrator at the Technical Service Center (TSC). Verify that INADS can dial into the system and that the system can dial out to INADS.

As part of the system registration process, the INADS Database Administrator enables Alarm Origination and customer options.

If the packet bus feature is available for this Release 5vs system, the Database Administrator will activate the `Packet Bus Available in G3VS?` field as part of the registration process.

Logoff the System

Enter **logoff** and press Enter to prevent unauthorized changes to data.

DEFINITY AUDIX System Power Procedures

To Manually Power Down AUDIX System

A yellow caution sticker on the system's power unit notifies technicians to shut down the DEFINITY AUDIX System prior to powering down the system.

1. Using a pointed object, such as a paper clip or pen (do not use a pencil), press the Boot/Shutdown button. The button is located at the top right portion of the front panel.

2. Hold the Boot/Shutdown button in until the LCD display flashes the message MSHUT.

3. Release Boot/Shutdown button.

> **NOTE:**
> The DEFINITY AUDIX System takes about five minutes to shut down. The "heartbeat" indication on the display continues to flash.

To Manually Power Up AUDIX System

1. Using a pointed object such as a paper clip or a pen (do not use a pencil), press the Boot/Shutdown button.

2. Hold the Boot/Shutdown button in until the display indicates the message, BTEST, steady on.

3. Release the Boot/Shutdown button. The DEFINITY AUDIX System takes approximately five minutes to power up.

   - The display has the following sequence of steady on messages:

     — OSINIT

     — OS

     — AINIT

     — ADX

   - The DEFINITY AUDIX System is now powered up. When the system is in the active state, the display indicates ADX, and the red LED is off.

> **NOTE:**
> Upon the system powering up, the DEFINITY AUDIX System automatically reboots. This sequence may show an MD or MJ ADX alarm in the display until the system has powered up. When the system has completed its power up sequence, the DEFINITY AUDIX System display reads: ADX.

Install and Wire Telephones and Other Equipment

4

The wiring procedures are the same for most of the DEFINITY System telephones and other equipment. This section provides wiring examples of these similar installation procedures. These are examples only and actual wiring procedures may vary at each site.

All wiring pinouts for all circuit packs in this chapter can be found in the tables at the end of this chapter.

Voice and Data Terminals

The system can connect to all DTE terminals and have RS-232 (or EIA-232) or DCP interfaces.

Telephone Connection Example

The 302C Attendant Console is used to describe a typical telephone connection. This information is typical of the 603E, 84xx (4-wire), and 94xx telephones.

The attendant console always requires auxiliary (adjunct) power (-48 VDC). Power connects to the console through Pins 7 and 8 of the information outlet. See Figure 4-2. Only one console can be powered by the system through the AUX connector. The primary console should be powered from the system so it has the same power failure backup as the system.

The maximum cabling distance for the console powered from the cabinet is 350 feet (100 meters) using 24 AWG (#5) (0.5 mm) wire.

The general steps to connect a telephone are:

1. Choose a device to connect such as a 302C Attendant Console.

2. Choose the port circuit pack (from Table 4-3) and its carrier and slot number. Such as: TN754B, Cabinet 1, Carrier C, Slot 02.

3. Choose a port circuit on the port circuit pack. Such as Port 05.
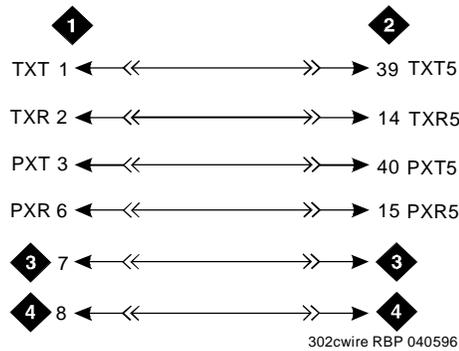
Figure Notes

1. 302C Attendant Console

2. TN754B Digital Line Circuit Pack (Position 1C02)

3. -48 VDC From Adjunct Power

4. Ground From Adjunct Power

Figure 4-1. 302C to TN754B Wiring

4. Install cross-connect jumpers to wire the terminal to the port circuit pack. See Figure 4-1. This pinout is for the TN754B Digital Line circuit pack.

5. For terminals needing adjunct power, wire -48 VDC and ground to appropriate pins on the terminal. See Figure 4-2.

Connect Adjunct Power

The 400B2 adapter is convenient for connecting local -48 VDC power to a modular plug. See Figure 4-2.

r749428 KLC 060396
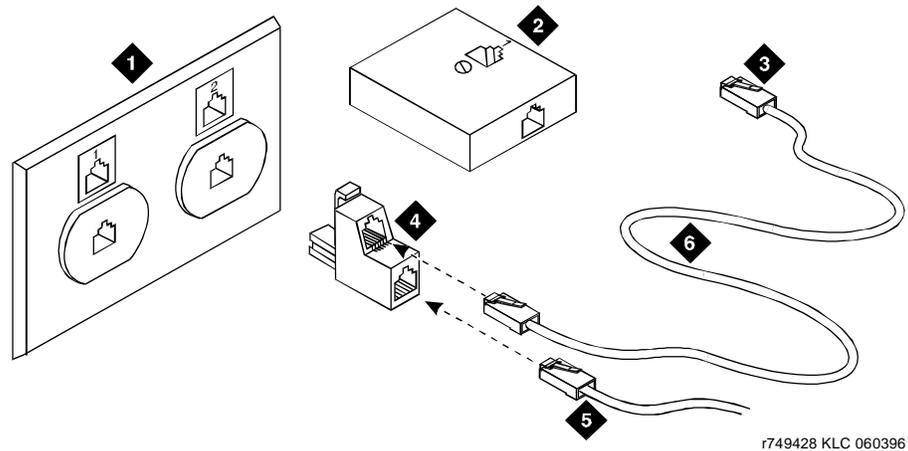
Figure Notes

1. Flush-Mounted Information Outlet
2. Surface-Mounted Information Outlet
3. To Individual Power Unit (Such as 1151A or 1151A2)
4. 400B2 Adapter
5. To Telephone
6. Destination Service Access Point (DSAP) Power Cord

Figure 4-2.   400B2 Adapter Connecting to a Modular Plug

Adjunct power can be provided from the equipment room or equipment closet with 1145B power unit.

Each port network can provide power for up to three attendant consoles. This source of power is preferred for the attendant consoles because it has the same battery backup as the system. See Table 4-2.

Adjunct power can be provided locally at the telephone or console by the 1151A or 1151A2 Power Supply.

Analog Station or 2-Wire Digital Station Example

This example is typical of the 2-wire digital stations (603E, 84xx, 94xx, 302C), 2-wire analog stations (500, 2500, 71xx), analog Central Office (CO) trunks, Direct Inward Dial (DID) trunks, and external alarms. See Figure 4-3.

T 2 ◄─◄───────────»─► 28 T3

R 3 ◄─◄───────────»─► 03 R3

2500wire RBP 040596

Figure Notes

1. 2500-Type Analog Station

2. TN2183 Analog Line Circuit Pack, Position 1C01

Figure 4-3.   2500-Type Analog Telephone Wiring

1. Choose a peripheral to connect (such as a 2-wire digital station).

2. Choose the port circuit pack to use and its carrier and slot number (from Table 4-3). For example: TN2183 Analog Line, Cabinet 1, Carrier C, Slot 1.

3. Choose a port circuit on the port circuit pack, for example port 3.

4. Install cross-connect jumpers to connect the pins from the 2-wire digital station to the appropriate pins on the port circuit pack.

5. Administer using *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*.

Analog Tie Trunk Example

This example shows how to connect analog tie trunk wiring from one DEFINITY System to another DEFINITY System.


```
        1                              2

T1 26 ◄──«──┐      ┌──»──► 29  T2
            │      │
R1  1 ◄──«──┼──┐   ┌┼──»──  4  R2
            │  │   ││
T11 27◄──«──┘  └───┼┘  ──»──► 30  T12
               ┌───┘
R11  2 ◄──«────┘      ──»──► 5  R12

E1 28◄──«──┐      ┌──»──► 31  E2
           │      │
M1  3 ◄──«─┘      └──»──► 6  M2

              tie_wire RBP 040596
```
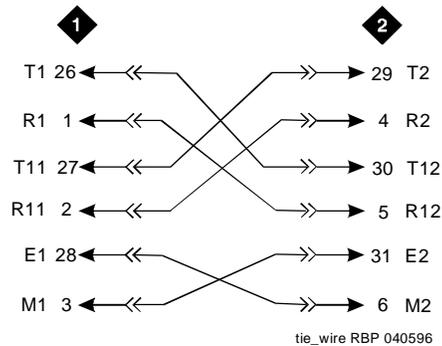
Figure Notes

1. External Trunk or Adapter   2. TN760 Tie Trunk Circuit Pack (Position 1C05)

Figure 4-4. Analog Tie Trunk Wiring

1. Set the option switches on the port circuit pack (TN760) as described in Appendix A, "Option Switch Settings".

2. Install cross-connect jumpers to connect the pins from the tie trunk circuit pack to the appropriate leads on the external tie trunk. Names of the tie trunk leads must be determined from the manufacturer or supplier of the external trunk circuit. The example in Figure 4-4 shows a DEFINITY System tie trunk connected to a DEFINITY System tie trunk.

3. Administer on the Trunk Group Screen of the management terminal. See *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*, for more details.

Digital Tie Trunk Example

This example shows how to connect digital tie trunk wiring from one DEFINITY System to another DEFINITY System. See Figure 4-5.

dig_tie RBP 040596
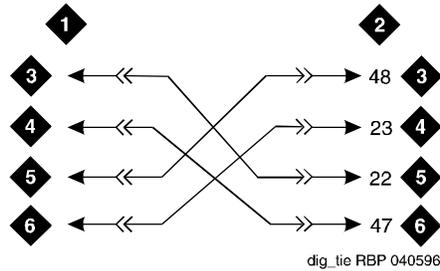
Figure Notes

1. External Trunk

2. TN464F Digital Trunk Circuit Pack, Position 1C06

3. LO

4. LO (Balanced Output Pair)

5. LI

Figure 4-5.   Digital Tie Trunk Wiring

1. Install cross-connect jumpers to connect the pins from the digital trunk circuit pack to appropriate pins on the manufacturer's or supplier's external digital trunk.

2. Set option switches on the port circuit pack (TN464F Digital Trunk) according to Appendix A, "Option Switch Settings".

3. Administer on the DS1 and Trunk Group Screens of the management terminal. See *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*, for more details.

DS1 Tie Trunk Example

Digital Signal Level 1 (DS1) tie trunks provide a 1.544 Mbps (T1) or 2.048 Mbps (E1) digital data service between two collocated systems or between the system and a data network. The following cables can be used:

- **C6C connector cable (comcode 104307327)** — 50-foot (15.2 m) shielded cable equipped with a 50-pin male connector on one end and a 15-pin male connector on the other end. Use this cable to connect a DS1 tie trunk circuit pack to a Channel Service Unit (CSU).

- **C6D connector cable (comcode 104307376)** — 50-foot (15.2 m) shielded cable equipped with a 50-pin male connector on each end. Use this cable to connect a DS1 tie trunks in collocated cabinets.

- **C6E connector cable (comcode 104307434)** — 100-foot (30.5 m) shielded cable equipped with a 50-pin male connector on one end and a 50-pin female connector on the other end. Use this cable as an "extension" cable between the DS1 tie trunk circuit pack and other connector cables.

- **C6F connector cable (comcode 104307475)** — 50-foot (15.2 m) shielded cable equipped with a 50-pin male connector on one end and a three inch (7.62 cm) stub on the other end. Use this cable to connect the DS1 tie trunk circuit pack to channel multiplexers requiring hardwired connections. See Table 4-1 for a pinout of the C6F cable.

Table 4-1.   Pinout of C6F Cable

Wire Color	Lead Designation	Pin Number
White/Green	LI (High Side)	47
Green	LI	22
White/Brown	LO	48
Brown	LO (High Side)	23
White/Slate	LBACK2	49
Slate	LBACK1	24

Collocated DS1 Tie Trunks

Two DS1 tie trunk circuit packs can be in collocated systems. A TN722B DS1 Tie Trunk circuit pack in one system can be connected to a TN722B in another system. A C6D cable can be used if the distance is less than 50 feet (15.24 m). If the distance is greater than 50 feet (15.24 m), use a C6E cable.

⇒ NOTE:
The maximum distance between cabinets is 1310 feet (399.3 m).

DS1 Tie Trunks Using Channel Service Unit

Figure 4-6 shows a DS1 tie trunk connected to a T1 Channel Service Unit (CSU). The CSU interfaces the DS1 tie trunks with the 1.544 Mbps digital facility. Contact your Lucent Technologies representative for maximum cabling distances.
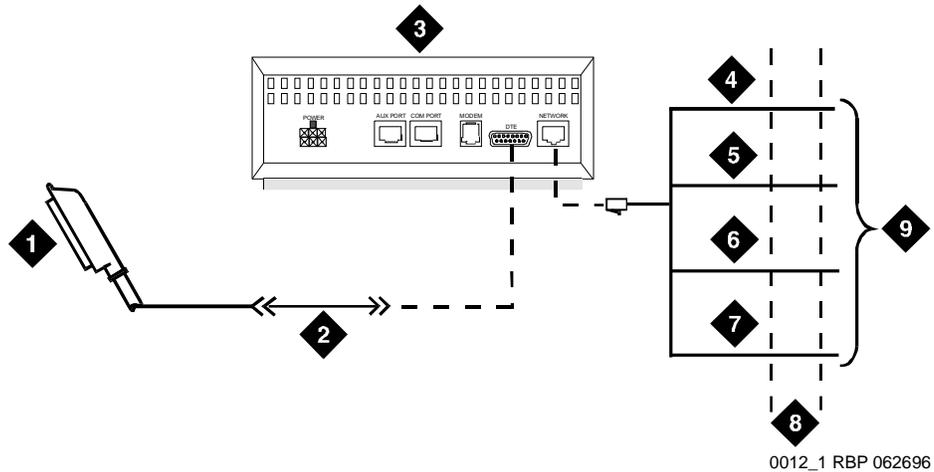
0012_1 RBP 062696

Figure Notes

1. To TN464F or TN767E DS1 Tie Trunk Circuit Pack

2. C6C Cable (For Distances Over 50 Feet (15.24 m), use C6E Cable(s))

3. T1 Channel Service Unit (CSU)

4. T (Tip)

5. R (Ring)

6. T1 (Tip 1)

7. R1 (Ring 1)

8. 1.544 Mbps Digital Service Interface

9. To T1 Carrier

Figure 4-6. Typical Connections to Channel Service Unit

Auxiliary Connector Outputs

The control carrier outputs cable pinouts are shown in Table 4-2. The control carrier **AUX** connector outputs include the following:

- Alarm monitoring for the auxiliary cabinet

- Seven -48 VDC power sources for emergency transfer units

- Three -48 VDC power sources for remotely powering an attendant console or other telephone adjunct

- The remote management terminal interface trunk connection location

- A relay contact actuates a customer-supplied light, bell, or similar device. The relay can activate when a major, minor or warning condition occurs. The pinouts for an external alarm are shown in Table 4-2.

Connect a 25-pair cable from the **AUX** connector to a connecting block on the trunk/auxiliary field.

Table 4-2.   Auxiliary Lead Appearances at AUX Connector

Color [1,2]	Pin Number	AUX Connection Outputs
W-BL BL-W	26 1	Major*
W-O O-W	27 2	Minor*
W-G G-W	28 3	GRD
W-BR BR-W	29 4	GRD
W-S S-W	30 5	GRD
R-BL BL-R	31 6	GRD
R-O O-R	32 7	GRD
R-G G-R	33 8	Not Connected
R-BR BR-R	34 9	Not Connected
R-S S-R	35 10	Not Connected

Continued on next page

Table 4-2.   Auxiliary Lead Appearances at AUX Connector — *Continued*

Color [1,2]	Pin Number	AUX Connection Outputs	
BK-BL BL-BK	36 11	-48 GND	Emergency Transfer Relay Power
BK-O O-BK	37 12	-48 GND	
BK-G G-BK	38 13	-48 GND	
BK-BR BR-BK	39 14	-48 GND	
BK-S S-BK	40 15	-48 GND	
Y-BL BL-Y	41 16	-48 GND	
Y-O O-Y	42 17	-48 GND	
Y-G G-Y	43 18	Not Connected	
Y-BR BR-Y	44 19	-48 GND	AUX Power
Y-S S-Y	45 20	-48 GND	
V-BL BL-V	46 21	-48 GND	
V-O O-V	47 22	Not Connected	
V-G G-V	48 23	Ext Alarm A** Ext Alarm Return	
V-BR BR-V	49 24	Not Connected	
V-S S-V	50 25	INADS Tip INADS Ring	

*   External alarm with signal incoming to system.
**   External alarm with signal outgoing from system.
1   Color designation is the main wire color and the color of the stripe on the wire.
2   The following wire colors apply to Table 4-2:

W	White	BL	Blue
O	Orange	G	Green
BR	Brown	S	Slate (Grey)
R	Red	BK	Black
Y	Yellow	V	Violet

Table 4-3 provides port circuit pack and telephone pin designations.

Table 4-3. Port Circuit Pack and Telephone Pin Designations

Pin on Modular Plug	4-wire; 302C, 8400-Series, 603E, 9403, 9434	2-wire; 302C, 8400-Series, 603E, 9403, 9410, 9434	8510T Basic Rate Interface (BRI) (with adjunct speaker phone)	Analog Station, Modem	NT1	Z3A1 & Z3A2 Asynchronous Data Units (ADU), Data Module
1	TXT					TXT
2	TXR			T		TXR
3	PXT		TXT	R		PXT
4		T	PXR		T	
5		R	PXT	No Connection 4-pin modular jack	R	
6	PXR		TXR			PXR
7	-48VDC	(-48VDC)	(-48VDC)		-48VDC	
8	GRD	GRD	GRD		GRD	
Circuit Pack	TN754 4-wire digital (8 port)	TN2181 2-wire digital (16 port) TN2224 2-wire digital (24 port)	TN556 ISDN-BRI Line	TN2183 Analog line (16 port)	TN2198 2-wire BRI line	TN726 Data Line

PX	PBX transmit	T	Tip (A)
TX	Terminal transmit	R	Ring (B)

Three-Pair and Four-Pair Modularity

Figure 4-7 shows 3-pair and 4-pair modularity from the port circuit pack to the voice or data terminal. Refer to Chapter 2, "Install Telecommunications Cabling" for descriptions of 3- and 4-pair modularity and distribution.

Most terminals connect to an information outlet (modular jack) installed at the work location. Make the connections as shown in Figure 4-7. Figure 4-8 shows three methods of connecting adjunct power.

widf3pm PDH 011397
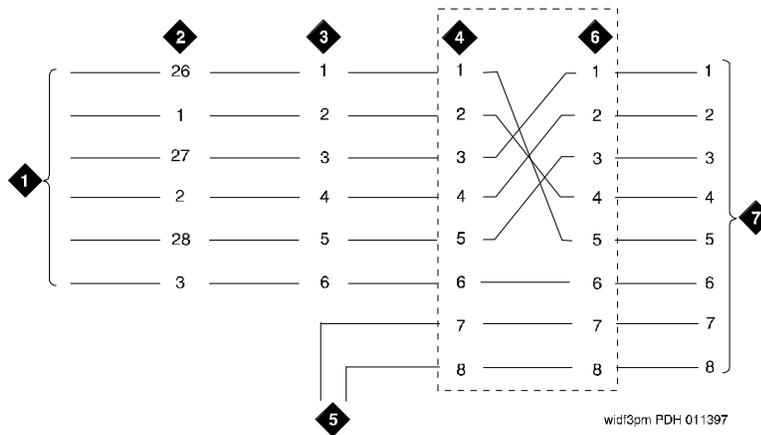
Figure Notes

1. Port Circuit Pack

2. System Cabinet Connector Pins (3-Pair Modularity)

3. Main Distribution Frame (MDF) Pins (3-Pair Modularity)

4. Input to Information Outlet (4-Pair Modularity)

5. Adjunct Power

6. Output From Information Outlet (4-Pair Modularity)

7. Voice or Data Terminal Pins

Figure 4-7.   3-Pair and 4-Pair Modularity

Adjunct Power Connections

Figure 4-8 shows typical connection locations for adjunct power.
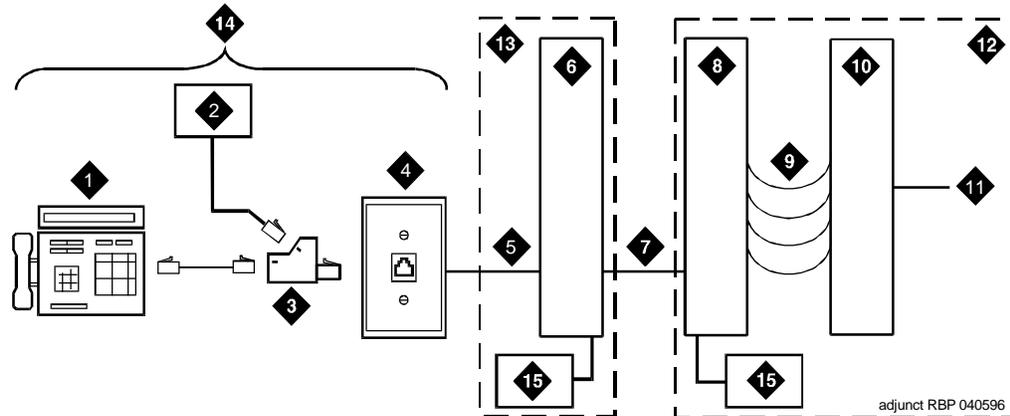
Figure Notes

1. Typical Display Telephone
2. Individual Power Supply (Such as 1151A)
3. 400B2 Adapter
4. Information Outlet (Modular Jack)
5. 4-Pair D-Inside Wire (DIW) Cable
6. Satellite Site or Adapter Location
7. 25-Pair D-Inside Wire (DIW) Cable
8. Station Side of Main Distribution Frame (MDF)
9. 100P6A Patch Cord or Jumpers
10. System Side of Main Distribution Frame (MDF)
11. 25-Pair Cable to System Cabinet (Analog Line Circuit Pack)
12. Equipment Room
13. Satellite Location
14. Work Location
15. Bulk Power Supply (Such as 1145B)

Figure 4-8.   Example Adjunct Power Connections

For Figure 4-8, the following example is used:

   a. If 25 telephones connect to the system and all 25 telephones need adjunct power, install a bulk power supply in the equipment room.

   b. If only ten of the telephones need adjunct power, install a bulk power supply at the satellite location.

   c. If only one telephone needs adjunct power, install the individual power supply at the work location.

Local and Phantom Power

A console's maximum distance from the system is limited. The maximum distance for a 302C console is as shown in Table 4-4.

Table 4-4. Attendant Console Cabling Distances

Enhanced Attendant Console (302C)	24 AWG Wire (0.5106 mm)		26 AWG Wire (0.4049 mm)	
	Feet	Meters	Feet	Meters
With Selector Console				
Phantom powered	800	244	500	152
Locally powered	5000	1524	3400	1037
Without Selector Console				
Phantom powered	1400	427	900	274
Locally powered	5000	1524	3400	1037

Auxiliary Power

The nonessential functions of an attendant console and its optional 26A1 or 24A1 selector console derive power from an auxiliary power source. Only one console can derive auxiliary power from the system and through the auxiliary cable located in the trunk/auxiliary field. Provide auxiliary power for an attendant console through this cable so the console remains fully operational during short power outages.

An attendant console can also derive auxiliary power from:

- Individual 1151A or 1151A2 power supply
- MSP-1 power supply
- 258A-type adapters
- Bulk power supplies such as the 1145A1

A console's maximum distance from its auxiliary power source is:

- 800 feet (244 m) for a 302A1
- 350 feet (107 m) for a 301B1 and 302C

Install Attendant Console
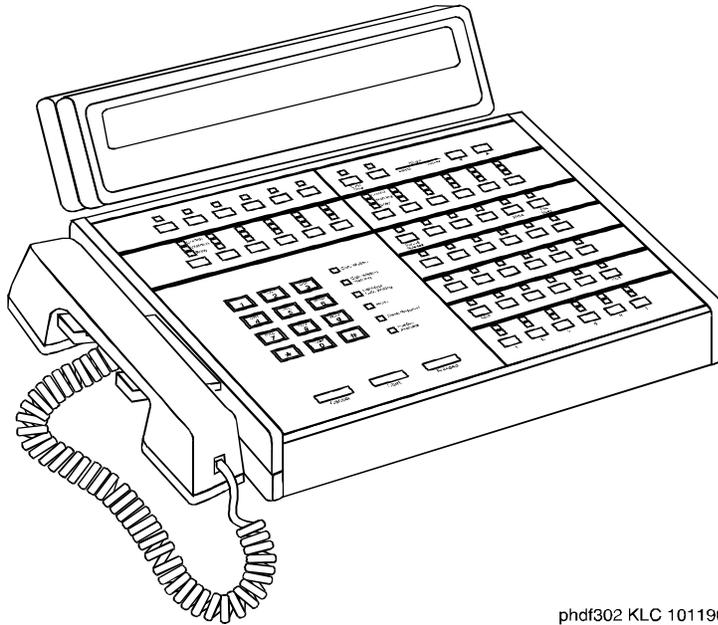
phdf302 KLC 101196

Figure 4-9.   302C Console

1. Install the Attendant Console and connect the modular cord to the information outlet.

2. Install labels per Attendant Console form and Display Module form assignments.

3. Install a TN754B Digital Line circuit pack in the assigned carrier slot (if required).

4. Administer forms listed under Attendant Console in *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*.

Hard-Wire Bridging

Analog type hard-wire bridging is not allowed for four-wire (only) DCP endpoints. This is because hard-wire bridging provides no way of combining the digital output of two bridged DCP sets. Also, a bridged endpoint causes the added load to degrade the fairly wide-spectrum DCP signal.

⚠️ **CAUTION:**
Bridging or paralleling these endpoints can cause electrical damage to the consoles or cause the circuit pack to remove power from the consoles.

Dual Wiring of Two-Wire and Four-Wire Endpoints

Do not simultaneously wire a two-wire and four-wire endpoint to the same equipment location in an MDF, even though they connect to differently colored wire pairs. The system uses separate circuit packs to interface two- and four-wire endpoints, and none are capable of interfacing both.

Install 26B1 Selector Console

1. Connect the supplied 3-foot (0.9 m) D8AC cable to the modular jack on the bottom of the 26B1 Selector Console.

2. Route the cable to the attendant console and connect to the DXS/BLF jack.

3. Attach labels according to the Attendant Console form.

4. Administer the console using *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*.

Connect External Alarm Indicators

The system provides access to a relay contact that can be used to operate a customer-supplied alarm, such as a light or bell. The circuitry and power source are customer-provided. The device connected to the alarm leads must not exceed a rating of more than 100 Volts at 0.75 Amp.

1. Route one major and one minor alarm pair to the trunk/auxiliary field for each carrier **AUX** connector. These pairs are designated *1M* (major) and *1m* (minor) in Table 4-5. Also refer to the tables at the end of this chapter for connector pin numbers to wiring block terminals.

Table 4-5. External Alarm Leads at Main Distribution Frame

Color	110-Type Wiring Block Terminal	Cabinet AUX Connector Outputs
White-Blue	01	1M (Pin 26)
Blue-White	02	Ground (Pin 1)
White-Orange	03	1m (Pin 27)
Orange-White	04	Ground (Pin 2)

Alarms can be generated on adjunct equipment, sent to the DEFINITY System, and recorded and reported as "External Alarms." A typical major alarm input is from pins 14 and 15 of J2 on an Uninterruptible Power Supply (UPS).

2. Connect external alarm inputs from the adjunct equipment through pins 45 and 20 of the wiring block associated with the **AUX** connector.

3. The connection is completed through the 25-pair cable to pins 48 and 23 of the **AUX** connector.

4. Note which device is connected to which alarm and give this information to your Lucent Technologies representative for future troubleshooting purposes.

Install Remote Network Interface

The Remote Network Interface (formerly Initialization and Administration System (INADS)) provides a 9600 bps modem connection for the remote management terminal. The network interface trunk should appear on the twenty-fifth pair of a RJ21X network interface jack. The trunk is a two-way, rotary dial, loop start trunk that connects to a TN731 Maintenance circuit pack, the TN790 Processor circuit pack, or the TN1648 SYSAM circuit pack through the Remote Network Interface terminals at the trunk/auxiliary field. Figure 4-10 shows a typical Remote Network Interface trunk installation.

Remote Network Interface Installation

1. Determine the network interface trunk appearance at the green trunk/auxiliary field.

2. Label the terminals for the trunk appearance.

3. Install jumpers between the trunk appearance and Remote Network Interface terminals.

r758482b MMR 031496
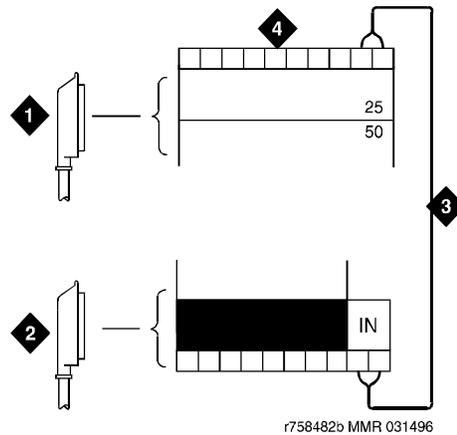
Figure Notes

1. To Network Interface Facility

2. To Control Carrier Auxiliary Connector

3. One Pair of Wires

4. Twenty-fifth Pair of RJ21X Network Interface Jack

Figure 4-10.   Connections at Trunk/Auxiliary Field

Install Off-Premises Station Wiring

The cabling outside the building for off-premises stations is provided by the local telephone company. The off-premises stations can appear on any of the RJ21X network interfaces provided for the Central Office (CO) trunks.

> ⚠ **CAUTION:**
> *Only an FCC-approved (or equivalent) analog type telephone (such as a 2500-type), can be used as an off-premises station. The TN746B and TN2183 Analog Line circuit packs can be connected to off-premises stations.*

1. Install an A25D (male to male) cable between the RJ21X network interface and a sneak fuse panel.

2. At the MDF, connect jumper wires between one row/connecting block in the green field and up to three rows/connecting blocks in the purple field to concentrate the analog line pairs.

3. Connect an A25D cable between the sneak fuse panel and the terminal block connector associated with the green row in Step 2.

4. Install a green label on the terminal block to identify the remote location.

5. Administer per *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*.

Install Off-Premises or Out-of-Building Stations

Out-of-building campus stations are those telephones/voice terminals not physically located in the same building as the equipment room but are located on the same property.

Analog Off-Premises Stations

Figure 4-11 shows the connections for one to eight off-premises analog telephones. Only analog telephones connected to TN742, TN746B, TN2183, or TN769 Analog Line circuit packs can be installed out-of-building.

The maximum distance from the system cabinet to the out-of-building voice terminal is 6000 feet (1828.8 meters) using 24 AWG (#5) (0.5 mm) wire.

crdfobt CJL 101396

Figure Notes

1. Locally Engineered Cables and Equipment

2. Out-of-Building Wiring

3. 25-Pair Connector

4. Multi-Pair Protector Units (Primary Protectors with Heat Coils or Equivalent with Sneak Current Protection)

5. 356A Adapter

6. B25A Cable (Male-to-Female)

7. Out-Of-Building Analog Telephones

8. Part of Main Distribution Frame (MDF)

9. Station Side

10. System Side

11. White Field

12. Purple Field

13. Cross-Connect Jumpers

14. Tip and Ring Wires

15. To TN2183, TN769, TN742, or TN746B Analog Line Circuit Pack

Figure 4-11.   Connections for 1 to 8 Out-of-Building Analog Telephones

Figure 4-12 shows the connections for up to 24 off-premises analog telephones. Concentrations of analog line pairs are used at both buildings to minimize the off-premises wiring required. At the MDF, jumpers must be connected between one row/connecting block in the white field and up to three rows/connecting blocks in the purple field. At the station location, a WP-90929, List 1 Concentrator Cable is used. There are eight station appearances on each of the three fingers of the concentrator cable.
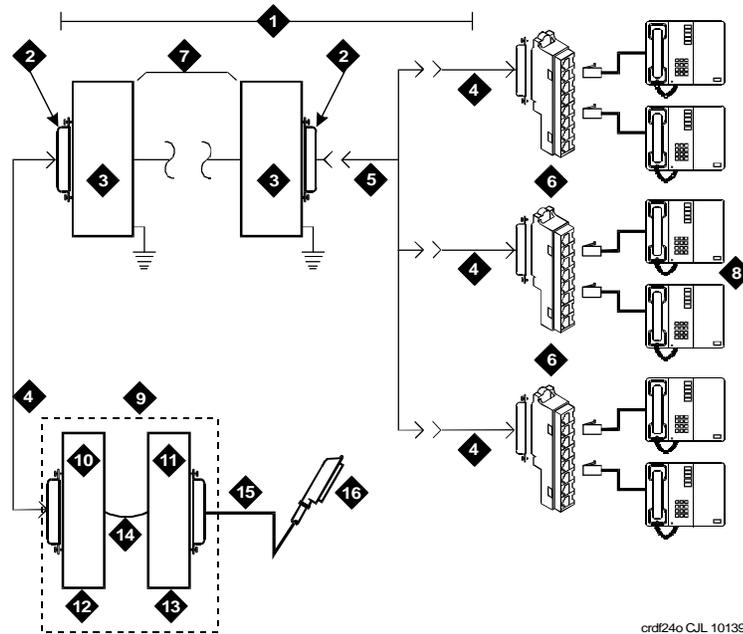
crdf24o CJL 101396

Figure Notes

1. Locally Engineered Cables and Equipment

2. 25-Pair Connector

3. Multi-Pair Protector Units (Primary Protectors with Heat Coils or Equivalent with Sneak Current Protection)

4. B25A Cable (Male to Female)

5. Concentrator Cable (WP90929 List 1)

6. 356A Adapter

7. Out-of-Building Wiring

8. Out-Of-Building Analog Telephones

9. Part of Main Distribution Frame (MDF)

10. Station Side

11. System Side

12. White Field

13. Purple Field

14. Cross-Connect Jumpers

15. Tip and Ring Wires

16. To TN2183, TN769, TN742, or TN746B Analog Line Circuit Pack

Figure 4-12.   Connections to 24 Out-of-Building Telephones

Carbon block, or equivalent protection is required at both building entrances. Also sneak current protection is required. Protection can be provided by a 4-type protector or a 3-type protector plus a separate sneak current protector. The 4-type protector is equipped with a heat coil.

The 4-type protector is the preferred device. For installations not using primary protection, 4-type protectors should always be used. When the 3-type protector is already installed, a separate sneak current protector is required. The multi-pair protector units and the off-premises cabling must be locally engineered. Connectorized multi-pair protector units (female 25-pair connector) are recommended. Order the protectors from the *Premises Distribution Systems Equipment and Supplies Catalog*. Table 4-6 shows the recommended protectors.

Table 4-6.   Analog Line Circuit Protectors

Protectors		
Primary[1]	**Primary (with heat coil)**	**Sneak Current Protectors[1]**
3B1A (carbon)	4B1C (carbon)	220029 Fuse
3B1E-W (wide gap gas tube)	4B1E-W (wide gap gas tube)	SCP-1
3C1S (solid state)	4C1S (solid state)	

1.   The 3-type protectors should only be used if they are already part of the existing protection system. A sneak current protector is always required when a 3-type primary protector is used

The maximum range of out-of-building analog telephones (500-, 2500-, or 7100-types) connected to an analog line circuit pack should be such that the maximum loop resistance does not exceed 1300 Ohms.

The following voice terminals cannot be installed in an exposed environment:

- 7300-type voice terminals connected to TN762 Hybrid Line circuit packs

- Multi-button Electronic Telephone (MET) sets connected to TN735 Multi-button Electronic Telephone (MET) Line circuit packs

- Analog telephones connected to TN746 Analog Line circuit packs

The following table details the protector ordering information.

Description	Comcode
3B1A (Carbon Block)	102381779
3B1E-W (Wide Gap Gas Tube)	104410147
3C1S (Solid State)	105514756
4B1C (Carbon Block with Heat Coil)	102904893
4B1E-W (Wide Gap Gas Tube w/Heat Coil)	104401856
4C1S (Solid State with Heat Coil)	104386545
SCP-110 Sneak Current Protector	406948976
220029 Fuse (sneak current protector)	407216316

Digital Out-of-Building Voice Terminals

Protection is required at both building entrances for digital out-of-building voice terminals. There are two different types of protectors that can be used to protect digital voice terminals and digital line circuit packs. The two protectors to use are the 4C3S-75 Enhanced protector and the ITW Linx Enhanced Protector. These units provide primary and sneak current protection. The 4C3S-75 is equipped with a heat coil for sneak current protection. The ITW Linx is equipped with replaceable fuses for sneak current protection.

The 4C3S-75 may only be used with Vintage 14 or newer TN754 circuit packs. The 4C3S-75 can be used on all vintages of the TN754B circuit packs. The ITW Linx may be used on all vintages of the TN754 and TN754B circuit packs. Table 4-7 lists the approved protectors.

$\Rightarrow$ **NOTE:**
The TN2181 16 Port Two-Wire Digital Line circuit pack may not be approved for some out-of-building uses. Contact your Lucent Technologies representative for more information.

Table 4-7. Digital Voice Circuit Protectors

Circuit Pack	Enhanced Primary Protector (With Sneak Current Protection)
TN754 V13 or earlier	ITW Linx Only
TN754 V14 or later	4C3S-75 or ITW Linx
TN754B all vintages	4C3S-75 or ITW Linx

When possible, all new and reused wiring installations should use blocks that accept the standard 5-pin plug-in 4C3S-75 protector. However, there are reused wiring installations where this may not be cost effective. For these installations, the ITW Linx protector may be installed. An example of this is where screw-type carbon block protectors (or other non plug-compatible types) are in place and it is too costly to re-terminate the outside plant cable on a 5-pin mounting block for only a few out-of-building terminals.

The ITW Linx Enhanced Protector may be installed in series with existing primary protection. Note the 4C3S-75 protector cannot be installed in series with other types of primary protection. It must be installed as the only protection on the line entering the building. For the 4C3S-75 protector there are a variety of 25-, 50-, and 100-pair protector panels equipped with 110-type connecting blocks and/or RJ21X connectors. The ITW Linx Enhanced Protector mounts directly on connecting blocks and requires a separate ground bar.

The maximum range for out-of-building digital voice terminals is 3400 feet (1036 m) when using 24 AWG (#5) (0.5 mm) wire and 2200 feet (670 m) when using 26 AWG (#4) (0.4 mm) wire. The range can be extended to 5000 feet (1524 m) using 24 AWG (#5) (0.5 mm) wire or 4000 feet (1219 m) using 26 AWG (#4) (0.4 mm) wire with the use of a data link protector. The protector is an isolating transformer used to remove phantom power on the system side and re-introduce it on the terminal side.

When a protector is used, the voice terminal must be locally powered by an external power supply or through the AC power cord provided with some of the 7400-type voice terminals. The protector is installed on the equipment side of the protection in both buildings.

Protector and Data Link Protector Ordering Information

Description	Comcode
4C3S-75 (Solid State with Heat Coil)	105581086
ITW LINX (Gas Tube, Avalanche Suppress)	406144907
ITW Linx Ground Bar (used with above)	901007120
ITW Linx Replacement Fuse	406304816
Data Link Protector (one circuit)	103972758
Data Link Protector (eight circuits)	103972733

Refer to Figure 4-8 and Figure 4-10.

Install Emergency Transfer Units and Associated Telephones

Emergency transfer capability is provided by a transfer unit mounted next to the trunk/auxiliary field. Analog telephones connected to the transfer panel can be used. The 500-and 2500-type telephones can also be used as normal extensions. Emergency transfer capability may be provided on analog Central Office (CO) and Wide Area Telecommunications Service (WATS) trunks.

The 808A Emergency Transfer Panel provides emergency trunk bypass or power-fail transfer for up to five incoming Central Office (CO) trunk loops to five selected station sets. The 808A equipment's Ringer Equivalency Number (REN) is 1.0 Amp.

At the Main Distribution Frame (MDF), the unit is controlled by a connection to a yellow terminal row/connecting block in the trunk/auxiliary field. The unit is controlled by -48 VDC from the **EM TRANS RELAY PWR** terminals. There are seven **EM TRANS RELAY PWR** terminal pairs that allow powering of up to seven transfer units.

Should power be restored to the relays while a call connected through the 808A is in progress, the 808A maintains the connection until the user goes on-hook. Each 808A can handle up to five Central Office (CO) trunks.

Install the 808A Emergency Transfer Panel

Figure 4-13 shows a typical 808A Emergency Transfer Panel. The 808A is connected to the MDF with B25A or A25B cable.

The following procedures are provided as a typical installation example.
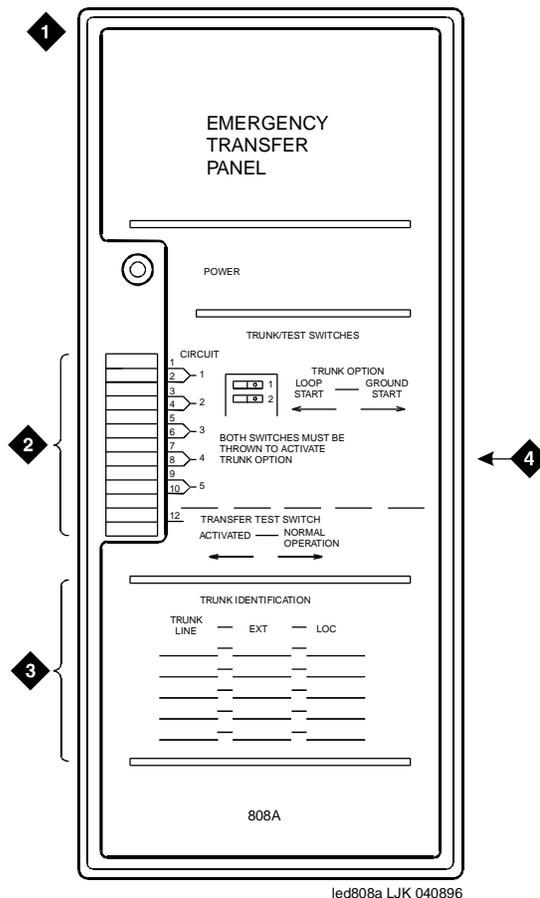
led808a LJK 040896

Figure Notes

1. 808A Emergency Transfer Panel
2. Circuit Start Selection Switches
3. Trunk Identification Label
4. 25-Pair Male Connector

Figure 4-13.   808A Emergency Transfer Panel

The panel can be installed on any mounting frame in either a vertical or horizontal
position. The housing has ears for screw-mounting and cutouts for snap-
mounting the unit in an 89-type mounting bracket. See Figure 4-14.

808a_em LJK 042396

Figure Notes
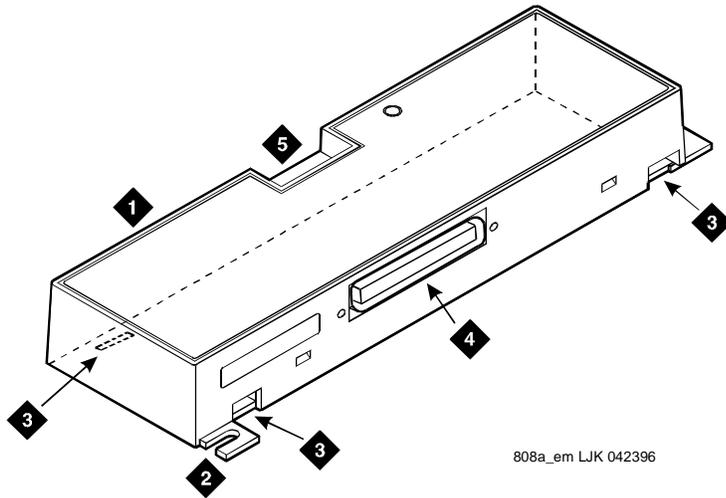
1. 808A Emergency Transfer Panel

2. Ear for Screw Mount

3. Cut-Out for Snap Mount

4. 25-Pair Male Connector

5. Circuit Start Switches

Figure 4-14. 808A Emergency Transfer Panel Mounting

➡ NOTE:

The 808A must be installed in a location that can be accessed only by
authorized personnel. The location must meet standard environmental
considerations such as temperature, humidity, and so forth.

1. Verify dial tone is present at each trunk circuit.

2. Locate the circuit start selection switches (see Figure 4-13). These are the
first 10 two-position switches on the left side of the Emergency Transfer
Panel. They are used to set each of the five incoming trunk lines to either
loop start or ground start. Two switches are used for each circuit; switches
1 and 2 are used for circuit 1, switches 3 and 4 are used for circuit 2, and
so forth. See Table 4-8. For loop start, set the switches to the **left**. For
ground start, set the switches to the **right.**

Table 4-8. Trunk/Test Switches

Switch Number	Circuit Number
1	1
2	1
3	2
4	2
5	3
6	3
7	4
8	4
9	5
10	5
11	Not Used
12	Test Switch

3. Connect a 25-pair cable between the male RJ21 25-pair connector on the Emergency Transfer Panel and the yellow field of the MDF. Table 4-9 shows the pinouts.

4. Make cross-connections for each emergency trunk/emergency station pair. See Figure 4-15 and Figure 4-16.

Table 4-9. Pin Assignments for 25-Pair Connector

Pin	Color	Designation	Connector/Description
26	W-BL	TTC1	Tip-PBX Trunk Circuit 1
1	BL-W	RTC1	Ring-PBX Trunk Circuit 1
27	W-O	TTK1	Tip-CO Trunk Circuit 1
2	O-W	RTK1	Ring-CO Trunk Circuit 1
28	W-G	TLC1	Tip-PBX Line Port 1
3	G-W	RLC1	Ring-PBX Line Port 1
29	W-BR	TST1	Tip-Emergency Terminal 1
4	BR-W	RST1	Ring-Emergency Terminal 1

Table 4-9. Pin Assignments for 25-Pair Connector — *Continued*

Pin	Color	Designation	Connector/Description
30	W-S	TTC2	Tip-PBX Trunk Circuit 2
5	S-W	RTC2	Ring-PBX Trunk Circuit 2
31	R-BL	TTK2	Tip-CO Trunk Circuit 2
6	BL-R	RTK2	Ring-CO Trunk Circuit 2
32	R-O	TLC2	Tip-PBX Line Port 2
7	O-R	RLC2	Ring-PBX Line Port 2
33	R-G	TST2	Tip-Emergency Terminal 2
8	G-R	RST2	Ring-Emergency Terminal 2
34	R-BR	TTC3	Tip-PBX Trunk Circuit 3
9	BR-R	RTC3	Ring-PBX Trunk Circuit 3
35	R-S	TTK3	Tip-CO Trunk Circuit 3
10	S-R	RTK3	Ring-CO Line Port 3
36	BK-BL	TLC3	Tip-PBX Line Port 3
11	BL-BK	RLC3	Ring-PBX Line Port 3
37	BK-O	TST3	Tip-Emergency Terminal 3
12	O-BK	RST3	Ring-Emergency Terminal 3
38	BK-G	TTC4	Tip-PBX Trunk Circuit 4
13	G-BK	RTC4	Ring-PBX Trunk Circuit 4
39	BK-BR	TTK4	Tip-CO Trunk Circuit 4
14	BR-BK	RTK4	Ring-CO Trunk Circuit 4
40	BK-S	TLC4	Tip-PBX Line Port 4
15	S-BK	RLC4	Ring-PBX Line Port 4
41	Y-BL	TST4	Tip-Emergency Terminal 4
16	BL-Y	RST4	Ring-Emergency Terminal 4
42	Y-O	TTC5	Tip-PBX Trunk Circuit 5
17	O-Y	RTC5	Ring-PBX Trunk Circuit 5
43	Y-G	TTK5	Tip-CO Trunk Circuit 5
18	G-Y	RTK5	Ring-CO Trunk Circuit 5
44	Y-BR	TLC5	Tip-PBX Line Port 5
19	BR-Y	RLC5	Ring-PBX Line Port 5

Table 4-9.   Pin Assignments for 25-Pair Connector — *Continued*

Pin	Color	Designation	Connector/Description
45	Y-S	TST5	Tip-Emergency Terminal 5
20	S-Y	RST5	Ring-Emergency Terminal 5
46	V-BL	COM1	Common 1 Relay Contact
21	BL-V	NO1	Normally Open 1 Contact
47	V-O	NC2	Normally Closed 2 Contact
22	O-V	NC1	Normally Closed 1 Contact
48	V-G	COM2	Common 2 Relay Contact
23	G-V	NO2	Normally Open 2 Contact
49	V-BR		
24	BR-V		
50	V-S	GRD	Ground From PBX
25	S-V	-48PX	-48V from Alarm Panel (AUX Cable)

5. On the trunk identification label at the bottom of the panel, record the trunk line, extension, and location for each circuit.

6. To each voice terminal designated as an emergency terminal, attach a label identifying it as such. The labels are provided with the unit.

7. Check the system for normal operation as follows:

   — Place the test switch (switch 12) in NORMAL OPERATION.

   — Ensure the power supply is providing -48 VDC at 80 mA maximum. The power LED should be ON.

   — Check wiring connections.

   — Verify there is dial tone on all emergency transfer sets.

   If all of the above conditions are not met, remove the panel from service and replace it with a new panel.

8. Check the system for transfer operation as follows:

   — Place the test switch (switch 12) in the ACTIVATED position.

   — The power LED should be OFF.

   — Verify there is dial tone on all emergency transfer sets.

   If all of the above conditions are not met, remove the panel from service and replace it with a new panel.

The 808A is connected to the MDF by means of a B25A cable. Figure 4-15 shows
the connections at the trunk/auxiliary field for a telephone used only for
emergency transfer.
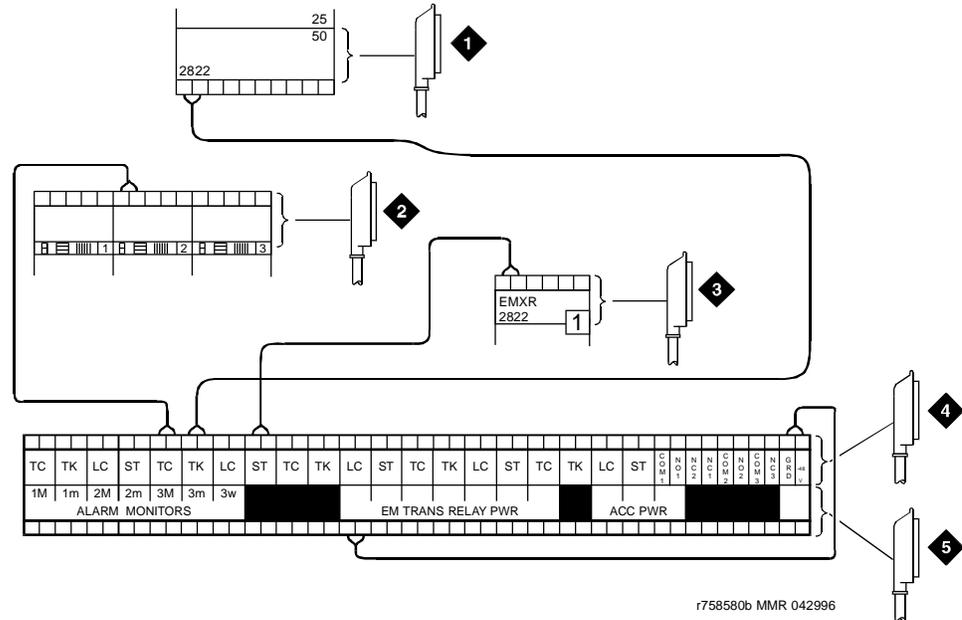
r758580b MMR 042996

Figure Notes

1. To Network Interface Circuitry

2. To TN747B (or Equivalent) Central Office Trunk Circuit Pack

3. To Blue or White Station Distribution Field

4. To Power Transfer Unit

5. To Control Carrier Auxiliary Connector

Figure 4-15.   Connections for Telephone Used for Emergency Transfer

Figure 4-16 shows the connections at the trunk/auxiliary field for a telephone used for emergency transfer as well as a normal extension.

r758582b MMR 042996
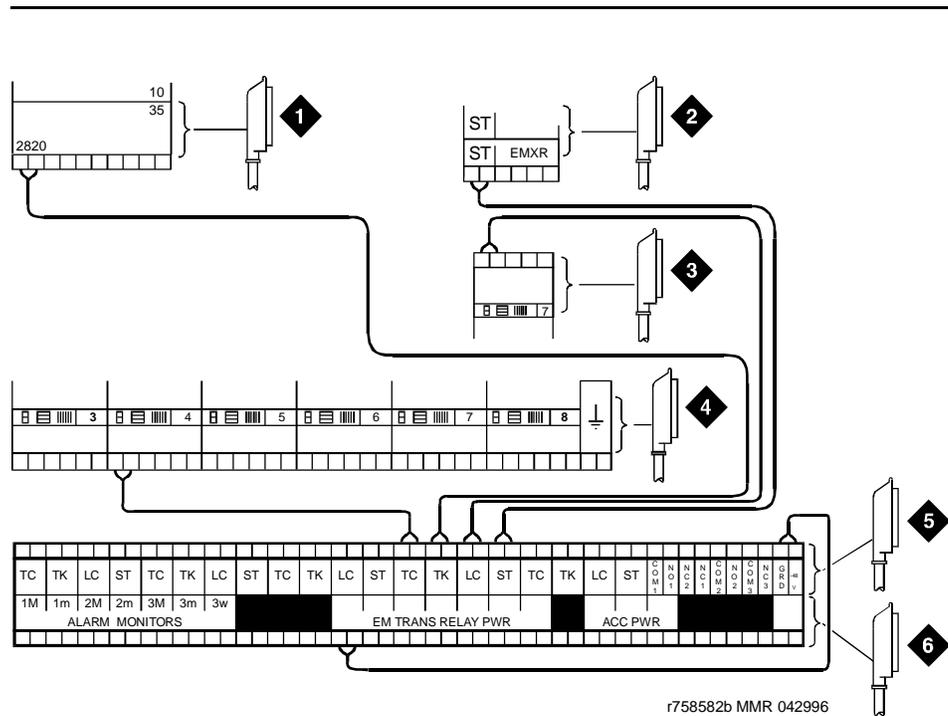
Figure Notes

1. To Network Interface Facility

2. To Blue or White Station Distribution Field

3. To TN2183 or Equivalent Analog Line Circuit Pack

4. To TN747B (or Equivalent) Central Office Trunk Circuit Pack

5. To Power Transfer Unit

6. To Control Carrier AUX Connector

Figure 4-16.   Connections for Telephone Used for Emergency Transfer and as Normal Extension

Install Telephone for Power Transfer Unit

Trunk/Auxiliary Field: Telephone Used Only for Emergency Transfer

1. Connect a pair of wires between the **-48V** and **GRD** terminals on the yellow emergency transfer row/connecting block and the **EM TRANS RELAY PWR** terminal. See Figure 4-15.

2. Connect Central Office (CO) trunk leads from the purple field to **TC** terminals on the yellow emergency transfer row/connecting block for each trunk.

3. Connect CO trunk leads from the green field to **TK** terminals on the yellow emergency transfer row/connecting block for each trunk.

4. Connect **ST** leads on the yellow emergency transfer row/connecting block for each emergency transfer telephone to the **ST** terminal appearance in the yellow trunk/auxiliary field. The **ST** terminal leads should be terminated on the following pairs: 1, 4, 7, 10, 13, 16, 19, or 22 (the first pair of any 3-pair group).

5. Connect the **ST** leads from the terminal in Step 4 to the assigned terminal in the blue or white station distribution field.

Trunk/Auxiliary Field: Telephone Used for Emergency Transfer and as Normal Extension

1. Connect a pair of wires between the **-48V** and **GRD** terminals on the yellow emergency transfer row/connecting block to the **EM TRANS RELAY PWR** terminal. See Figure 4-16.

2. Connect CO trunk leads from the purple field to **TC** terminals on the yellow emergency transfer row/connecting block for each trunk.

3. Connect CO trunk leads from the green field to **TK** terminals on the yellow emergency transfer row/connecting block for each trunk.

4. Connect telephone leads from the purple analog line board row/connecting block to the **LC** terminals on the yellow emergency transfer row/connecting block for each telephone.

5. Connect **ST** leads on the yellow emergency transfer row/connecting block for each emergency transfer telephone to the **ST** terminal appearance in the purple trunk/auxiliary field.

6. Connect the **ST** leads from the terminal in Step 5 to the assigned terminal in the blue or white station distribution field.

Telephone Installation

1. Connect telephone to the information outlet.

2. Install patch cords/jumper wires between the system side and the station side of the station distribution field on the MDF.

Install the BRI Terminating Resistor

The resistors balance the cable plant between the receiver and the transmitter on the interface. When using the TN2198 ISDN-BRI 2-Wire U Interface circuit pack, an NT1 is required. A terminating resistor is always required near the terminal when the BRI S-type interface circuit pack (TN556 BRI 4-Wire S-NT Line circuit pack) is used (see *#5ESS Switch Integrated Services Digital Network Customer Premises Planning Guide* Issue 7, 533-700-100).

The resistor is built into the NT1 and can be one of three values, depending on the configuration and the distance from the NT1 to the ISDN terminal. The resistor value is controlled from the NT1. A terminating resistor adapter may be needed near the terminal and can be placed in the satellite closet or work location.

⇒ **NOTE:**
The 440A4 terminating resistor and 110RA1-12 terminating resistor block are UL listed. Most new installations are the 110RA1-12 terminating resistor block. The following installation instructions should be observed.

- Never install telephone wiring during a lightning storm

- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations

- Never touch uninsulated wires or terminals unless the telephone line has been disconnected at the network interface

- Use caution when installing or modifying telephone lines

Terminating Resistor Adapter

Figure 4-17 shows an 8-pin 440A4 terminating resistor adapter. The adapter is three inches long with an 8-wide plug at one end, a short cord, and an 8-wide jack at the opposite end.
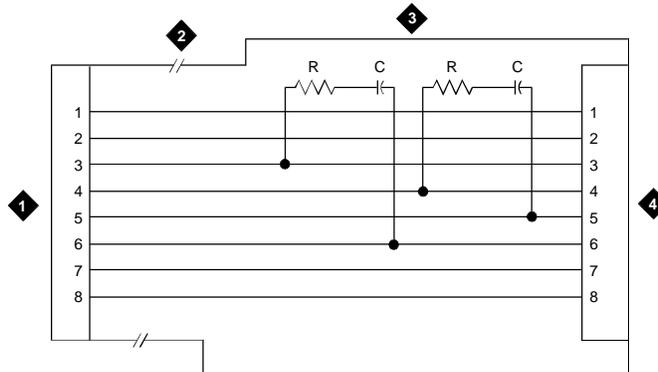
Figure Notes

1. 8-Wide Plug

2. Cord

3. Plastic Housing

4. 8-Wide Jack

Figure 4-17.   8-Wide Terminating Resistor Adapter (440A4)

Closet Mounted (110RA1-12)

The 110RA1-12 terminating resistor block is designed to mount in the telecommunications wire closet. It consists of twelve 2-pair circuits and provides the 100 Ohm termination used for ISDN-BRI circuits.

Figure 4-18 shows the wiring of the 110RA1-12. Three rows of 110D-4 connector blocks are mounted on a printed wire board along with circuit resistors and capacitors. The bottom row is designated as the input row and the top and middle rows are designated as the output rows. The circuit assembly is mounted on a standard 110A-100 pair mounting base. The 110RA1-12 is shipped with designation strips to simplify circuit identification and installation.
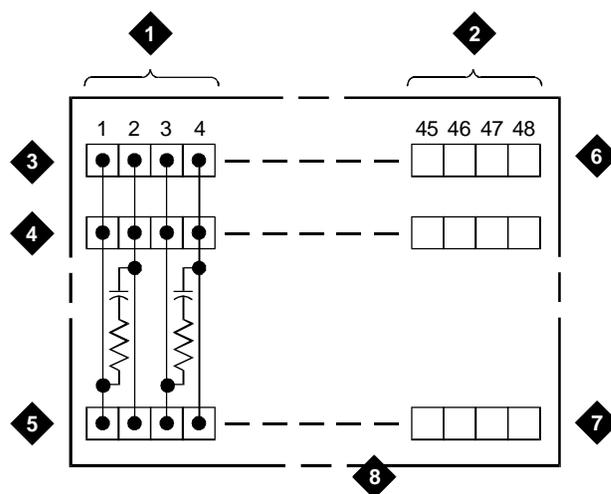
Figure Notes

1. Circuit 1

2. Circuit 12

3. Output Row "A"

4. Output Row "B"

5. Input Row "C"

6. Only First Circuit Shown to All 12 Circuits (2APR) Per Block

7. 110D-4 Connector Block

8. Printed Circuit Board Mounted on Standard 110A or 100APR Block

Figure 4-18.   Terminating Resistor Block (110RA1-12)

Figure 4-19 shows the wiring connections for the 110RA1-12 terminal block. The TN556 BRI switch port is terminated to bottom row C.
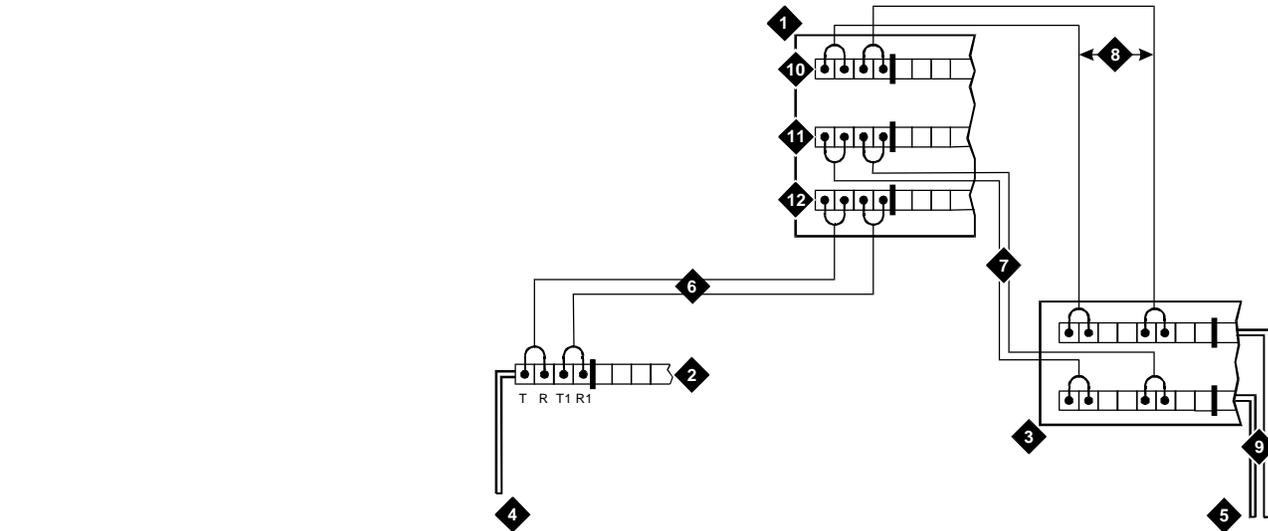
Figure Notes

1. Part of Terminating Resistor Block

2. White or Purple Field

3. Part of 4-Pair Blue Field

4. From ISDN T-interface Circuit (2-Pair)

5. To ISDN S/T-interface Terminals

6. 2-Pair Cross-Connect

7. Basic Multi-point Option

8. 2-Pair Cross-Connect

9. 4-Pair Horizontal Cables

10. Row "A"

11. Row "B"

12. Row "C"

Figure 4-19. Typical Installation of Terminating Resistor Block

For point-to-point wiring, the top row is connected to the blue station field. The pair connects from the 110RA1-12 to the standard 4-pair circuit. Pair 1 from the 110RA1-12 is connected to Pair 1 of the station field, and Pair 2 is connected to Pair 3 of the station field.

Two terminal basic multi-point applications are accommodated by connecting row B (output) to the second terminal common to the multi-point circuit.

Install Multi-point Adapters

Multi-point adapters are used to provide signal fanout of the T-interface. Fanout can be performed at the work station by the BR851-B or the 367A. These adapters support more than one ISDN terminal per horizontal 4-pair D-inside wire (DIW). To support multiple horizontal runs, fanout must be performed in the satellite closet by a MDF with multiple common rows. The 110RA1-12 provides fanout for two horizontal runs and contains the 100 Ohm terminating resistor. This can be used for basic multi-point or point-to-point with terminating resistor in the closet. Other fanout blocks include the 110AB1-025M and the 110AB1-050M.

BR851-B Adapter (T-Adapter)

The BR851-B supports two terminals on one multi-point BRI at the work station. It is a T-shaped device used to fanout transmission and power. The BR851-B is an 8-pin device with a single plug and two jacks. See Figure 4-20.
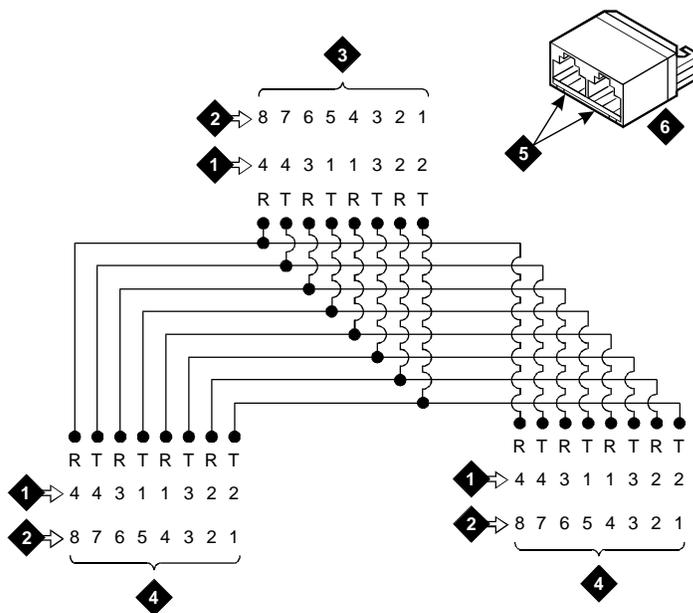
Figure Notes

1. Wire Pairs
2. Pin Numbers
3. Modular Plug (Male)
4. Female Connectors
5. Two 8-pin Modular Jacks
6. T-Type Adapter

Figure 4-20.   Wiring Diagram of BR851-B

367A Adapter

The 367A adapter provides fanout. See Figure 4-21. It can provide inputs to up to seven terminals. The 367A is an 8-conductor adapter and can be is used at the work location for bridging three to seven terminals.
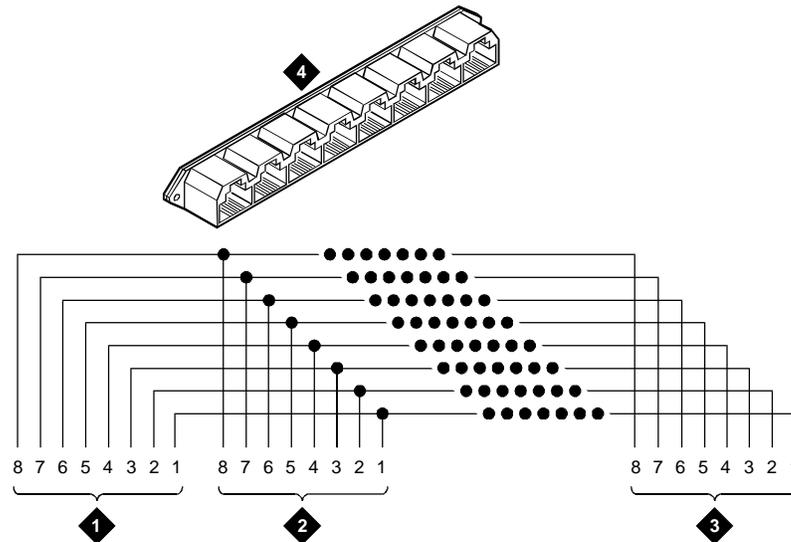
Figure Notes

1. Jack 1

2. Jack 2

3. Jack 8

4. 367A Adapter

Figure 4-21.   Wiring Diagram of 367A Adapter

Basic Multi-point Installation Distances

Figure 4-22 provides cabling information for fan-out of ISDN-BRI multi-point installations. In Figure 4-22, the terminating resistor is located in the satellite closet. All distances assume 24 AWG (#5) (0.5 mm) D-Inside Wire (DIW).
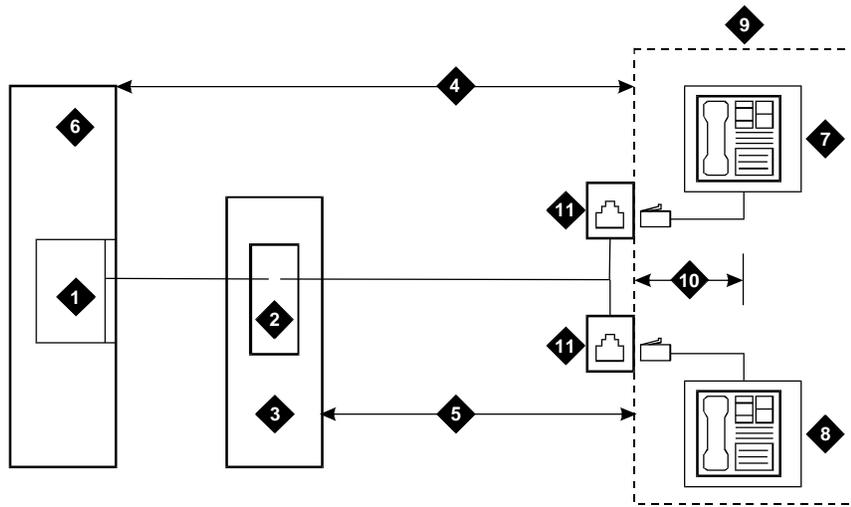
inst_dis CJL 030796

Figure Notes

1. S-Interface Source (TN556/B)
2. Terminating Resistor
3. Satellite Closet
4. Maximum Distance from S-Interface Source to Work Location (1600 Feet) (488 m)
5. Maximum Distance From Satellite Closet to Work Location (250 Feet) (76 m)
6. System Cabinet
7. Terminating Endpoint 1
8. Terminating Endpoint 2
9. Work Location
10. Maximum Distance from Information Outlet to Terminating Endpoint (33 Feet) (10 m)
11. Information Outlet

Figure 4-22.   Basic Multi-point with One Work Location

Multimedia Call Handling (MMCH)
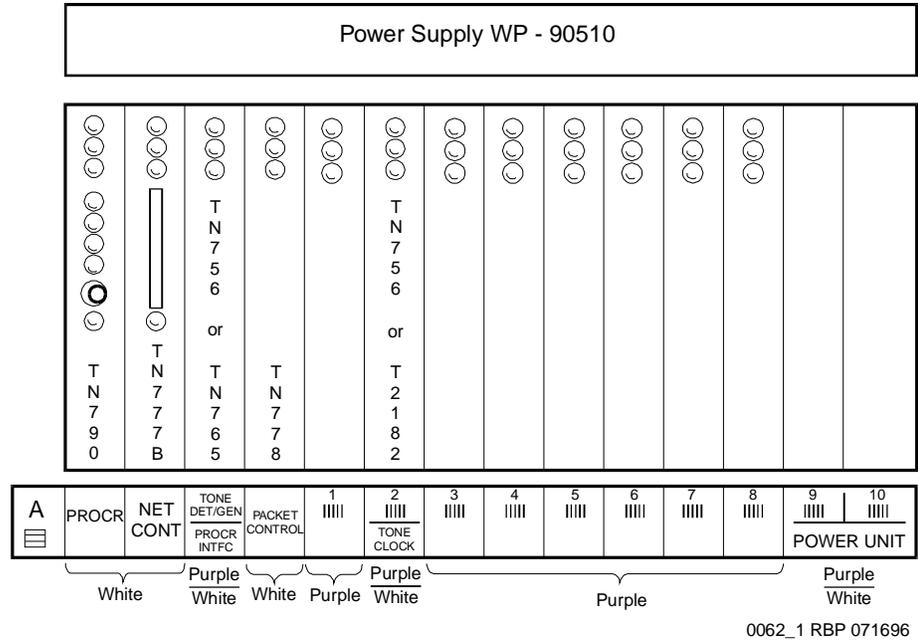
Figure 4-23. Typical Multimedia Call Handling Installation

1. Install a 4 TN787F (or later) Multimedia Interface circuit pack into any available purple port slot. See Figure 4-23.

2. Install a TN788/B (or later) Multimedia Voice Conditioner circuit pack into any available port slot.

3. Refer to *DEFINITY Enterprise Communications Server Release 5 Installation of Adjuncts and Peripherals* to install and test the multimedia endpoints.

Connector and Cable Diagrams (Pinout Charts)

See Table 4-10 for lead designations. The circuit packs and auxiliary equipment are classified as shown in the tables at the end of this chapter.

Table 4-10.   Lead and Color Designations

Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
1	W-BL	26	102
2	BL-W	01	002
3	W-O	27	103
4	O-W	02	003
5	W-G	28	104
6	G-W	03	004
7	W-BR	29	105
8	BR-W	04	005
9	W-SL	30	106
10	SL-W	05	006
11	R-BL	31	107
12	BL-R	06	007
13	R-O	32	108
14	O-R	07	008
15	R-G	33	109
16	G-R	08	009
17	R-BR	34	110
18	BR-R	09	010
19	R-SL	35	111
20	SL-R	10	011
21	BK-BL	36	112
22	BL-BK	11	012
23	BK-O	37	113
24	O-BK	12	013

Continued on next page

Table 4-10.   Lead and Color Designations — *Continued*

Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
25	BK-G	38	302
26	G-BK	13	202
27	BK-BR	39	303
28	BR-BK	14	203
29	BK-SL	40	304
30	SL-BK	15	204
31	Y-BL	41	305
32	BL-Y	16	205
33	Y-O	42	306
34	O-Y	17	206
35	Y-G	43	307
36	G-Y	18	207
37	Y-BR	44	308
38	BR-Y	19	208
39	Y-SL	45	309
40	SL-Y	20	209
41	V-BL	46	310
42	BL-V	21	210
43	V-O	47	311
44	O-V	22	211
45	V-G	48	312
46	G-V	23	212
47	V-BR	49	313
48	BR-V	24	213
49	V-SL	50	300
50	SL-V	25	200

Table 4-11.   Port Circuit Pack Lead Designations

Cross-Connect Pin	TN742/B TN747B TN753 TN769 TN2147	TN754 TN726	TN760/B TN760C TN760D	TN762/B	TN763 TN763B TN763C	TN735	TN767B TN722/B TN464C	TN746/B TN2183	TN2224
1	T.1		T.1	T.1	T.1	T.1		T.1	T.1
2	R.1		R.1	R.1	R.1	R.1		R.1	R.1
3		TXT.1	T1.1	TXT.1	SZ.1	BT.1	GRD	T.2	T.2
4		TXR.1	R1.1	TXR.1	SZ1.1	BR.1	GRD	R.2	R.2
5		PXT.1	E.1	PXT.1	S.1	LT.1	GRD	T.3	T.3
6		PXR.1	M.1	PXR.1	S1.1	LR.1	GRD	R.3	R.3
7	T.2		T.2	T.2	T.2	T.2		T.4	T.4
8	R.2		R.2	R.2	R.2	R.2	GRD	R.4	R.4
9		TXT.2	T1.2	TXT.2	SZ.2	BT.2			T.5
10		TXR.2	R1.2	TXR.2	SZ1.2	BR.2	GRD		R.5
11		PXT.2	E.2	PXT.2	S.2	LT.2	GRD		T.6
12		PXR.2	M.2	PXR.2	S1.2	LR.2	GRD		R.6
13	T.3		T.3	T.3	T.3	T.3			T.7
14	R.3		R.3	R.3	R.3	R.3			R.7
15		TXT.3	T1.3	TXT.3	SZ.3	BT.3			T.8
16		TXR.3	R1.3	TXR.3	SZ1.3	BR.3	GRD		R.8
17		PXT.3	E.3	PXT.3	S.3	LT.3	GRD	T.5	T.9
18		PXR.3	M.3	PXR.3	S1.3	LR.3	GRD	R.5	R.9
19	T.4		T.4	T.4	T.4	T.4		T.6	T.10
20	R.4		R.4	R.4	R.4	R.4	GRD	R.6	R.10
21		TXT.4	T1.4	TXT.4	SZ.4	BT.4		T.7	T.11
22		TXR.4	R1.4	TXR.4	SZ1.4	BR.4	GRD	R.7	R.11
23		PXT.4	E.4	PXT.4	S.4	LT.4	+5	T.8	T.12
24		PXR.4	M.4	PX4.4	S1.4	LR.4	+5	R.8	R.12
25	T.5		T.5	T.5	T.5	T.5		T.9	T.13
26	R.5		R.5	R.5	R.5	R.5		R.9	R.13
27		TXT.5	T1.5	TXT.5	SZ.5	BT.5	GRD	T.10	T.14
28		TXR.5	R1.5	TXR.5	SZ1.5	BR.5	GRD	R.10	R.14
29		PXT.5	E.5	PXT.5	S.5	LT.5	GRD	T.11	T.15
30		PXR.5	M.5	PXR.5	S1.5	LR.5		R.11	R.15
31	T.6		T.6	T.6	T.6	T.6	LBACK1	T.12	T.16
32	R.6		R.6	R.6	R.6	R.6	LBACK2	R.12	R.16
33		TXT.6	T1.6	TXT.6	SZ.6	BT.6	GRD		T.17
34		TXR.6	R1.6	TXR.6	SZ1.6	BR.6	GRD		R.17
35		PXT.6	E.6	PXT.6	S.6	LT.6	GRD		T.18
36		PXR.6	M.6	PXR.6	S1.6	LR.6	GRD		R.18

Continued on next page

Table 4-11. Port Circuit Pack Lead Designations — *Continued*

Cross-Connect Pin	TN742/B TN747B TN753 TN769 TN2147	TN754 TN726	TN760/B TN760C TN760D	TN762/B	TN763 TN763B TN763C	TN735	TN767B TN722/B TN464C	TN746/B TN2183	TN2224
37	T.7		T.7	T.7	T.7	T.7	LO		T.19
38	R.7		R.7	R.7	R.7	R.7	LO*		R.19
39		TXT.7	T1.7	TXT.7	SZ.7	BT.7	GRD		T.20
40		TXR.7	R1.7	TXR.7	SZ1.7	BR.7	GRD		R.20
41		PXT.7	E.7	PXT.7	S.7	LT.7	GRD	T.13	T.21
42		PXR.7	M.7	PXR.7	S1.7	LR.7		R.13	R.21
43	T.8		T.8	T.8	T.8	T.8	LI*	T.14	T.22
44	R.8		R.8	R.8	R.8	R.8	LI	R.14	R.22
45		TXT.8	T1.8	TXT.8	SZ.8	BT.8	GRD	T.15	T.23
46		TXR.8	R1.8	TXR.8	SZ1.8	BR.8	GRD	R.15	R.23
47		PXT.8	E.8	PXT.8	S.8	LT.8	+5	T.16	T.24
48		PXR.8	M.8	PXR.8	S1.8	LR.8	+5	R.16	R.24
49	GRD	GRD	GRD	GRD	GRD	GRD	GRD	GRD	GRD
50	GRD	GRD	GRD	GRD	GRD	GRD	GRD	GRD	GRD

Table 4-12. DS1 Interface Cable H600-307 (and C6C)

50-Pin			15-Pin		
Pin	Color	Designation	Pin	Color	Designation
02	W-BL				
03	BL-W				
47	W-G	LI (High)	11	W-G	LI (High)
22	G-W	LI	03	G-W	LI
48	W-BR	LO	09	W-BR	LO
23	BR-W	LO (High)	01	\BR	LO (High)
49	W-SL	LOOP2	06	W-SL	LOOP2
24	SL-W	LOOP1	05	SL-W	LOOP1

All other pins empty.

Table 4-13. Circuit Pack and Auxiliary Equipment Classifications

Analog Line (8)	2-Wire Digital & Analog Line (16)	Data Line & Digital Line 4-Wire	Digital Line 2-Wire 24 Ports	Hybrid Line	MET Line	AUX Trunk	Central Office Trunk	Central Office Trunk 3-Wire	DID/ DIOD Trunk	Tie Trunk	DS1 Tie Trunk	ISDN BRI Line 4-wire	ISDN BRI Line 2-wire	Packet Data Line	Four Port DIOD
TN467	TN2149	TN726B	TN2224	TN762	TN735	TN417	TN429	TN2199	TN429	TN478	TN483	TN556B	TN2198	TN553	TN2184
TN432	TN2135	TN754B		TN762B		TN763	TN493		TN2139	TN458	TN722				
TN431	TN468B	TN564B				TN763D	TN422		TN459B	TN449	TN767				
TN411B	TN448	TN413					TN421		TN436B	TN760D	TN722B				
TN742	TN746						TN438B		TN753	TN760C	TN464F				
TN769	TN746B						TN447		TN2146	TN434					
	TN2181						TN465C		TN414	TN415					
	TN2183						TN747B								
							TN2138								
							TN2147C								
							TN2148								

1. DID means Direct Inward Dialing
2. DIOD means Direct Inward Outward Dialing
3. MET means Multibutton Electronic Telephone

Table 4-14. Circuit Pack and Auxiliary Equipment Leads (Pinout Charts)

Color	Connector Pin Numbers	Analog Line 8 ports	2-Wire Digital Line and Analog Line 16 ports	Data Line and Digital Line 4-wire	Digital Line 2-Wire 24 Ports	Hybrid Line	MET Line	AUX Trunk	CO Trk.	CO Trunk 3-wire	DID/DIOD Trunk	Tie Trk.	DS1 Tie Trunk	ISDN BRI Line 4-wire	ISDN BRI Line 2-wire	Packet Data Line	Four Port DIOD
W-BL	26	T1	T1		T1	V1T1	T1	T1	T1	A1	T1	T1		PXR1	T1	TXT1	T1
BL-W	01	R1	R1		R1	V1R1	R1	R1	R1	B1	R1	R1		PXT1	R1	TXR1	R1
W-O	27		T2	TXT1	T2	CT1	TXT1	SZ1				T11		TXT1	T2	PXT1	
O-W	02		R2	TXR1	R2	CR1	TXR1	SZ11				R11		TXR1	R2	PXR1	
W-G	28		T3	PXT1	T3	P-1	PXT1	S1				E1		PXR2	T3	TXT2	
G-W	03		R3	PXR1	R3	P+1	PXR1	S11		C1		M1		PXT2	R3	TXR2	
W-BR	29	T2	T4		T4	V1T2	T2	T2	T2	A2	T2	T2		TXT2	T4	PXT2	T2
BR-W	04	R2	R4		R4	V1R2	R2	R2	R2	B2	R2	R2		TXR2	R4	PXR2	R2
W-S	30			TXT2	T5	CT2	TXT2	SZ2				T12		PXR3	T5	TXT3	
S-W	05			TXR2	R5	CR2	TXR2	SZ12				R12		PXT3	R5	TXR3	
R-BL	31			PXT2	T6	P-2	PXT2	S2				E2		TXT3	T6	PXT3	
BL-R	06			PXR2	R6	P+2	PXR2	S12		C2		M2		TXR3	R6	PXR3	
R-O	32	T3			T7	V1T3	T3	T3	T3	A3	T3	T3		PXR4	T7	TXT4	T3
O-R	07	R3			R7	V1R3	R3	R3	R3	B3	R3	R3		PXT4	R7	TXR4	R3
R-G	33			TXT3	T8	CT3	TXT3	SZ3				T13		TXT4	T8	PXT4	
G-R	08			TXR3	R8	CR3	TXR3	SZ13				R13		TXR4	R8	PXR4	
R-BR	34		T5	PXT3	T9	P-3	PXT3	S3				E3		PXR5	T9	TXT5	
BR-R	09		R5	PXR3	R9	P+3	PXR3	S13		C3		M3		PXT5	R9	TXR5	
R-S	35	T4	T6		T10	V1T4	T4	T4	T4	A4	T4	T4		TXT5	T10	PXT5	T4
S-R	10	R4	R6		R10	V1R4	R4	R4	R4	B4	R4	R4		TXR5	R10	PXR5	R4
BK-BL	36		T7	TXT4	T11	CT4	TXT4	SZ4				T14		PXR6	T11	TXT6	
BL-BK	11		R7	TXR4	R11	CR4	TXR4	SZ14				R14		PXT6	R11	TXR6	
BK-O	37		T8	PXT4	T12	P-4	PXT4	S4				E4		TXT6	T12	PXT6	
O-BK	12		R8	PXR4	R12	P+4	PXR4	S14				M4		TXR6	R12	PXR6	

Table 4-14. Circuit Pack and Auxiliary Equipment Leads (Pinout Charts)

Color	Connector Pin Numbers	Analog Line 8 ports	2-Wire Digital Line and Analog Line 16 ports	Data Line and Digital Line 4-wire	Digital Line 2-Wire 24 Ports	Hybrid Line	MET Line	AUX Trunk	CO Trk.	CO Trunk 3-wire	DID/ DIOD Trunk	Tie Trk.	DS1 Tie Trunk	ISDN BRI Line 4-wire	ISDN BRI Line 2-wire	Packet Data Line	Four Port DIOD
BK-G	38	T5	T9		T13	V1T5			T5		T5			PXR7		TXT7	
G-BK	13	R5	R9		R13	V1R5			R5		R5			PXT7		TXR7	
BK-BR	39		T10	TXT5	T14	CT4								TXT7		PXT7	
BR-BK	14		R10	TXR5	R14	CR4								TXR7		PXR7	
BK-S	40		T11	PXT5	T15	P-5								PXR8		TXT8	
S-BK	15		R11	PXR5	R15	P+5								PXT8		TXR8	
Y-BL	41	T6	T12		T16	V1T6			T6		T6			TXT8		PXT8	
BL-Y	16	R6	R12		R16	V1R6			R6		R6			TXR8		PXR8	
Y-O	42			TXT6	T17	CT6								PXR9		TXT9	
O-Y	17			TXR6	R17	CR6								PXT9		TXR9	
Y-G	43			PXT6	T18	P-6								TXT9		PXT9	
G-Y	18			PXR6	R18	P+6								TXR9		PXR9	
Y-BR	44	T7			T19	V1T7			T7		T7			PXR10		TXT10	
BR-Y	19	R7			R19	V1R7			R7		R7			PXT10		TXR10	
Y-S	45			TXT7	T20	CT7								TXT10		PXT10	
S-Y	20			TXR7	R20	CR7								TXR10		PXR10	
V-BL	46		T13	PXT7	T21	P-7								PXR11		TXT11	
BL-V	21		R13	PXR7	R21	P+7								PXT11		TXR11	
V-O	47	T8	T14		T22	V1T8			T8		T8		LI*	TXT11		PXT11	
O-V	22	R8	R14		R22	V1R8			R8		R8		LI	TXR11		PXR11	
V-G	48		T15	TXT8	T23	CT8							LO	PXR12		TXT12	
G-V	23		R15	TXR8	R23	CR8							LO*	PXT12		TXR12	
V-BR	49		T16	PXT8	T24	P-8							LBACK2	TXT12		PXT12	

Continued on next page

Table 4-14. Circuit Pack and Auxiliary Equipment Leads (Pinout Charts)

Color	Connector Pin Numbers	Analog Line 8 ports	2-Wire Digital Line and Analog Line 16 ports	Data Line and Digital Line 4-wire	Digital Line 2-Wire 24 Ports	Hybrid Line	MET Line	AUX Trunk	CO Trk.	CO Trunk 3-wire	DID/ DIOD Trunk	Tie Trk.	DS1 Tie Trunk	ISDN BRI Line 4-wire	ISDN BRI Line 2-wire	Packet Data Line	Four Port DIOD
BR-V	24		R16	PXR8	R24	P+8							LBACK1	TXR12		PXR12	
V-S	50																
S-V	25																

† The wire colors in this chart apply only to B25A and A25B cables. H600-307 cable colors are not shown.

The following abbreviations apply for all circuit packs unless otherwise noted:

T,R	PBX transmit voice	T Tip(A)Green
T1,R1	PBX receive voice	R Ring(B)Red
M	PBX transmit signal	S Sleeve
E	PBX receive signal	PX PBX transmit
TX	Terminal transmit	
LI, LI*	Digital Trunk IN	LO, LO* Digital Trunk OUT

The following wire colors apply in the above chart:

W White	S	Slate (Grey)
BL Blue	R	Red
O Orange	BK	Black
G Green	Y	Yellow
BR Brown	V	Violet

Upgrade G3vs (I386) to Release 5vs

5

This chapter provides the information to upgrade from a DEFINITY G3vs V2, V3, or V4 system with an I386 processor to a DEFINITY Enterprise Communications Server Release 5vs with a RISC processor.

➡ NOTE:
This upgrade assumes the current system is a DEFINITY G3vs V2, V3, or V4 system with a I386 processor. If the system is not at this level, refer to *DEFINITY Communications Systems Generic 3 V4 Upgrades and Additions*, 555-230-108, to complete this portion of the upgrade process.

DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description lists DEFINITY ECS Release 5vs features and functions and provides the commands, procedures, and forms to initialize and administer the system.

Task Table

Table 5-1 provides the high-level tasks to perform the upgrades in this chapter. Refer to the appropriate page for instructions for each step.

Table 5-1.   Tasks to Upgrade from G3vs (I386) V2, V3, or V4 to Release 5vs

✓	Task Description	Page
	Disable Alarm Origination to INADS	5-7
	Save Current Translations onto Original Translation Card	5-7
	Save Recorded Announcements	5-7
	Disable TTI	5-8
	List Configuration Software Version	5-8
	Disable Scheduled Maintenance	5-8
	Power Down System Cabinet	5-8
	Replace Circuit Packs	5-8
	Reboot the System	5-9
	Save Upgraded Translations onto Release 5 Translation Card	5-10
	Enable Scheduled Maintenance	5-11
	Enable Customer Options	5-11
	Resolve Alarms	5-11
	Contact INADS to Enable Customer Options and Alarm Origination	5-11
	Return Equipment	5-11

Considerations

Service Interruption

The upgrade process requires a service interruption of about 10 minutes. This interruption must be closely coordinated with the customer and the local account team.

Contact Network Technicians

Contact the technician for each public and private network before the update or upgrade begins. Otherwise, it is possible that network access trunk facilities will be busied out at the far end.

Changes to Translation Card Upgrade Procedures

The procedures for a Release 5 upgrade are subject to change. Although these steps are accurate for the translation card issue that is available at this manual's publication date, the specific steps for an upgrade can change as new Release 5 translation cards are issued. For the most current information, refer to the Quality Protection Plan Change Notice (QPPCN) Update Supplement provided with the new Release 5 translation card.

Usable Circuit Packs

Every port or control circuit pack used in the upgraded system must conform to the minimum usable vintage requirements for Release 5vs.

Those circuit packs must meet the usable vintage specifications. In addition, at a presale site inspection, the QPPCN process must check the vintages of every circuit pack to be reused and replace those circuit packs with unusable vintages.

Refer to *Technical Quarterly*, *Reference Guide for Circuit-Pack Vintages and Change Notices*, for current information about usable vintages. For information about usable vintages of international circuit packs, refer to the *ITAC Technical Alert* via your regional distributor.

Generic 3 — Management Applications (G3-MA)

As part of the QPPCN process, upgrade any G3-MAs being used to administer a Release 5 system to at least an R1V3.1 prior to an upgrade. An R1V5 G3-MA is necessary for full compatibility with a Release 5 system.

Call Management System (CMS)

Upgrade existing CMS adjuncts (not BCMS) monitoring call center activity for a Release 5 system, with a Release 5 Call Center package, to CentreVu CMS R3V5 in conjunction with a Release 5 upgrade.

DC Isolator

Each peripheral device connecting to a DC-powered system, via the asynchronous EIA RS-232 interface, requires a 116A isolator. Install the isolator at the RS-232 interface between the peripheral and the interface connector to isolate ground between the system and external adjuncts.

Software

Even though the G3vs V2, V3, or V4 translations upgrade automatically to Release 5vs, several features require special attention because of form changes or potential naming conflicts in the update or upgrade procedure.

Between customer confirmation and the actual upgrade, the Software Specialist and Associate should check these forms to ensure the upgraded translations are appropriate for the customer's needs. After rebooting the system, enter these translations either locally by the Software Associate or remotely at the FSAC (with possible assistance from the upgrade technician). For more information, refer to:

- *DEFINITY Communications System Generic 3 V2 to DEFINITY Enterprise Communications Server Release 5.4 Transition Reference*

- *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*

System Updates and Upgrades

There are many configurations of DEFINITY G3vs systems in the field. Each system can have a unique configuration. The manner in which to upgrade a system depends on its present configuration.

Software Upgrade

No administration changes should be entered during the upgrade procedure. There can be substantial time gaps between steps and, since the system cannot prevent administration changes, it is up to the system technician to make sure that none are attempted during the entire upgrade process.

Anti-Static Protection

> **⚠ CAUTION:**
> *When handling circuit packs or any components of a DEFINITY System, always wear an authorized wrist ground strap. Connect the strap to an approved ground such as an unpainted metal surface on the DEFINITY System.*

Preliminary

The upgrade takes up to 130 minutes, during which time service is interrupted for about 10 minutes. This upgrade cannot be performed remotely, and it must be performed on the local management terminal. Ensure that the following items are available before proceeding:

- Generic program card with the current software release running in the system

- Original translation card on which the system translations are to be saved

- Software patch (if it exists) that is currently applied to the system (download this patch if a software backout is necessary)

The following table indicates the processes and their corresponding time allotment for the upgrade procedure.

Process	Time (minutes)
Save translation	10
Save announcements	45
Upgrade software	10
Save translation	10
Save announcements	45
Miscellaneous	10
Total Time	130

Required Hardware

The equipment in Table 5-2 must be on-site before the upgrade begins.

Table 5-2.   Required Hardware

Equipment	Description	Quantity
601819790	Release 5 Generic Program Card (Orange Card) (if TN790 does not contain latest software)	1 [1]
601817448 or 601817422 or 601817430	J58890TG L13 2 Mbyte Mass-Storage Translation Card (White Card) or J58890TG L14 4 Mbyte Mass-Storage Translation Card (White Card) or J58890TG L15 10 Mbyte Mass-Storage Translation Card (White Card)	1 [2]
106718521	TN790 Processor Circuit Pack	1

1. Contains the Release 5 software.

2. A 4 Mbyte translation card is required for a system with recorded announcements. A 10 Mbyte translation card is required if a DEFINITY Wireless Business System is installed.

Required Tools

This upgrade may require the following tools and other items:

- Wrist ground strap

- One copy of each of the following manuals:

    — *DEFINITY Enterprise Communications System Release 5 Maintenance for R5vs/si*

    — *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*

Upgrade to Release 5vs

Disable Alarm Origination to INADS

1. Enter **change system-parameters maintenance** and press Enter.

2. Enter n in the `Alarm Origination Activated` field and press Enter.

3. For some releases of system software, disable `Cleared Alarm Notification and Restart Notification` before the submitting the form.

> ⚠ **CAUTION:**
> *Disabling alarm origination prevents the system from generating alarms, thus preventing unnecessary trouble tickets.*

Save Current Translations onto Original Translation Card

1. Verify the write switch on the original translation card is in the down position to record. Insert the card into the slot on the TN777B faceplate.

2. Enter **save translation** and press Enter. If the translations were corrupted, the following error message displays when logging in:

   ```
   WARNING: Translation corruption detected; call Lucent
   Technologies distributor immediately.
   ```

   > ⇒ **NOTE:**
   > The **save translation** command cannot function if the translation corruption message appears.

Save Recorded Announcements

1. If the system contains a TN750/B Announcement circuit pack, enter **display announcements**, and press Enter.

2. If administered recorded announcements are listed, enter **save announcements** and press Enter.

   > ⇒ **NOTE:**
   > The TN750C Multiple Announcement circuit pack contains on-board non-volatile memory. It is not necessary to back up a TN750C.

Disable TTI

Enter **change system-parameters features** and press Enter. Use Page 2 of the form to disable Terminal Translation Initialization (TTI) by changing the value to n.

List Configuration Software Version

Issue the **list configuration software-versions** command to determine whether any patches have been applied. If the system must be restored to the old software, download the correct patches.

Disable Scheduled Maintenance

Enter **change system-parameters maintenance**, and press Enter. Use this form to prevent scheduled daily maintenance from interfering with the upgrade.

> **NOTE:**
> If scheduled maintenance has begun, set the value of the "Stop Time" field to one minute after the current time. If scheduled maintenance has not yet begun, change the value of the "Start Time" field to a time after the upgrade will be finished.

Power Down System Cabinet

From behind the cabinet, set the circuit breaker to OFF.

Replace Circuit Packs

1. Remove the TN786B or TN796B Processor circuit pack from the system cabinet and place it in its anti-static packing material.

2. Remove the TN790 Processor circuit pack from its packing material and install it into the slot labeled "PROCR".

Reboot the System

1. From behind the cabinet, set the circuit breaker to ON.

2. The system performs the reset level 4 rebooting process by loading translations from the original translation card. Loading the translations takes 8 to 11 minutes.

3. Peel the paper backing from the new TN790 circuit pack position label (designation strip) and affix it to the front of the cabinet.

4. Log in as "**craft**" at the login: prompt on the terminal.

5. Enter **set time**, and press Enter to set the time and ensure that the system is booted properly.

6. Enter **list configuration software-version**, and press Enter to compare the version number of the Release 5 software program (displayed on the terminal) with the TN790 version number (written on a label on the TN790 faceplate). If the version numbers are not the same, change the version number on the TN790 label so that they agree.

7. Perform a sanity check on the system running the new software by executing the following commands in this order:

    1. **status system 1** (to check out unusual status in the system)

    2. **list station** (to ensure that the translation is read in properly)

    3. **display alarm** (to ensure no alarm is raised in the system)

    4. **list trunk-group** (to ensure the translation is read in properly)

    5. **list hunt-group** (to ensure the translation is read in properly)

    This ensures there is no translation corruption and the translations can be saved with the new software.

    ➡ **NOTE:**
    If the new load must be returned to the previous software load, re-install the TN786B or TN796B circuit pack and reboot with the original translation card.

8. Get the DOSS order number of the upgrade, and call the regional CSA to request an "init" login. The CSA assigns the Release 5 option, which automatically sets the 24-hour password aging for the customer logins.

    Refer to *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*.

    ➡ **NOTE:**
    Certain forms have changed for Release 5. Upgraded translations may appear on a different form, fields may shift within a form, and the name assignments to particular fields may change.

> **⇒ NOTE:**
> Notify the switch administrator that any previous login names and passwords still exist, but that the passwords expire in 24 hours. The new login names and passwords must conform to the requirements below.
>
> A password must have from 4 to 11 symbols including at least 1 alphabetic character and 1 numeric character. A login name must have from 3 to 6 alphanumeric characters.
>
> Since an R1V3.0 G3-MA cannot notify users about expiring passwords, disable password aging for any login name used with an R1V3.0 G3-MA.

Save Upgraded Translations onto Release 5 Translation Card

1. Enter **status system 1** and press Enter to verify the system is in the "active" mode.

2. If the system contains a TN750/B Announcement circuit pack, check for completion of an automatic restore of announcements before removing the original translation card. If the system has been running for at least 45 minutes since power on, this operation should be complete. Check the yellow LED on the TN750/B which is lit during the download. If the restore did not start within 15 minutes of power on, enter **restore announcements** [to PCSS] and press Enter, where P is the port network number (1 for PPN), C is the carrier designation (A), and SS is the number of the slot in which the circuit pack resides (01 to 10).

   > **⇒ NOTE:**
   > At this point, all telephones should be working properly.

3. Insert the new Release 5 formatted translation card. Verify that the write switch is in the down position to record.

4. Enter **save translation**, and press Enter. This instructs the system to write all translation information from memory onto the translation card.

5. If the system contains a TN750/B Announcement circuit pack and announcements were restored in the above step, enter **save announcements** [from PCSS] and press Enter, where P is the port network number (1 for PPN), C is the carrier designation (A), and SS is the number of the slot in which the circuit pack resides (01 to 10).

   Customers may desire to back up announcements stored on TN750C circuit packs. These must be stored on an individual translation card for the TN750C. While the Release 5 software can read such cards, these cards must be reformatted before Release 5 can save announcements on the cards.

Enable Scheduled Maintenance

Enter **change system-parameters maintenance**, and press Enter. Use this form to enable scheduled daily maintenance.

Enable Customer Options

1. Enter **change system-parameters customer-options** and press Enter.

2. Use these forms to verify the customer options are properly set.

   ➡ **NOTE:**
   In the `Basic Call Setup` field, if `ISDN-PRI?` was set to `y` before the upgrade, be sure to set the field back to `y`.

Resolve Alarms

Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 5 Maintenance for R5vs/si*.

Contact INADS to Enable Customer Options and Alarm Origination

Be sure the system is part of the existing INADS database by calling the INADS Database Administrator at the Technical Service Center (TSC). Verify that INADS can dial into the system and that the system can dial out to INADS.

As part of the system registration process, the INADS Database Administrator enables Alarm Origination.

Return Equipment

Return replaced equipment to Lucent Technologies according to the requirements outlined in:

> *BCS/Material Logistics, MSL/Attended Stocking Locations Methods and Procedures for Basic Material Returns*

Option Switch Settings

A

Some of the interface units used between the system and other types of equipment require specific option switch settings for each application. This section lists the settings required for data modules, modems, printers, and so forth. Refer to the user's guide for each type of equipment for information on how to locate and set the option switches.

Data Module Option Switch Settings

DCS Switch Settings

The Distributed Communications System (DCS) for a system is sometimes connected to the system through the TN765 Processor Interface circuit pack or a TN778 Packet Interface circuit pack. The first circuit can be connected directly to the DCS through the processor interface (**PI**) connector on the rear of the control carrier.

Any of the remaining three circuits on the processor interface used to support the DCS must be connected through a data module serving as the interface link. The option settings for a 7400B Data Module are shown in Table A-1. Refer to Figure A-1 for the location of the switches. Also refer to *7400B Data Module User's Manual*, 555-020-707.

> ⟹ **NOTE:**
> The options for the 7400A and 7400C Data Modules are set from the front panel interface. For the 7400A, refer to *7400A Data Module User's Manual*, 555-020-706. For the 7400C, refer to *DEFINITY Communications System High Speed Link User's Guide*, 555-020-711.

DTE

1

DATA
METERING
POWER
TEST

AA CD RD SD TR OH

CHECK
SPEED
DATA

7400B Data Module

2

ON

1 2 3 4 5 6 7 8
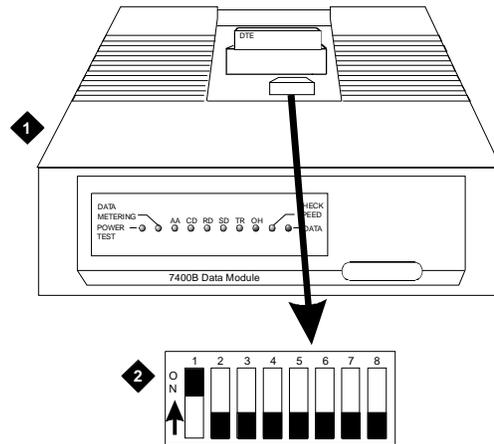
Figure Notes:

1. Data Module (7400B Shown)   2. DIP Switch

Figure A-1.   DIP Switch Locations

1. Remove the top cover from the data module.

2. Switches 1, 5, and 8 are the only switches to be set. Refer to Table A-1 for the switch option settings.

Table A-1.   Data Module Option Switch Settings

DIP Switch	Function	Setting
1	With Phone Without Phone	ON OFF
5	Data Metering No Data Metering	ON OFF
8	Make Busy on Loc Loop No Make Busy on Loc Loop	ON OFF
2, 3, 4, 6, and 7		OFF

7400D Data Module Option Settings

The option settings shown in Table A-2 are for the Answer Only interface and are set from the front panel interface. Set only the desired speed of the 7400D. All other default settings can be used.

Refer to "Set 7400D Options" on page A-4 to set the speed.

Table A-2.   7400 Series Data Module Options (Answer Only Interface)

Set Option Display	Abbreviation	Possible Values	Default
Set 300 SPEED?	300	ON, OFF	ON
Set 1200 SPEED?	1200	ON, OFF	ON
Set 2400 SPEED?	2400	ON, OFF	ON
Set 4800 SPEED?	4800	ON, OFF	ON
Set 9600 SPEED?	9600	ON, OFF	ON
Set 19200 SPEED?	19200	ON, OFF	ON
Set ANSWER?	ANS	AUTO, MANUAL	AUTO
Set CI LEAD?	CI	ON, OFF	OFF
Set CH LEAD?	CH	ON, OFF	OFF
Set CTS LEAD?	CTS	NORMAL, ON	ON
Set DCD LEAD?	DCD	NORMAL, ON	ON
Set DSR LEAD?	DSR	NORMAL, ON	ON
Set DTR DETECT?	DTR	0, 10, 20, 30, 50, 100 MSEC	50
Set DTR LEAD?	DTR	EIA STANDARD, IGNORE	EIA STANDARD
Set LL LEAD?	LL	ON, OFF	OFF
Set REMOTE LOOP?	REMLOOP	GRANT, DENY	GRANT
Set RI LEAD?	RI	CYCLE, ON	ON
Set RL LEAD?	RL	ON, OFF	OFF
Set SIGLS DISC?	SIGLS DISC	ON, OFF	ON
Set TIMING?	TIMING	INTERNAL, EXTERNAL	INT
Set TM LEAD?	TM	ON, OFF	OFF

⇒ **NOTE:**
It is recommended that CI and CH be set to ON, and DCD and DSR be set to normal. This allows login information to be displayed on the screen without having to send a carriage return character.

Set 7400D Options

The following steps are used as an example to change the default setting of 9600 to the custom setting of 19200.

➡ **NOTE:**
    If the link is between a Release 5r and a CMS, set the 7400D to 19200. If the link is between any other system and a CMS, leave the speed of the 7400D set at 9600.

1. From the HOME screen, press **NEXT/NO** until `SET OPTIONS ?` is displayed.

2. Press **ENTER/YES** to stay in the `SET OPTIONS ?` menu.

3. Press **NEXT/NO** until `SET 9600 SPEED ?` is displayed.

4. Press **ENTER/YES** when `SET 9600 SPEED ?` is displayed.

5. Press **NEXT/NO** when `9600 = ON ?` is displayed.

6. Press **ENTER/YES** when `9600 -> OFF ?` is displayed.

7. Press **ENTER/YES** when `CONTINUE ?` is displayed.

8. Press **ENTER/YES** when `SET 19200 SPEED ?` is displayed.

9. Press **NEXT/NO** when `19200 = OFF ?` is displayed.

10. Press **ENTER/YES** when `19200 -> ON ?` is displayed.

11. Press **NEXT/NO** when `CONTINUE ?` is displayed.

12. Press **ENTER/YES** when `19200 -> ON ?` is displayed.

13. Press **ENTER/YES** when `SAVE CHANGES ?` is displayed.

➡ **NOTE:**
    The `SET OPTIONS ?` menu cannot be terminated if all speeds are set to off.

Modem Pooling (Combined) Option Settings

Combined modem pooling requires option switch settings on different modems and data modules. Refer to the vendor's documentation.

7400A and 7400B Option Settings

Determine if the 7400A or 7400B is interfacing with D-lead modems or attention control modems. Use Table A-3 for D lead modems and Table A-4 for attention control modems.

Table A-3.   7400A Options for D-Lead Modems

Set Option Display	Option	Desired Setting
Set 300 Speed?	300	Note 1
Set 1200 Speed?	1200	Note 1
Set 2400 Speed?	2400	Note 1
Set 4800 Speed?	4800	Note 1
Set 9600 Speed?	9600	Note 1
Set 19200 Speed?	19200	Note 1
Set AT Control?	AT	OFF
Set CI Lead?	CI	Note 2
Set CI2 Lead?	CI2	Note 2
Set CH Lead?	CH	Note 2
Set CH2 Lead?	CH2	Note 2
Set LL Lead?	LL	Note 2
Set REMOTE Loop?	REMLOOP	Grant
Set RL Lead?	RL	Note 2
Set SIGLS Disc?	SIGLS DISC	ON
Set TM Lead?	TM	Note 2

> **NOTE:**
> 1. Set speed to match remote modem. At least one speed must be set ON.

> **NOTE:**
> 2. Set to match remote modem.

Table A-4. 7400A Options — **Attention Control Modems**

Set Option Display	Option	Setting
Set 300 Speed?	300	Note 1
Set 1200 Speed?	1200	Note 1
Set 2400 Speed?	2400	Note 1
Set 4800 Speed?	4800	Note 1
Set 9600 Speed?	9600	Note 1
Set 19200 Speed?	19200	Note 1
Set AT Control?	AT	ON
Set CI Lead?	CI	Note 2
Set CI2 Lead?	CI2	Note 2
Set CH Lead	CH	Note 2
Set CH2 Lead?	CH2	Note 2
Set LL Lead?	LL	Note 2
Set REMOTE Loop?	REMLOOP	Grant
Set RL Lead?	RL	Note 2
Set SIGLS Disc?	SIGLS DISC	ON
Set TM Lead?	TM	Note 2

NOTE:
1. Set speed to match remote modem. At least one speed must be set ON.

NOTE:
2. Set to match remote modem.

External Modem Option Settings

The COMSPHERE 3700, 3800, and 3900 series (recommended) external modems may require option switch settings. Refer to the documentation that accompanies each modem to set the options.

> **NOTE:**
> A locally obtained, type-approved external modem may be used. Contact your Lucent Technologies representative for more information.

The Release 5 systems operate with the COMSPHERE modems set to the factory default settings. See Screen A-1. Refer to *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*, to administer the modem after the options are set. The Customer Options Screen (Page 3) is modified.

```
change system-parameters maintenance            Page 3 of 3

        MAINTENANCE-RELATED SYSTEM PARAMETERS

        Modem Connection: external
              Data Bits: 8
                 Parity: none
             Modem Name: ___

         RTS/CTS Enabled: \Q3        Auto Answer Ring Count (rings): ___
   Asynchronous Data Mode: &M0&Q0                        Dial Type: T
     DTE Auto-Data Speed: ___       Adjustable Make/Break Ratio: ___
 Disable Data Compression: ___                       Dial Command: D
     Enable Error Control: ___              No Answer Time-out: S7=255
        Misc. Init. Param: _____
```

Screen A-1.   External Modem Default Settings (Page 3 of 3)

There are fields that are hidden when the "Modem Connection" field is set to "internal." When the "Modem Connection" field is set to "external" these fields are displayed. Two fields help setup the data format for the serial data from the system to the modem: the "Data Bits:" and "Parity:" fields. There are only two valid combinations of these two fields.

- Data Bits = 8, Parity = None

- Data Bits = 7, Parity = (odd, even, mark, or space)

The remaining modem fields are listed in Table A-5.

Table A-5.   Modem Fields

Field	Description
Modem Connection	Valid entries are "internal" or "external". Default is internal.
Modem Name	This field is 20 characters long and permits alphanumeric characters to provide a unique qualifier for a given modem (such as INTEL).
RTS/CTS Enabled	Informs the modem that communication with the data source UART is driven with RTS/CTS flow control. The field name has a default of \Q3 in a field 6 characters long. This field is not case sensitive. Default is upper case.
Asynchronous Data Mode	Configures modem as an asynchronous communications device. The field name has a default value of &M0&Q0 in a field 8 characters long. This field is not case sensitive. Default is upper case.
DTE Auto-Data Speed	Adjusts the speed of the data source (DTE) UART to the outgoing (modem-to-modem) data rate. At maximum, this speed is 9600 baud. It is not desirable to have the serial data fill the modem buffer faster than the outgoing data rate, since data compression is disabled. The field name has a blank default value in a field of 6 characters. The Lucent products use the command S90=1 to enable this functionality while the Intel product uses the command \J1 to enable similar functionality. This field is not case sensitive. Default is upper case.
Disable Data Compression	Turns off the default data compression algorithms in use by most modems. The field has a blank field of 6 characters as default. The AT commands that control this are supported by similar commands; however, these commands do not operate in the same manner. The Intel modems require "H0%C0" to disable V.42bis & MNP Class 5 data compression algorithms. The Paradyne products only use %C0 to disable both algorithms. This field is not case sensitive. Default is upper case.
Enable Error Control	Turns on the V.42 LAPM and MNP error control protocols, if available. The field has a blank field of 6 characters as default. The Paradyne products use the command \N5 to enable V.42/MNP/Buffer error control while the Intel product uses \N3 to provide similar functionality.
	This V.42/MNP/Buffer mode attempts to negotiate V.42 error control with the remote modem. If this fails, the modem changes to MNP, if this fails, no error control is used. This field is not case sensitive. Default is upper case.
Misc. Init. Param	This field has a blank as a default and a field length of 20 characters. This field supports any initialization parameters not already specified. The AT commands specified in this free-form field is always the last initialization parameters to be sent to the external modem. This field is not case sensitive. Default is upper case.
Auto-Answer Ring Number	This field controls the number of rings required before the modem answers an incoming call. This field has a blank default value in a field 6 characters long. Typically, the maximum permissible value for this register is 255. The values 1-255 denote the number of incoming ring cycles. This field is not case sensitive. Default is upper case.

Continued on next page

Table A-5. Modem Fields — *Continued*

Field	Description
Dial Type	This field controls the type of inter-register signaling to be used between the modem and the Central Office. The field has a default of "T " for tone dialing. Pulse dialing is indicated by "P". The field length should be 3 characters long. This field is concatenated with the dial string. This field is not case sensitive. Default is upper case.
Adjustable Make/Break Ratio	This field controls the make/break ratios of pulses and DTMF dialing. The Intel product information has support for different make/ break options for pulse dialing only. Intel uses &P0 to select a ratio of 39% make and 61% break for communication within the United States and Canada. The option &P1 sets a ration of 33% make and 67% break for the United Kingdom and Hong Kong. This field has a blank default and a 5 character long entry. This field is not case sensitive. Default is upper case.
Dial Command	This field has a default of "D" in a field 3 characters long. This field denotes the dialing command of the modem. This is a standard command. This field is not case sensitive. Default is upper case.
No Answer Time-Out	Most external modems provide a timer that abandons any outbound data call after a predetermined interval. Some modems disable this timer, allowing an outbound call to ring indefinitely. Paradyne does not provide this capability because it is undesirable to have an outbound call attempt to ring indefinitely. Therefore, the initialization string must contain the following ASCII string to set the "No-Answer Timer" to the maximum value: S7=255. The internal modem must have this parameter disabled or set to at least 255 seconds. This is a non-administrable parameter.

For the modem connection, this parameter is the first initialization string to be transmitted to the modem. This field is visible on the administration form in display mode only. The new field is set to S7=255. This hardcoded constant can be overriden for type approval applications, specifically in the United Kingdom and other Western European nations, by the use of the "Misc. Init. Param:" field. (S7=255) |

Printer Option Settings

Printers can be used with a management terminal as journal printers for the hospitality feature and also as an output device for Call Detail Recording (CDR).

A 572 printer can function as a CDR device, system printer, or journal printer. The options are set with function keys rather than DIP switches. Figure A-2 shows the arrangement of the function keys on the printer control panel.
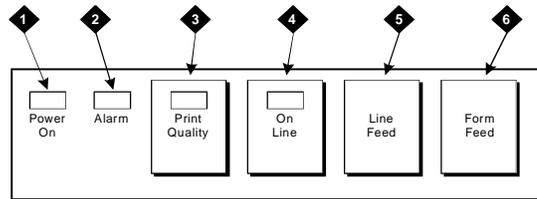
Figure Notes:

1. Power On Button
2. Alarm Button
3. Print Quality Button

4. On Line Button
5. Line Feed Button
6. Form Feed Button

Figure A-2.   Control Panel for 572 Printer

1. Load the printer with paper and turn the power off (Callout 1).

2. Simultaneously press and hold the **Print Quality** and **On Line** buttons.

3. Press the **Power On** button. Release all three buttons. The printer is now in set-up mode and it prints the following settings:

   - Form length
   - Lines per inch
   - Characters per inch
   - Buzzer on/off
   - Letter quality or near letter quality

   If the printer is used with a management terminal, CDR, or as a Journal printer, set the options as shown in Table A-6. If the printer is used as the system printer, set the options as shown in Table A-7 on page A-12.

4. Use **Line Feed** to step forward through the list of functions or use **Form Feed** to step backward.

5. Press **On Line**. This activates the menu for the function. Use **Line Feed** and **Form Feed** to step through the options for the function.

6. When a desired option is located, press **Print Quality**. Each time an option is set, the setting is printed. Repeat Step 4 for each option to be set.

7. When finished, press **Print Quality**. The printer changes to normal mode.

Table A-6.   572 Printer Used with Management Terminal

Function	Function Name	Menu	Menu Status
01	FORM LENGTH	09	11
02	LPI	01	6
03	CPI	01	10
04	LQ or NLQ	01	LQ
05	BUZZER	01	ON
06	FONT	02	FONTCART
07	RESOLUTION	01	144
11	BUFFER	02	N-LINE
13	PW ON MODE	01	ON-LINE
14	DIRECTION	01	B1-DIR.1
15	BUFF FULL	02	LF + CR
16	P.E.	01	ACTIVE
17	AUTO CARRIAGE RETURN (CR)	01	CR + LF
18	ZERO	01	0
22	AUTO LINE FEED	01	CR ONLY
31	1" SKIP	01	OFF
32	CHAR.SET (GO, GL)	02	USA
33	CHAR.SET (G1, GR)	01	UK
34	CHAR SET (G2)	03	GE
35	CHAR SET (G3)	07	LINE DRAWING
81	OFF-LINE STATE	01	ALL RECEIVE
82	DSR	02	OFF
83	REQUEST TO SEND (RTS) TIMING	01	RTS
84	CD	02	OFF
85	CLEAR TO SEND (CTS)	02	OFF
91	OVER RUN	02	256
92	DATA BIT	02	8
93	PROTOCOL	03	XON/XOFF
94	STOP BIT	01	1
95	PARITY	01	NONE
96	PBS (matches connected device)	01	9600

Table A-7. 572 Printer used as System Printer

572 Printer Option Settings

Function	Function Name	Menu	Menu Status
01	FORM LENGTH	09	11
02	LPI	01	6
03	CPI	01	10
04	LQ or NLQ	01	LQ
05	BUZZER	01	ON
06	FONT	02	FONTCART
07	RESOLUTION	01	144
11	BUFFER	02	N-LINE
13	PW ON MODE	01	ON-LINE
14	DIRECTION	01	B1-DIR.1
15	BUFF FULL	02	LF + CR
16	P.E.	01	ACTIVE
17	AUTO CARRIAGE RETURN (CR)	01	CR + LF
18	ZERO	01	0
22	AUTO LINE FEED	01	CR ONLY
31	1" SKIP	01	OFF
32	CHAR.SET (GO, GL)	02	USA
33	CHAR.SET (G1, GR)	01	UK
34	CHAR SET (G2)	03	GE
35	CHAR SET (G3)	07	LINE DRAWING
81	OFF-LINE STATE	01	ALL RECEIVE
82	DSR	02	OFF
83	REQUEST TO SEND (RTS) TIMING	01	RTS
84	CD	02	OFF
85	CLEAR TO SEND (CTS)	02	OFF
91	OVER RUN	02	256
92	DATA BIT	02	8
93	PROTOCOL	03	XON/XOFF
94	STOP BIT	01	1
95	PARITY	01	NONE
96	PBS	04	1200

Call Detail Recording Option Settings

The interface between the system and CDR equipment may be one of the following:

- Data Module — recommended option settings are shown in Table A-3.
- Modem — recommended option settings are in modem vendor document
- TN726 Data Line circuit pack and an Asynchronous Data Unit — data modules or modems are not required.
- Connected directly to the **DCE** connector (EIA Port) located on the rear of the Control Carrier — data modules or modems are not required.

A 572 Printer can be used as an output receiving device for CDR. The recommended option settings for this printer is shown in Table 5-3 and Table A-8. Also, a TELESEER, CDR, 94A Local Storage Unit (LSU), or Customer Premises Equipment (CPE) can be used as the output receiving device.

Administration procedures for CDR equipment are provided in *DEFINITY Enterprise Communications Server Release 5 Administration and Feature Description*.

Table 5-3.   572 Printer Used with Management Terminal, CDR, or Journal Printer

Function	Function Name	Menu	Menu Status
01	FORM LENGTH	09	11
02	LPI	01	6
03	CPI	01	10
04	LQ or NLQ	01	LQ
05	BUZZER	01	ON
06	FONT	02	FONTCART
07	RESOLUTION	01	144
11	BUFFER	02	N-LINE
13	PW ON MODE	01	ON-LINE
14	DIRECTION	01	B1-DIR.1
15	BUFF FULL	02	LF + CR
16	P.E.	01	ACTIVE

Continued on next page

Table 5-3. **572 Printer Used with Management Terminal, CDR, or Journal Printer** — *Continued*

Function	Function Name	Menu	Menu Status
17	AUTO CARRIAGE RETURN (CR)	01	CR + LF
18	ZERO	01	0
22	AUTO LINE FEED	01	CR ONLY
31	1" SKIP	01	OFF
32	CHAR.SET (GO, GL)	02	USA
33	CHAR.SET (G1, GR)	01	UK
34	CHAR SET (G2)	03	GE
35	CHAR SET (G3)	07	LINE DRAWING
81	OFF-LINE STATE	01	ALL RECEIVE
82	DSR	02	OFF
83	REQUEST TO SEND (RTS) TIMING	01	RTS
84	CD	02	OFF
85	CLEAR TO SEND (CTS)	02	OFF
91	OVER RUN	02	256
92	DATA BIT	02	8
93	PROTOCOL	03	XON/XOFF
94	STOP BIT	01	1
95	PARITY	01	NONE
96	PBS	01	9600

AUDIX Interface Option Settings

The Audio Information Exchange (AUDIX) sometimes connects to the system through the Processor Interface circuit pack. The first circuit on the processor interface can connect directly to the AUDIX through the **PI** connector on the rear of the control carrier.

Any of the remaining three circuits on the processor interface to be used to support AUDIX must connect through a 7400D Data Module serving as the interface link for AUDIX. The option settings are shown in Table A-8.

Table A-8.   Data Module Settings for DEFINITY AUDIX

DIP Switch 1	Setting
9600	ON
DIP Switch 2	Setting
SYNC	ON
INT	ON
AANS	ON
All Other Switches	OFF

212-Type Modem Switch Settings (CDR)

Refer to Table A-9 for the 212-type modem settings for typical installations.

Table A-9.   212-Type Modem Switch Settings

Switch	Setting
AL	OFF
ST	OFF
RDL	OFF
DL	OFF
HS	ON

TN760D Tie Trunk Option Settings

The TN760D Tie Trunk circuit pack interfaces between four tie trunks and the TDM bus. Two tip and ring pairs form a 4-wire analog transmission line. An E and M pair are DC signaling leads used for call setup. The E-lead receives signals from the tie trunk and the M-lead transmits signals to the tie trunk.

To choose the preferred signaling format (Table A-10 and Table A-11), set the switches on the TN760D and administer the port per Figure A-3 and Table A-12.

Table A-10.   Signaling Formats for TN760D

Mode	Type
E & M	Type I Standard (unprotected)
E & M	Type I Compatible (unprotected)
Protected	Type I Compatible, Type I Standard
Simplex	Type V
E & M	Type V
E & M	Type V Revised

Table A-11.   Signaling Type Summary

Signaling Type	Transmit (M-Lead)		Receive (E-Lead)	
	On-Hook	Off-Hook	On-Hook	Off-Hook
Type I Standard	grd	bat	open[1]/bat	grd
Type I Compatible	open[1]/bat	grd	grd	open[1]/bat
Type V	open[1]/bat	grd	open	grd
Type V Reversed	grd	open	grd	open

1.   An open circuit is preferred instead of battery voltage.
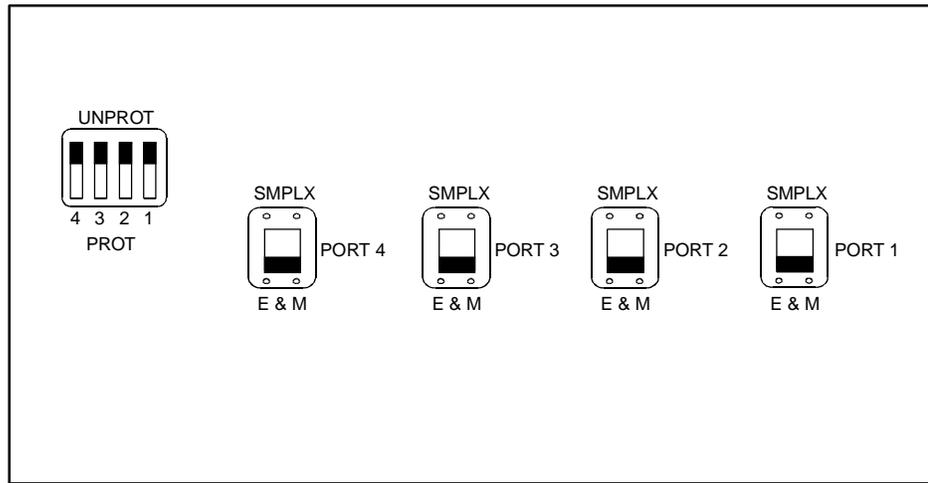
r758183 RBP 050896

Figure A-3.   TN760D Tie Trunk Circuit Pack (Component Side)

Table A-12.   TN760D Option Switch Settings and Administration

Installation Situation		Preferred Signaling Format		Set E&M/SMPLX Option Switch	Set Prot/Unprot Option 4Switch	Administered Port
Circumstance	To	System	Far-End			
Co-Located	Sys75/G1	Simplex	Simplex	SMPLX	Either	Type 5
		Type 5	Type 5			
Inter-Building	Sys75/G1	Simplex	Simplex	SMPLX	Either	Type 5
		Type 5	Type 5			
Co-Located	Sys85/G2	Simplex	Simplex	SMPLX	Either	Type 5
		Type 5	Type 5			
Inter-Building	Sys85/G2	Simplex	Simplex	SMPLX	Either	Type 5
		Type 5	Type 5			
Co-Located	DIMENSION	E&M Type 1	E&M Type 1	E&M	Unprotected	Type 1
	PBX	Compatible	Standard			Compatible
Inter-Building	DIMENSION	Protected Type 1	Protected Type 1	E&M	Protected	Type 1
	PBX	Compatible	Standard			Compatible
Co-Located	Other	E&M Type 1	E&M Type 1	E&M	Unprotected	Type 1
		Compatible	Standard			Compatible
Inter-Building	Other	Protected Type 1	Protected Type 1	E&M	Protected	Type 1
		Compatible	Standard Plus			Compatible
			Protection			
			Unit			
Co-Located	Net Integrated	E&M Type 1	Any PBX	E&M	Unprotected	Type 1
		Standard				

TN464E/F Option Settings

The TN464E/F DS1/E1 Interface - T1/E1 circuit pack interfaces between a 24 or 32 channel Central Office/ISDN or tie trunk and the TDM bus.

Set the switches on the circuit pack to select bit rate and impedance match. See Table A-13 and Figure A-4.

Table A-13.   Option Switch Settings on TN464E/F

120 Ohms	Twisted pair
75 Ohms	Coaxial requiring 888B adapter
32 Channel	2.048 Mbps
24 Channel	1.544 Mbps
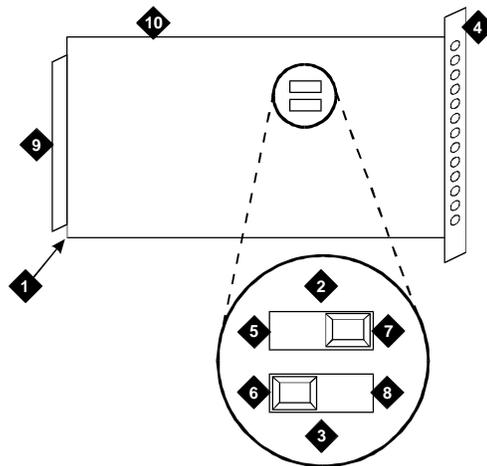
Figure Notes

1. Backplane Connectors
2. 24/32 Channel Selector
3. 75/120 Ohm Selector
4. Faceplate
5. 32 Channel

6. 120 Ohm (shown selected)
7. 24 Channel (shown selected)
8. 75 Ohm
9. Connector
10. TN464E/F

Figure A-4.   TN464E/F Option Settings

Connector and Cable Diagrams

B

For circuit pack, auxiliary equipment lead designations, and auxiliary equipment classifications, see the tables at the end of Chapter 4, "Install and Wire Telephones and Other Equipment".

FS 10 H600-348 cable

50-pin Amphenol connector TN1654 | 15-pin D-sub DS1 interface to a CSU

Connector 01

23	LOA*	LOA*	1
48	LOA	LOA	9
22	LIA	LIA	3
47	LIA*	LIA*	11

Connector 02

20	LOB*	LOB*	1
45	LOB	LOB	9
19	LIB	LIB	3
44	LIB*	LIB*	11

Connector 03

17	LOC*	LOC*	1
42	LOC	LOC	9
16	LIC	LIC	3
41	LIC*	LIC*	11

Connector 04

14	LOD*	LOD*	1
39	LOD	LOD	9
13	LID	LID	3
38	LID*	LID*	11

FS 11 H600-347 cable (packet gateway interface cable)

Amphenol connector to TN577 | 25-pin D-sub connectors

Connector 1

1	TC0	15
2	DCD0	8
3	RC0	17
4	CTS0	5
5	RD0	3
6	SG0	7
7	TD0	2
8	DTR0	20
9	TT0	24
10	LL0	18
11	RTS0	4
12		No connection

Connector 2

13	TC1	15
14	DCD1	8
15	RC1	17
16	CTS1	5
17	RD1	3
18	SG1	7
19	TD1	2
20	DTR1	20
21	TT1	24
22	LL1	18
23	RTS1	4
24		No connection
25		No connection

Amphenol connector to TN577 | 25-pin D-sub connectors

Connector 3

26	TC2	15
27	DCD2	8
28	RC2	17
29	CTS2	5
30	RD2	3
31	SG2	7
32	TD2	2
33	DTR2	20
34	TT2	24
35	LL2	18
36	RTS2	4
37		No connection

Connector 4

38	TC3	15
39	DCD3	8
40	RC3	17
41	CTS3	5
42	RD3	3
43	SG3	7
44	TD3	2
45	DTR3	20
46	TT3	24
47	LL3	18
48	RTS3	4
49		No connection
50		No connection

FS 12

Amphenol connector to TN1654 | Amphenol connector to TN570 or TN573

2	GRDE	GRDE	2
27	XMT_DAT*	RCV_DAT*	31
3	GRD	GRDE	3
28	GRD	GRDE	28
5	GRD	GRDE	5
30	GRD	GRDE	30
6	GRD	GRDE	6
31	RCV_DAT*	XMT_DAT*	27

23	LOA*	LOA*	23
48	LOA	LOA	48
22	LIA	LIA	22
47	LIA*	LIA*	47
20	LOB*	LOB*	20
45	LOB	LOB	45
19	LIB	LIB	19
44	LIB*	LIB*	44
17	LOC*	LOC*	17
42	LOC	LOC	42
16	LIC	LIC	16
41	LIC*	LIC*	41
14	LOD*	LOD*	14
39	LOD	LOD	39
13	LID	LID	13
38	LID*	LID*	38
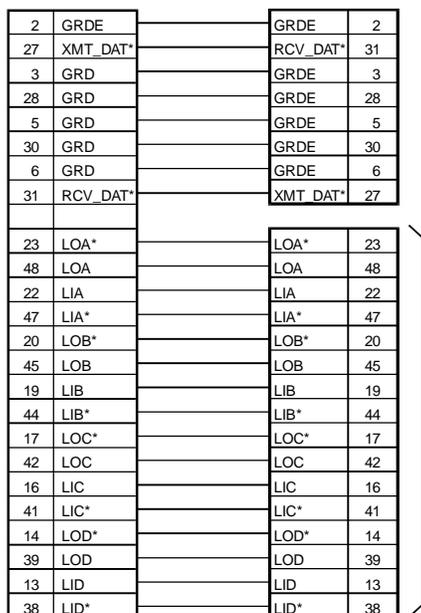
Pass thru to Amphenol connector to H600-348 or to cross connect

r975bb3 MMR 051096

Figure B-1. Sample Cable Pinouts

FS 13 600-307 cable

50-pin Amphenol connector to TN767,TN722,TN464 — 15-pin D-sub for application to a CSU

2	GRD			
3	GRD			
22	LI		LI	3
47	LI*		LI*	11
23	LO*		LO*	1
48	L0		L0	9
24	LOOP1		LOOP1	5
49	LOOP2		LOOP2	6

FS 14 846448652

Amphenol connection to TN574 — Amphenol connection to fiber transceiver 9823A or 9823B

1	+5		+5	1
26	+5		+5	26
2	GRD		GRD	2
27	TX		TX	27
3	GRD		GRD	3
28	GRD		GRD	28
4	TA*		TA*	4
29	TL*		TL*	29
5	GRD		GRD	5
30	GRD		GRD	30
6	GRD		GRD	6
31	RX		RX	31
7	+5		+5	7
32	+5		+5	32
23	LOA*		LOA*	23
48	LOA		LOA	48
22	LIA		LIA	22
47	LIA*		LIA*	47
20	LOB*		LOB*	20
45	LOB		LOB	45
19	LIB		LIB	19
44	LIB*		LIB*	44
17	LOC*		LOC*	17
42	LOC		LOC	42
16	LIC		LIC	16
41	LIC*		LIC*	41
14	LOD*		LOD*	14
39	LOD		LOD	39
13	LID		LID	13
38	LID*		LID*	38

Pass thru to Amphenol connection to H600-348 or to cross connect

FS 15 Clock (STRATUM 3 clock interface) PPN control carrier

25			50
24			49
23			48
22	ALRM5A	ALRM5B	47
21			46
20	EXTSYN0R	EXTSYN0T	45
19			44
18			43
17	EXTSYN1T	EXTSYN1R	42
16			41
15	ALRM1A	ALRM1B	40
14			39
13			38
12			37
11			36
10	ALRM4A	ALRM4B	35
09			34
08	ALRM3A	ALRM3B	33
07			32
06			31
05	ALRM2A	ALRM2B	30
04			29
03	ALRM0A	ALRM0B	28
02			27
01			26

FS 16 TERMINAL PPN & EPN terminal connections

Pin number	Lead designation
1	
2	TD
3	RD
4	RTS
5	CTS
6	DSR
7	SGRD
8	CD
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	DTR
20	
21	
22	
23	
24	

r975bb4 MMR 051396

Figure B-2.   Sample Pinouts

FS 17 H600-210 cable

25-pin D-sub	37-pin D-sub
1 - shield	1
2	4
15	5
3	6
4	7
17	8
5	9
18	10
6	11
20	12
8	13
22	15
24	17
7	19
	37
	35
21	33
	31
	30
	29
	27
	26
	24
	23
	22

Strapped wire leads

FS 18 H600-362 cable

25-pin D-sub	37-pin D-sub
1 - shield	1
3	4
15	5
2	6
4	7
17	8
5	9
18	10
6	11
20	12
8	13
22	15
24	17
7	19
	37
	35
21	33
	31
	30
	29
	27
	26
	24
	23
	22

Strapped wire leads

FS 19 ED1E434-11,G175

25-pin D-sub	37-pin D-sub
1	1
2	4
15	5
3	6
	7
17	8
5	9
20	12
8	13
24	17
4	18
7	19
	31
	27
	26
	24
	23

Resistor

Strapped wire leads

r975bb5 MMR 051396

Figure B-3.   Sample Cable Pinouts

FS 22 H600-274

15-pin D-sub to CSU		50-pin system connector	
Pin number		Pin number	
1		1	
2		22	
3		4	
4		23	
5			
6			
7			
8			
9		26	
10		47	
11		5	
12		48	
13			
14			
15			

50-pin clock connector

Pin number	
26	
47	
1	
22	

422 Ω

422 Ω

r975bb8 MMR 051396
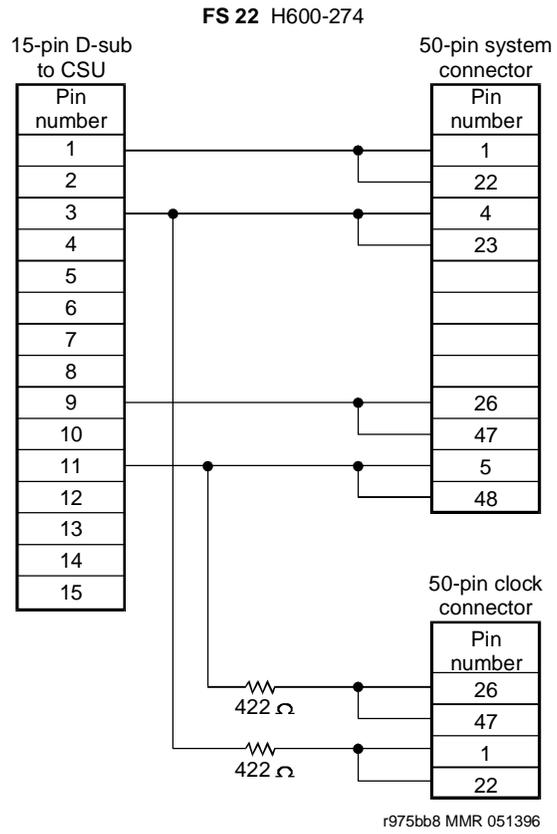
Figure B-4.   Sample H600-274 Cable

References

C

This section contains a list of user documents for the DEFINITY Enterprise Communications Server (ECS) Release 5.4.

To order these or other DEFINITY documents, contact the Lucent Technologies Publications Center at the address and phone number on the back of the title page of this document. A complete list of Business Communications Systems (BCS) documents, including previous issues of the documents listed here, is provided in *BCS Publications Catalog,* 555-000-010.

Basic DEFINITY ECS Documents

These are the basic documents issued for DEFINITY ECS Release 5.4.

DEFINITY Enterprise Communications Server Release 5 — Overview, Issue 3, 555-230-024

Provides a detailed overview of the ECS including descriptions of many of the major features, applications, hardware, system capabilities, and the support provided with the system. This document is available in the following languages: English, German (DE), Dutch (NL), Brazilian Portuguese (PTB), European French (FR), Colombian Spanish (SPL), and Japanese (JA). To order, append the language suffix to the document number; for example, 555-230-894DE for German. No suffix is needed for the English version.

DEFINITY Enterprise Communications Server Release 5.4.0 — Change Description, Issue 1, 555-230-472

Gives a high-level overview of the DEFNITY ECS Release 5.4. Describes the hardware and software enhancements and lists the problem corrections for this release.

DEFINITY Enterprise Communications Server Release 5 — System Description Pocket Reference, Issue 1, **555-230-207**

Provides hardware descriptions, system parameters, listings of features and system configurations, and environmental and maintenance requirements. This compact reference combines and replaces Release 5 *System Description and Specifications* and Release 5 *Pocket Reference*.

DEFINITY Enterprise Communications Server Release 5 — Administration and Feature Description, Issue 1, **555-230-522**

Provides descriptions of system features. Also provides step-by-step procedures for preparing the screens that are required to implement the features, functions, and services of the system. Includes the applications and benefits, feature interactions, administration requirements, hardware requirements, and procedures for voice terminal, data module, and trunk group administration.

This document combines and replaces Release 5 *Feature Description* and Release 5 *Implementation*.

DEFINITY Enterprise Communications Server Release 5 — Implementation Blank Forms, Issue 1, **555-230-303**

Provides blank hardcopy forms corresponding to the screens that are required to implement the features, functions, and services of the system.

DEFINITY Enterprise Communications Server Release 5 — System Monitoring and Reporting, Issue 4, **555-230-511**

Provides detailed descriptions of the measurement, status, security, and recent change history reports available in the system and is intended for administrators who validate traffic reports and evaluate system performance. Includes corrective actions for potential problems. Issue 2 of this document was titled *Traffic Reports*.

DEFINITY Enterprise Communications Server Release 5 — Installation and Test for Single-Carrier Cabinets, Issue 3, **555-230-894**

Provides procedures and information for hardware installation and initial testing of single-carrier cabinets.

This document is available in the following languages: English, German (DE), Dutch (NL), Brazilian Portuguese (PTB), European French (FR), Castillian Spanish (SP), and Japanese (JA). To order, append the language suffix to the document number; for example, 555-230-894DE for German. No suffix is needed for the English version.

DEFINITY Enterprise Communications Server Release 5 — Installation and Test for Multi-Carrier Cabinets, Issue 2, **555-230-112**

Provides procedures and information for hardware installation and initial testing of multi-carrier cabinets.

DEFINITY Communications System Generic 3vs and Generic 3si — Upgrades and Additions, Issue 1, 555-230-108

Provides procedures for an installation technician to convert an existing DEFINITY Communications System earlier than Generic 3 Version 4 to Generic 3vs/si Version 4.

DEFINITY Communications System Generic 3r — Upgrades and Additions, Issue 1, 555-230-109

Provides procedures for an installation technician to convert an existing DEFINITY Communications System earlier than Generic 3 Version 4 to Generic 3r Version 4.

DEFINITY Enterprise Communications Server Release 5 — Upgrades and Additions for R5r, Issue 2, 555-230-121

Provides procedures for an installation technician to convert an existing Generic 3 Version 4 DEFINITY Communications System to DEFINITY ECS and from DEFINITY ECS Release 5 to DEFINITY ECS Release 5.4.

Included are upgrade considerations, lists of required hardware, and step-by-step upgrade procedures. Also included are procedures to add control carriers, switch node carriers, port carriers, circuit packs, auxiliary cabinets, and other equipment.

DEFINITY Enterprise Communications Server Release 5 — Upgrades and Additions for R5vs/si, Issue 2, 555-230-120

Provides procedures for an installation technician to convert an existing DEFINITY Communications System Generic 3 Version 4 to DEFINITY ECS and from DEFINITY ECS Release 5 to DEFINITY ECS Release 5.4.

Included are upgrade considerations, lists of required hardware, and step-by-step upgrade procedures. Also included are procedures to add control carriers, switch node carriers, port carriers, circuit packs, auxiliary cabinets, and other equipment.

DEFINITY Enterprise Communications Server Release 5 — Maintenance and Test for R5r, Issue 1, 555-230-122

Provides detailed descriptions of the procedures for monitoring, testing, and maintaining the ECS. Included are maintenance commands, step-by-step trouble-clearing procedures, the procedures for using all tests, and explanations of the system's error codes.

DEFINITY Enterprise Communications Server Release 5 — Maintenance and Test for R5vs/si, Issue 1, 555-204-123

Provides detailed descriptions of the procedures for monitoring, testing, and maintaining the ECS. Included are maintenance commands, step-by-step trouble-clearing procedures, the procedures for using all tests, and explanations of the system's error codes.

DEFINITY Communications System Generic 3 Planning and Configuration, Issue 2, 555-230-601

Provides step-by-step procedures for the account team in determining the customer's equipment and hardware requirements to configure a system according to the customer specifications. Includes detailed requirements and block diagrams. This document reflects Generic 3 Version 2 software, but still contains relevant information for the ECS.

BCS Products Security Handbook, Issue 5, 555-025-600

Provides information about the risks of telecommunications fraud and measures for addressing those risks and preventing unauthorized use of BCS products. This document is intended for telecommunications managers, console operators, and security organizations within companies.

DEFINITY Enterprise Communications Server Release 5 — Terminals and Adjuncts Reference, Issue 8, 555-015-201

Provides descriptions of the peripheral equipment that can be used with System 75, System 85, DEFINITY Communications System, and DEFINITY ECS. This document is intended for customers and Lucent Technologies account teams for selecting the correct peripherals to accompany an ECS.

DEFINITY Enterprise Communications Server — Generic 1, Generic 3, System 75, and Voice Terminal Guide Builder, Issue 3, 555-230-755

Provides capability to produce laser-printed documentation for specific voice terminals. The software is supported by a comprehensive user's guide and on-line help. This product requires a 386 PC, minimum of 6MB disk space, minimum of 4MB RAM, a printer supported by Microsoft GDI printer drive, and Microsoft Windows 3.1 or higher. A mouse is recommended.

Call Center

These documents are issued for Call-Center applications of the DEFINITY ECS.

DEFINITY

***DEFINITY Enterprise Communications Server Release 5 — Call Vectoring/EAS Guide, Issue 1**, 585-230-521*

Provides information on how to write, use, and troubleshoot vectors, which are command sequences that process telephone calls in an Automatic Call Distribution (ACD) environment. It is provided in two parts: tutorial and reference.

The tutorial provides step-by-step procedures for writing and implementing basic vectors.

The reference includes detailed descriptions of the call vectoring features, vector management, vector administration, adjunct routing, troubleshooting, and interactions with management information systems (including the Call Management System).

***DEFINITY Enterprise Communications Server Release 5 — Basic Call Management System (BCMS) Operations, Issue 1**, 555-230-706*

Provides detailed instructions on how to generate reports and manage the system and is intended for telecommunications managers who wish to use Basic Call Management System (BCMS) reports and system managers responsible for maintaining the system.

CentreVu CMS

***CentreVu Call Management System Release 3 Version 5 — Administration, Issue 1**, 585-215-820*

***CentreVu Call Management System Release 3 Version 5 — Reports, Issue 1**, 585-215-821*

***CentreVu Call Management System Release 3 Version 5 — Custom Reports, Issue 1**, 585-215-822*

***CentreVu Call Management System Release 3 Version 5 — Upgrades and Migrations, Issue 1**, 585-215-826*

***CentreVu Call Management System Release 3 Version 5 — External Call History Reference, Issue 1**, 585-215-824*

***CentreVu Call Management System Release 3 Version 5 — Forecast, Issue 1**, 585-215-825*

Application-Specific Documents

These documents are application-specific.

DEFINITY Enterprise Communications Server Generic 2 to Release 5.4 — Transition Reference, Issue 1, 555-230-523

Provides information on the differences in features and administration between the old and new systems when upgrading from a Generic 2 system to DEFINITY ECS Release 5.4.

ASAI

DEFINITY Enterprise Communications Server Release 5 — CallVisor ASAI Planning Guide, Issue 5, 555-230-222

Provides procedures and directions for the account team and customer personnel for effectively planning and implementing the CallVisor Adjunct/Switch Application Interface (ASAI) PBX-Host environment. The CallVisor ASAI is a communications interface that allows adjunct processors to access switch features and to control switch calls. It is implemented using an Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI). Hardware and software requirements are included.

DEFINITY Enterprise Communications Server Release 5 — CallVisor ASAI Protocol Reference, Issue 6, 555-230-221

Provides detailed layer 3 protocol information regarding the CallVisor Adjunct/Switch Application Interface (ASAI) for the systems and is intended for the library or driver programmer of an adjunct processor to create the library of commands used by the applications programmers. Describes the ISDN message, facility information elements, and information elements.

DEFINITY Enterprise Communications Server Release 5 — CallVisor ASAI Technical Reference, Issue 6, 555-230-220

Provides detailed information regarding the CallVisor Adjunct/Switch Application Interface (ASAI) for the systems and is intended for the application designer responsible for building and/or programming custom applications and features.

DEFINITY Enterprise Communications Server Release 5 — Installation, Administration, and Maintenance of CallVisor ASAI Over the DEFINITY LAN Gateway, Issue 2, 555-230-223

Provides procedures for installation, administration, and maintenance of the CallVisor Adjunct/Switch Application Interface (ASAI) Ethernet application over the DEFINITY LAN Gateway and is intended for system administrators, telecommunications managers, Management Information System (MIS) managers, LAN managers, and Lucent personnel. The ASAI-Ethernet application

provides ASAI functionality using 10Base-T Ethernet rather than BRI as a transport media.

DEFINITY Enterprise Communications Server Release 5 — Call Visor ASAI Overview, Issue 2, 555-230-225

Provides a general description of Call Visor ASAI.

This document is available in the following languages: English, German (DE), Dutch (NL), Brazilian Portuguese (PTB), European French (FR), Colombian Spanish (SPL), and Japanese (JA). To order, append the language suffix to the document number; for example, 555-230-894DE for German. No suffix is needed for the English version.

DEFINITY Enterprise Communications Server Release 5 — **CallVisor PC ASAI Installation and Reference, Issue 4, 555-246-205**

Provides procedural and reference information for installers, Tier 3 support personnel, and application designers.

ACD

DEFINITY Enterprise Communications Server Release 5 — Automatic Call Distribution (ACD) Agent Instructions, Issue 5, 555-230-722

Provides information for use by agents after they have completed ACD training. Includes descriptions of ACD features and the procedures for using them.

DEFINITY Enterprise Communications Server Release 5 — Automatic Call Distribution (ACD) Supervisor Instructions, Issue 4, 555-230-724

Provides information for use by supervisors after they have completed ACD training. Includes descriptions of ACD features and the procedures for using them.

Call Detail Recording

Call Detail Acquisition & Processing Reference, 555-006-202

Contains call detail recording information.

Console Operations

DEFINITY Communications System Generic 1 and Generic 3 Console Operations, Issue 2, 555-230-700

Provides operating instructions for the attendant console. Included are descriptions of the console control keys and functions, call-handling procedures, basic system troubleshooting information, and routine maintenance procedures.

***DEFINITY Enterprise Communications Server Release 5 — Console Operations Quick Reference, Issue 2*, 555-230-890**

Provides operating instructions for the attendant console. Included are descriptions of the console control keys and functions, call handling, basic system-troubleshooting information, and routine maintenance procedures.

This document is available in the following languages: English, German (DE), Dutch (NL), Brazilian Portuguese (PTB), European French (FR), Colombian Spanish (SPL), and Japanese (JA). To order, append the language suffix to the document number; for example, 555-230-894DE for German. No suffix is needed for the English version.

Hospitality

***An Introduction to DEFINITY Communications System Generic 3 Hospitality Services, Issue 1*, 555-230-021**

Provides an overview of the features available for use by the lodging and health industries to improve their property management and to provide assistance to their employees and clients. Included are brief definitions of many of the system features, descriptions of the hardware, planning considerations, and list of the system capabilities.

***DEFINITY Communications System Generic 1 and Generic 3 Hospitality Operations, Issue 3*1 555-230-723**

Provides step-by-step procedures for using the features available for the lodging and health industries to improve their property management and to provide assistance to their employees and clients. Includes detailed descriptions of reports.1

Glossary and Abbreviations

Numerics

3B2 Message Server
A software application that combines voice and data messaging services for voice-terminal users whose extensions are connected to a system.

800 service
A service in the United States that allows incoming calls from certain areas to an assigned number for a flat-rate charge based on usage.

A

AA
Archangel. See angel.

AAC
ATM access concentrator

AAR
See Automatic Alternate Routing (AAR).

abandoned call
An incoming call in which the caller hangs up before the call is answered.

Abbreviated Dialing (AD)
A feature that allows callers to place calls by dialing just one or two digits.

AC
1. Alternating current.
2. See Administered Connection (AC).

AAR
Automatic Alternate Routing

ACA
See Automatic Circuit Assurance (ACA).

ACB
See Automatic Callback (ACB).

ACD
See Automatic Call Distribution (ACD).

ACD agent
See agent.

ACU
See Automatic calling unit (ACU)

ACW
See after-call work (ACW) mode.

access code

A 1-, 2-, or 3-digit dial code used to activate or cancel a feature, or access an outgoing trunk.

access endpoint

Either a nonsignaling channel on a DS1 interface or a nonsignaling port on an analog tie-trunk circuit pack that is assigned a unique extension.

access tie trunk

A trunk that connects a main communications system with a tandem communications system in an electronic tandem network (ETN). An access tie trunk can also be used to connect a system or tandem to a serving office or service node. Also called access trunk.

access trunk

See access tie trunk.

ACCUNET

A trademarked name for a family of digital services offered by AT&T in the United States.

ACD

See Automatic Call Distribution (ACD). ACD also refers to a work state in which an agent is on an ACD call.

ACD work mode

See work mode.

active-notification association

A link that is initiated by an adjunct, allowing it to receive event reports for a specific switch entity, such as an outgoing call.

active-notification call

A call for which event reports are sent over an active-notification association (communication channel) to the adjunct. Sometimes referred to as a monitored call.

active notification domain

VDN or ACD split extension for which event notification has been requested.

ACU

See Automatic calling unit (ACU).

AD

See Abbreviated Dialing (AD).

ADAP

AUDIX Data Acquisition Package

ADC

See analog-to-digital converter (ADC).

adjunct

A processor that does one or more tasks for another processor and that is optional in the configuration of the other processor. See also application.

adjunct-control association

A relationship initiated by an application via *Third Party Make Call*, the *Third Party Take Control,* or *Domain (Station) Control* capabilities to set up calls and control calls already in progress.

adjunct-controlled call

Call that can be controlled using an adjunct-control association. Call must have been originated via *Third Party Make Call* or *Domain (Station) Control* capabilities or must have been taken control of via *Third Party Take Control* or *Domain (Station) Control* capabilities.

adjunct-controlled split

An ACD split that is administered to be under adjunct control. Agents logged into such splits must do all telephony work, ACD login/ logout, and changes of work mode through the adjunct (except for auto-available adjunct-controlled splits, whose agents may not log in/out or change work mode).

adjunct-monitored call

An adjunct-controlled call, active-notification call, or call that provides event reporting over a domain-control association.

Adjunct-Switch Application Interface (ASAI)

A recommendation for interfacing adjuncts and communications systems, based on the CCITT Q.932 specification for layer 3.

ADM

Asynchronous data module

administer

To access and change parameters associated with the services or features of a system.

Administered Connection (AC)

A feature that allows the switch to automatically establish and maintain end-to-end connections between access endpoints (trunks) and/or data endpoints (data modules).

administration group

See capability group.

administration terminal

A terminal that is used to administer and maintain a system. See also terminal.

Administration Without Hardware (AWOH)

A feature that allows administration of ports without associated terminals or other hardware.

ADU

See asynchronous data unit (ADU).

AE

See access endpoint.

after-call work (ACW) mode

A mode in which agents are unavailable to receive ACD calls. Agents enter the ACW mode to perform ACD-related activities such as filling out a form after an ACD call.

AG

ASAI Gateway

agent

A person who receives calls directed to a split. A member of an ACD hunt group or ACD split. Also called an ACD agent.

agent report

A report that provides historical traffic information for internally measured agents.

AIM

Asynchronous interface module

AIOD

Automatic Identification of Outward Dialing

ALBO

Automatic Line Build Out

All trunks busy (ATB)

The state in which no trunks are available for call handling.

ALM-ACK

Alarm acknowledge

American Standard Code for Information Interchange

See ASCII (American Standard Code for Information Interchange).

AMW

Automatic Message Waiting

AN

Analog

analog

The representation of information by continuously variable physical quantities such as amplitude, frequency, and phase. See also digital.

analog data

Data that is transmitted over a digital facility in analog (PCM) form. The data must pass through a modem either at both ends or at a modem pool at the distant end.

analog telephone

A telephone that receives acoustic voice signals and sends analog electrical signals along the telephone line. Analog telephones are usually served by a single wire pair (tip and ring). The model-2500 telephone set is a typical example of an analog telephone.

analog-to-digital converter (ADC)

A device that converts an analog signal to digital form. See also digital-to-analog converter (DAC).

angel

A microprocessor located on each port card in a processor port network (PPN). The angel uses the control-channel message set (CCMS) to manage communications between the port card and the archangel on the controlling switch-processing element (SPE). The angel also monitors the status of other microprocessors on a port card and maintains error counters and thresholds.

ANI

See Automatic Number Identification (ANI).

ANSI

American National Standards Institute**.** A United States professional/technical association supporting a variety of standards.

answer tone

A high-pitched continuous tone that indicates a data endpoint has answered.

answerback code

A number used to respond to a page from a code-calling or loudspeaker-paging system, or to retrieve a parked call.

AOL

Attendant-offered load

AP

Applications processor

APLT
Advanced Private-Line Termination

appearance
A software process that is associated with an extension and whose purpose is to supervise a call. An extension can have multiple appearances. Also called call appearance, line appearance, and occurrence. See also call appearance.

application
An adjunct that requests and receives ASAI services or capabilities. One or more applications can reside on a single adjunct. However, the switch cannot distinguish among several applications residing on the same adjunct and treats the adjunct, and all resident applications, as a single application. The terms application and adjunct are used interchangeably throughout this document.

applications processor
A micro-computer based, program controlled computer providing application services for the DEFINITY switch. The processor is used with several user-controlled applications such as traffic analysis and electronic documentation.

application service element
See capability group.

architecture
The organizational structure of a system, including hardware and software.

ARS
See Automatic Route Selection (ARS).

ASAI
See Adjunct-Switch Application Interface (ASAI)

ASCII (American Standard Code for Information Interchange)
The standard code for representing characters in digital form. Each character is represented by an 8-bit code (including parity bit).

association
A communication channel between adjunct and switch for messaging purposes. An active association is one that applies to an existing call on the switch or to an extension on the call.

asynchronous data transmission
A method of transmitting data in which each character is preceded by a start bit and followed by a stop bit, thus permitting data characters to be transmitted at irregular intervals. This type transmission is advantageous when transmission is not regular (characters typed at a keyboard). Also called asynchronous transmission. See also synchronous data transmission.

asynchronous data unit (ADU)
A device that allows direct connection between RS-232C equipment and a digital switch.

asynchronous Transfer Mode (ATM)
A packet-like switching technology in which data is transmitted in fixed-size (53-byte) cells. ATM provides high-speed access for data communication in LAN, campus, and WAN environments.

ATB
See All trunks busy (ATB).

ATD
See Attention dial (ATD).

attendant

A person at a console who provides personalized service for incoming callers and voice-services users by performing switching and signaling operations. See also attendant console.

ATM

See asynchronous Transfer Mode (ATM).

attendant console

The workstation used by an attendant. The attendant console allows the attendant to originate a call, answer an incoming call, transfer a call to another extension or trunk, put a call on hold, and remove a call from hold. Attendants using the console can also manage and monitor some system operations. Also called console. See also attendant.

Attention dial (ATD)

A command in the Hayes modem command set for asynchronous modems.

Audio Information Exchange (AUDIX)

A fully integrated voice-mail system. Can be used with a variety of communications systems to provide call-history data, such as subscriber identification and reason for redirection.

AUDIX

See Audio Information Exchange (AUDIX).

auto-in trunk group

Trunk group for which the CO processes all of the digits for an incoming call. When a CO seizes a trunk from an auto-in trunk group, the switch automatically connects the trunk to the destination — typically an ACD split where, if no agents are available, the call goes into a queue in which callers are answered in the order in which they arrive.

Auto-In Work mode

One of four agent work modes: the mode in which an agent is ready to process another call as soon as the current call is completed.

Automatic Alternate Routing (AAR)

A feature that routes calls to other than the first-choice route when facilities are unavailable.***

Automatic Callback (ACB)

A feature that enables internal callers, upon reaching a busy extension, to have the system automatically connect and ring both parties when the called party becomes available.

Automatic Call Distribution (ACD)

A feature that answers calls, and then, depending on administered instructions, delivers messages appropriate for the caller and routes the call to an agent when one becomes available.

Automatic Call Distribution (ACD) split

A method of routing calls of a similar type among agents in a call center. Also, a group of extensions that are staffed by agents trained to handle a certain type of incoming call.

Automatic calling unit (ACU)

A device that places a telephone call.

Automatic Circuit Assurance (ACA)

A feature that tracks calls of unusual duration to facilitate troubleshooting. A high number of very short calls or a low number of very long calls may signify a faulty trunk.

Automatic Number Identification (ANI)

Representation of the calling number, for display or for further use to access information about the caller. Available with Signaling System 7.

automatic restoration
A service that restores disrupted connections between access endpoints (nonsignaling trunks) and data endpoints (devices that connect the switch to data terminal and/or communications equipment). Restoration is done within seconds of a service disruption so that critical data applications can remain operational.

Automatic Route Selection (ARS)
A feature that allows the system to automatically choose the least-cost way to send a toll call.

automatic trunk
A trunk that does not require addressing information because the destination is predetermined. A request for service on the trunk, called a seizure, is sufficient to route the call. The normal destination of an automatic trunk is the communications-system attendant group. Also called automatic incoming trunk and automatic tie trunk.

AUX
Auxiliary

auxiliary equipment
Equipment used for optional system features, such as Loudspeaker Paging and Music-on-Hold.

auxiliary trunk
A trunk used to connect auxiliary equipment, such as radio-paging equipment, to a communications system.

Aux-Work mode
A work mode in which agents are unavailable to receive ACD calls. Agents enter Aux-Work mode when involved in non-ACD activities such as taking a break, going to lunch, or placing an outgoing call.

AVD
Alternate voice/data

AWOH
See Administration Without Hardware (AWOH).

AWG
American Wire Gauge

AWT
Average work time

B

B8ZS
Bipolar Eight Zero Substitution.

bandwidth
The difference, expressed in hertz, between the defined highest and lowest frequencies in a range.

barrier code
A security code used with the Remote Access feature to prevent unauthorized access to the system.

baud
A unit of transmission rate equal to the number of signal events per second. See also bit rate and bits per second (bps).

BCC
See Bearer capability class (BCC).

BCMS
Basic Call Management System

BCT
See business communications terminal (BCT).

Bearer capability class (BCC)
Code that identifies the type of a call (for example, voice and different types of data). Determination of BCC is based on the caller's characteristics for non-ISDN endpoints and on the Bearer Capability and Low-Layer Compatibility Information Elements of an ISDN endpoint. Current BCCs are 0 (voice-grade data and voice), 1 (DMI mode 1, 56 kbps data transmission), 2 (DMI mode 2, synchronous/asynchronous data transmission up to 19.2 kbps) 3 (DMI mode 3, 64 kbps circuit/packet data transmission), 4 (DMI mode 0, 64 kbps synchronous data), 5 (temporary signaling connection, and 6 (wideband call, 128–1984 kbps synchronous data).

BER
Bit error rate

BHCC
Busy-hour call completions

bit (binary digit)
One unit of information in binary notation, having two possible values: 0 or 1.

bits per second (bps)
The number of binary units of information that are transmitted or received per second. See also baud and **bit rate**.

bit rate
The speed at which bits are transmitted, usually expressed in bits per second. Also called data rate. See also baud and bits per second (bps).

BLF
Busy Lamp Field

BN
Billing number

BOS
Bit-oriented signaling

BPN
Billed-party number

bps
See bits per second (bps).

bridge (bridging)
The appearance of a voice terminal's extension at one or more other voice terminals.

BRI
The ISDN Basic Rate Interface specification.

bridged appearance
A call appearance on a voice terminal that matches a call appearance on another voice terminal for the duration of a call.

BTU
British Thermal Unit

buffer
1. In hardware, a circuit or component that isolates one electrical circuit from another. Typically, a buffer holds data from one circuit or process until another circuit or process is ready to accept the data.
2. In software, an area of memory that is used for temporary storage.

bus
A multiconductor electrical path used to transfer information over a common connection from any of several sources to any of several destinations.

business communications terminal (BCT)
A digital data terminal used for business applications. A BCT can function via a data module as a special-purpose terminal for services provided by a processor or as a terminal for data entry and retrieval.

busy tone
A low-pitched repeating tone that indicates the dialed number is in use.

BX.25
A version of the CCITT X.25 protocol for data communications. BX.25 adds a fourth level to the standard X.25 interface. This uppermost level combines levels 4, 5, and 6 of the ISO reference model.

bypass tie trunks
A 1-way, outgoing tie trunk from a tandem switch to a main switch in an ETN. Bypass tie trunks, provided in limited quantities, are used as a last-choice route when all trunks to another tandem switch are busy. Bypass tie trunks are used only if all applicable intertandem trunks are busy.

byte
A sequence of (usually eight) bits processed together.

C

CACR
Cancellation of Authorization Code Request

cabinet
Housing for racks, shelves, or carriers that hold electronic equipment.

cable
Physical connection between two pieces of equipment (for example, data terminal and modem) or between a piece of equipment and a termination field.

cable connector
A jack (female) or plug (male) on the end of a cable. A cable connector connects wires on a cable to specific leads on telephone or data equipment.

CAG
Coverage answer group

call appearance

1. For the attendant console, six buttons, labeled a–f, used to originate, receive, and hold calls. Two lights next to the button show the status of the call appearance.

2. For the voice terminal, a button labeled with an extension and used to place outgoing calls, receive incoming calls, or hold calls. Two lights next to the button show the status of the call appearance.

call-control capabilities

Capabilities (*Third Party Selective Hold, Third Party Reconnect, Third Party Merge*) that can be used in either of the Third Party Call Control ASE (cluster) subsets (Call Control and Domain Control).

Call Detail Recording (CDR)

A feature that uses software and hardware to record call data (same as CDRU).

Call Detail Recording utility (CDRU)

Software that collects, stores, optionally filters, and outputs call-detail records.

Call Management System (CMS)

An application, running on an adjunct processor, that collects information from an ACD unit. CMS enables customers to monitor and manage telemarketing centers by generating reports on the status of agents, splits, trunks, trunk groups, vectors, and VDNs, and enables customers to partially administer the ACD feature for a communications system.

call-reference value (CRV)

An identifier present in ISDN messages that associates a related sequence of messages. In ASAI, CRVs distinguish between associations.

call vector

A set of up to 15 vector commands to be performed for an incoming or internal call.

callback call

A call that automatically returns to a voice-terminal user who activated the Automatic Callback or Ringback Queuing feature.

call-waiting ringback tone

A low-pitched tone identical to ringback tone except that the tone decreases in the last 0.2 seconds (in the United States). Call-waiting ringback tone notifies the attendant that Attendant Call Waiting is active and that the called party is aware of the waiting call. Tones in international countries may sound different.

call-waiting tone

One, two, or three beeps (short bursts of high-pitched tone) that indicate to a busy single-line terminal that an incoming call is waiting. The type of incoming call determines the number of beeps the busy terminal receives: 1 beep indicates the call is from another terminal in the system, 2 beeps indicate the call is from the attendant or an outside caller, and 3 beeps indicate the waiting call is a priority 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.

CAMA

Centralized Automatic Message Accounting

carrier

An enclosed shelf containing vertical slots that hold circuit packs.

carried load

The amount of traffic served by traffic-sensitive facilities during a given interval.

CARR-POW

Carrier Port and Power Unit for AC Powered Systems

CAS

Centralized Attendant Service or Call Accounting System

CCS or hundred call seconds

A unit of call traffic. Call traffic for a facility is scanned every 100 seconds. If the facility is busy, it is assumed to have been busy for the entire scan interval. There are 3600 seconds per hour. The Roman numeral for 100 is the capital letter C. The abbreviation for call seconds is CS. Therefore, 100 call seconds is abbreviated CCS. If a facility is busy for an entire hour, then it is said to have been busy for 36 CCS. See also **Erlang.**

capability

A request or indication of an operation. For example, *Third Party Make Call* is a request for setting up a call; *event report* is an indication that an event has occurred.

capability group

Set of capabilities, determined by switch administration, that can be requested by an application. Capability groups denote association types. For example, *Call Control* is a type of association that allows certain functions (the ones in the capability group) to be performed over this type of association. Also referred to as administration groups or application service elements (ASEs).

CA-TSC

Call-Associated Temporary Signaling Connection

cause value

A value is returned in response to requests or in event reports when a denial or unexpected condition occurs. ASAI cause values fall into two coding standards: Coding Standard 0 includes any cause values that are part of AT&T and CCITT ISDN specifications; Coding standard 3 includes any other ASAI cause values. This document uses a notation for cause value where the coding standard for the cause is given first, then a slash, then the cause value. Example: CS0/100 is coding standard 0, cause value 100.

CBC

Call-by-call or coupled bonding conductor

CC

Country code

CCIS

Common-Channel Interoffice Signaling

CCITT

CCITT (Comitte Consultatif International Telephonique et Telegraphique), now called *International Telecommunications Union* (ITU). See International Telecommunications Union (ITU).

CCMS

Control-Channel Message Set

CCS

See CCS or hundred call seconds.

CCSA

Common-Control Switching Arrangement

CDM

Channel-division multiplexing

CDOS

Customer-dialed and operator serviced

CDR

See Call Detail Recording (CDR).

CDRP

Call Detail Record Poller

CDRR

Call Detail Recording and Reporting

CDRU

See Call Detail Recording utility (CDRU).

CEM

Channel-expansion multiplexing

center-stage switch (CSS)

The central interface between the processor port network and expansion port networks in a CSS-connected system.

central office (CO)

The location housing telephone switching equipment that provides local telephone service and access to toll facilities for long-distance calling.

central office (CO) codes

The first three digits of a 7-digit public-network telephone number in the United States.

central office (CO) trunk

A telecommunications channel that provides access from the system to the public network through the local CO.

CEPT1

European Conference of Postal and Telecommunications Rate 1

channel

1. A circuit-switched call.
2. A communications path for transmitting voice and data.
3. In wideband, all of the time slots (contiguous or noncontiguous) necessary to support a call. Example: an H0-channel uses six 64-kbps time slots.
4. A DS0 on a T1 or E1 facility not specifically associated with a logical circuit-switched call; analogous to a single trunk.

channel negotiation

The process by which the channel offered in the Channel Identification Information Element (CIIE) in the SETUP message is negotiated to be another channel acceptable to the switch that receives the SETUP message and ultimately to the switch that sent the SETUP. Negotiation is attempted only if the CIIE is encoded as *Preferred*. Channel negotiation is not attempted for wideband calls.

CI

Clock input

circuit

1. An arrangement of electrical elements through which electric current flows.
2. A channel or transmission path between two or more points.

circuit pack

A card on which electrical circuits are printed, and IC chips and electrical components are installed. A circuit pack is installed in a switch carrier.

CISPR

International Special Committee on Radio Interference

Class of Restriction (COR)

A feature that allows up to 64 classes of call-origination and call-termination restrictions for voice terminals, voice-terminal groups, data modules, and trunk groups. See also Class of Service (COS).

Class of Service (COS)

A feature that uses a number to specify if voice-terminal users can activate the Automatic Callback, Call Forwarding All Calls, Data Privacy, or Priority Calling features. See also Class of Restriction (COR).

cm

Centimeter

CM

Connection Manager

CMDR

Centralized Message Detail Recording

CMS

Call Management System

CO

See central office (CO).

common-control switching arrangement (CCSA)

A private telecommunications network using dedicated trunks and a shared switching center for interconnecting company locations.

communications system

The software-controlled processor complex that interprets dialing pulses, tones, and keyboard characters and makes the proper connections both within the system and external to the system. The communications system itself consists of a digital computer, software, storage device, and carriers with special hardware to perform the connections. A communications system provides voice and data communications services, including access to public and private networks, for telephones and data terminals on a customer's premises. See also switch.

confirmation tone

Three short bursts of tone that confirms a feature activation, deactivation, or cancellation has been accepted. This tone also can indicate that an outgoing call from a single-line voice terminal was placed in a ringback queue.

connectivity

The connection of disparate devices within a single system.

console

See attendant console.

contiguous

Adjacent DS0s within one T1 or E1 facility or adjacent TDM or fiber time slots. The first and last TDM bus, DS0, or fiber time slots are not considered contiguous (no wraparound). For an E1 facility with a D-channel, DS0s 15 and 17 are considered contiguous.

control cabinet
  See control carrier.

control carrier
  A carrier in a multicarrier cabinet that contains the SPE circuit packs and, unlike an R5r control carrier, port circuit packs. Also called control cabinet in a single-carrier cabinet. See also switch-processing element (SPE).

controlled station
  A station that is monitored and controlled via a domain-control association.

COR
  See Class of Restriction (COR).

COS
  See Class of Service (COS).

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 to an alternate answering position when certain coverage criteria are met.

coverage path
  The order in which calls are redirected to alternate answering positions.

coverage point
  An extension or attendant group, VDN, or ACD split designated as an alternate answering position in a coverage path.

coverage tone
  A long-burst of tone indicating to the calling party that a call to an extension is being answered at another extension by a covering user.

covering user
  A person at a coverage point who answers a redirected call.

CP
  Circuit pack

CPE
  Customer-premises equipment

CPN
  Called-party number

CPN/BN
  Calling-party number/billing number

CPTR
  Call-progress-tone receiver

CRC
  Cyclical Redundancy Checking

critical-reliability system
A system that has the following duplicated items: control carriers, tone clocks, EI circuit packs, and cabling between port networks and center-stage switch in a CSS-connected system. See also duplicated common control, and duplication.

CSA
Canadian Safety Association

CSCC
Compact single-carrier cabinet

CSCN
Center-stage control network

CSD
Customer-service document

CSM
Centralized System Management

CSS
See center-stage switch (CSS).

CSSO
Customer Services Support Organization

CSU
Channel service unit

CTS
Clear to Send

CWC
See call work code.

D

DAC
1. Dial access code or Direct Agent Calling
2. See digital-to-analog converter (DAC).

data channel
A communications path between two points used to transmit digital signals.

data-communications equipment (DCE)
The equipment (usually a modem, data module, or packet assembler/disassembler) on the network side of a communications link that makes the binary serial data from the source or transmitter compatible with the communications channel.

data link
The configuration of physical facilities enabling end terminals to communicate directly with each other.

data module
An interconnection device between a BRI or DCP interface of the switch and data terminal equipment or data communications equipment.

data path

The end-to-end connection used for a data communications link. A data path is the combination of all elements of an interprocessor communication in a DCS.

data port

A point of access to a computer that uses trunks or lines for transmitting or receiving data.

data rate

See bit rate.

data service unit (DSU)

A device that transmits digital data on transmission facilities.

data terminal

An input/output (I/O) device that has either switched or direct access to a host computer or to a processor interface.

data terminal equipment (DTE)

Equipment consisting of the endpoints in a connection over a data circuit. In a connection between a data terminal and host, the terminal, the host, and their associated modems or data modules make up the DTE.

dB

Decibel

dBA

Decibels in reference to amperes.

dBrnC

Decibels above reference noise with C filter.

DC

Direct current

DCE

Data-communications equipment

D-channel backup

Type of backup used with Non-Facility Associated Signaling (NFAS). A primary D-channel provides signaling for an NFAS D-channel group (two or more PRI facilities). A second D-channel, on a separate PRI facility of the NFAS D-channel group, is designated as backup for the D-channel. Failure of the primary D-channel causes automatic transfer of call-control signaling to the backup D-channel. The backup becomes the primary D-channel. When the failed channel returns to service, it becomes the backup D-channel.

DCO

Digital central office

DCP

Digital Communications Protocol

DCS

Distributed Communications System

DDC

Direct Department Calling

DDD

Direct Distance Dialing

delay-dial trunk

A trunk that allows dialing directly into a communications system (digits are received as they are dialed).

denying a request

Sending a negative acknowledgement (NAK), done by sending an FIE with a *return error* component (and a cause value). It should not be confused with the denial event report that applies to calls.

designated voice terminal

The specific voice terminal to which calls, originally directed to a certain extension, are redirected. Commonly used to mean the forwarded-to terminal when Call Forwarding All Calls is active.

dial tone

A continuous tone indicating that a user can begin dialing or activate features.

dial-repeating trunks

A PBX tie trunk that is capable of handling PBX station-signaling information without attendant assistance.

dial-repeating tie trunk

A tie trunk that transmits called-party addressing information between two communications systems.

DID

Direct Inward Dialing

digit conversion

A process used to convert specific dialed numbers into other dialed numbers.

digital

The representation of information by discrete steps. See also analog.

digital communications protocol (DCP)

A proprietary protocol used to transmit both digitized voice and digitized data over the same communications link. A DCP link is made up of two 64-kbps information (I-) channels and one 8-kbps signaling (S-) channel.

digital data endpoints

In DEFINITY ECS, devices such as the 510D terminal or the 515-type business communications terminal (BCT).

digital multiplexed interface (DMI)

An interface that provides connectivity between a communications system and a host computer or between two communications systems using DS1 24th-channel signaling. DMI provides 23 64-kbps data channels and 1 common-signaling channel over a twisted-pair connection. DMI is offered through two capabilities: bit-oriented signaling (DMI-BOS) and message-oriented signaling (DMI-MOS).

digital signal level 0 (DS0)

A single 64-kbps voice channel. A DS0 is a single 64-kbps channel in a T1 or E1 facility and consists of eight bits in a T1 or E1 frame every 125 microseconds.

digital signal level 1 (DS1)

A single 1.544-Mbps (United States) or 2.048-Mbps (outside the United States) digital signal carried on a T1 transmission facility. A DS1 converter complex consists of a pair, one at each end, of DS1 converter circuit packs and the associated T1/E1 facilities.

digital terminal data module (DTDM)

An integrated or adjunct data module that shares with a digital telephone the same physical port for connection to a communications system. The function of a DTDM is similar to that of a PDM and MPDM in that it converts RS-232C signals to DCP signals.

digital-to-analog converter (DAC)

A device that converts data in digital form to the corresponding analog signals. See also analog-to-digital converter (ADC).

digital transmission

A mode of transmission in which information to be transmitted is first converted to digital form and then transmitted as a serial stream of pulses.

digital trunk

A circuit that carries digital voice and/or digital data in a telecommunications channel.

DIOD

Direct Inward and Outward Dialing

direct agent

A feature, accessed only via ASAI, that allows a call to be placed in a split queue but routed only to a specific agent in that split. The call receives normal ACD call treatment (for example, announcements) and is measured as an ACD call while ensuring that a particular agent answers.

Direct Extension Selection (DXS)

A feature on an attendant console that allows an attendant direct access to voice terminals by pressing a group-select button and a DXS button.

Direct Inward Dialing (DID)

A feature that allows an incoming call from the public network (not FX or WATS) to reach a specific telephone without attendant assistance.

Direct Inward Dialing (DID) trunk

An incoming trunk used for dialing directly from the public network into a communications system without help from the attendant.

disk drive

An electromechanical device that stores data on and retrieves data from one or more disks.

distributed communications system (DCS)

A network configuration linking two or more communications systems in such a way that selected features appear to operate as if the network were one system.

DIVA

Data In/Voice Answer

DLC

Data line circuit

DLDM

Data-line data module

DMI

Digital-multiplexed interface

DND

Do not disturb

DNIS

Dialed-Number Identification Service

DOD

Direct Outward Dialing

domain

VDNs, ACD splits, and stations. The VDN domain is used for active-notification associations. The ACD-split domain is for active-notification associations and domain-control associations. The station domain is used for the domain-control associations.

domain-control association

A *Third Party Domain Control Request* capability initiates a unique CRV/link number combination, which is referred to as a domain-control association.

domain-controlled split

A split for which *Third Party Domain Control* request has been accepted. A domain-controlled split provides an event report for logout.

domain-controlled station

A station for which a *Third_Party_Domain_Control* request has been accepted. A domain-controlled station provides event reports for calls that are alerting, connected, or held at the station.

domain-controlled station on a call

A station that is active on a call, and which provides event reports over one or two domain-control associations.

DOSS

Delivery Operations Support System

DOT

Duplication Option Terminal

DPM

Dial Plan Manager

DPR

Dual-port RAM

DS1

Digital Signal Level 1

DS1C

Digital Signal Level-1 protocol C

DS1 CONV

Digital Signal Level-1 converter

DSI

Digital signal interface

DSU

Data service unit

DTDM

Digital-terminal data module

DTE

Data-terminal equipment

DTGS

Direct Trunk Group Select

DTMF

Dual-tone multifrequency

DTS

Disk-tape system

duplicated common control

Two processors ensuring continuous operation of a communications system. While one processor is online, the other functions as a backup. The backup processor goes online periodically or when a problem occurs.

duplication

The use of redundant components to improve availability. When a duplicated subsystem fails, its backup redundant system automatically takes over.

duplication option

A system option that duplicates the following: control carrier containing the SPE, EI circuit packs in carriers, fiber-optic cabling between port networks, and center-stage switch in a CSS-connected system.

DWBS

DEFINITY Wireless Business System

DXS

Direct extension selection

E

E1

A digital transmission standard that carries traffic at 2.048 Mbps. The E1 facility is divided into 32 channels (DS0s) of 64 kbps information. Channel 0 is reserved for framing and synchronization information. A D-channel occupies channel 16.

E & M

Ear and mouth (receive and transmit)

EA

Expansion archangel

EAL

Expansion archangel link

ear and mouth (E & M) signaling

Trunk supervisory signaling, used between two communications systems, whereby signaling information is transferred through 2-state voltage conditions (on the E and M leads) for analog applications and through a single bit for digital applications.

EEBCDIC

Extended Binary-Coded Decimal Interexchange Code

ECC

Error Correct Code

ECMA

European Computer Manufacturers Association

EFP

Electronic power feed

EI

Expansion interface

EIA

Electronic Industries Association

EIA-232

A physical interface specified by the EIA. EIA-232 transmits and receives asynchronous data at speeds of up to 19.2 kbps over cable distances of up to 50 feet. EIA-232 replaces RS-232 protocol in some DEFINITY applications.

electronic tandem network (ETN)

A tandem tie-trunk network that has automatic call-routing capabilities based on the number dialed and the most preferred route available. Each switch in the network is assigned a unique private network office code (RNX), and each voice terminal is assigned a unique extension.

Electronics Industries Association (EIA)

A trade association of the electronics industry that establishes electrical and functional standards.

emergency transfer

If a major system failure occurs, automatic transfer is initiated to a group of telephones capable of making outgoing calls. The system operates in this mode until the failure is repaired and the system automatically returns to normal operation. Also called power-failure transfer.

EMI

Electromagnetic interference

end-to-end signaling

The transmission of touch-tone signals generated by dialing from a voice terminal to remote computer equipment. These digits are sent over the trunk as DTMF digits whether the trunk signaling type is marked as tone or rotary and whether the originating station is tone or rotary. Example: a call to a voice-mail machine or automated-attendant service. A connection is first established over an outgoing trunk. Then additional digits are dialed to transmit information to be processed by the computer equipment.

enhanced private-switched communications service (EPSCS)

An analog private telecommunications network based on the No. 5 crossbar and 1A ESS that provides advanced voice and data telecommunications services to companies with many locations.

EPN

Expansion-port network

EPROM

Erasable programmable read-only memory

EPSCS

Enhanced Private Switched Communications Services

ERL

Echo return loss

Erlang

A unit of traffic intensity, or load, used to express the amount of traffic needed to keep one facility busy for one hour. One Erlang is equal to 36 CCS. See also CCS or hundred call seconds.

ESF

Extended superframe format

ESPA

European Standard Paging Access

ETA

Extended Trunk Access; also Enhanced Terminal Administration

ETN

Electronic tandem network

ETSI

European Telecommunications Standards Institute

expansion archangel (EAA)

A network-control microprocessor located on an expansion interface (EI) port circuit pack in an expansion port network. The EA provides an interface between the EPN and its controlling switch-processing element.

expansion-archangel link (EAL)

A link-access function on the D-channel (LAPD) logical link that exists between a switch-processing element and an expansion archangel (EA). The EAL carries control messages from the SPE to the EA and to port circuit packs in an expansion port network.

expansion control cabinet

See expansion control carrier.

expansion control carrier

A carrier in a multicarrier cabinet that contains extra port circuit packs and a maintenance interface. Also called expansion control cabinet in a single-carrier cabinet.

expansion interface (EI)

A port circuit pack in a port network that provides the interface between a PN's TDM bus/ packet bus and a fiber-optic link. The EI carries circuit-switched data, packet-switched data, network control, timing control, and DS1 control. In addition, an EI in an expansion port network communicates with the master maintenance circuit pack to provide the EPN's environmental and alarm status to the switch-processing element.

expansion port network (EPN)

A port network (PN) that is connected to the TDM bus and packet bus of a processor port network (PPN). Control is achieved by indirect connection of the EPN to the PPN via a port-network link (PNL). See also port network (PN).

extension-in

Extension-In (ExtIn) is the work state agents go into when they answer (receive) a non-ACD call. If the agent is in Manual-In or Auto-In and receives an extension-in call, it is recorded by CMS as an AUX-In call.

extension-out

The work state that agents go into when they place (originate) a non-ACD call.

external measurements

Those ACD measurements that are made by the External CMS adjunct.

extension

A 1- to 5-digit number by which calls are routed through a communications system or, with a Uniform Dial Plan (UDP) or main-satellite dialing plan, through a private network.

external call
A connection between a communications system user and a party on the public network or on another communications system in a private network.

F

FAC
Feature Access Code

facility
A telecommunications transmission pathway and associated equipment.

facility-associated signaling (FAS)
Signaling for which a D-channel carries signaling only for those channels on the same physical interface.

FAS
Facility-associated signaling

FAT
Facility access trunk

FAX
Facsimile

FCC
Federal Communications Commission

FEAC
Forced Entry of Account Codes

feature
A specifically defined function or service provided by the system.

feature button
A labeled button on a telephone or attendant console used to access a specific feature.

FEP
Front-end processor

FIC
Facility interface codes

fiber optics
A technology using materials that transmit ultrawideband electromagnetic light-frequency ranges for high-capacity carrier systems.

fixed
A trunk allocation term. In the fixed allocation scheme, the time slots necessary to support a wideband call are contiguous, and the first time slot is constrained to certain starting points.

flexible
A trunk allocation term. In the flexible allocation scheme, the time slots of a wideband call can occupy noncontiguous positions within a single T1 or E1 facility.

floating

A trunk allocation term. In the floating allocation scheme, the time slots of a wideband call are contiguous, but the position of the first time slot is not fixed.

FNPA

Foreign Numbering-Plan Area

foreign-exchange (FX)

A CO other than the one providing local access to the public telephone network.

foreign-exchange trunk

A telecommunications channel that directly connects the system to a CO other than its local CO.

foreign numbering-plan area code (FNPAC)

An area code other than the local area code, that must be dialed to call outside the local geographical area.

FRL

Facilities Restriction Level

FX

Foreign exchange

G

G3-MA

Generic 3 Management Applications

G3-MT

Generic 3 Management Terminal

G3r

Generic 3, RISC (Reduced Instruction Set Computer)

generalized route selection (GRS)

An enhancement to Automatic Alternate Routing/Automatic Route Selection (AAR/ARS) that performs routing based on call attributes, such as Bearer Capability Classes (BCCs), in addition to the address and facilities restriction level (FRL), thus facilitating a Uniform Dial Plan (UDP) that is independent of the type of call being placed.

glare

The simultaneous seizure of a 2-way trunk by two communications systems, resulting in a standoff.

GM

Group manager

GPTR

General-purpose tone receiver

grade of service

The number of call attempts that fail to receive service immediately. Grade of service is also expressed as the quantity of all calls that are blocked or delayed.

ground-start trunk
A trunk on which, for outgoing calls, the system transmits a request for services to a distant switching system by grounding the trunk ring lead. To receive the digits of the called number, that system grounds the trunk tip lead. When the system detects this ground, the digits are sent.

GRS
Generalized Route Selection

H

H0
An ISDN information transfer rate for 384-kbps data defined by CCITT and ANSI standards.

H11
An ISDN information transfer rate for 1536-kbps data defined by CCITT and ANSI standards.

H12
An ISDN information transfer rate for 1920-kbps data defined by CCITT and ANSI standards.

handshaking logic
A format used to initiate a data connection between two data module devices.

hertz (Hz)
A unit of frequency equal to one cycle per second.

high-reliability system
A system having the following: two control carriers, duplicate expansion interface (EI) circuit packs in the PPN (in R5r with CSS), and duplicate switch node clock circuit packs in the switch node (SN) carriers. See also duplicated common control, duplication, duplication option, and critical-reliability system.

HNPA
See home numbering-plan area code (HNPA).

holding time
The total length of time in minutes and seconds that a facility is used during a call.

home numbering-plan area code (HNPA)
The local area code. The area code does not have to be dialed to call numbers within the local geographical area.

hop
Nondirect communication between two switch communications interfaces (SCI) where the SCI message passes automatically without intermediate processing through one or more intermediate SCIs.

host computer
A computer, connected to a network, that processes data from data-entry devices.

hunt group
A group of extensions that are assigned the Station Hunting feature so that a call to a busy extension reroutes to an idle extension in the group. See also ACD work mode.

Hz
See hertz (Hz).

I

I1

The first information channel of DCP.

I2

The second information channel of DCP.

I2 Interface

A proprietary interface used for the DEFINITY Wireless Business System for the radio-controller circuit packs. Each interface provides communication between the radio-controller circuit pack and up to two wireless fixed bases.

I3 Interface

A proprietary interface used for the DEFINITY Wireless Business System for the cell antenna units. Each wireless fixed base can communicate to up to four cell antenna units.

IAS

Inter-PBX Attendant Service

ICC

Intercabinet cable or intercarrier cable

ICD

Inbound Call Director

ICDOS

International Customer-Dialed Operator Service

ICHT

Incoming call-handling table

ICI

Incoming call identifier

ICM

Inbound Call Management

IDDD

International Direct Distance Dialing

IDF

Intermediate distribution frame

IE

Information element

immediate-start tie trunk

A trunk on which, after making a connection with a distant switching system for an outgoing call, the system waits a nominal 65 ms before sending the digits of the called number. This allows time for the distant system to prepare to receive digits. On an incoming call, the system has less than 65 ms to prepare to receive the digits.

IMT

Intermachine trunk

in

Inch

INADS

Initialization and Administration System

incoming gateway

A PBX that routes an incoming call on a trunk *not* administered for Supplementary Services Protocol B to a trunk *not* administered for Supplementary Services Protocol B.

information exchange

The exchange of data between users of two different systems, such as the switch and a host computer, over a LAN.

Information Systems Network (ISN)

A WAN and LAN with an open architecture combining host computers, minicomputers, word processors, storage devices, PCs, high-speed printers, and nonintelligent terminals into a single packet-switching system.

INS

ISDN Network Service

inside call

A call placed from one telephone to another within the local communications system.

Integrated Services Digital Network (ISDN)

A public or private network that provides end-to-end digital communications for all services to which users have access by a limited set of standard multipurpose user-network interfaces defined by the CCITT. Through internationally accepted standard interfaces, ISDN provides digital circuit-switched or packet-switched communications within the network and links to other ISDNs to provide national and international digital communications. See also Integrated Services Digital Network Basic Rate Interface (ISDN-BRI) and Integrated Services Digital Network Primary Rate Interface (ISDN-PRI).

Integrated Services Digital Network Basic Rate Interface (ISDN-BRI)

The interface between a communications system and terminal that includes two 64-kbps B-channels for transmitting voice or data and one 16-kbps D-channel for transmitting associated B-channel call control and out-of-band signaling information. ISDN-BRI also includes 48 kbps for transmitting framing and D-channel contention information, for a total interface speed of 192 kbps. ISDN-BRI serves ISDN terminals and digital terminals fitted with ISDN terminal adapters. See also Integrated Services Digital Network (ISDN) andIntegrated Services Digital Network Primary Rate Interface (ISDN-PRI).

Integrated Services Digital Network Primary Rate Interface (ISDN-PRI)

The interface between multiple communications systems that in North America includes 24 64-kbps channels, corresponding to the North American digital signal level-1 (DS1) standard rate of 1.544 Mbps. The most common arrangement of channels in ISDN-PRI is 23 64-kbps B-channels for transmitting voice and data and 1 64-kbps D-channel for transmitting associated B-channel call control and out-of-band signaling information. With nonfacility-associated signaling (NFAS), ISDN-PRI can include 24 B-channels and no D-channel. See alsoIntegrated Services Digital Network (ISDN) andIntegrated Services Digital Network Basic Rate Interface (ISDN-BRI).

intercept tone

An alternating high and low tone that indicates a dialing error or denial of the service requested.

interface

A common boundary between two systems or pieces of equipment.

internal call

A connection between two users within a system.

International Telecommunications Union (ITU)
Formerly known as International Telegraph and Telephone Consultative Committee (CCITT), ITU is an international organization that sets universal standards for data communications, including ISDN. ITU members are from telecommunications companies and organizations around the world. See also BX.25.

International Telegraph and Telephone Consultative Committee
See International Telecommunications Union (ITU).

interflow
The ability for calls to forward to other splits on the same PBX or a different PBX using the Call Forward All Calls feature.

intraflow
The ability for calls to redirect to other splits on the same PBX on a conditional or unconditional basis using call coverage busy, don't answer, or all criteria.

internal measurements
BCMS measurements that are made by the system. ACD measurements that are made external to the system (via External CMS) are referred to as external measurements.

in-use lamp
A red light on a multiappearance voice terminal that 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.

INWATS
Inward Wide Area Telephone Service

IO
Information outlet

ISDN
See Integrated Services Digital Network (ISDN).

ISDN Gateway (IG)
A feature allowing integration of the switch and a host-based telemarketing application via a link to a gateway adjunct. The gateway adjunct is a 3B-based product that notifies the host-based telemarketing application of call events.

ISDN trunk
A trunk administered for use with ISDN-PRI. Also called ISDN facility.

ISDN-PRI terminal adapter
An interface between endpoint applications and an ISDN PRI facility. ISDN-PRI terminal adapters are currently available from other vendors and are primarily designed for video conferencing applications. Accordingly, currently available terminal adapters adapt the two pairs of video codec data (V.35) and dialing (RS-366) ports to an ISDN PRI facility.

IS/DTT
Integrated Services/digital tie trunk

ISN
Information Systems Network

ISO
International Standards Organization

ISV
Independent software vendor

ITP
  Installation test procedure

ITU
  International Telecommunications Union

IXC
  Interexchange carrier code

K

kHz
  Kilohertz

kbps
  Kilobits per second

kbyte
  Kilobyte

kg
  Kilogram

L

LAN
  Local area network

LAP-D
  Link Access Procedure on the D-channel

LAPD
  Link Access Procedure data

LATA
  Local access and transport area

lb
  Pound

LBO
  Line buildout

LDN
  Listed directory number

LDS
  Long-distance service

LEC
  Local exchange carrier

LED
  See light-emitting diode (LED).

light-emitting diode (LED)

A semiconductor device that produces light when voltage is applied. LEDs provide a visual indication of the operational status of hardware components, the results of maintenance tests, the alarm status of circuit packs, and the activation of telephone features.

lightwave transceiver

Hardware that provides an interface to fiber-optic cable from port circuit packs and DS1 converter circuit packs. Lightwave transceivers convert electrical signals to light signals and vice versa.

line

A transmission path between a communications system or CO switching system and a voice terminal or other terminal.

line appearance

See appearance.

line buildout

A selectable output attenuation is generally required of DTE equipment because T1 circuits require the last span to lose 15–22.5 dB.

line port

Hardware that provides the access point to a communications system for each circuit associated with a telephone or data terminal.

link

A transmitter-receiver channel that connects two systems.

link-access procedure on the D-channel (LAPD)

A link-layer protocol on the ISDN-BRI and ISDN-PRI data-link layer (level 2). LAPD provides data transfer between two devices, and error and flow control on multiple logical links. LAPD is used for signaling and low-speed packet data (X.25 and mode 3) on the signaling (D-) channel and for mode-3 data communications on a bearer (B-) channel.

LINL

Local indirect neighbor link

local area network (LAN)

A networking arrangement designed for a limited geographical area. Generally, a LAN is limited in range to a maximum of 6.2 miles and provides high-speed carrier service with low error rates. Common configurations include daisy chain, star (including circuit-switched), ring, and bus.

logical link

The communications path between a processor and a BRI terminal.

loop-start trunk

A trunk on which, after establishing a connection with a distant switching system for an outgoing call, the system waits for a signal on the loop formed by the trunk leads before sending the digits of the called number.

LSU

Local storage unit

LWC

Leave Word Calling

M

MAC
Medium access

MADU
Modular asynchronous data unit

main distribution frame (MDF)
A device that mounts to the wall inside the system equipment room. The MDF provides a connection point from outside telephone lines to the PBX switch and to the inside telephone stations.

main-satellite-tributary
A private network configuration that can either stand alone or access an ETN. A main switch provides interconnection, via tie trunks, with one or more subtending switches, called satellites; all attendant positions for the main/satellite configuration; and access to and from the public network. To a user outside the complex, a main/satellite configuration appears as one switch, with one listed directory number (LDN). A tributary switch is connected to the main switch via tie trunks, but has its own attendant positions and LDN.

maintenance
Activities involved in keeping a telecommunications system in proper working condition: the detection and isolation of software and hardware faults, and automatic and manual recovery from these faults.

management terminal
The terminal that is used by the system administrator to administer the switch. The terminal may also be used to access the BCMS feature.

major alarm
An indication of a failure that has caused critical degradation of service and requires immediate attention. Major alarms are automatically displayed on LEDs on the attendant console and maintenance or alarming circuit pack, logged to the alarm log, and reported to a remote maintenance facility, if applicable.

Manual-In work mode
One of four agent work modes: the mode in which an agent is ready to process another call manually. *See* Auto-In Work mode for a contrast.

MAP
Maintenance action process

MAPD
Multiapplication platform for DEFINITY

MA-UUI
Message-Associated User-to-User Signaling

Mbps
Megabits per second

M-Bus
Memory bus

Mbyte
Megabyte

MCC
Multicarrier cabinet

MCS
Message Center Service

MCT
Malicious Call Trace

MCU
Multipoint control unit

MDF
Main distribution frame

MDM
Modular data module

MDR
Message detail record

MEM
Memory

memory
A device into which information can be copied and held, and from which information can later be obtained.

memory shadowing link
An operating-system condition that provides a method for memory-resident programs to be more quickly accessed, allowing a system to reboot faster.

message center
An answering service that supplies agents to and stores messages for later retrieval.

message center agent
A member of a message-center hunt group who takes and retrieves messages for voice-terminal users.

MET
Multibutton electronic telephone

MF
Multifrequency

MFB
Multifunction board

MFC
Multifrequency code

MHz
Megahertz

MIM
Management information message

minor alarm

An indication of a failure that could affect customer service. Minor alarms are automatically displayed on LEDs on the attendant console and maintenance or alarming circuit pack, sent to the alarm log, and reported to a remote maintenance facility, if applicable.

MIPS

Million instructions per second

MIS

Management information system

MISCID

Miscellaneous identification

MMCS

Multimedia Call Server

MMCH

Multimedia call handling

MMI

Multimedia interface

MMS

Material Management Services

MO

Maintenance object

modem

A device that converts digital data signals to analog signals for transmission over telephone circuits. The analog signals are converted back to the original digital data signals by another modem at the other end of the circuit.

modem pooling

A capability that provides shared conversion resources (modems and data modules) for cost-effective access to analog facilities by data terminals. When needed, modem pooling inserts a conversion resource into the path of a data call. Modem pooling serves both outgoing and incoming calls.

modular processor data module (MPDM)

A processor data module (PDM) that can be configured to provide several kinds of interfaces (RS-232C, RS-449, and V.35) to customer-provided data terminal equipment (DTE). See also processor data module (PDM).

modular trunk data module (MTDM)

A trunk data module that can be configured to provide several kinds of interfaces (RS-232, RS-449, and V.35) to customer-provided data terminal equipment.

modulator-demodulator

See modem.

monitored call

See active-notification call.

MOS

Message-oriented signaling

MPDM

Modular processor data module

MS
Message server

ms
Millisecond

MS/T
Main satellite/tributary

MSA
Message servicing adjunct

MSG
Message service

MSL
Material stocking location

MSM
Modular System Management

MSS
Mass storage system

MSSNET
Mass storage/network control

MT
Management terminal

MTDM
Modular trunk data module

MTP
Maintenance tape processor

MTT
Multitasking terminal

multiappearance voice terminal
A terminal equipped with several call-appearance buttons for the same extension, allowing the user to handle more than one call on that same extension at the same time.

Multicarrier cabinet
A structure that holds one to five carriers. See also single-carrier cabinet.

Multifrequency Compelled (MFC) Release 2 (R2) signaling
A signal consisting of two frequency components, such that when a signal is transmitted from a switch, another signal acknowledging the transmitted signal is received by the switch. R2 designates signaling used in the United States and in countries outside the United States.

multiplexer
A device used to combine a number of individual channels into a single common bit stream for transmission.

multiplexing
A process whereby a transmission facility is divided into two or more channels, either by splitting the frequency band into a number of narrower bands or by dividing the transmission channel into successive time slots. See also time-division multiplexing (TDM).

multirate
  The new N x DS0 service (see N x DS0).

MWL
  Message-waiting lamp

N

N+1
  Method of determining redundant backup requirements. Example: if four rectifier modules are required for a DC-powered single-carrier cabinet, a fifth rectifier module is installed for backup.

N x DS0
  N x DS0, equivalently referred to as N x 64 kbps, is an emerging standard for wideband calls separate from H0, H11, and H12 ISDN channels. The emerging N x DS0 ISDN multirate circuit mode bearer service will provide circuit-switched calls with data-rate multiples of 64 kbps up to 1536 kbps on a T1 facility or up to 1920 kbps on an E1 facility. In the switch, N x DS0 channels will range up to 1984 kbps using NFAS E1 interfaces.

NANP
  North American Numbering Plan

narrowband
  A circuit-switched call at a data rate up to and including 64 kbps. All nonwideband switch calls are considered narrowband.

native terminal support
  A predefined terminal type exists in switch software, eliminating the need to alias the terminal (that is, manually map call appearances and feature buttons onto some other natively supported terminal type).

NAU
  Network access unit

NCA/TSC
  Noncall-associated/temporary-signaling connection

NCOSS
  Network Control Operations Support Center

NCSO
  National Customer Support Organization

NEC
  National Engineering Center

NEMA
  National Electrical Manufacturer's Association

NETCON
  Network-control circuit pack

network
  A series of points, nodes, or stations connected by communications channels.

network-specific facility (NSF)

An information element in an ISDN-PRI message that specifies which public-network service is used. NSF applies only when Call-by-Call Service Selection is used to access a public-network service.

network interface

A common boundary between two systems in an interconnected group of systems.

NFAS

See Nonfacility-associated signaling (NFAS).

NI

Network interface

NID

Network Inward Dialing

NM

Network management

NN

National number

node

A switching or control point for a network. Nodes are either tandem (they receive signals and pass them on) or terminal (they originate or terminate a transmission path).

Nonfacility-associated signaling (NFAS)

A method that allows multiple T1 and/or E1 facilities to share a single D-channel to form an ISDN-PRI. If D-channel backup is not used, one facility is configured with a D-channel, and the other facilities that share the D-channel are configured without D-channels. If D-channel backup is used, two facilities are configured to have D-channels (one D-channel on each facility), and the other facilities that share the D-channels are configured without D-channels.

NPA

Numbering-plan area

NPE

Network processing element

NQC

Number of queued calls

NSE

Night-service extension

NSU

Network sharing unit

null modem cable

Special wiring of an RS-232-C cable such that a computer can talk to another computer (or to a printer) without a modem.

NXX

Public-network office code

O

OA
Operator assisted

occurrence
See appearance.

OCM
Outbound Call Management

offered load
The traffic that would be generated by all the requests for service occurring within a monitored interval, usually one hour.

ONS
On-premises station

OPS
Off-premises station

OPX
Off-premises extension

OQT
Oldest queued time

OSHA
Occupational Safety and Health Act

OSI
Open Systems Interconnect

OSS
Operations Support System

OSSI
Operational Support System Interface

OTDR
Optical time-domain reflectometer

othersplit
The work state that indicates that an agent is currently active on another split's call, or in ACW for another split.

OTQ
Outgoing trunk queuing

outgoing gateway
A PBX that routes an incoming call on a trunk administered for Supplementary Services Protocol B to a trunk *not* administered for Supplementary Services Protocol B.

P

PACCON
Packet control

packet
A group of bits (including a message element, which is the data, and a control information element (IE), which is the header) used in packet switching and transmitted as a discrete unit. In each packet, the message element and control IE are arranged in a specified format. See also **packet bus** and **packet switching**.

packet bus
A wide-bandwidth bus that transmits packets.

packet switching
A data-transmission technique whereby user information is segmented and routed in discrete data envelopes called packets, each with its own appended control information, for routing, sequencing, and error checking. Packet switching allows a channel to be occupied only during the transmission of a packet. On completion of the transmission, the channel is made available for the transfer of other packets. See also BX.25 and **packet**.

PAD
Packet assembly/disassembly

paging trunk
A telecommunications channel used to access an amplifier for loudspeaker paging.

party/extension active on call
A party is on the call if he or she is actually connected to the call (in active talk or in held state). An originator of a call is always a party on the call. Alerting parties, busy parties, and tones are not parties on the call.

PBX
Private branch exchange

PC
See personal computer (PC).

PCM
See pulse-code modulation (PCM).

PCOL
Personal central-office line

PCOLG
Personal central-office line group

PCS
Permanent switched calls

PDM
See processor data module (PDM).

PDS
Premises Distribution System

PE
Processing element

PEC
Price element code

PEI
Processor element interchange

personal computer (PC)
A personally controllable microcomputer.

PGATE
Packet gateway

PGN
Partitioned group number

PI
Processor interface

PIB
Processor interface board

pickup group
A group of individuals authorized to answer any call directed to an extension within the group.

PIDB
Product image database

PKTINT
Packet interface

PL
Private line

PLS
Premises Lightwave System

PMS
Property Management System

PN
Port network

PNA
Private network access

POE
Processor occupancy evaluation

POP
Point of presence

port
A data- or voice-transmission access point on a device that is used for communicating with other devices.

port carrier
A carrier in a multicarrier cabinet or a single-carrier cabinet containing port circuit packs, power units, and service circuits. Also called a port cabinet in a single-carrier cabinet.

port network (PN)

A cabinet containing a TDM bus and packet bus to which the following components are connected: port circuit packs, one or two tone-clock circuit packs, a maintenance circuit pack, service circuit packs, and (optionally) up to four expansion interface (EI) circuit packs in DEFINITY ECS. Each PN is controlled either locally or remotely by a switch processing element (SPE). See also expansion port network (EPN) and processor port network (PPN).

port-network connectivity

The interconnection of port networks (PNs), regardless of whether the configuration uses direct or switched connectivity.

PPM

1. Parts per million
2. Periodic pulse metering

PPN

See processor port network (PPN).

PRI

See Primary Rate Interface (PRI).

primary extension

The main extension associated with the physical voice or data terminal.

Primary Rate Interface (PRI)

A standard ISDN frame format that specifies the protocol used between two or more communications systems. PRI runs at 1.544 Mbps and, as used in North America, provides 23 64-kbps B-channels (voice or data) and one 64-kbps D-channel (signaling). The D-channel is the 24th channel of the interface and contains multiplexed signaling information for the other 23 channels.

PRI endpoint (PE)

The wideband switching capability introduces PRI endpoints on switch line-side interfaces. A PRI endpoint consists of one or more contiguous B-channels on a line-side T1 or E1 ISDN PRI facility and has an extension. Endpoint applications have call-control capabilities over PRI endpoints.

principal

A terminal that has its primary extension bridged on one or more other terminals.

principal (user)

A person to whom a telephone is assigned and who has message-center coverage.

private network

A network used exclusively for the telecommunications needs of a particular customer.

private network office code (RNX)

The first three digits of a 7-digit private network number.

PROCR

Processor

processor carrier

See control carrier.

processor data module (PDM)

A device that provides an RS-232C DCE interface for connecting to data terminals, applications processors (APs), and host computers, and provides a DCP interface for connection to a communications system. See also modular processor data module (MPDM).

processor port network (PPN)
A port network controlled by a switch-processing element that is directly connected to that PN's TDM bus and LAN bus. See also port network (PN).

processor port network (PPN) control carrier
A carrier containing the maintenance circuit pack, tone/clock circuit pack, and SPE circuit packs for a processor port network (PPN) and, optionally, port circuit packs.

Property Management System (PMS)
A stand-alone computer used by lodging and health-services organizations for services such as reservations, housekeeping, and billing.

protocol
A set of conventions or rules governing the format and timing of message exchanges to control data movement and correction of errors.

PSC
Premises service consultant

PSDN
Packet-switch public data network

PT
Personal terminal

PTC
Positive temperature coefficient

PTT
Postal Telephone and Telegraph

public network
The network that can be openly accessed by all customers for local and long-distance calling.

pulse-code modulation (PCM)
An extension of pulse-amplitude modulation (PAM) in which carrier-signal pulses modulated by an analog signal, such as speech, are quantized and encoded to a digital, usually binary, format.

Q

QPPCN
Quality Protection Plan Change Notice

quadrant
A group of six contiguous DS0s in fixed locations on an ISDN-PRI facility. Note that this term comes from T1 terminology (one-fourth of a T1), but there are five quadrants on an E1 ISDN-PRI facility (30B + D).

queue
An ordered sequence of calls waiting to be processed.

queuing
The process of holding calls in order of their arrival to await connection to an attendant, to an answering group, or to an idle trunk. Calls are automatically connected in first-in, first-out sequence.

R

RAM

See random-access memory (RAM).

random-access memory (RAM)

A storage arrangement whereby information can be retrieved at a speed independent of the location of the stored information.

RBS

Robbed-bit signaling

RC

Radio controller

RCL

Restricted call list

read-only memory (ROM)

A storage arrangement primarily for information-retrieval applications.

recall dial tone

Tones signalling that the system has completed a function (such as holding a call) and is ready to accept dialing.

recorded telephone dictation ready tone

A tone that indicates a dictation machine is connected to the voice terminal.

redirection criteria

Information administered for each voice terminal's coverage path that determines when an incoming call is redirected to coverage.

Redirection on No Answer

An optional feature that redirects an unanswered ringing ACD call after an administered number of rings. The call is then redirected back to the agent.

remote home numbering-plan area code (RHNPA)

A foreign numbering-plan area code that is treated as a home area code by the Automatic Route Selection (ARS) feature. Calls can be allowed or denied based on the area code and the dialed CO code rather than just the area code. If the call is allowed, the ARS pattern used for the call is determined by these six digits.

Remote Operations Service Element (ROSE)

A CCITT and ISO standard that defines a notation and services that support interactions between the various entities that make up a distributed application.

REN

Ringer equivalency number

reorder tone

A tone to signal that at least one of the facilities, such as a trunk or a digit transmitter, needed for the call was not available.

report scheduler

Software that is used in conjunction with the system printer to schedule the days of the week and time of day that the desired reports are to be printed.

RFP

Request for proposal

RHNPA

See remote home numbering-plan area code (RHNPA).

ringback tone

A low-pitched repeating tone that indicates to the calling party that the dialed number has been reached successfully and is ringing.

RINL

Remote indirect neighbor link

RISC

Reduced-instruction-set computer

RLT

Release-link trunk

RMATS

Remote Maintenance, Administration, and Traffic System

RNX

Route-number index (private network office code)

ROM

See read-only memory (ROM).

RPN

Routing-plan number

RS-232C

A physical interface specified by the Electronic Industries Association (EIA). RS-232C transmits and receives asynchronous data at speeds of up to 19.2 kbps over cable distances of up to 50 feet.

RS-449

Recommended Standard 449

RSC

Regional Support Center

ROSE

See Remote Operations Service Element (ROSE).

S

S1

The first logical signalling channel of DCP. The channel is used to provide signaling information for DCP's I1 channel.

S2

The second logical signaling channel of DCP. The channel is used to provide signaling information for DCP's I2 channel.

SABM

Set Asynchronous Balance Mode

SAC
Send All Calls

SAKI
See sanity and control interface (SAKI).

sanity and control interface (SAKI)
A custom VLSI microchip located on each port circuit pack. The SAKI provides address recognition, buffering, and synchronization between the angel and the five control time slots that make up the control channel. The SAKI also scans and collects status information for the angel on its port circuit pack and, when polled, transmits this information to the archangel.

SAT
System access terminal

SCC
1. See single-carrier cabinet.
2. Serial communications controller

SCD
Switch-control driver

SCI
Switch communications interface

SCO
System control office

SCOTCH
Switch Conferencing for TDM Bus in Concentration Highway

SCSI
See small computer system interface (SCSI).

SDDN
Software-Defined Data Network

SDI
Switched Digital International

SDLC
Synchronous data-link control

SDN
Software-defined network

SFRL
Single-frequency return loss

SID
Station-identification number

simplex system
A system that has no redundant hardware.

simulated bridged appearance
The same as a temporary bridged appearance; allows the terminal user (usually the principal) to bridge onto a call that had been answered by another party on his or her behalf.

single-carrier cabinet
A combined cabinet and carrier unit that contains one carrier. See also Multicarrier cabinet.

single-line voice terminal
A voice terminal served by a single-line tip and ring circuit (models 500, 2500, 7101A, 7103A).

SIT
Special-information tones

small computer system interface (SCSI)
An ANSI bus standard that provides a high-level command interface between host computers and peripheral devices.

SMDR
Station Message Detail Recording

SN
Switch Node

SNA
Systems Network Architecture

SNC
Switch Node Clock

SNI
Switch Node Interface

SNMP
Simple Network Management Protocol

software
A set of computer programs that perform one or more tasks.

SPE
Switch Processing Element

SPID
Service Profile Identifier

split
See ACD work mode.

split condition
A condition whereby a caller is temporarily separated from a connection with an attendant. A split condition automatically occurs when the attendant, active on a call, presses the start button.

split number
The split's identity to the switch and BCMS.

split report
A report that provides historical traffic information for internally measured splits.

split (agent) status report
A report that provides real-time status and measurement data for internally measured agents and the split to which they are assigned.

SSI
Standard serial interface

SSM
Single-site management

SSV

Station service

ST3

Stratum 3 clock board

staffed

Indicates that an agent position is logged in. A staffed agent functions in one of four work modes: Auto-In, Manual-In, ACW, or AUX-Work.

STARLAN

Star-Based Local Area Network

Station Message Detail Recording (SMDR)

An obsolete term now called CDR — a switch feature that uses software and hardware to record call data. See Call Detail Recording (CDR).

standard serial interface (SSI)

A communications protocol developed for use with 500-type business communications terminals (BCTs) and 400-series printers.

status lamp

A green light that shows the status of a call appearance or a feature button by the state of the light (lit, flashing, fluttering, broken flutter, or unlit).

stroke counts

A method used by ACD agents to record up to nine customer-defined events per call when CMS is active.

SVN

Security-violation notification

switch

Any kind of telephone switching system. See also communications system.

switchhook

The buttons located under the receiver on a voice terminal.

switch-node (SN) carrier

A carrier containing a single switch node, power units, and, optionally, one or two DS1 converter circuit packs. An SN carrier is located in a center-stage switch.

switch-node (SN) clock

The circuit pack in an SN carrier that provides clock and maintenance alarm functions and environmental monitors.

switch-node interface (SNI)

The basic building block of a switch node. An SNI circuit pack controls the routing of circuit, packet, and control messages.

switch-node link (SNL)

The hardware that provides a bridge between two or more switch nodes. The SNL consists of the two SNI circuit packs residing on the switch nodes and the hardware connecting the SNIs. This hardware can include lightwave transceivers that convert the SNI's electrical signals to light signals, the copper wire that connects the SNIs to the lightwave transceivers, a full-duplex fiber-optic cable, DS1 converter circuit cards and DS1 facilities if a company does not have rights to lay cable, and appropriate connectors.

switch-processing element (SPE)

A complex of circuit packs (processor, memory, disk controller, and bus-interface cards) mounted in a PPN control carrier. The SPE serves as the control element for that PPN and, optionally, for one or more EPNs.

SXS

Step-by-step

synchronous data transmission

A method of sending data in which discrete signal elements are sent at a fixed and continuous rate and specified times. See also association.

SYSAM

System Access and Administration

system administrator

The person who maintains overall customer responsibility for system administration. Generally, all administration functions are performed from the Management Terminal. The switch requires a special login, referred to as the system administrator login, to gain access to system-administration capabilities.

system printer

An optional printer that may be used to print scheduled reports via the report scheduler.

system report

A report that provides historical traffic information for internally measured splits.

system-status report

A report that provides real-time status information for internally measured splits.

system manager

A person responsible for specifying and administering features and services for a system.

system reload

A process that allows stored data to be written from a tape into the system memory (normally after a power outage).

T

T1

A digital transmission standard that in North America carries traffic at the DS1 rate of 1.544 Mbps. A T1 facility is divided into 24 channels (DS0s) of 64 kbps. These 24 channels, with an overall digital rate of 1.536 Mbps, and an 8-kbps framing and synchronization channel make up the 1.544-Mbps transmission. When a D-channel is present, it occupies channel 24. T1 facilities are also used in Japan and some Middle-Eastern countries.

TAAS

Trunk Answer from Any Station

TABS

Telemetry asynchronous block serial

TAC

Trunk-access code

tandem switch

A switch within an electronic tandem network (ETN) that provides the logic to determine the best route for a network call, possibly modifies the digits 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 network (TTTN)

A private network that interconnects several customer switching systems.

TC

Technical consultant

TCM

Traveling class mark

TDM

See time-division multiplexing (TDM).

TDR

Time-of-day routing

TEG

Terminating extension group

terminal

A device that sends and receives data within a system. See also administration terminal.

tie trunk

A telecommunications channel that directly connects two private switching systems.

time-division multiplex (TDM) bus

A bus that is time-shared regularly by preallocating short time slots to each transmitter. In a PBX, all port circuits are connected to the TDM bus, permitting any port to send a signal to any other port.

time-division multiplexing (TDM)

Multiplexing that divides a transmission channel into successive time slots. See also multiplexing.

time interval

The period of time, either one hour or one-half hour, that BCMS measurements are collected for a reports.

time-out tone

Tones that indicate the user failed to dial within the preset time interval after lifting the handset or after dialing the previous digit.

time slice

See **time interval**.

time slot

64 kbps of digital information structured as eight bits every 125 microseconds. In the switch, a time slot refers to either a DS0 on a T1 or E1 facility or a 64-kbps unit on the TDM bus or fiber connection between port networks.

time slot sequence integrity

The situation whereby the N octets of a wideband call that are transmitted in one T1 or E1 frame arrive at the output in the same order that they were introduced.

to control
   An application can invoke *Third Party Call Control* capabilities using either an adjunct-control or domain-control association.

to monitor
   An application can receive *event reports* on an active-notification, adjunct-control, or domain-control association.

TOD
   Time of day

tone ringer
   A device with a speaker, used in electronic voice terminals to alert the user.

TOP
   Task-oriented protocol

trunk
   A dedicated telecommunications channel between two communications systems or COs.

trunk allocation
   The manner in which trunks are selected to form wideband channels.

trunk-data module
   A device that connects off-premises private-line trunk facilities and DEFINITY ECS. The trunk-data module converts between the RS-232C and the DCP, and can connect to DDD modems as the DCP member of a modem pool.

trunk group
   Telecommunications channels assigned as a group for certain functions that can be used interchangeably between two communications systems or COs.

TSC
   Technical Service Center

TTI
   Terminal translation initialization

TTR
   Touch-tone receiver

TTT
   Terminating trunk transmission

TTTN
   See tandem tie-trunk network (TTTN).

TTY
   Teletypewriter

U

UAP
   Usage-allocation plan

UART
   Universal asynchronous transmitter

UCD
Uniform call distribution

UCL
Unrestricted call list

UDP
See Uniform Dial Plan (UDP).

UL
Underwriter Laboratories

UM
User manager

Uniform Dial Plan (UDP)
A feature that allows a unique 4- or 5-digit number assignment for each terminal in a multiswitch configuration such as a DCS or main-satellite-tributary system.

UNMA
Unified Network Management Architecture

UNP
Uniform numbering plan

UPS
Uninterruptible power supply

USOP
User service-order profile

UUCP
UNIX-to-UNIX Communications Protocol

UUI
User-to-user information

V

VAR
Value-added reseller

VDN
See vector directory number (VDN).

vector directory number (VDN)
An extension that provides access to the Vectoring feature on the switch. Vectoring allows a customer to specify the treatment of incoming calls based on the dialed number.

vector-controlled split
A hunt group or ACD split administered with the vector field enabled. Access to such a split is possible only by dialing a VDN extension.

VIS
Voice Information System

VLSI
Very-large-scale integration

VM
Voltmeter

VNI
Virtual nodepoint identifier

voice terminal
A single-line or multiappearance telephone.

W

warning tone
A low-pitched tone heard by all parties in a Busy Verification attempt that bridges to an active call.

WATS
See Wide Area Telecommunications Service (WATS).

WCC
World-Class Core

WCR
World-Class Routing

WCTD
World-Class Tone Detection

WFB
Wireless fixed base

Wide Area Telecommunications Service (WATS)
A service in the United States that allows calls to certain areas for a flat-rate charge based on expected usage.

wideband
A circuit-switched call at a data rate greater than 64 kbps. A circuit-switched call on a single T1 or E1 facility with a bandwidth between 128 and 1536 (T1) or 1984 (E1) kbps in multiples of 64 kbps. H0, H11, H12, and N x DS0 calls are wideband.

wideband access endpoint
Access endpoints, extended with wideband switching to include wideband access endpoints. A wideband access endpoint consists of one or more contiguous DS0s on a line-side T1 or E1 facility and has an extension. The Administered Connections feature provides call control for calls originating from wideband access endpoints.

wink-start tie trunk
A trunk with which, after making a connection with a distant switching system for an outgoing call, the system waits for a momentary signal (wink) before sending the digits of the called number. Similarly, on an incoming call, the system sends the wink signal when ready to receive digits.

work mode
One of four states (Auto-In, Manual-In, ACW, AUX-Work) that an ACD agent can be in. Upon logging in, an agent enters AUX-Work mode. To become available to receive ACD calls, the agent

enters Auto-In or Manual-In mode. To do work associated with a completed ACD call, an agent enters ACW mode.

work state

An ACD agent may be a member of up to three different splits. Each ACD agent continuously exhibits a work state for every split of which it is a member. Valid work states are Avail, Unstaffed, AUX-Work, ACW, ACD (answering an ACD call), ExtIn, ExtOut, and OtherSpl. An agent's work state for a particular split may change for a variety of reasons (example: when a call is answered or abandoned, or the agent changes work modes). The BCMS feature monitors work states and uses this information to provide BCMS reports.

write operation

The process of putting information onto a storage medium, such as a hard disk.

WSA

Waiting session accept

WSS

Wireless Subscriber System

Z

ZCS

Zero Code Suppression

Index

D

E

F

G

R

S

T

U

V

W