

Lucent Technologies
Bell Labs Innovations



DEFINITY[®]

Enterprise Communications Server

Release 7

Installation, Upgrades, and Additions for
Compact Modular Cabinets

555-230-128
Comcode 108343153
Issue 4
June 1999

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 or contact your local Lucent representative.

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 Numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Trademarks

See "About This Book."

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Issue 4, June 1999

For additional documents, refer to the section in "About This Book" entitled "Related Documents."

You can be placed on a standing order list for this and other documents you may need. Standing order will enable you to automatically receive updated versions of individual documents or document sets, billed to account information that you provide. For more information on standing orders, or to be put on a list to receive future issues of this document, contact the Lucent Technologies Publications Center.

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

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

Acknowledgment

This document was prepared by Product Documentation Development, Lucent Technologies, Denver, CO.

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About This Book

This document provides procedures to install, upgrade, or make additions to a DEFINITY[®] Enterprise Communications Server Release 7csi, using the Compact Modular Cabinet.

This document is intended for use by trained installation technicians.

Conventions Used in This Book

- Information you type is shown as: **save translation**. To submit the command you typed, press the Enter key in the numbers section of the keyboard, not the Enter/Return key in the letters section.
- Information displayed on the management terminal is shown as: login
- Keyboard keys are shown as: Enter.
- Circuit pack codes (such as TN798B or TN2182B) are shown with the minimum acceptable alphabetic suffix (like the “B” in the code TN2182B).

Generally, an alphabetic suffix higher than that 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 usable vintages of specific circuit pack codes (including the suffix).

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

- The word *system* is a general term encompassing Release 7 and includes references to the DEFINITY Enterprise Communications Server
- Systems in this book are called Release 7, Release 7 CMC, and R7csi

- Information in this book is applicable for Release 7 unless otherwise specified
- DEFINITY Enterprise Communications Server is abbreviated as DEFINITY ECS
- Physical dimensions in this book are in inches followed by metric centimeters (cm) in parentheses. Wire gauge measurements are in AWG followed by the cross-sectional area in squared millimeters (mm²) in parentheses

Related Documents

As supplemental information, you may need the following documents when installing a DEFINITY ECS Release 7 system:

- *DEFINITY Enterprise Communications Server Release 7 Administration for Network Connectivity*, 555-233-501
- *BCS Products Security Handbook*, 555-025-600
- *DEFINITY Enterprise Communications Server Release 7 Installation for Adjuncts and Peripherals*, 555-230-125
- *DEFINITY Enterprise Communications Server Release 7 Administration and Feature Description*, 555-230-522
- *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7csi*, 555-230-129
- *DEFINITY Enterprise Communications Server Release 7 System Description Pocket Reference*, 555-230-211
- *DEFINITY Communications System and System 75 and System 85 Terminals and Adjuncts*, 555-015-201
- *Switch Administration for DEFINITY AUDIX*, 585-300-509

In addition to this book, other description, installation and test, maintenance, and administration books are available.

How to Order Documentation

A complete list of DEFINITY books is available in the *Business Communications System Publications Catalog*, 555-000-010.

You can order this document and any other DEFINITY documentation directly from the Lucent Technologies Business Communications System Publications Fulfillment Center at 1-317-322-6791 or toll free at 1-800-457-1235.

How to Comment on This Book

Lucent Technologies welcomes your feedback. Please fill out the reader comment card at the front of this book and return it. Your comments are of great value and help us to 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 6 Installation and Test for Compact Modular Cabinets*, 555-230-128.

Where to Call for Technical Support

	Telephone Number
Streamlined Implementation (for missing equipment)	1-800-772-5409
USA/Canada Technical Service Center	1-800-248-1234
Technical Service Center (INADS Database Administration)	1-800-248-1111
Asia/Pacific Regional Support Center	65-872-8686
Western Europe/South Africa/Middle East	441-252-774-800
Business Communications Europe	441-252-391-789
Eastern/Central Europe	361-345-4334
ITAC	1-303-804-3777
Latin/Central America & Caribbean	1-303-804-3778
DEFINITY Helpline	1-800-225-7585
Lucent Technologies Toll Fraud Intervention	1-800-643-2353
Lucent Technologies Technical Service Center	1-800-242-2121
Lucent Technologies Corporate Security	1-800-822-9009

Security Issues

To ensure the greatest security possible for customers, 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 ECS software. Existing passwords expire 24 hours after installation.

For Access Security Gateway (ASG), see [Appendix A, "Access Security Gateway"](#).

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:

- LINX™ is a trademark of Illinois Tool Works, Incorporated
- 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

Standards Compliance

The equipment presented in this document complies with the following standards (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
- IEC 950
- UL 1459
- UL 1950
- 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 standards:

- Limits and Methods of Measurements of Radio Interference Characteristics of Information Technology Equipment, EN55022 (CISPR22), 1993
- EN50082-1, European Generic Immunity Standard
- FCC Part 15
- 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

The system conforms to the following standards:

- 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 IEC 1000-4-2
- Radiated radio frequency field immunity requirements IEC 1000-4-3
- Electrical fast transient/burst immunity requirements IEC 1000-4-4
- Power Harmonics IEC 61000-3-2, 1995

European Union Standards

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

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

The "CE" mark is applied to the following Release 7 products:

- Global AC-powered Multi-Carrier Cabinet (MCC)
- DC-powered Multi-Carrier Cabinet (MCC) with 25 Hz ring generator
- AC-powered Enhanced Single-Carrier Cabinet (ESCC) with 25 Hz ring generator
- AC-powered Compact Single-Carrier Cabinet (CSCC) with 25 Hz ring generator
- Enhanced DC power system
- AC-powered Compact Modular Cabinet (CMC) with 25 Hz ring generator
- AC-powered Compact Modular Cabinet (CMC) with 50 Hz ring generator for France

Anti-Static Protection

CAUTION:

When handling circuit packs or any components of a DEFINITY System, always wear an anti-static wrist ground strap. Connect the strap to an approved ground such as an unpainted metal surface on the DEFINITY System.

Remove/Install Circuit Packs

CAUTION:

The control circuit packs with white labels cannot be removed or installed when the power is on. The port circuit packs with gray labels (older version circuit packs had purple labels) can be removed or installed when the power is on.

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

Lucent Technologies attests that this registered 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. A label is provided on this equipment 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 1-800-242-2121. For assistance outside of the United States, refer to ["Where to Call for Technical Support"](#). 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.

About This Book

Federal Communications Commission Statement

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Install and Cable the Cabinets

1

Check Customer's Order

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

Correcting Shipping Errors

1. Red-tag all defective equipment and over-shipped equipment and return according to the nearest Material Stocking Location (MSL) instructions. For international customers, contact your order service agent.
2. Direct all short-shipped reports to the nearest MSL. Contact the appropriate location for specific instructions. For Streamlined Implementation in the United States, call 1-800-772-5409.

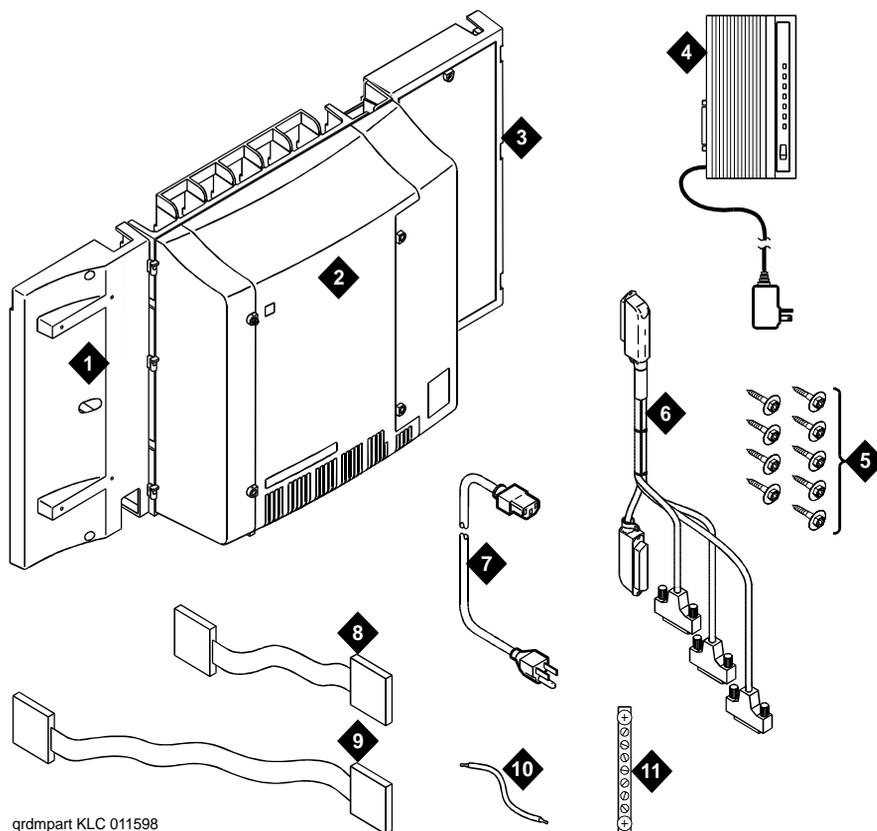
Unpack and Inspect

READ THIS FIRST !

 **CAUTION:**

A fully loaded system weighs 58 lbs (26.3 kg). Use lifting precautions. If the doors, power unit, and circuit packs are removed, the unit weighs only 29 lbs (13.1 kg).

1. Verify the equipment received. See [Figure 1-1](#). Actual equipment may vary in appearance and may ship in separate packages.
2. Equipment comcodes are listed in [Table 1-1](#).
3. Before mounting the cabinets, remove the cabinet doors by opening them and lifting them straight up and off of the hinge pins.



qrdmpart KLC 011598

Figure Notes

1. Left panel (also acts as a wall-mount template and as a floor mount pedestal)
2. CMC cabinet
3. Right panel
4. U.S. Robotics external modem (not shipped with all systems)
5. #12 x 1-inch shoulder screws
6. Processor interface cable (not shipped with all cabinets)
7. AC power cord (NEMA 5-15P or IEC 320)
8. Vertical TDM/LAN bus cable (not shipped with all systems)
9. Horizontal TDM/LAN bus cable (not shipped with all systems)
10. 14-inch (35.5 cm) 6 AWG (#40) (16 mm²) ground wire
11. Single-point ground block

Figure 1-1. Equipment Packed with the CMC Cabinet

Comcodes for CMC

[Table 1-1](#) lists the comcodes for equipment used with the CMC.

Table 1-1. Comcodes for Release 7.1 and Later CMC

Comcode	Description
847951662	Left Panel
847951670	Right Panel
847915238	Right Door
847915246	Left Door
847960002	Processor Interface Cable
108186255	TN798/B Processor Circuit Pack
107784019	TN2182B Tone Clock — Tone Detector and Call Classifier Circuit Pack
407633999	U.S. Robotics Model 839 External Modem
105631527	TDM/LAN Bus Terminator (AHF110)
407772870	Vertical TDM/LAN Bus Cable (WP-91716 List 8)
407772888	Horizontal TDM/LAN Bus Cable (WP-91716 List 9)
706827717	Single-Point Ground Block
H600-487	14-inch (35.5 cm) 6 AWG (#40) (16 mm ²) Green Ground Wire
847987187	CMC 110 Cross-Connect Assembly (Main Distribution Frame)
407676691	120 VAC Power Distribution Unit (145D 6-AC)
107949364	650A Power Supply
848082715	Fan Assembly
407745009	Fan Air Filter
405362641	120 VAC Power Cord (U.S.)
407786623	120 VAC Power Cord (Europe)
407786599	120 VAC Power Cord (United Kingdom)
407786631	120 VAC Power Cord (Australia)
407790591	120 VAC Power Cord (India)
106278062	Apparatus Blank (Circuit Pack Blank) (158P)
601817448	2 Mbyte Mass-Storage Translation Card (White Card)
601817422	4 Mbyte Mass-Storage Translation Card (White Card)

Continued on next page

Table 1-1. Comcodes for Release 7.1 and Later CMC — Continued

Comcode	Description
601817430	10 Mbyte Mass-Storage Translation Card (White Card)
106606536	Integrated Channel Service Unit (ICSU) (120A2)
107988867	DS1 Loopback Jack (T1 Only) (700A)
107152969	75 Ohm DS1 Coaxial Adapter (888B)
403613003	157B Connecting Block
406948976	6SCP-110 Protector
107435091	507B Sneak Current Fuse Panel
407216316	220029 Sneak Current Fuse
403613003	157B Connecting Block
103970000	Main Distribution Frame Label (Code 220A)
847489895 or 847489903	6-pin mini DIN to RJ-11 jack to allow 715 BCS keyboard on 2900/715 Terminal
407536531	9-pin DTE to 25-pin DCE Adapter Cable for a 715 BCS-2 Terminal
104307327	C6C cable — 50-foot (15.2 m) shielded DS1 cable with 50-pin male to 15-pin male
104307376	C6D cable — 50-foot (15.2 m) shielded DS1 cable with 50-pin male on each end
104307434	C6E cable — 100-foot (30.5 m) shielded DS1 cable with 50-pin male to 50-pin female
104307475	C6F cable — 50-foot (15.2 m) shielded DS1 cable with 50-pin male to 3 inch (7.62 cm) stub
102381779	3B1A Carbon Block
104410147	3B1E-W Wide Gap Gas Tube
105514756	3C1S Solid State
102904893	4B1C Carbon Block with Heat Coil
104401856	4B1E-W Wide Gap Gas Tube w/Heat Coil
104386545	4C1S Solid State with Heat Coil
406948976	SCP-110 Sneak Current Protector
407216316	220029 Fuse Sneak Current Protector
105581086	4C3S-75 Solid State with Heat Coil

Continued on next page

Table 1-1. Comcodes for Release 7.1 and Later CMC — Continued

Comcode	Description
406144907	ITW LINX Gas Tube, Avalanche Suppress
901007120	ITW Linx Ground Bar (used with above)
406304816	ITW Linx Replacement Fuse
103972758	Data Link Protector (1 circuit)
103972733	Data Link Protector (8 circuits)
407063478	Electrostatic Discharge (ESD) Wrist Strap
107731853	Single-Mode Fiber Optic Transceiver (300A)
106455348	Multi-Mode Fiber Optic Transceiver (9823A)
106455363	Multi-Mode Fiber Optic Transceiver (9823B)
407439975	Multi-mode Fiber Interconnect Cable — 20 feet (6.1 m)
407598325	Single-mode Fiber Interconnect Cable — 20 feet (6.1 m)
105357727	Single-mode Fiber Optic Patch Cord — 2 feet (0.6 m)
106060718	Single-mode 5dB Attenuator
106060734	Single-mode 10dB Attenuator

Install the System Cabinets

Set the Carrier Address ID — All Cabinets

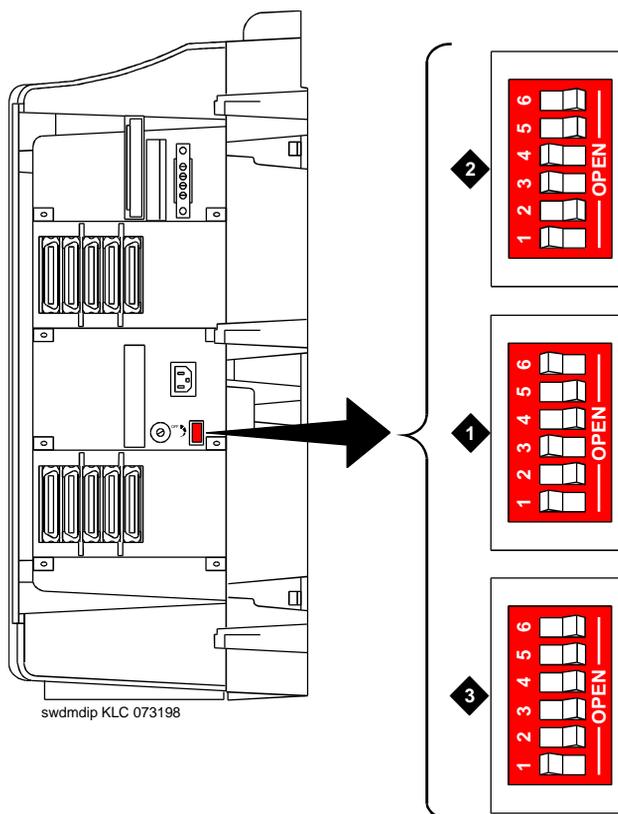


Figure Notes

1. Carrier A switch settings
2. Carrier B switch settings
3. Carrier C switch settings

Figure 1-2. Setting Carrier Address ID (Right Side)

1. Proceed to either [“Floor-Mount the Cabinet” on page 1-8](#) or to [“Wall-Mount the Cabinets” on page 1-9](#).

Floor-Mount the Cabinet

The cabinet dimensions (with floor pedestal) are 28.5 in. (72.4 cm) high, 24.5 in. (62.2 cm) wide, and 12 in. (30.5 cm) deep. Maintain a service clearance of 12 in. (30.5 cm) on the left, right, and front of the cabinet.

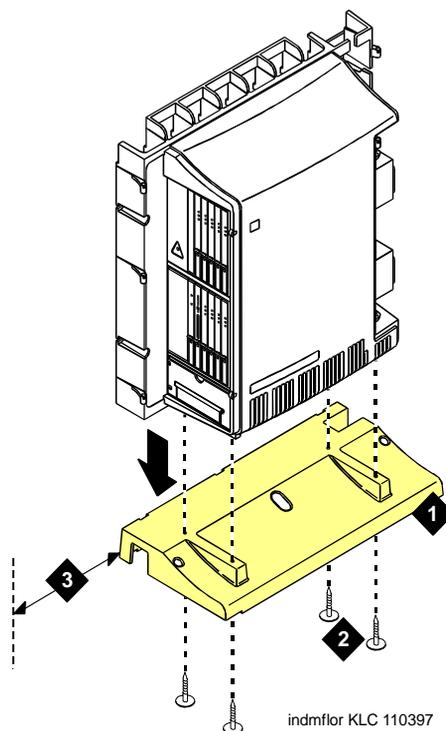


Figure Notes

- | | |
|--------------------------------------|--|
| 1. Left panel (floor-mount pedestal) | 3. 12 inches (30.5 cm) minimum from nearest object (required to service the circuit packs) |
| 2. #12 x 1-inch shoulder screws | |

Figure 1-3. Typical Floor Mount Installation

1. Proceed to ["Cable the System" on page 1-23.](#)

Wall-Mount the Cabinets

CAUTION:

A fully loaded system weighs 58 lbs (26.3 kg). Use lifting precautions. If the doors, power unit, and circuit packs are removed, the unit weighs only 29 lbs (13.1 kg).

Install Plywood Backing onto Wall

The plywood and the hardware to mount the plywood are installer-provided.

NOTE:

The following plywood dimensions account for the extra space needed to install the panels on each side of the cabinet. The cabinet is 24 inches (0.6 m) wide and each panel is 12 inches (0.3 m) wide.

Single-Cabinet Installation

1. Install a 3/4-inch (2 cm) thick sheet of 2 x 4-foot (0.6 x 1.2 m) plywood horizontally onto the wall. See [Figure 1-4](#).

The top of the plywood must be at least 54 inches (137 cm) from the floor.

2 or 3 Vertically Mounted Cabinets

1. Install a 3/4-inch (2 cm) thick sheet of 4 x 8-foot (1.2 x 2.4 m) plywood vertically onto the wall. See [Figure 1-6](#).

2 Cabinets Vertically Mounted and 1 Cabinet Horizontally Mounted

1. Install a 3/4-inch (2 cm) thick sheet of 4 x 8-foot (1.2 x 2.4 m) plywood vertically onto the wall. See [Figure 1-6](#).
2. Install a 3/4-inch (2 cm) thick sheet of 2 x 4-foot (0.6 x 1.2 m) sheet of plywood horizontally onto the wall. Position the plywood to the right of the first sheet, across from Cabinet A.

Install Cabinet A — Wall-Mount

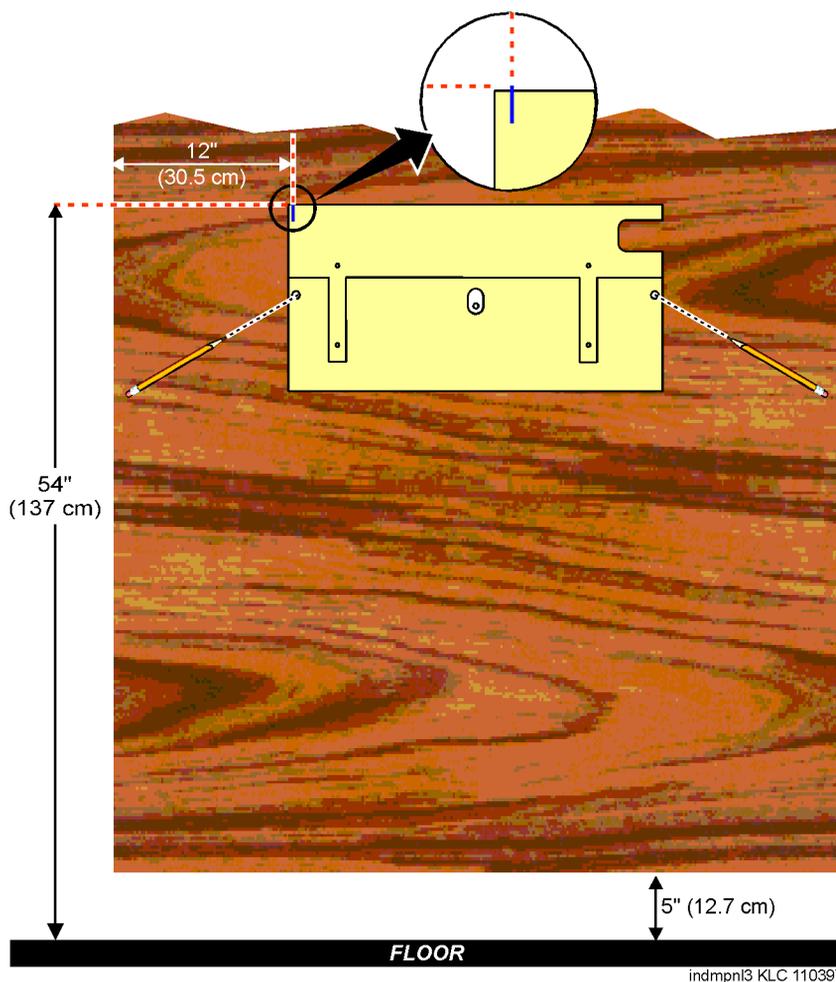


Figure 1-4. Left Panel Used as Mounting Template

1. Place the template on the wall ensuring that the top surface is level.
2. Mark two 1/8-inch (0.3 cm) pilot holes in the mounting hole locations.
3. Remove the template from the wall.
4. Drill the two pilot holes.
5. Thread two #12 x 1-inch shoulder screws partially into the holes.
6. Set the cabinet onto the wall and align the slots with the shoulder screws. See [Figure 1-5](#). Slide the cabinet to the left to hold it in place. Tighten the screws securely.

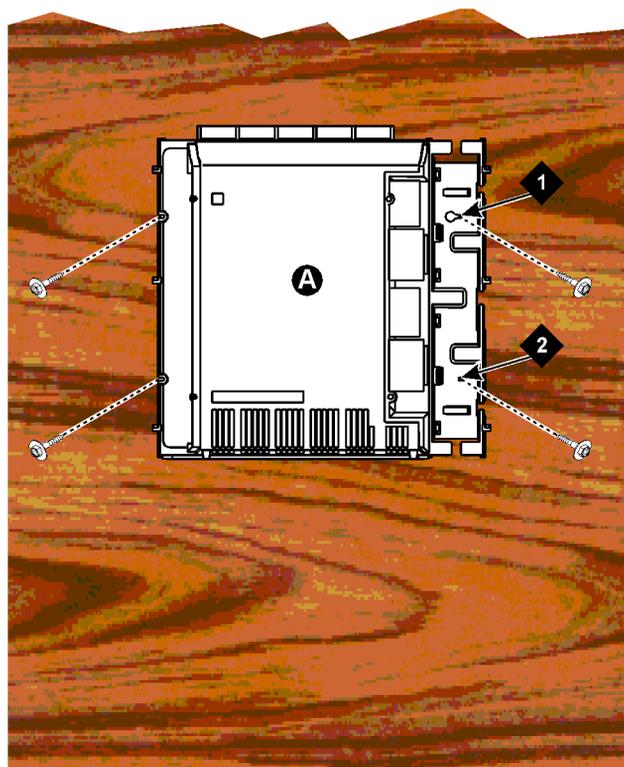


Figure Notes

1. #12 x 1-inch shoulder screws

2. #12 x 1-inch safety screw

Figure 1-5. Typical Wall-Mount Installation

7. Drill two lower mounting holes using the cabinet as a template.
8. Thread the 2 lower screws and tighten.



CAUTION:

Be sure the right bottom safety screw is in place and tight.

Install 2 or 3 Vertically Mounted Cabinets

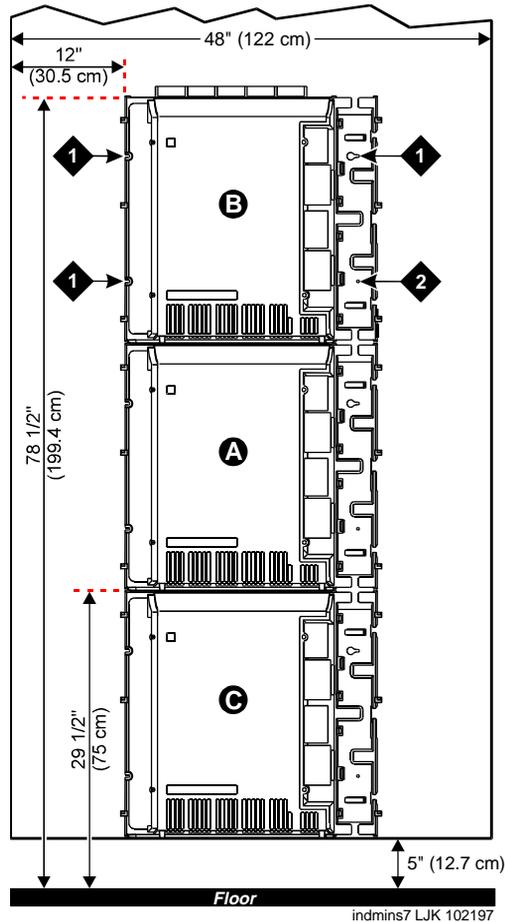


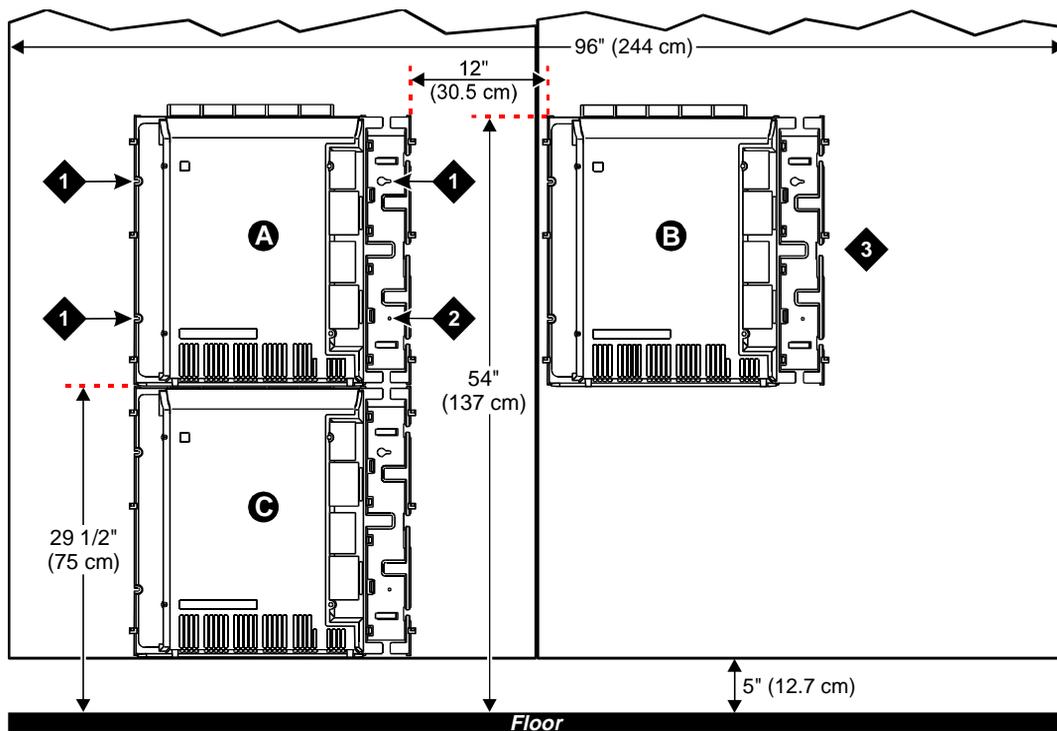
Figure Notes

- 1. #12 x 1-inch shoulder screws
- 2. #12 x 1-inch safety screw

Figure 1-6. Typical Multi-Cabinet Installation

1. Securely tighten the shoulder screws and safety screws.

Install 2 Cabinets Vertically and 1 Cabinet Horizontally



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Figure Notes

1. #12 x 1-inch shoulder screws
2. #12 x 1-inch safety screw
3. Second sheet of plywood

Figure 1-7. Typical 3-Cabinet Installation

1. Securely tighten the shoulder screws and safety screws.

AC Power and Ground

CAUTION:

The AC power circuit must be dedicated to the system. The circuit must not be shared with other equipment and must not be controlled by a wall switch. The AC receptacle must not be located under the Main Distribution Frame and must be easily accessible.

CAUTION:

The latch only removes DC power from the cabinet. Unseating the power supply removes AC power from the power supply, but not from the cabinet. To remove AC power from the cabinet, pull the AC power cord from the AC appliance connector on the rear of the cabinet.

CAUTION:

System grounding must comply with the general rules for grounding provided in Article 250 of the National Electrical Code (NEC), National Fire Protection Agency (NFPA) 70, or the applicable electric code in the country of installation.

CAUTION:

AC mains wiring and testing must be performed by a qualified electrician and must conform to Article 250 of the National Electrical Code (NEC), National Fire Protection Agency (NFPA) 70, or the applicable electric code in the country of installation.

Check AC Power

Each CMC uses an auto-ranging 85 to 264 VAC power supply, 47 to 63 Hz, 330 Watts, 4.5 Amps (100-120 VAC) or 2.3 Amps (200 to 240 VAC), at 500 VoltAmps (VA). The AC power source can be 1 phase of 120 VAC with neutral (100 VAC for Japan) with 15 Amp circuit breaker, or 1 phase of 220 or 240 VAC (200 VAC for Japan) with 10 Amp circuit breaker. The AC cord uses a NEMA 5-15P plug or an IEC 320 plug.

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

1. Measure the AC voltage between the hot and neutral side of the receptacle.
2. Depending on the AC power source, verify that the meter reads 90 to 132 VAC or 180 to 264 VAC. If not, have a qualified electrician correct the problem.
3. Measure the voltage between the neutral and ground side of the receptacle.

4. Verify that the meter reads 0 VAC. If not, have a qualified electrician correct the problem.
5. When finished, set the AC mains circuit breakers to **OFF**.

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 1 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 1 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 (1.3 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 connects. 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 1 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 (1.6 cm) solid rod or 3/4-inch (2 cm) conduit or pipe electrode driven to a minimum depth of 8 feet (2.4 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 (5.1 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 1 or more steel reinforcing bars or rods 1/2-inch (1.3 cm) in diameter, or at least 20 feet (6.1 m) of bare, solid copper, 4 AWG (26 mm²) 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 (35 mm²), bare, copper wire.

APPROVED FLOOR GROUNDS

CAUTION:

If the approved ground is inside a dedicated equipment room, then these connections must be made by a qualified electrician.

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

- 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

Uninterruptible Power Supply

An optional UPS (Uninterruptible Power Supply) may be used for power holdover. The type of UPS depends on the holdover requirements. Holdover times vary from less than 10 minutes to up to 8 hours. The UPS must provide surge protection for all connected cabinets.

1. Connect the UPS to an electrical outlet capable of handling the power requirements of all cabinets:
 - a. For 100 VAC, multiply 4.5 Amps times the number of cabinets.
 - b. For 120 VAC, multiply 3.8 Amps times the number of cabinets.
 - c. For 200 VAC, multiply 2.3 Amps times the number of cabinets.
 - d. For 220-240 VAC, multiply 2.0 Amps times the number of cabinets.
2. Be sure that Cabinet A (control carrier) is connected to an “unswitched” or “always on” electrical outlet on the UPS.

CMC Cabinet Power Switch

CAUTION:

The latch only removes DC power from the cabinet. Unseating the power supply removes AC power from the power supply, but not from the cabinet. To remove AC power from the cabinet, pull the AC power cord from the AC appliance connector on the rear of the cabinet. See [Figure 1-9](#).

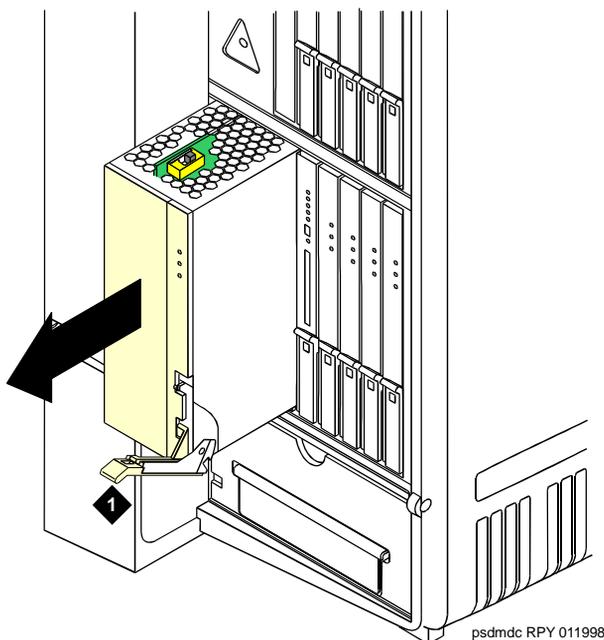


Figure Notes

1. Latch

Figure 1-9. CMC Power Supply

Connect Cabinet Grounds and Other Grounds

The following additional grounding requirements must be met:

- The approved ground wire must be green, 6 AWG (#40) (16 mm²), copper, stranded wire (this is in addition to the ground wire in the AC power cord)
- Bond all approved grounds at the single-point ground to form a single grounding electrode system

Install the Ground Block

1. Mount the ground block as shown in [Figure 1-10](#).
2. Make the cable connections as shown in [Figure 1-11](#).

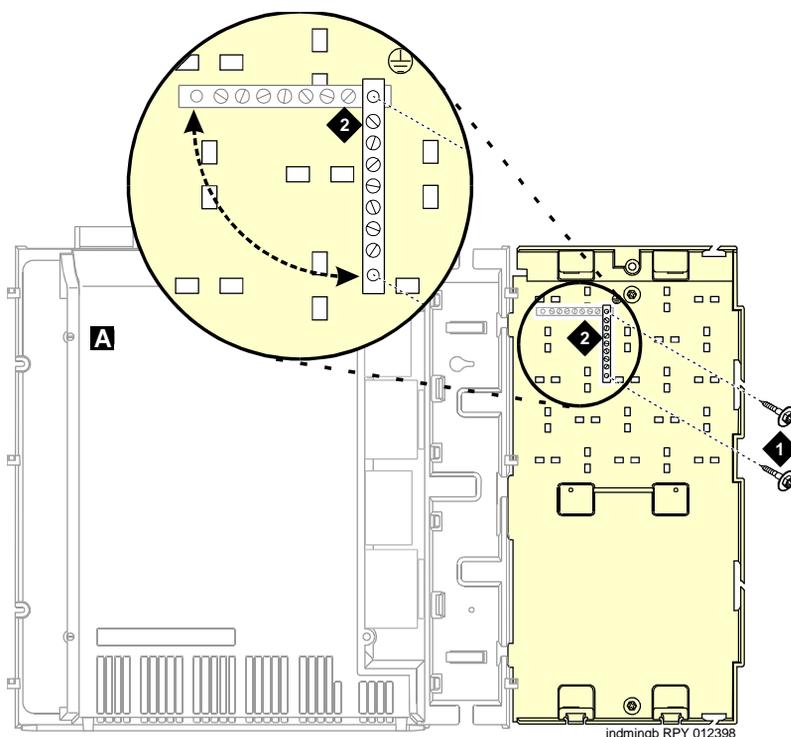


Figure Notes

1. #12 x 1-inch shoulder screws
2. Single-point ground block

Figure 1-10. Ground Block Installation to Right Panel



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Figure Notes

1. 6 AWG (#40) (16 mm²) cabinet ground wire
2. 6 AWG (#40) (16 mm²) ground wire to next cabinet
3. Single-point ground block
4. AC load center single-point ground
5. 10 AWG (#25) (6 mm²) wire to coupled bonding conductor (CBC)
6. 6 AWG (#40) (16 mm²) ground wire from single-point ground block to the AC load center single-point ground

Figure 1-11. Typical Cabinet Grounding

Install Coupled Bonding Conductor

The Coupled Bonding Conductor (CBC) provides for mutual inductance coupling between the CBC and the telephone cables that are exposed to lightning. The conductor can be a 10 AWG (#25) (6 mm²) wire tie wrapped to the exposed cables, a metal cable shield around the exposed cables, or 6 spare pairs from the exposed cable.

In a high rise building, connect the CBC to an approved building ground on each floor. To provide the coupled bonding protection:

1. Connect 1 end of the conductor to a telephone cable building entrance protector ground that is connected to an approved ground.
2. Route the rest of the conductor next to the exposed telephone cables being protected until they reach the cross-connect nearest to the telephone system.
3. Position the non-exposed telephone cables at least 12 inches (30.5 cm) away from exposed telephone cables whenever possible.
4. Terminate the other end to the single-point ground block provided for the telephone system.

Connect and Route Cabinet AC Power Cords

CAUTION:

The AC power cords may connect to a properly rated power distribution unit, individual AC power receptacles, or to a UPS. See [Figure 1-12](#).

1. Be sure the circuit breakers at the AC load center are **OFF**.
2. Connect Cabinet A to an “unswitched” or “always on” electrical outlet.

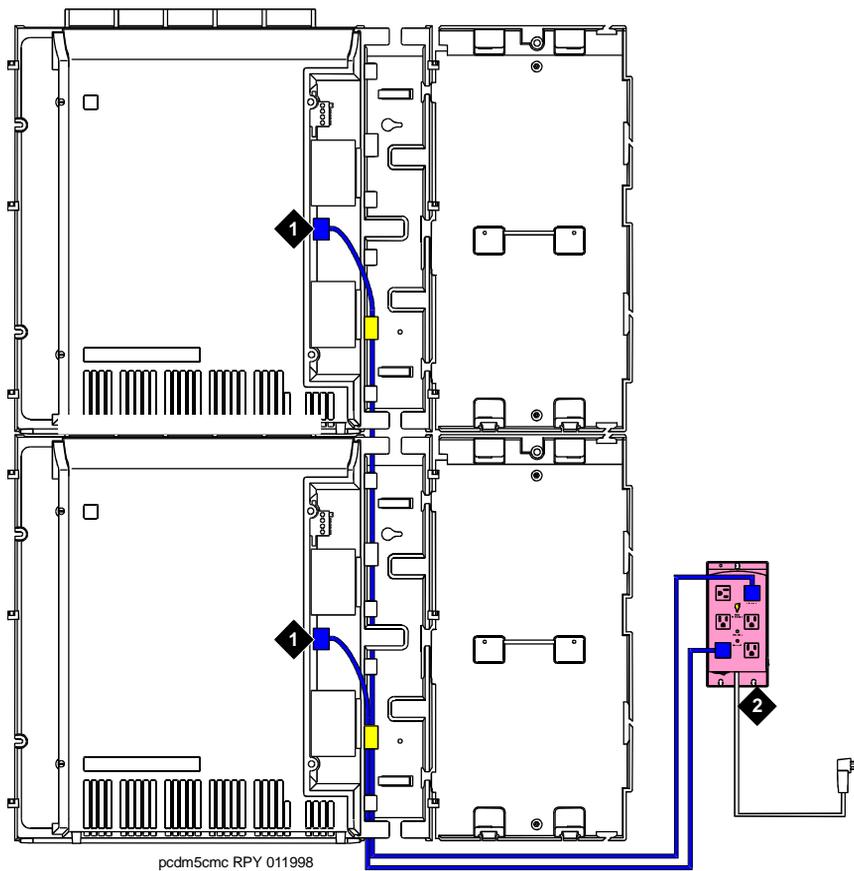


Figure Notes

- 1. Cabinet AC power cord
- 2. Surge-protected AC power distribution unit (120 VAC systems) (optional)

Figure 1-12. Routing AC Power Cords to a Power Distribution Unit

Cable the System

Install Processor Interface Cable — Cabinet A Only and TDM/LAN Bus Terminator

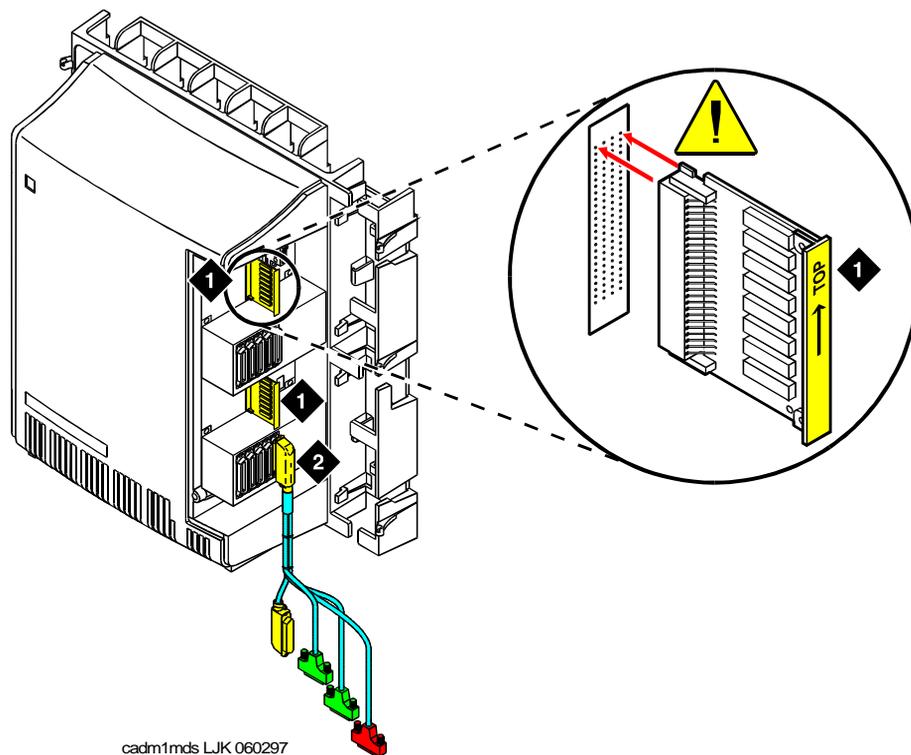


Figure Notes

1. TDM/LAN bus terminator
2. Processor interface cable (cabinet A only)

Figure 1-13. System Cable Connections

1. Connect the Processor Interface Cable to slot 1 of Cabinet A. See [Figure 1-13](#).
2. Install the TDM/LAN bus terminators.

Cable the Multi-Cabinet System — Wall-Mount

Vertically Mounted System

1. Route the TDM/LAN bus cables through the cable trough.
See [Figure 1-14](#).

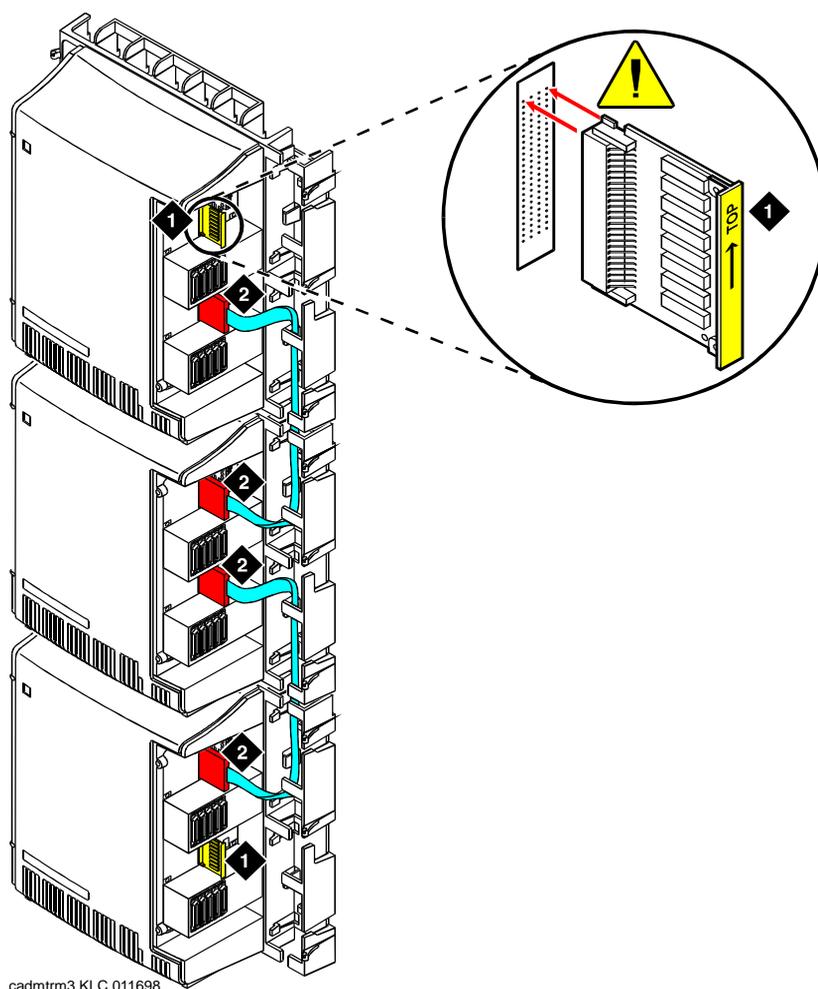


Figure Notes

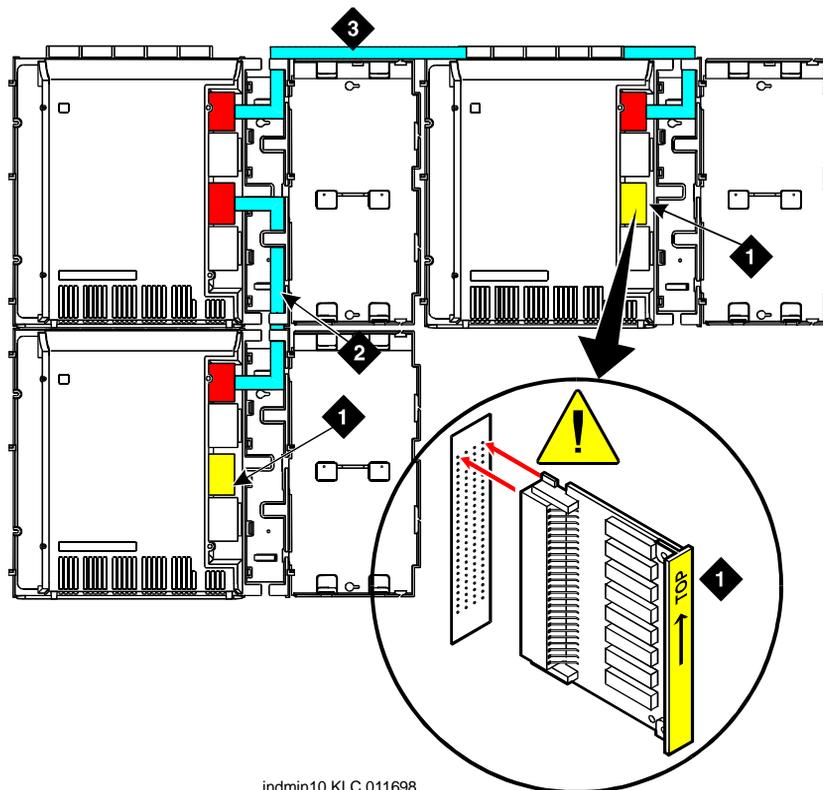
1. TDM/LAN bus terminator (at each end of the TDM/LAN bus)
2. Vertical TDM/LAN bus cable (List 8)

Figure 1-14. TDM/LAN Bus Cables and Terminators

Vertically and Horizontally Mounted System

Only 1 horizontal TDM/LAN Bus cable is allowed per system. See [Figure 1-15](#).

1. Route the TDM/LAN bus cables through the cable trough.



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Figure Notes

1. TDM/LAN bus terminator (at each end of the TDM/LAN bus)
2. Vertical TDM/LAN bus cable (List 8)
3. Horizontal TDM/LAN bus cable (List 9)

Figure 1-15. System Cable Connections

- 1 Install and Cable the Cabinets
Install Main Distribution Frame and External Modem

1-26

Install Main Distribution Frame and External Modem

Install the MDF

CAUTION:

The optional MDF is a special 110 cross-connect field and is smaller than standard 110 cross-connect hardware. Do not install standard 110 hardware inside the right panel.

NOTE:

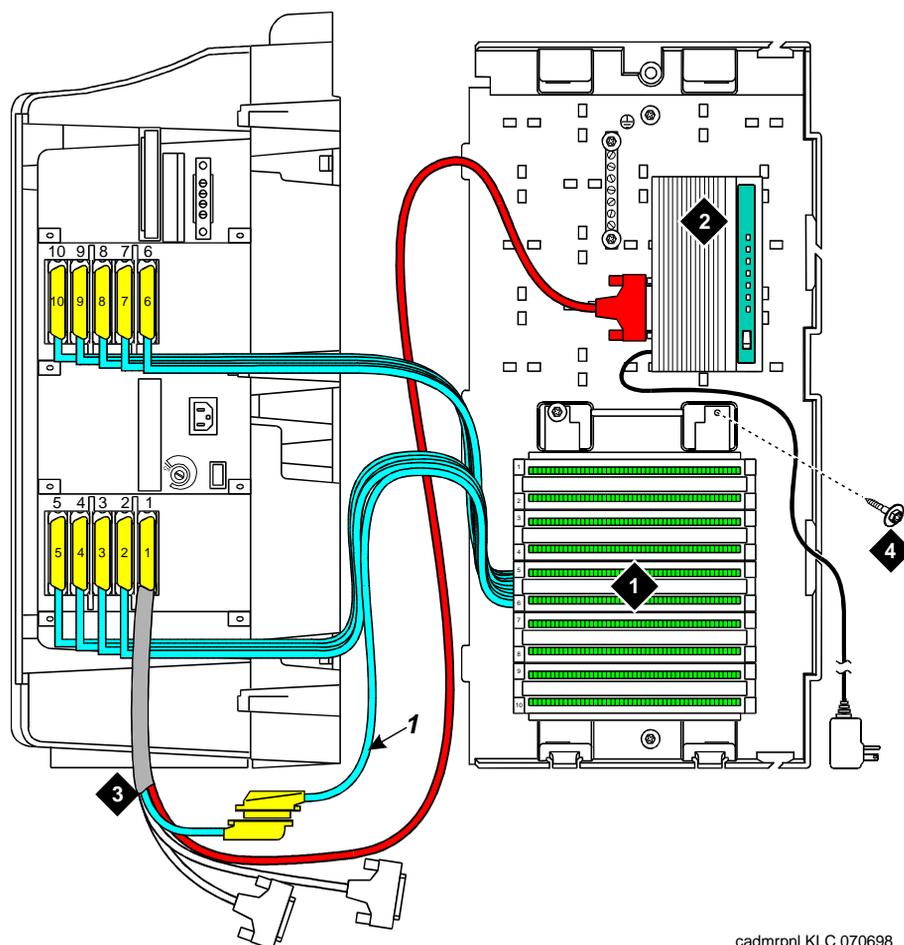
The depth of any equipment installed inside the right panel must not exceed 2.5 inches (6.3 cm), otherwise the right cover panel cannot fit over the right panel.

The optional MDF represents the trunk/auxiliary field.

1. Mount the optional MDF to the right panel using one of the following:
 - For bottom-mount MDFs, refer to [“Bottom-mounted MDF with Modem” on page 1-27](#).
 - For top-mount MDFs (in cabinets other than cabinet A), refer to [“Top-Mounted MDF” on page 1-28](#).
 - For dual-mount MDFs, refer to [“Dual MDFs” on page 1-29](#).

Bottom-mounted MDF with Modem

1. On the rear of the MDF, cut the cable tie securing the top 5 cables to the MDF mounting frame.
2. Mount the MDF to the right panel. See [Figure 1-16](#).
3. Secure all 10 cables to the bottom left bracket on the MDF with a cable tie.



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Figure Notes

1. Main distribution frame (MDF)
2. External modem
3. Processor interface cable (connect P2 to modem, connect J1 to cable 1 on MDF)
4. #12 x 1-inch shoulder screw

Figure 1-16. Typical Bottom-Mount MDF and Modem Cable Routing

Top-Mounted MDF

Use this configuration when the cabinet is wall-mounted, and is near the floor. Do not use this configuration for cabinet A.

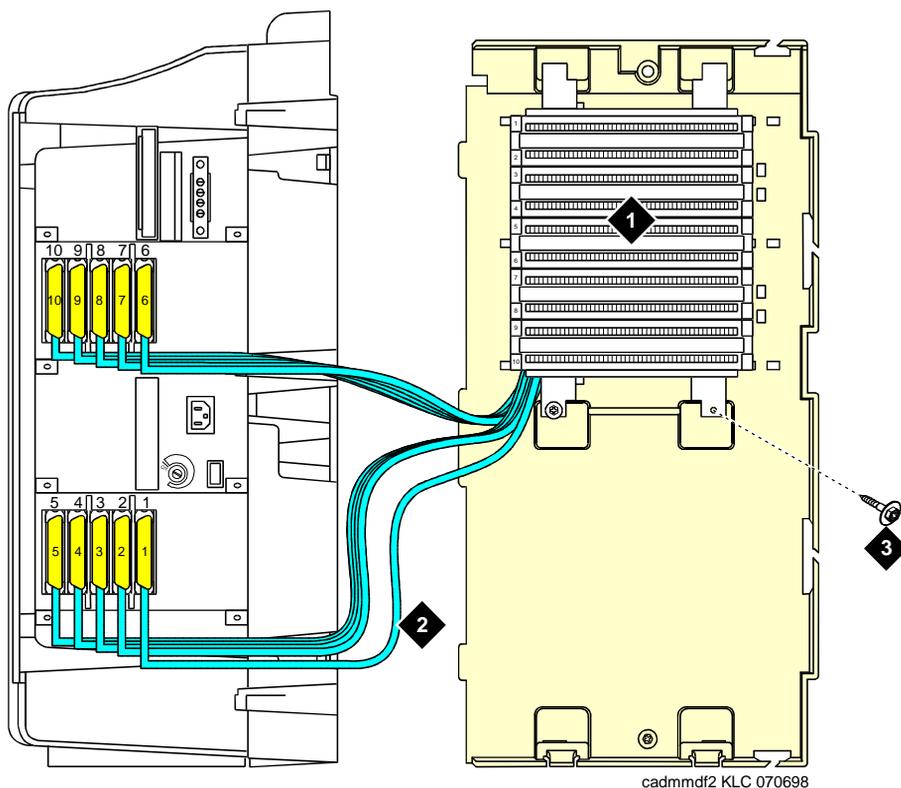


Figure Notes

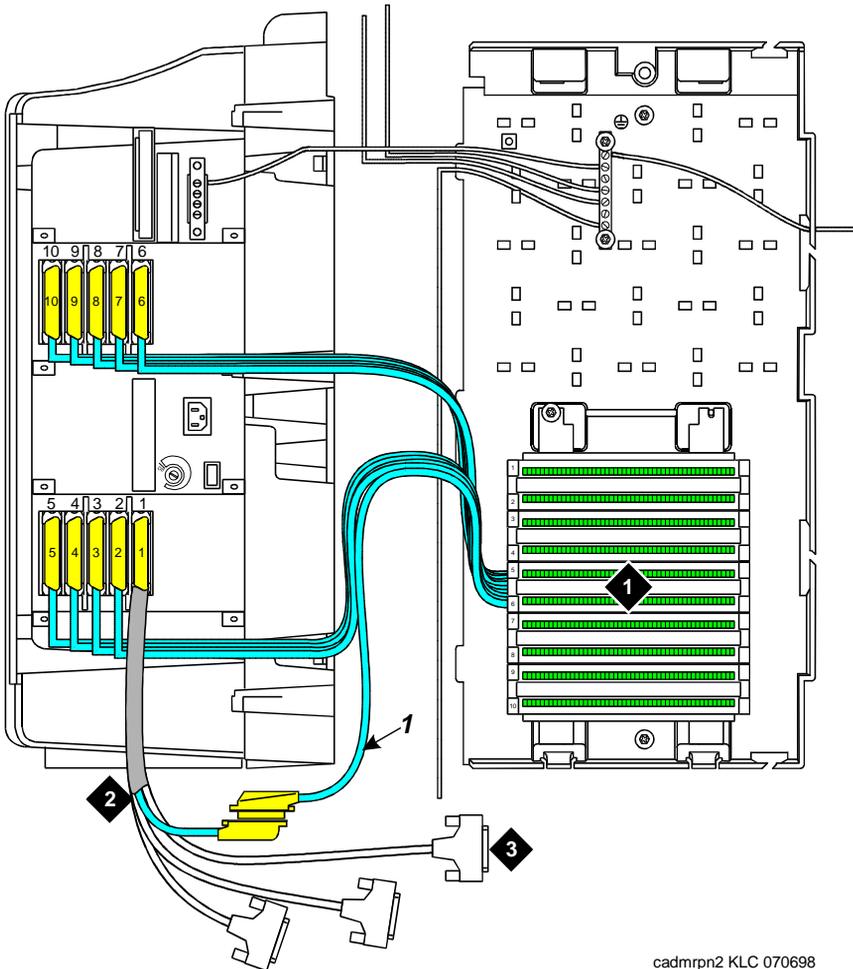
1. Main distribution frame (MDF)
2. Connect cable 1 to slot 1
3. #12 x 1-inch shoulder screw

Figure 1-17. Typical Top-Mount MDF Cable Routing

1. On the rear of the MDF, cut the cable tie securing the top 5 cables to the MDF mounting frame.
2. Mount the MDF to the right panel. See [Figure 1-17](#).
3. Secure all 10 cables to the bottom left bracket on the MDF with a cable tie.

Dual MDFs

Use this configuration when mounting two MDFs.



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Figure Notes

1. Main distribution frame (MDF)
2. Connect cable 1 to slot 1
3. To external modem

Figure 1-18. Preliminary Dual-Mount MDF Cable Routing

1 Install and Cable the Cabinets
Install Main Distribution Frame and External Modem

1-30

1. On the rear of the MDF, cut the cable tie securing the top 5 cables to the MDF mounting frame.
2. Mount the MDF to the bottom position on the right panel. See [Figure 1-18](#).
3. Secure all 10 cables to the bottom left bracket on the MDF with a cable tie.
4. Mount the second MDF to the top position on the right panel. See [Figure 1-19](#).

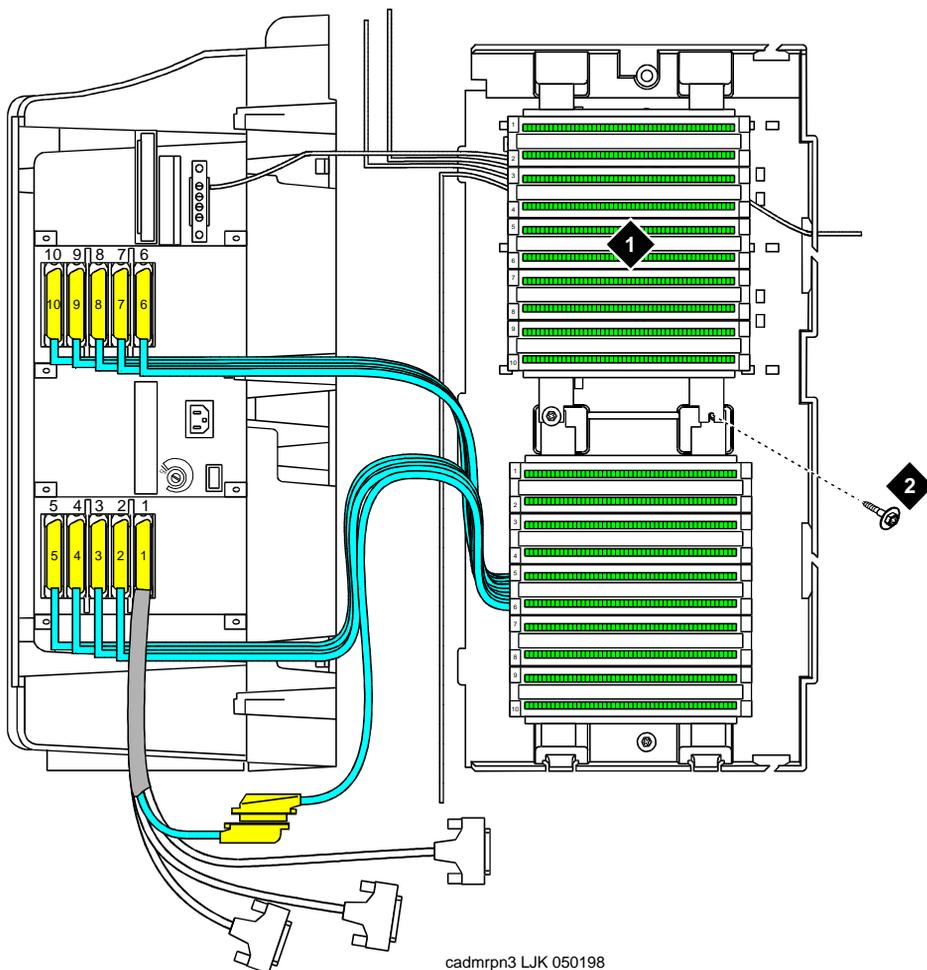


Figure Notes

1. Main distribution frame (MDF)
2. #12 x 1-inch shoulder screw

Figure 1-19. Typical Dual-Mount MDF Cable Routing

Install the External Modem

The U.S. Robotics Model 839 external modem is the recommended external modem. Release 7 CMC systems operate with this modem set to the factory default settings.

NOTE:

You may use a locally obtained, type-approved external modem (33.6 bps and V.34 protocol). Contact your Lucent Technologies representative for more information.

1. Use installer-provided hardware to mount the modem. See [Figure 1-16](#). If top-mounting MDFs or dual-mounting MDFs, mount the external modem to the plywood in a location which allows the standard connection to the interconnect cable.
2. Route the MODEM cable (P2) from the Processor Interface Cable through the cable trough and to the modem.
3. Connect the cable to the modem. Refer to "[Processor Interface Cable Pinout](#)" on [page 2-11](#) for the pinout of the modem cable.
4. Plug the modem power cord into an electrical outlet and turn on the modem.
5. Modem setup and administration is performed in "[External Modem Option Settings](#)" on [page 1-105](#).

Install Equipment Room Hardware

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

Cross-Connect the Cabinets to the MDF

1. Cross-connect the ports on the trunk and line circuit packs to the MDF as required. See [Figure 1-21 on page 1-39](#).

Allowable Circuit Packs for CMC

[Table 1-2](#) lists the circuit packs that can be used with Release 7.

Table 1-2. Circuit Packs and Circuit Modules

Apparatus Code	Name
ED-1E546 (TN2169) (TN567)	DEFINITY AUDIX R3 System
ED-1E546 (TN2170)	CallVisor ASAI over the DEFINITY (LAN) Gateway R1
J58890M-1 (TN801)	CallVisor ASAI/Call Visor PC/LAN over the DEFINITY LAN Gateway R2
NAA1	Fiber Optic Cable Adapter Circuit Pack
TN429/B/C/D	Analog Direct Inward/Outward Dialing (DIOD) Central Office Trunk
TN433	Voice Synthesizer
TN436B	Direct Inward Dialing Trunk
TN437B	Tie Trunk - Australia
TN439	Tie Trunk
TN459B	Direct Inward Dialing Trunk
TN464F	DS1 Interface - T1, 24 Channel - E1, 32 Channel
TN465C	Central Office Trunk
TN497	Tie Trunk - Italy
TN556B/C/D	ISDN-BRI 4-Wire S/T-NT Interface

Continued on next page

Table 1-2. Circuit Packs and Circuit Modules — Continued

Apparatus Code	Name
TN568	Definity AUDIX Slim
TN570C	Expansion Interface
TN725B	Speech Synthesizer
TN726B	Data Line
TN744C/D	Call Classifier - Detector
TN746B	Analog Line
TN747/B	Central Office Trunk
TN750B/C	Announcement
TN753/B	Direct Inward Dialing Trunk
TN754/B/C	Digital Line 4-Wire DCP
TN758	Pooled Modem
TN760B/C/D/E	Tie Trunk
TN762/B	Hybrid Line
TN763B/C/D	Auxiliary Trunk
TN767B/C/D/E	DS1 Interface - T1, 24 Channel
TN789	Radio Controller
TN791	Analog Line
TN793	Analog Line, 24-Port, 2-Wire
TN798B	Processor
TN799	Control LAN (C-LAN)
TN801	LAN Gateway Interface
TN802	Internet Protocol (IP) Trunk
TN2135	Analog Line
TN2140B	Tie Trunk - Hungary, Italy
TN2146	Direct Inward Dialing Trunk
TN2147C	Central Office Trunk
TN2181	Digital Line 2-Wire DCP
TN2182/B	Tone-Clock - Tone Detector and Call Classifier

Continued on next page

Table 1-2. Circuit Packs and Circuit Modules — Continued

Apparatus Code	Name
TN2183	Analog Line
TN2184	DIOD Trunk
TN2185/B	ISDN-BRI 4-Wire S/T-TE Interface (Trunk Side)
TN2198	ISDN-BRI 2-Wire U Interface
TN2199	Central Office Trunk
TN2214/B	Digital Line, 24-Port, 2-Wire DCP - Category B
TN2215	Analog Line, 16-Port 2-Wire - Category B
TN2224/B	Digital Line, 24-Port, 2-Wire DCP
TN2305	ATM Interface (Multi-Mode)
TN2306	ATM Interface (Single-Mode)
TN2464	DS1 Interface - T1, 24 Channel - E1, 32 Channel
TN2793	Analog Line 24-Port

Circuit Pack Installation



CAUTION:

When handling circuit packs or any components of a DEFINITY System, always wear an authorized wrist ground strap. Connect the strap to the ground connector provided on the system cabinet.



NOTE:

Unlike previous releases of DEFINITY, the circuit pack slots in the CMC are not purple or white. This is because all of the circuit pack slots in the CMC are “universal slots.” That is, any slot can contain any type of *port* circuit pack.

Circuit Pack Slot Loading

In general, load the circuit packs so that the number in each cabinet is about equal and the trunks and lines are evenly distributed among the cabinets. See [Figure 1-20](#).

1. Install the TN798B Processor circuit pack in slot 1 of Cabinet A.
2. Install the TN2182B Tone-Clock circuit pack in slot 2 of Cabinet A.

Load all port circuit packs starting with Cabinet A first, Cabinet B next, and so forth. Return to Cabinet A and repeat.

3. A TN744D Call Classifier/Tone Detector circuit pack may be required in systems with heavy traffic. Install the TN744D into any port slot. Slot 1 of Cabinet B is preferred.
4. See [Table 1-3](#) for the recommended circuit pack layout for the control carrier and the port carriers.

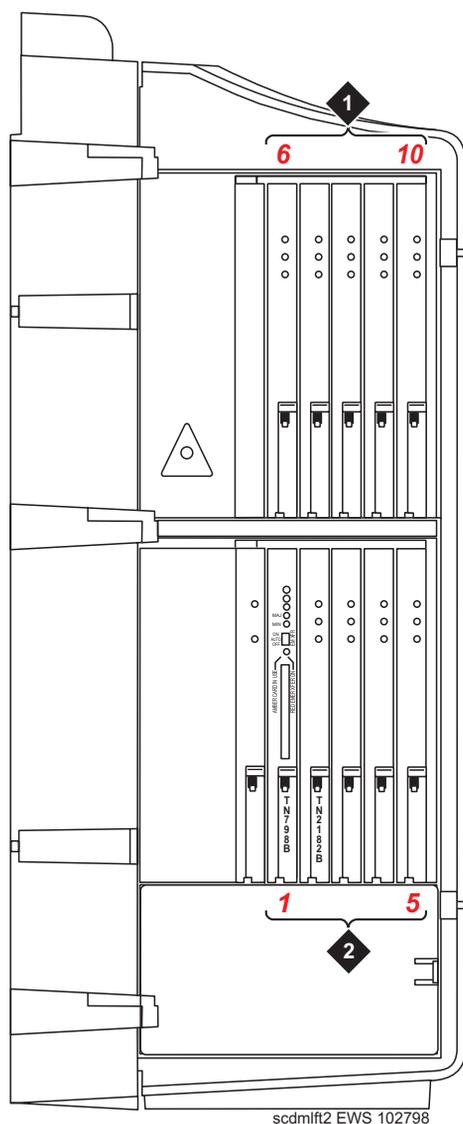


Figure Notes

- 1. Line circuit pack slots
- 2. Trunk circuit pack slots

Figure 1-20. Control Carrier Slot Layout

1 Install and Cable the Cabinets
Install Equipment Room Hardware

1-37

Table 1-3. Circuit Pack Installation Order (Loading)

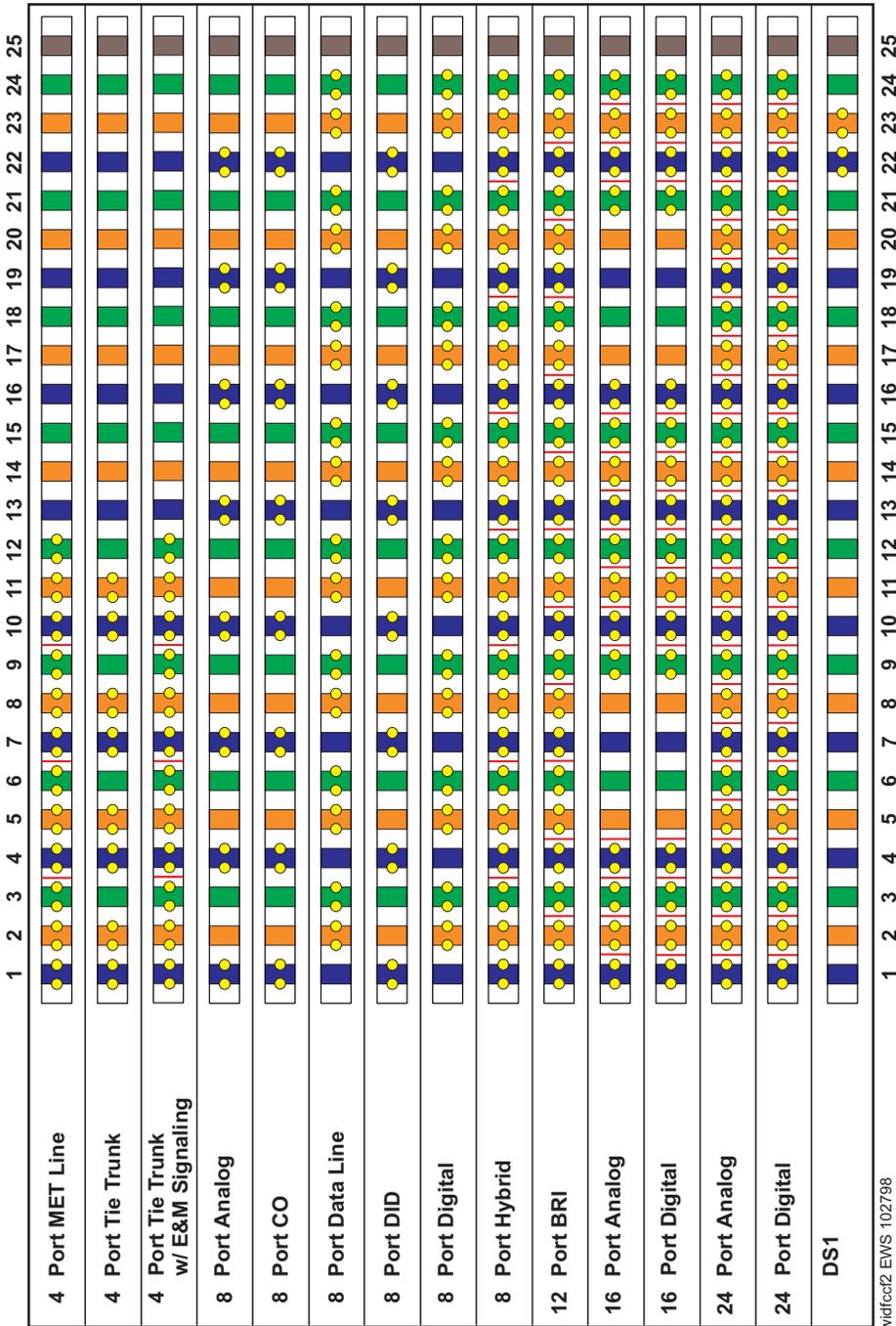
Function	Apparatus Code	Load From	Notes
Processor	TN798B	Slot 1 in Cabinet A	
Tone Clock	TN2182B	Slot 2 in Cabinet A	
Call Classifier/ Tone Detector	TN744D	Slot 1 of Cabinet B	If slot is not available, load in first available slot from slot 1.
DEFINITY AUDIX	ED-1E546 (TN566/TN567)	Slots 6-9	TN566 and TN567 require 4 slots with overlap into area to the left of slot 6. In any other position, 5 slots are required.
DEFINITY AUDIX Slim	TN568	Slot 6	TN568 requires 2 slots. If there is a fiber-optic interface and slot 6 is occupied, use slots 7 and 8.
Announcement	TN750C	Lower Left	
Speech Synthesizer	TN725B	Lower Left	
DS1/E1, ISDN PRI	TN464F, TN767E, TN2242, TN2464 (Guestworks and BCS only)	Lower Left	Maximum of 8 ISDN-PRI. Total number of ISDN-PRI plus number of ISDN-BRI circuit packs must not exceed 8.
ISDN-BRI Trunk	TN2185	Lower Left	Maximum of 4
CO Trunk	TN747B, TN465C, TN2199, TN2147C, TN2138, TN438B	Lower Left	
DID Trunk	TN753, TN2139, TN2146, TN436B, TN459B	Lower Left	
Tie Trunk	TN760C, TN458, TN497, TN2140B	Lower Left	
Auxiliary Trunk	TN763B	Lower Left	
Modem Pool	TN758	Lower Left	
Data Line	TN726	Upper Left	
Digital Line	TN754C, TN2181, TN2224/B, TN2214/B	Upper Left	
Analog Line	TN746B, TN2135, TN467, TN2144, TN2149, TN2180, TN2183, TN2215, TN468B, TN791, TN2214	Upper Left	
Hybrid Line	TN762B	Upper Left	

Continued on next page

Table 1-3. Circuit Pack Installation Order (Loading)

Function	Apparatus Code	Load From	Notes
MET Line	TN735	Upper Left	
Radio Controller	TN789	Upper Left	
ISDN-BRI 4-Wire S/T-NT Line (A-Law)	TN556C	Upper Left	

1. Cross-connect the port circuit packs to the MDF. See [Figure 1-21](#).



widafccf2 EWS 102798

Figure 1-21. Example MDF Connections

Off-Premises Circuit Protection

Protection from hazardous voltages and currents is required for all off-premises (out of building) trunks, lines, and terminal installations. Both over-voltage protection (lightning, power induction, and so forth), and sneak current protection are required. Sneak current protectors must be either UL listed/CSA certified, or must comply with local safety standards.

Sneak current protectors must have a maximum rating of 350 mA, and a minimum voltage rating of 600V, or as required by local regulations. The following devices protect the system from over-voltages:

- Analog trunks use the 507B sneak protector or equivalent. Over-voltage protection is normally provided by the local telephone company.
- Analog voice terminals use one of the following types of combined over-voltage and sneak current protection, or equivalent:
 - Carbon block with heat coil for UL code 4B1C
 - Gas tube with heat coil for UL code 4B1E-W
 - Solid state with heat coil for UL code 4C1S
- DCP and ISDN-BRI terminals use the solid state 4C3S-75 with heat coil protector, or equivalent
- DS1/E1/T1 circuits require isolation from exposed facilities. This isolation may be provided by a CSU (T1), LIU (E1), or other equipment that provides equivalent protection

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-premises circuit packs. The model 507B sneak current fuse panel, or equivalent, is recommended for sneak current protection. See [Figure 1-22](#).

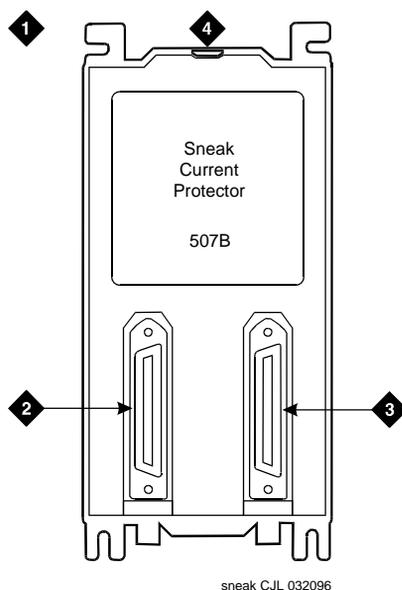


Figure Notes

- | | |
|--|--|
| 1. Sneak current protector (PEC 63210) | 3. 25-pair female connector (Out) |
| 2. 25-pair male connector (In) | 4. 220029 fuses (inside panel). Use a small screwdriver to pry top cover off |

Figure 1-22. Model 507B Sneak Fuse Panel

Approximately 8 inches (20 cm) of horizontal wall space is required for each column of sneak fuse panels. Connector cables connect the network interface to the sneak fuse panel. Also, use 157B connecting blocks equipped with SCP-110 protectors for sneak current protection.

 **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 panel contains two 25-pair connectors, fuse removal tool, and fifty 220029 Sneak Fuses (and 2 spares). 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.

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

[Table 1-4](#) is a pinout of the cable wiring and associated fuse numbers.

Table 1-4. 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

Label the Main Distribution Frame

[Figure 1-23](#) shows the graphic symbols used on the supplied labels for the system, cross-connections, information outlets, and cables.

1. Write the floor and building identification on each label as required.
2. Insert the labels into the plastic holders.
3. Snap the holders into the appropriate locations on the MDF.

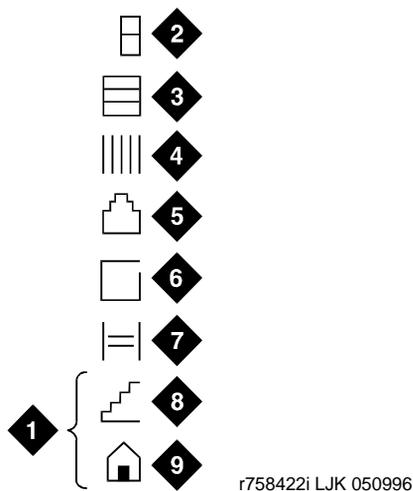


Figure Notes

- | | |
|--------------------------------------|--------------------------|
| 1. Floor and building identification | 6. Site/satellite closet |
| 2. Cabinet | 7. Tie circuit |
| 3. Carrier | 8. Floor |
| 4. Slot | 9. Building |
| 5. Information outlet | |

Figure 1-23. Label Graphic Symbols and Nomenclature

1. Label the cables as required using the supplied labels. Label code number 220A (comcode 103970000) contains all required labels.

Install and Set Up the Management Terminal

To prevent unnecessary trouble tickets, do not enable the system alarms (Alarm Origination feature) before completing all installation and administration procedures.

1. Remove and retain the installation and usage instructions from the carton. These instructions are needed to set up the terminal after installation. See [Figure 1-24](#).
2. 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.
3. Connect the supplied 25-pin DTE management terminal cable (H600-426) into the TERM connector (J3) on the Processor Interface Cable. See [Table 2-7 on page 2-11](#) for the pinout.
4. Connect an optional printer to either the management terminal (using the supplied adapter cable) or to the DCE connector (J2) on the Processor Interface Cable. See [Table 2-7 on page 2-11](#) for the pinout of the DCE connector.
5. Set the terminal power switch to the ON position when finished.

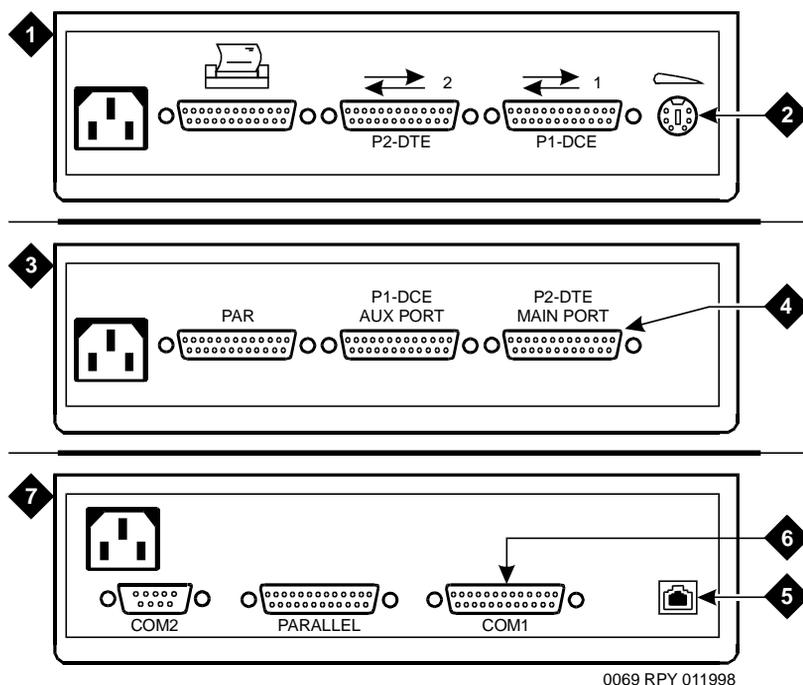


Figure Notes

- | | |
|--|-------------------------------------|
| 1. Rear panel of 715 BCS terminal | 5. Modular keyboard jack |
| 2. 6-pin mini DIN connector (keyboard) | 6. COM 1 port |
| 3. Rear panel of 2900/715 BCS terminal | 7. Rear panel of 715 BCS-2 terminal |
| 4. P2-DTE port | |

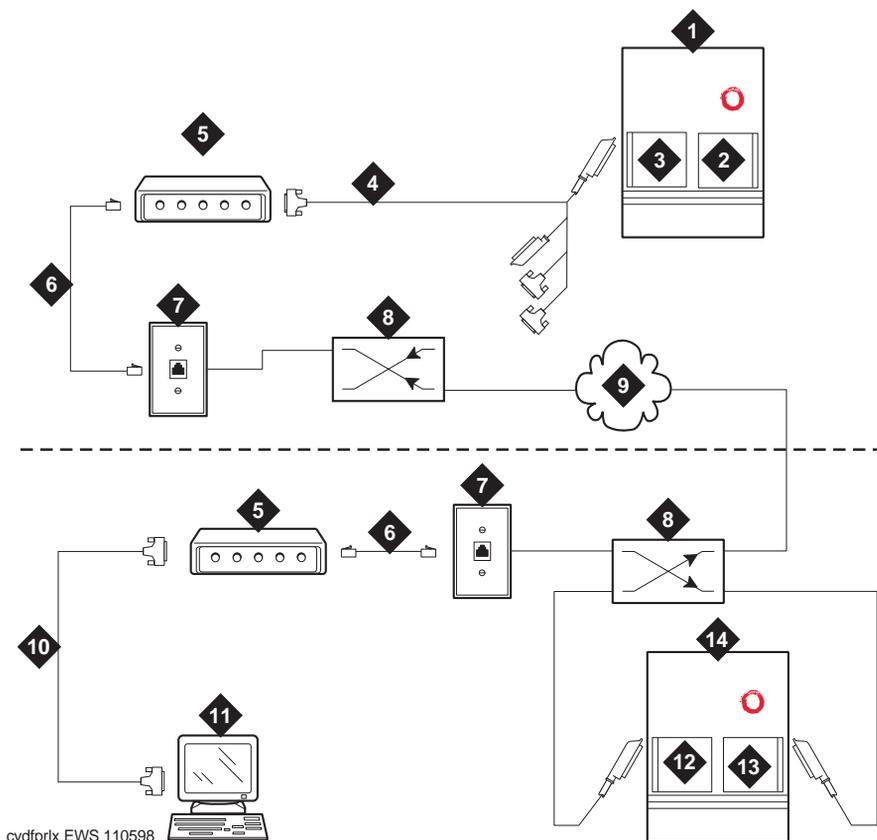
Figure 1-24. Rear Panels on Management Terminals

Set Up the Management Terminal

Each type of management terminal requires a different setup procedure. The 715 BCS-2 terminals are designed to operate in their default configuration.

1. For the 715 BCS-2 terminals, refer to *715GBCS-2 Terminal User's Guide and Service Manual*, 555-230-876, packed with the management terminal.

Remotely Connect Terminal



cydfprlx EWS 110598

Figure Notes

- | | |
|--|--|
| 1. Local compact modular cabinet (right side view) | 8. Main distribution frame (MDF) |
| 2. Digital line circuit pack | 9. Public switched telephone network (PSTN) |
| 3. TN798B processor | 10. DB9 to DB25 converter (ED3-1-70, G115) (optional) to connect to PC |
| 4. Modem connector (P2) on processor interface cable | 11. Remote management terminal or PC |
| 5. External modem | 12. CO trunk circuit pack |
| 6. Modular cord to network jack on modem | 13. Analog line circuit pack |
| 7. 103A or Lucent modular wall jack | 14. Remote DEFINITY ECS |

Figure 1-25. Typical Connections to Remote Devices

Remote Administration

Remote administration allows the system to be administered from a remote terminal. A local administration terminal is one that is located on-premises within 50 feet (15.25m) of the system cabinet. A terminal located more than 50 feet (15.25m) from the system cabinet is considered remote. A remote administration terminal can be on-premises or off-premises. The remote terminal can perform the same functions as the local terminal.

You can connect several terminals to the system at the same time. These terminals can display information simultaneously, but the system limits the type of simultaneous changes that users can make from any 2 (or more) terminals. These limitations, and the number of terminals you can connect to a system, are documented in *DEFINITY ECS Release 7 System Description Pocket Reference*.

SECURITY ALERT:

When logging into the system from a remote location using the asynchronous link, you should not be on the link too long or leave the terminal unattended while logged in. This link is used by the system to transmit alarms and errors to a central maintenance site. A long login session may block reporting of important maintenance information.

See the *BCS Products Security Handbook* for suggestions on preventing unauthorized access to system ports.

To allow remote administration, you need to establish a remote administration link, and you may need to assign the remote administration extension to a hunt group. The members of this hunt group are the extensions of the data modules available to connect to the management terminal. For information about how to do this, find the data module type you are using in the *DEFINITY ECS Release 7 System Administrator's Guide*.

Prepare the System to Allow Remote Administration

1. For Release 7csi configurations, translate all 4 NETCON channels.
2. Translate a Uniform Call Distribution (UCD) hunt group using a hunt group form.
3. In the `Group Extension` field, enter an extension number. If you use Direct Inward Dialing (DID) for remote administration, enter a DID extension number.

SECURITY ALERT:

Using DID for remote administration presents a major security risk.

4. In the `Group Members Assignment` field, enter the 4 extension numbers previously assigned to the 4 NETCON channels or system access ports.
5. If the system will be remotely administered from an on-premises terminal, no additional translations are required. You do not need to administer DID if the remote terminal is on-premises or accessible through DCS.
6. If the system will be remotely administered from an off-premises location via a dial-up facility:
 - a. Translate a pooled modem if not translated previously. See the "modem pooling" section in the *DEFINITY ECS Release 7 System Administrator's Guide* for more information.
 - b. Translate a trunk group if not translated previously.

How to Perform Remote Administration

1. Using either the keyboard or voice terminal, dial the UCD group extension number. This number will be one of the following (see [Table 1-5](#)):
 - a. From off-premises:
 - The DID number
 - An LDN (you must use a voice terminal)
 - The trunk number dedicated to remote administration
 - b. From on-premises:
 - An extension number
2. If you dialed a DID number, dedicated trunk number, or extension, you receive data tone or visually receive answer confirmation.
3. If you use an LDN, the attendant will answer. Ask to be transferred to the UCD group extension number. You receive data tone or visually receive answer confirmation. Transfer the voice call to your data terminal.
4. The `Login:` prompt appears.
5. Enter your login and password.
6. Perform system administration.
7. Log off and disconnect.

Data Terminal Speed Settings

1. Ensure data terminal speed settings are compatible with the modem pool and the NETCON data channel. Use the table below to determine the data terminal speed setting that you need.

Table 1-5. Data Terminal Speed Settings

Data Terminal	Speed
Integrated pooled modem TN758 circuit pack	1200 BPS
Combined modem pools	
NETCON data channel	Up to 9.6 KBPS
System access ports	9.6 KBPS

Set Ringing Option

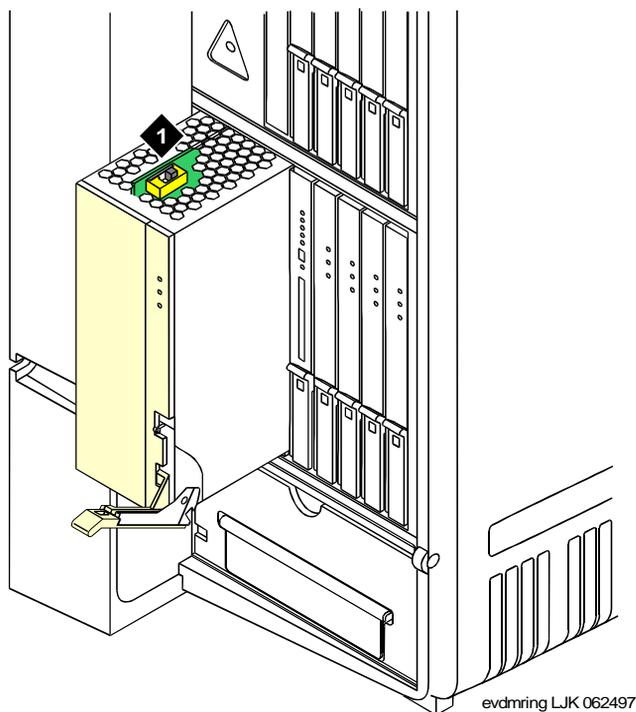


Figure Notes

1. Ringing option switch

Figure 1-26. Ringing Option Selection

1. Check the ringing option for the country of installation (20 Hz, 25 Hz, or 50 Hz). See [Figure 1-26](#).
2. Set the slide switch to the proper setting. Refer to the label on the side of the power unit.

Activate and Administer the System

⇒ NOTE:

The Release 7 CMC is a PPN cabinet only. Cabinet A is the control carrier and Cabinets B and C are port carriers.

Power Up System

Single Cabinet Installations

1. Insert the translation card into the slot in the TN798/B Processor circuit pack.
2. Fully seat the 650A Power Unit in the cabinet.
3. Set the circuit breaker at the AC load center to ON. This starts the system reboot process. In about 2 minutes, verify the screen displays: `Login:`

Multi-Cabinet Installations

1. Insert the translation card into the slot in the TN798/B Processor circuit pack.

⇒ NOTE:

Power up the port carriers first and the control carrier last.

2. Set the circuit breakers at the AC load center to ON.
3. Insert the power supplies into the port cabinets.
4. Insert the power supply into the control carrier. This starts the system reboot process. In about 2 minutes, verify the terminal screen displays:
`Login:`

System Administration

⇒ NOTE:

An `init` login is required to perform the following. Contact the regional CSA (Customer Software Associate) to assign the Offer Category option. Maintenance capabilities to initialize the system and access to either an internal or external modem are the only command options available until the Offer Category option is set.

1. To use Access Security Gateway (ASG), see [Appendix A, "Access Security Gateway"](#).

Log into the System

1. Verify the screen displays: `Login:`
2. Type **craft** and press Enter.
3. Type **crftpw** and press Enter. The password does not display as it is typed. The screen displays the system software version and the terminal types.

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

4. Enter the type of management terminal (such as 715) and press Enter.

Check System Status

The system status may suggest problem areas. Refer to *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7csi*.

1. Type **status system all-cabinets** and press Enter.
2. Verify the screen displays a service state of `in` for all appropriate areas.

Change Customer Options

Refer to *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide* to view a sample screen.

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

- ARS/AAR Partitioning
- Emergency Access to Attendant
- Hospitality (Basic)
- Service Observing

NOTE:

An **init** login is required to change customer options. Contact your regional CSA (Customer Software Administrator) to perform this function.

1. Enter **change system-parameters customer-options** and press Enter.
2. Using the customer order, enable the optional features purchased by the customer (as shown by PEC codes on the customer order).
3. Press Enter when finished to submit the form.
4. Logoff and then log back in to affect the customer option changes.

Set Country Options

Some country options need to be set to turn off the red alarm LEDs.

1. Enter **change system-parameters country options** and press Enter. A screen similar to [Screen 1-1](#) displays on the terminal. The cursor is set on the Companding Mode field.

```
change system-parameters country-options Page 1 of 21 SPE A
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: 6
Interdigit Pause: short
```

Screen 1-1. Typical System Parameters Country-Options Screen

2. The default (United States) companding mode is mu-Law. If the country uses A-Law companding, type A-Law. Press Enter when finished.

⇒ NOTE:

Other items eventually need to be entered on this screen, but this is all that is needed to turn the red alarm LEDs off.

3. Set the country codes as needed in the following fields. Refer to [Table 1-6](#) for the country codes. The United States country code (1) is shown in the example above.
 - Digital Loss Plan:
 - Analog Ringing Cadence:
 - Analog Line Transmission:

Table 1-6. 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		

4. If all red LEDs remain on, reseal any *port* circuit packs displaying red LEDs.
5. If the red LEDs remain on, refer to *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7csi*.



NOTE:

Ignore the red LED on any TN767 or TN464 DS1 circuit pack until after it is administered. Refer to [Chapter 2, "Installation Completion and Cable Pinouts"](#) to set the switches on these circuit packs.



NOTE:

Alarms appear in the Alarm Log when power is applied to the system before all equipment connecting to port circuit packs is installed. Some alarms are logged when power is applied, but resolve quickly. If no equipment is connected to the port circuit packs, alarms associated with these ports can take up to 4 hours to log, but 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.

1. Login as **craft** and enter **change password craft**. Press Enter. See [Screen 1-2](#). The cursor is positioned on Password for Login Making Change:

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

Password of Login Making Change: _____

LOGIN BEING CHANGED
                Login Name: craft

LOGIN'S PASSWORD INFORMATION
                Login's Password: _____
                Reenter Login's Password: _____
```

Screen 1-2. Typical Change Password Screen

2. Type the password for the craft login (assigned as *crftpw* when the system is shipped) and press Enter.
3. Enter the new password (obtained from the regional CSA). Valid passwords consist of a combination of 4 to 11 alpha or numeric characters. Use at least 1 letter and 1 number.
4. In the Reenter Login's Password: field, type the new password again and press Enter.

Set Daylight Savings Rules

You can set up to 15 customized daylight savings time rules. If you have switches in several different time zones, you can set up rules for each. A daylight savings time rule specifies the exact time when you want to transition to and from daylight savings time. It also specifies the increment at which to transition.

1. Type **change daylight-savings-rules** and press Enter.

DAYLIGHT SAVINGS RULES						
Rule	Change Day	Month	Date	Time	Increment	
0:	No Daylight Savings					
1:	Start: first <u>Sunday</u>	on or after	<u>April</u>	1	at <u>3:00</u>	<u>01:00</u>
	Stop: first <u>Sunday</u>	on or after	<u>October</u>	<u>25</u>	at <u>3:00</u>	
2:	Start: first <u>Sunday</u>	on or after	<u>April</u>	1	at <u>4:00</u>	<u>01:00</u>
	Stop: first <u>Sunday</u>	on or after	<u>October</u>	<u>25</u>	at <u>4:00</u>	
3:	Start: first _____	on or after	_____	__	at <u>:</u>	
	Stop: first _____	on or after	_____	__	at <u>:</u>	
4:	Start: first _____	on or after	_____	__	at <u>:</u>	
	Stop: first _____	on or after	_____	__	at <u>:</u>	
5:	Start: first _____	on or after	_____	__	at <u>:</u>	
	Stop: first _____	on or after	_____	__	at <u>:</u>	
6:	Start: first _____	on or after	_____	__	at <u>:</u>	
	Stop: first _____	on or after	_____	__	at <u>:</u>	
7:	Start: first _____	on or after	_____	__	at <u>:</u>	
	Stop: first _____	on or after	_____	__	at <u>:</u>	

2. Type the appropriate start and stop information in the Change Day, Month, Date, Time, and Increment (for example, **1:00** equals one hour) fields for each rule.

⇒ NOTE:

You can change any rule except rule 0 (zero). You cannot delete a daylight savings rule if it is in use on either the Locations or Date and Time screens.

3. Press Enter.

Set Date and Time

1. Enter **set time** and press Enter. See [Screen 1-3](#).

```

set time                                     Page 1 of 1  SPE A
                                     DATE AND TIME

DATE
    Day of the Week: Monday                Month: March
    Day of the Month: 10                   Year: 1997

TIME
    Hour: 9                               Second: 25
    Minute: 13

WARNING: Changing the date or time will impact BCMS, CDR and MEASUREMENTS
    
```

Screen 1-3. Typical Date and Time Screen

2. Type the day of the week in English (Sunday through Saturday). See [Table 1-7](#) for English day of the week names.

Table 1-7. English Day of the Week Names

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

3. In the `Month:` field, type the current month in English (January through December). See [Table 1-8](#) for English month names.

Table 1-8. 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

4. In the `Month:` field, type the day of month (1 through 31).
5. In the `Year:` field, type the current year.
6. In the `Hour:` field, type the current hour for a 24-hour clock.
7. In the `Minute:` field, type current minute (0 through 59). Seconds cannot be set.
8. Press `Enter` when the information is correct.

Circuit Pack Administration

After the equipment is installed (including circuit packs), the circuit packs must be administered. Refer to *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*, for more information.

The following describes general administration information:

- Use 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 1 carrier in the cabinet shown on the command line. For Release 7 CMC, 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 translations 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

CAUTION:

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

1. Enter **change system-parameters maintenance** and press Enter.
2. Enter the alarm notification and scheduled maintenance information into each field on Page 1 of the form.
3. Enter the appropriate information on Page 2 of the form.
4. Press Enter when finished.

- 1 Install and Cable the Cabinets
Activate and Administer the System

1-61

Administer the Attendant Console

If no attendant console is installed, proceed to [“Save Translations”](#).

1. Enter **display system-parameters country-options** and press Enter.
Verify the system’s companding mode for its local stations (usually, A-Law for Europe and mu-Law for North America and Japan).
2. If necessary, enter **change terminal-parameters 603/302B1** 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 ITAC (International Technical Assistance Center).

3. Administer other forms listed under “Attendant Console” in *DEFINITY Enterprise Communications Server Release 7 Administrator’s Guide*.

Save Translations

1. Enter **save translation** and press Enter. This copies the current system translations onto the translation card and takes about 10 minutes.
2. Remove the original translation card and replace with the backup card.
3. Repeat Step 1 for the backup translation card.
4. Remove the backup card and replace with the original translation card.
5. 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 7 Administrator’s Guide*, to add new terminals.

Install and Wire Telephones and Other Equipment

NOTE:

Only 1 pair of wires is available for emergency transfer, and 1 pair of wires is available for attendant console power.

The wiring procedures are the same for most of the DEFINITY System telephones and other equipment.

This chapter provides wiring examples of these similar installation procedures. These are examples only and actual wiring procedures may vary at each site.

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

All wiring pinouts for port circuit packs are in the tables at the end of this chapter.

Refer to [Figure 1-21 on page 1-39](#) for punch-down information for common circuit packs. The figure shows the colors of the punch-downs and is best viewed from CD-ROM or on-line.

After installing the hardware, the data for the system and telephone features is administered. These procedures are provided in *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.

Telephone Connection Examples

The 302C1 Attendant Console describes 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). See [Figure 1-27](#). Only 1 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 m) using 24 AWG (#5) (0.26 mm²) wire.

The general steps to connect a telephone are:

1. Choose a device to connect such as a 302C1 Attendant Console.
2. Choose the port circuit pack and its carrier and slot number, such as TN754B, Cabinet 1, Carrier A, Slot 06.
3. Choose a port circuit on the port circuit pack, such as Port 05.

Connect Adjunct Power

The 400B2 adapter is convenient for connecting local -48 VDC power to a modular plug. See [Figure 1-28](#).

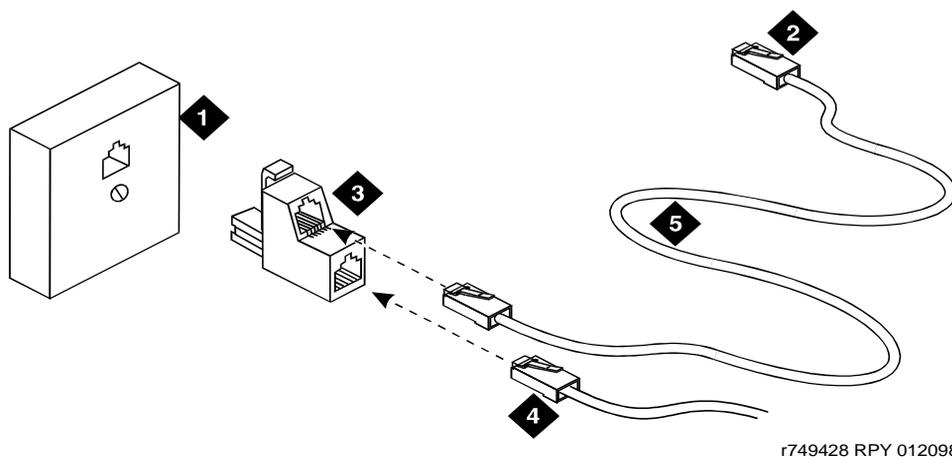


Figure Notes

1. Surface-mounted information outlet
2. To individual power unit (such as 1151A or 1151A2)
3. 400B2 adapter
4. To telephone
5. Destination service access point (DSAP) power cord

Figure 1-28. 400B2 Adapter Connecting to a Modular Plug

Adjunct power can be provided from the equipment room or equipment closet with 1145B power unit. The AUX connector (J1) on the processor interface cable can provide power for 1 attendant console. See [Table 2-7 on page 2-11](#).

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, 2-wire analog stations, analog CO trunks, DID trunks, and external alarms. See [Figure 1-29](#).



Figure Notes

1. 2500-type analog station
2. 2-wire analog line circuit pack

Figure 1-29. 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. 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 station to the appropriate pins on the port circuit pack.
5. Administer using *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.

Analog Tie Trunk Example

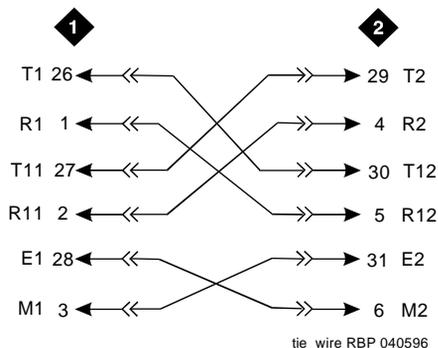


Figure Notes

1. External trunk or adapter
2. Tie trunk circuit pack

Figure 1-30. Analog Tie Trunk Wiring

1. Before installing the Tie Trunk circuit pack, set the option switches as described in [Chapter 2, "Installation Completion and Cable Pinouts"](#).
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 1-30](#) shows a DEFINITY System tie trunk connected to a DEFINITY System tie trunk.
3. Administer on the Trunk Group Screen. See *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.

Digital Tie Trunk Example

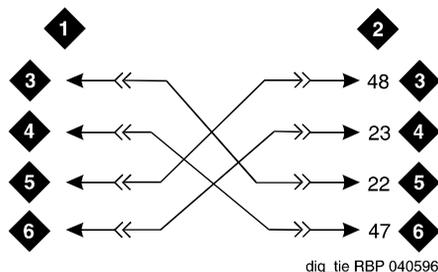


Figure Notes

- | | |
|--|------------------------------|
| 1. External trunk | 4. LO (Balanced output pair) |
| 2. DS1 interface circuit pack, position 1C06 | 5. LI |
| 3. LO | 6. LI (Balanced input pair) |

Figure 1-31. Digital Tie Trunk Wiring

1. Before installing the DS1 Interface circuit pack, set the option switches according to [Chapter 2, "Installation Completion and Cable Pinouts"](#).
2. Install cross-connect jumpers to connect the pins from the digital trunk circuit pack to appropriate pins on the external digital trunk.
3. Administer the DS1 Interface circuit pack on the DS1 and Trunk Group Screens. See *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.

DS1 Tie Trunk Example

DS1 tie trunks provide a 1.544 Mbps (T1) or 2.048 Mbps (E1) digital data service between 2 collocated systems or between the system and a data network. The following cables can be used:

- **C6C connector cable** — 50-foot (15.2 m) shielded cable with a 50-pin male connector on 1 end and a 15-pin male connector on the other end. Use to connect a DS1 tie trunk circuit pack to a Channel Service Unit.
- **C6D connector cable** — 50-foot (15.2 m) shielded cable with a 50-pin male connector on each end. Use to connect a DS1 tie trunks in collocated cabinets.
- **C6E connector cable** — 100-foot (30.5 m) shielded cable with a 50-pin male connector on 1 end and a 50-pin female connector on the other end. Use as an “extension” cable between the DS1 tie trunk circuit pack and other connector cables.
- **C6F connector cable** — 50-foot (15.2 m) shielded cable with a 50-pin male connector on 1 end and a 3 inch (7.62 cm) stub on the other end. Use to connect the DS1 tie trunk circuit pack to channel multiplexers requiring hardwired connections. See [Table 1-9](#) for a pinout.

Table 1-9. 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

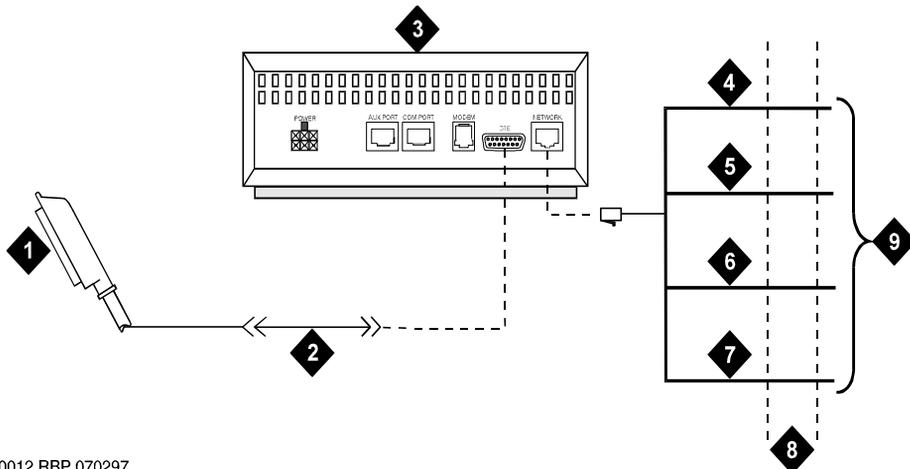
Two DS1 tie trunk circuit packs can be in collocated systems. A DS1 tie trunk circuit pack in 1 system can connect to a DS1 tie trunk in another system. Use a C6D cable if the distance is less than 50 feet (15.24 m). If the distance is greater than 50 feet (15.24 m), use a C6E cable.

NOTE:

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

DS1 Tie Trunks Using T1 Channel Service Unit

[Figure 1-32](#) shows a DS1 tie trunk connected to an external T1 Channel Service Unit (CSU). A 120A2 enhanced Integrated Channel Service Unit (ICSU) can be used in place of a T1 external CSU. The CSU or ICSU interfaces the DS1 tie trunks with the 1.544 Mbps digital facility. Contact your Lucent Technologies representative for maximum cabling distances.



0012 RBP 070297

Figure Notes

- | | |
|--|----------------------------|
| 1. To DS1 tie trunk circuit pack | 5. Ring (R) |
| 2. C6C cable (If distance is over 50 feet (15.24 m), use C6E cable.) | 6. Tip 1(T1) |
| 3. T1 external CSU or 120A2 ICSU | 7. Ring1 (R1) |
| 4. Tip (T) | 8. 1.544 Mbps T1 interface |
| | 9. To T1 carrier |

Figure 1-32. Typical Connections to Channel Service Unit

3-Pair and 4-Pair Modularity

[Figure 1-33](#) shows 3-pair and 4-pair modularity from the port circuit pack to the voice or data terminal. Most terminals connect to an information outlet (modular jack) installed at the work location.

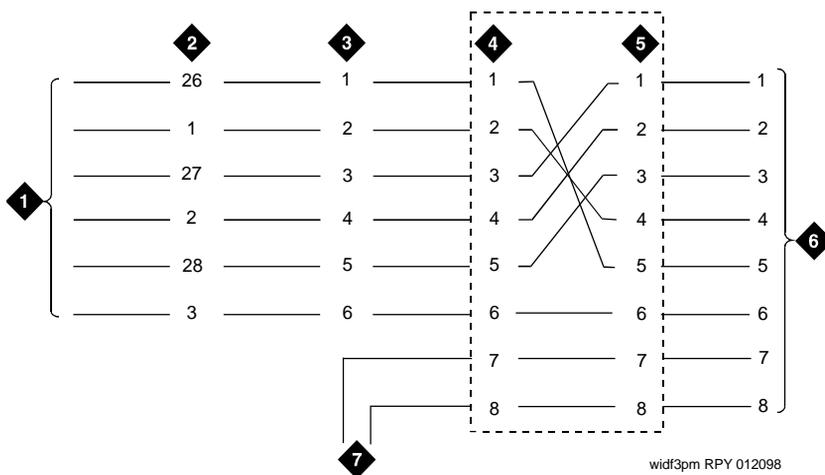


Figure Notes

- | | |
|--|---|
| 1. Port circuit pack | 5. Output from information outlet (4-pair modularity) |
| 2. 25-pair connector pins (3-pair modularity) | 6. Voice or data terminal pins |
| 3. MDF pins (3-pair modularity) | 7. Adjunct power |
| 4. Input to information outlet (4-pair modularity) | |

Figure 1-33. 3-Pair and 4-Pair Modularity

Adjunct Power Connections

[Figure 1-34](#) shows typical connection locations for adjunct power.

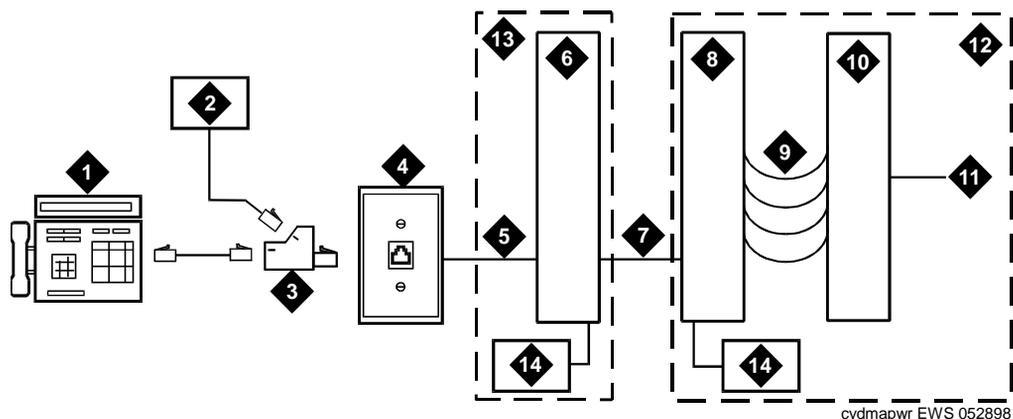


Figure Notes

- | | |
|--|--|
| 1. Typical display telephone | 9. 100P6A patch cord or jumpers |
| 2. Individual power supply (Such as 1151A) (Not used if item 14 is used) | 10. System side of MDF |
| 3. 400B2 adapter | 11. 25-pair cable to digital line circuit pack |
| 4. Information outlet (modular jack) | 12. Equipment room |
| 5. 4-pair D-Inside Wire (DIW) cable | 13. Satellite location |
| 6. Satellite site or adapter location | 14. Bulk power supply (Such as 1145B). Install at satellite location or equipment room (not both). |
| 7. 25-pair D-Inside Wire (DIW) cable | |
| 8. Station side of MDF | |

Figure 1-34. Example Adjunct Power Connections

Local and Phantom Power

An attendant console's maximum distance from the system is limited.
See [Table 1-10](#).

Table 1-10. Attendant Console Cabling Distances

Enhanced Attendant Console (302C1)	24 AWG Wire (0.26 mm ²)		26 AWG Wire (0.14 mm ²)	
	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. Provide auxiliary power for an attendant console through this cable so the console remains fully operational during short power outages.

NOTE:

Only 1 console can derive auxiliary power from the system and through the auxiliary cable located in the trunk/auxiliary field.

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 302C1

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

Install Attendant Console — Optional

1. Position the attendant console in the desired location and connect the modular cord to the information outlet.
2. Install labels per the Attendant Console form and Display Module form assignments.
3. Install a Digital Line circuit pack in the assigned carrier slot (if required).
4. Administer the Attendant Console forms in *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.

Hard-Wire Bridging

CAUTION:

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

Analog type hard-wire bridging is not allowed for 4-wire (only) DCP endpoints. This is because hard-wire bridging provides no way of combining the digital output of 2 bridged DCP sets. Also, a bridged endpoint causes the added load to degrade the DCP signal.

Dual Wiring of 2-Wire and 4-Wire Endpoints

Do not simultaneously wire a 2-wire and 4-wire endpoint to the same equipment location in an MDF, even though they connect to different colored wire pairs. The system uses separate circuit packs to interface 2- and 4-wire endpoints, and none are capable of interfacing both.

Install 26B1 Selector Console — Optional

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 7 Administrator's Guide*.

Connect External Alarms and Auxiliary Connections

NOTE:

The AUX connector is part of the Processor Interface cable assembly (J1).

Alarm Input

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 a UPS.

1. Connect 1 major alarm *input* wire pair and 1 minor alarm *input* wire pair to the auxiliary field from the AUX connector (J1 on Processor Interface Cable). See [Table 1-11](#).

Table 1-11. Alarm Inputs at AUX Connector

Alarm Input Type	Color	AUX Connector
Major	White-Blue	AP1 (Pin 26)
	Blue-White	Ground (Pin 1)
Minor	White-Orange	AP2 (Pin 27)
	Orange-White	Ground (Pin 2)

Alarm Output

The system provides a relay contact that can operate a customer-provided alarm, such as a light or bell. The circuitry and power source are customer-provided. The alarm device must not exceed a rating of more than 30 VAC RMS or 60 VDC at 0.75 Amps.

1. Connect the external alarm *output*. See [Table 1-12](#).
2. Give this information to your Lucent Technologies representative for troubleshooting purposes.

Table 1-12. Alarm Output at AUX Connector

Alarm Output Type	Color	AUX Connector
EXTALMA	Violet-Green	(Pin 48)
EXTALMB	Green-Violet	Ground (Pin 23)

Emergency Transfer and Auxiliary Power



NOTE:

Only 1 emergency transfer power panel and 1 auxiliary power connection is provided per system.

Connect emergency transfer power and auxiliary power as shown in [Table 1-13](#). Auxiliary power includes power to an attendant console or adjunct device.

Table 1-13. Emergency Transfer and Auxiliary Power

Power Type	Color	AUX Connector
Emergency Transfer	Black-Blue	XFER48 (Pin 36)
	Blue-Black	Ground (Pin 11)
Auxiliary (Adjunct) -48 VDC	Brown-Yellow	ACC48A (Pin 19)
	Yellow-Brown	Ground (Pin 44)

Telephone Pin Designations

[Table 1-14](#) provides port circuit pack and telephone pin designations.

Table 1-14. Port Circuit Pack and Telephone Pin Designations

Pin on Modular Plug	4-wire; 302C1, 8400-Series, 603E, 9403, 9434	2-wire; 302C1, 8400-Series, 603E, 9403, 9410, 9434	8510T BRI (with adjunct speaker phone)	Analog Station, Modem	Z3A1 & Z3A2 ADU, Data Module
1	TXT				TXT
2	TXR			T	TXR
3	PXT		TXT	R	PXT
4		T	PXR		
5		R	PXT		
6	PXR		TXR		PXR
7	-48VDC	(-48VDC)	(-48VDC)		
8	GRD	GRD	GRD		
circuit pack	4-wire digital (8 port)	2-wire digital (16 or 24 port)	4-wire BRI Trunk Side	Analog line (16 or 24 port)	Data Line

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

CAMA/E911 Installation

Configuration

The CAMA/E911 feature will only work on R7 CMC if TN429C CO trunk circuit packs (or later suffix) are used.

Port Networks (PNs) that include TN429C circuit packs used to interface to CAMA trunks may require some CPTR resources to be either TN744D V2 or TN2182B circuit packs, since TTR/CPTR or General Purpose Tone Receiver (GPTR) resources are selected from the pool available in the PN when needed.

Hardware Setup

1. Insert the TN429C or later CO trunk circuit pack in any available port slot.
2. Be sure the TN744D Call Classifier - Detector circuit pack is Vintage 2 or later.
3. Wire the CAMA trunk to the MDF (the trunk from the CO). Refer to the pinouts in [Table 2-13](#).

Administration Setup

1. At the prompt, type **add trunk next** and press Enter.

```
Page 1 of 11

TRUNK GROUP

Group Number: 1          Group Type: cama          CDR Reports: y
Group Name:  cama Trunk Group - E911  COR: 1          TN: 1          TAC: 701
Direction: outgoing      Outgoing Display? y  CESID I Digits Sent: 0
                          Busy Threshold: 99

TRUNK PARAMETERS
Trunk Type: wink-start
Outgoing Dial Type: rlmf
Trunk Termination: rc
```

Screen 1-4. CAMA Trunk Group form (page 1)

2. On the Trunk Group screen (page 1), in the `Group Type:` field, enter **cama**.

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CAMA/E911 Installation

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3. In the Group Name: field, enter the desired name.
4. In the TAC: field, enter the desired trunk access code.
5. In the Outgoing Display: field, enter y.
6. In the CESID I Digits Sent: field, enter the number directed by the Central Office (CO) or the Public Safety Answering Point (PSAP).
7. Scroll to page 3 of the form.

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TRUNK GROUP

ADMINISTRABLE TIMERS

	Outgoing Disconnect (msec): 400
	Cama Outgoing Dial Guard (msec): 75
	Outgoing Glare Guard (msec): 1000
	Cama Wink Start Time (msec): 5000
Outgoing End of Dial (sec): 1	Outgoing Seizure Response (sec): 4
	Disconnect Signal Error (sec): 30

Screen 1-5. Administrable Timers form (page 3)

8. On the Administrable Timers screen (page 3), you may need to adjust these fields according to your CO. Scroll to page 5.

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TRUNK GROUP

Administered Members (min/max): 1/2
Total Administered Members: 2

GROUP MEMBER ASSIGNMENTS

Port	Code	Sfx	Name
1:	01C0401	TN429	C
2:	01C0402	TN429	C
3:			
4:			
5:			
6:			
7:			
8:			
9:			
10:			
11:			
12:			
13:			

Screen 1-6. Group Member Assignments form (page 5)

- On the Group Member Assignments screen, in the Port field, add the trunk members and press Enter when finished.
- At the prompt, type **change feature-access-code** and press Enter.

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FEATURE ACCESS CODE (FAC)

Abbreviated Dialing List1 Access Code: ___

Abbreviated Dialing List2 Access Code: ___

Abbreviated Dialing List3 Access Code: ___

Abbreviated Dial - Prgm Group List Access Code: ___

Announcement Access Code: ___

Answer Back Access Code: ___

Auto Alternate Routing (AAR) Access Code: ___

Auto Route Selection (ARS) Access Code 1: 9___ Access Code 2: ___

Automatic Callback Activation: ___ Deactivation: ___

Call Forwarding Activation Busy/DA: ___ All: ___ Deactivation: ___

Call Park Access Code: ___

Call Pickup Access Code: ___

CAS Remote Hold/Answer Hold-Unhold Access Code: ___

CDR Account Code Access Code: ___

Change Coverage: ___

Data Origination Access Code: ___

Data Privacy Access Code: ___

Directed Call Pickup Access Code: ___

Emergency Access To Attendant Access Code: ___

Extended Call Fwd Activate Busy D/A: ___ All: ___ Deactivation: ___

Facility Test Calls Access Code: ___

Flash Access Code: ___

Screen 1-7. Feature Access Code (FAC) form (page 1)

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- In the `Rte Pat` field, type the desired Route Pattern (in the example above the route pattern is 12).



NOTE:

For the following step, if you are using the Attendant Crisis Alerting feature, type **alrt** instead of "emer."

- In the `Call Type` field, enter **emer** and press Enter.
- At the prompt, type **change route-pattern <number>** (the route pattern to be changed; in the example below, the route pattern is 11) and press Enter.

Page 1 of X

Pattern Number: 11

Grp. No.	FRL	NPA	Pfx Mrk	Hop Lmt	Toll List	No. Digits	Del	Inserted Digits	IXC
1:	1	0							user
2:									user
3:									user
4:									user
5:									user
6:									user

BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	Numbering Format	LAR								
0	1	2	3	4	W	Request										
1:	y	y	y	y	y	n	y	none		both	ept	outwats-bnd	BAND:			none
2:	y	y	y	y	y	n	n			rest						next
3:	y	y	y	y	y	n	n			rest						rehu
4:	y	y	y	y	y	n	n			rest						none
5:	y	y	y	y	y	n	n			rest						none
6:	y	y	y	y	y	n	n			rest						none

Screen 1-9. Route Pattern form (Page 1)

- On the Route Pattern screen, in `Grp. No.` field, enter the CAMA trunk group number.
- In the `FRL` field, enter **0**.



NOTE:

For the following step, if the Central Office (CO) wants KP11ST as the dialed digit string, then leave blank. If the CO wants KP911ST, then insert a "9" in the `Inserted Digits` field.

- Administer the `Inserted Digits` field if needed and press Enter.

28. At the prompt, type **change route-pattern <number>** (the route pattern to be changed; in the example below, the route pattern is 12) and press Enter.

Page 1 of X

Pattern Number: 12

Grp. No.	FRL	NPA	Pfx Mrk	Hop Lmt	Toll List	No. Del Digits	Inserted Digits	IXC
1:	1	0				1		user
2:								user
3:								user
4:								user
5:								user
6:								user

BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	Numbering Format	LAR	
0	1	2	3	4	W	Request			
1:	y	y	y	y	n	y none	both ept	outwats-bnd	BAND: none
2:	y	y	y	y	n	n	rest		next
3:	y	y	y	y	n	n	rest		rehu
4:	y	y	y	y	n	n	rest		none
5:	y	y	y	y	n	n	rest		none
6:	y	y	y	y	n	n	rest		none

Screen 1-10. Route Pattern form (Page 1)

29. On the Route Pattern screen, in Grp. No. field, type the CAMA trunk group number and press Enter.
30. In the FRL field, type 0.



NOTE:

For the following step, if the Central Office (CO) wants KP911ST as the dialed digit string, then leave blank. If the CO wants KP11ST, then delete one digit.

31. Administer No. Del Digits field if needed and press Enter.
32. At the prompt, type **change cama-numbering** and press Enter.

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CAMA NUMBERING - E911 FORMAT

System CESID Default: 5241100_____

Ext Len	Ext Code	CESID	Total Length	Ext Len	Ext Code	CESID	Total Length
4_	101_	5381234_____	7_	—	—	—	—
4_	1_	555_____	7_	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

Screen 1-11. CAMA Numbering Format form

33. In the CAMA Numbering - E911 Format screen (page 1), in System CESID Default : field, enter your own system default and press Enter. This is the number outputted when the extension code is not found in the CAMA Numbering table. See [Screen 1-11](#).
34. In the Ext Len, Ext Code, CESID, and Total Length fields, fill out to your own CAMA numbering plan and press Enter. Be sure to cover all extensions.
35. At the prompt, type **change cor <number>** (the class of restriction (COR) to be changed) and press Enter. Change all CORs that are defined for stations in order to remove any calling party restrictions for 911 calls.

CLASS OF RESTRICTION

COR Number: 10
COR Description: supervisor

FRL: 0	APLT? y
Can Be Service Observed? n	Calling Party Restriction: none
Can Be A Service Observer? n	Called Party Restriction: none
Time of Day Chart: 1	Forced Entry of Account Codes? n
Priority Queuing? n	Direct Agent Calling? n
Restriction Override: none	Facility Access Trunk Test? n
Restricted Call List? n	Can Change Coverage? n
Unrestricted Call List?	
Access to MCT? y	Fully Restricted Service? n
Category For MFC ANI: 7	Hear VDN of Origin Annc.? n
Send ANI for MFE? n_	Add/Remove Agent Skills? n
Hear System Music on Hold? y	PASTE (Display PBX Data on Phone)? n
Automatic Charge Display? n	
Can Be Picked Up By Directed Call Pickup? n	
Can Use Directed Call Pickup? n	

Screen 1-12. Class of Restriction form (page 1)

36. On the Class of Restriction screen (page 1), in the Calling Party Restriction: field, type **none** and press Enter.
37. Type **Save Translation** and press Enter.

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*, 533-700-100).

The resistor is built into the NT1 and can be 1 of 3 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.

CAUTION:

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 1-35](#) shows an 8-pin 440A4 terminating resistor adapter. The adapter has an 8-wide plug at 1 end, a short cord, and an 8-wide jack at the opposite end.

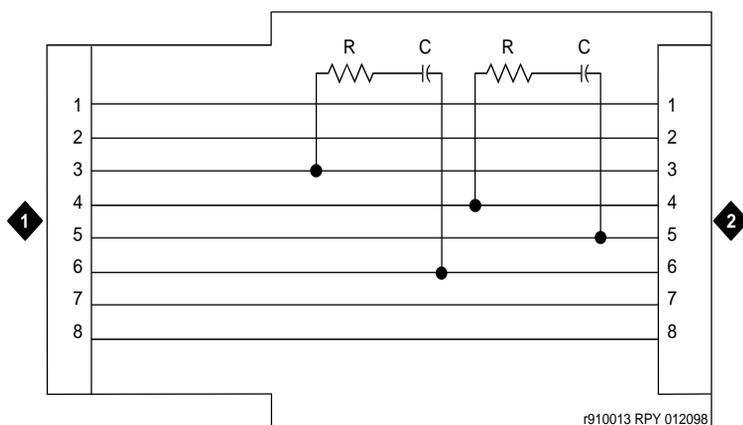


Figure Notes

1. 8-wide plug

2. 8-wide jack

Figure 1-35. 8-Wide Terminating Resistor Adapter (440A4)

Closest Mounted (110RA1-12)

The 110RA1-12 terminating resistor block consists of twelve 2-pair circuits and provides the 100 Ohm termination used for ISDN-BRI circuits.

[Figure 1-36](#) shows the wiring of the 110RA1-12. Three rows of 110D-4 connector blocks contain 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.

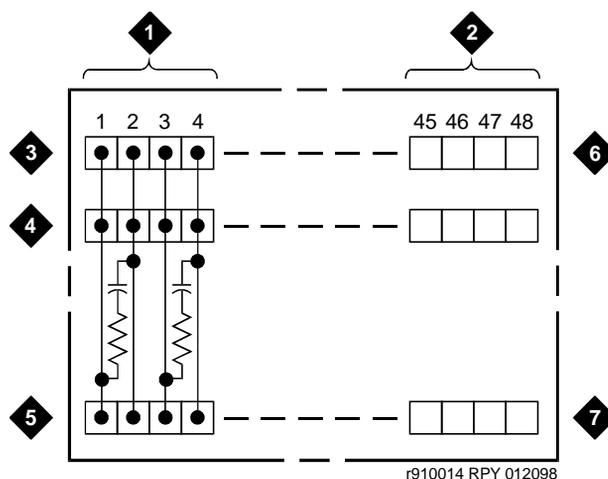


Figure Notes

- | | |
|-------------------|---|
| 1. Circuit 1 | 5. Input row "C" |
| 2. Circuit 12 | 6. Only first circuit shown to all 12 circuits (2APR) per block |
| 3. Output row "A" | 7. 110D-4 connector block |
| 4. Output row "B" | |

Figure 1-36. Terminating Resistor Block (110RA1-12)

Install Multi-point Adapters

Use multi-point adapters to provide signal fanout of the T-interface. BR851-B or the 367A perform fanout at the work station. These adapters support more than 1 ISDN terminal per horizontal 4-pair D-inside wire (DIW). To support multiple horizontal runs, a MDF with multiple common rows performs fanout in the satellite closet. The 110RA1-12 provides fanout for two horizontal runs and contains the 100 Ohm terminating resistor. Use this 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 2 terminals on 1 multi-point BRI at the work station and is used to fanout transmission and power. See [Figure 1-38](#).

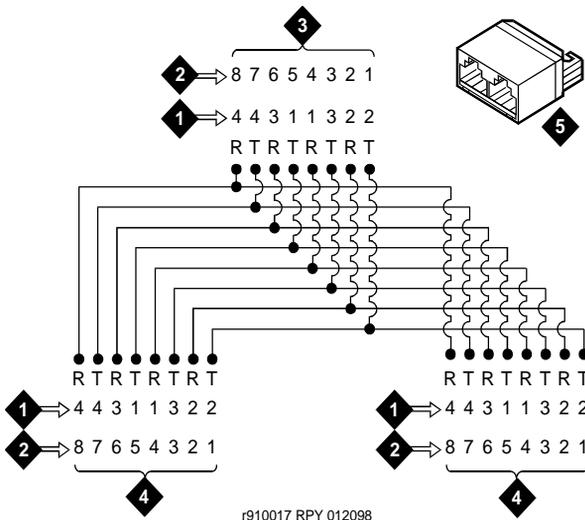


Figure Notes

- | | |
|------------------------|-----------------------------|
| 1. Wire pairs | 4. Female |
| 2. Pin numbers | 5. T-Type adapter (BR851-B) |
| 3. Modular plug (male) | |

Figure 1-38. Wiring Diagram of BR851-B

367A Adapter

The 367A adapter provides fanout for up to 7 terminals. See [Figure 1-39](#).

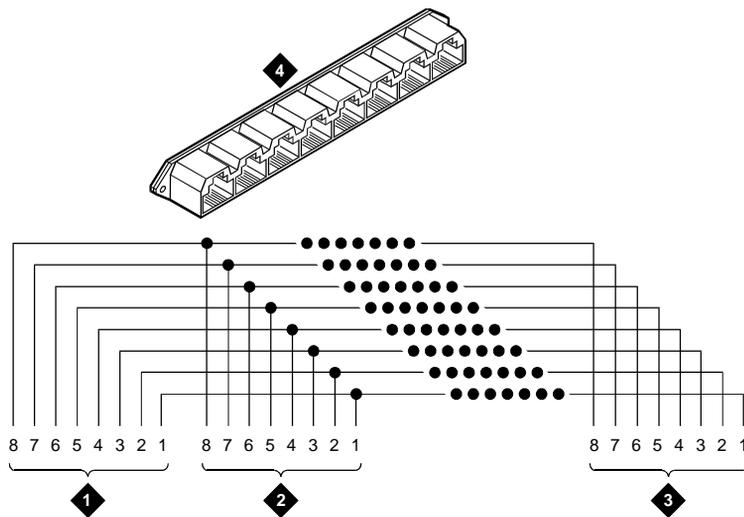


Figure Notes

- | | |
|-----------|-----------------|
| 1. Jack 1 | 3. Jack 8 |
| 2. Jack 2 | 4. 367A adapter |

Figure 1-39. Wiring Diagram of 367A Adapter

Basic Multi-point Installation Distances

Figure 1-40 provides cabling information for fanout of ISDN-BRI multi-point installations. In Figure 1-40, the terminating resistor is located in the satellite closet. All distances assume 24 AWG (#5) (0.26 mm²) D-Inside Wire (DIW).

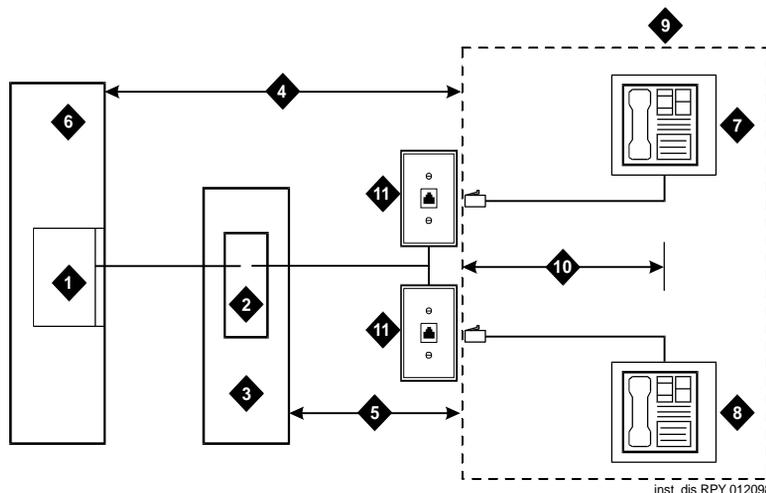


Figure Notes

- | | |
|--|---|
| 1. S-interface source (TN556) | 6. System cabinet |
| 2. Terminating resistor | 7. Terminating endpoint 1 |
| 3. Satellite closet | 8. Terminating endpoint 2 |
| 4. Maximum distance from S-interface source to work location (1600 feet) (488 m) | 9. Work location |
| 5. Maximum distance from satellite closet to work location (250 feet) (76 m) | 10. Maximum distance from information outlet to terminating endpoint (33 feet) (10 m) |
| | 11. Information outlet |

Figure 1-40. Basic Multi-point with One Work Location

Install Off-Premises Station Wiring

The cabling for off-premises stations is provided by the local telephone company. These stations can appear on any of the RJ21X network interfaces provided for the CO trunks.

⚠ CAUTION:

Use only an FCC-approved (or equivalent) analog type telephone (such as a 2500-type) as an off-premises station. The TN746B and TN2183 Analog Line circuit packs can be connected to off-premises stations.

1. Install an A25D cable between the RJ21X network interface and a sneak fuse panel.
2. At the MDF, connect jumper wires between 1 row/connecting block in the green field and up to 3 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 7 Administrator's Guide*.

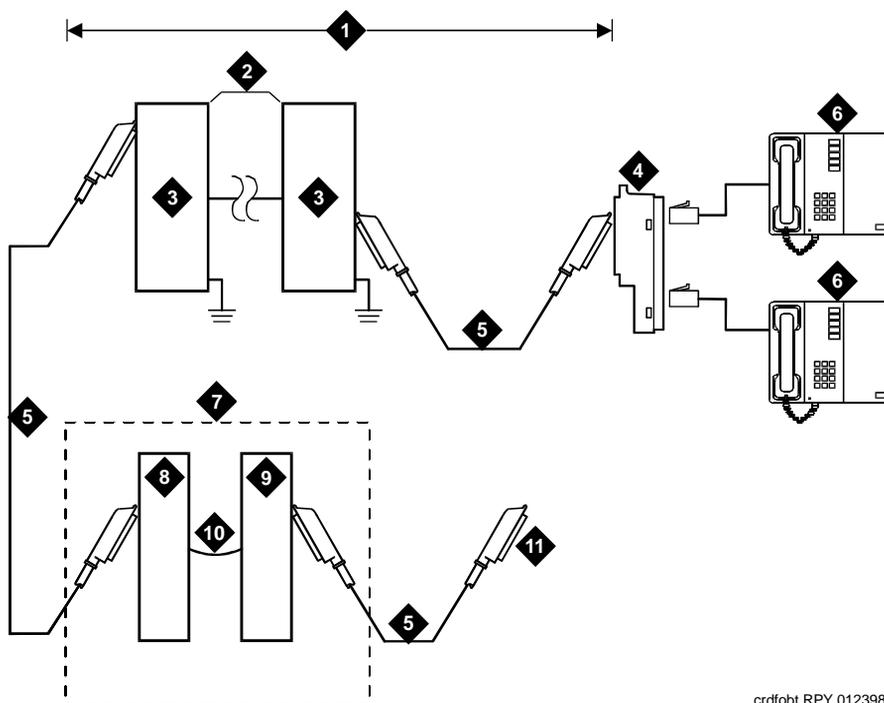
Install Off-Premises or Out-of-Building Stations

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

Analog Off-Premises Stations

[Figure 1-41](#) shows the connections for 1 to 8 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 m) using 24 AWG (#5) (0.26 mm²) wire.



crdfobt RPY 012398

Figure Notes

- | | |
|--|---|
| 1. Locally engineered cables | 7. Part of MDF |
| 2. Out-of-building wiring | 8. Station side (white field) |
| 3. Multi-pair protector units (primary protectors with heat coils or equivalent with sneak current protection) | 9. System side (purple field) |
| 4. 356A adapter | 10. Cross-connect jumpers |
| 5. B25A cable | 11. To analog line circuit pack (TN2183, TN769, TN742, or TN746B) |
| 6. Out-of-building analog telephones | |

Figure 1-41. Connections for 1 to 8 Out-of-Building Analog Telephones

Figure 1-42 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 1 row/connecting block in the white field and up to 3 rows/connecting blocks in the purple field. At the station location, a WP-90929, List 1 Concentrator Cable is used. There are 8 station appearances on each of the 3 fingers of the concentrator cable.

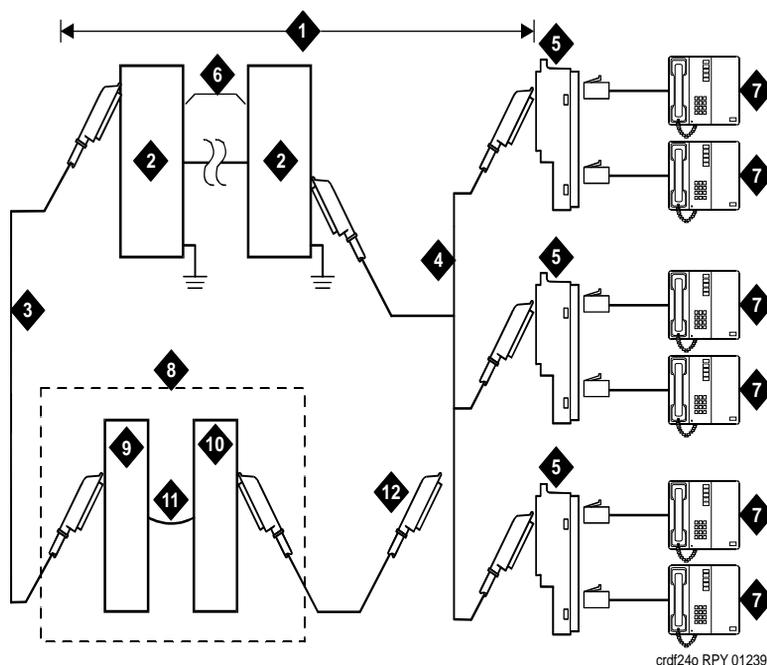


Figure Notes

- | | |
|--|---|
| 1. Locally engineered cables | 7. Out-of-building analog telephones |
| 2. Multi-pair protector units (primary protectors with heat coils or equivalent with sneak current protection) | 8. Part of MDF |
| 3. B25A cable | 9. Station side (white field) |
| 4. Concentrator cable (WP90929 List 1) | 10. System side (purple field) |
| 5. 356A adapter | 11. Cross-connect jumpers |
| 6. Out-of-building wiring | 12. To TN2183, TN769, TN742, or TN746B analog line circuit pack |

Figure 1-42. Connections to 24 Out-of-Building Telephones

Circuit Protectors

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. [Table 1-15](#) shows the recommended protectors.

Table 1-15. Analog Line Circuit Protectors

Protectors		
Primary¹	Primary (with heat coil)	Sneak Current Protectors¹
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 MET Line circuit packs
- Analog telephones connected to TN746 Analog Line circuit packs

Refer to [Table 1-1 on page 1-4](#) for circuit protector ordering information (comcodes).

Digital Out-of-Building Telephones

Protection is required at both building entrances for digital out-of-building voice terminals. There are 2 different types of protectors that can be used to protect digital voice terminals and digital line circuit packs. The 2 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 is only 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 circuit packs. [Table 1-16](#) lists the approved protectors.



NOTE:

The TN2181 (2-Wire 16 Port Digital Line circuit pack) may not be approved for some out-of-building uses. Contact your Lucent Technologies representative for more information.

Table 1-16. 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
TN2181	4C3S-75 or ITW Linx
TN2224	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, this may not be cost-effective in some cases. 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, various 25-, 50-, and 100-pair protector panels are 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.

1 Install and Cable the Cabinets
Install Emergency Transfer Unit and Associated Telephones

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The maximum range for out-of-building digital voice terminals is 3400 feet (1036 m) when using 24 AWG (#5) (0.26 mm²) wire and 2200 feet (670 m) when using 26 AWG (#4) (0.14 mm²) wire. The range can extend to 5000 feet (1524 m) using 24 AWG (#5) (0.26 mm²) wire or 4000 feet (1219 m) using 26 AWG (#4) (0.14 mm²) 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.

Refer to [Table 1-1 on page 1-4](#) for circuit protector and data link protector comcodes.

Install Emergency Transfer Unit and Associated Telephones

 **NOTE:**

Install only 1 emergency transfer power panel per system.

Emergency transfer capability is provided by an 808A Emergency Transfer Panel (or equivalent) mounted next to the trunk/auxiliary field. See [Figure 1-43](#). Also refer to [Table 1-13 on page 1-75](#) for the pinout of the AUX (J1) connector.

Use analog telephones for emergency transfer. The 500-and 2500-type telephones can also be used as normal extensions. Emergency transfer capability may be provided on analog CO and Wide Area Telecommunications Service (WATS) trunks.

The transfer panel provides emergency trunk bypass or power-fail transfer for up to 5 incoming CO trunk loops to 5 selected station sets. The 808A equipment's Ringer Equivalency Number (REN) is 1.0 Amp.

At the 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.

Install the Emergency Transfer Panel

The 808A Emergency Transfer Panel is used in the following installation example.

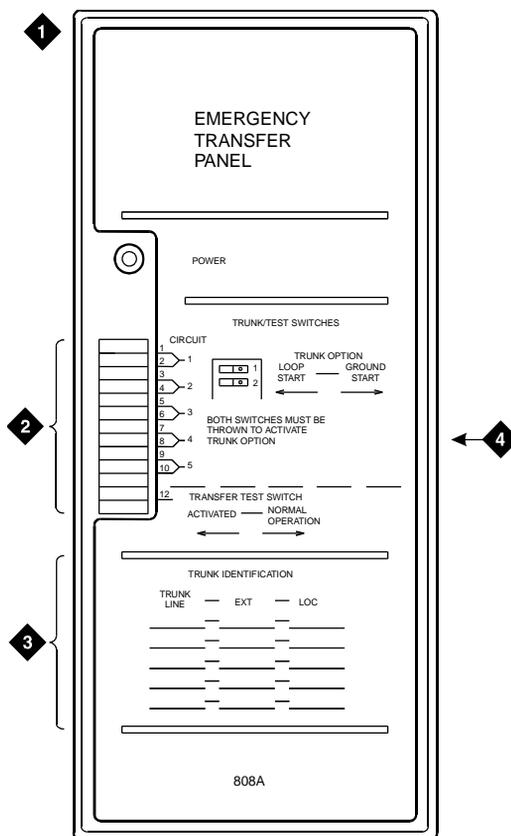
1. Install the transfer panel on any mounting frame in either a vertical or horizontal position. The housing has ears for screw-mounting and cutouts for snap-mounting the unit in an 89-type mounting bracket.



NOTE:

Install the panel so it can be accessed only by authorized personnel. The location must meet standard environmental considerations such as temperature, humidity, and so forth.

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



led808a LJK 040896

Figure Notes

- | | |
|-------------------------------------|-------------------------------|
| 1. 808A emergency transfer panel | 3. Trunk identification label |
| 2. Circuit start selection switches | 4. 25-pair male connector |

Figure 1-43. 808A Emergency Transfer Panel

1 Install and Cable the Cabinets*Install Emergency Transfer Unit and Associated Telephones*

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3. Locate the circuit start selection switches. See [Figure 1-43](#). These are the first 10 two-position switches on the left side of the 808A. The switches set each of the 5 incoming trunk lines to either loop start or ground start. Two switches are used for each of the 5 circuits; switches 1 and 2 are used for circuit 1, switches 3 and 4 are used for circuit 2, and so forth. See [Table 1-17](#).

For loop start, set the switches to the **left**. For ground start, set the switches to the **right**.

Table 1-17. 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

4. Connect a 25-pair cable between the male RJ21 25-pair connector on the 808A and the yellow field on the MDF. [Table 1-18](#) shows the pinouts.
5. Make cross-connections for each emergency trunk/emergency station pair. See [Figure 1-44](#) and [Figure 1-45](#).
6. On the trunk identification label at the bottom of the panel, record the trunk line, extension, and location for each circuit.
7. To each voice terminal designated as an emergency terminal, attach a label identifying it as such. The labels are provided with the unit.

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Install Emergency Transfer Unit and Associated Telephones

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8. Check the system for normal operation as follows:
 - a. Place the test switch (switch 12) in NORMAL OPERATION.
 - b. Ensure the power supply is providing -48 VDC at 80 mA maximum. The power LED should be ON.
 - c. Check wiring connections.
 - d. Verify there is dial tone on all emergency transfer sets.

Table 1-18. Pin Assignments for 25-Pair Connector on 808A

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
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

Continued on next page

Table 1-18. Pin Assignments for 25-Pair Connector on 808A — Continued

Pin	Color	Designation	Connector/Description
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
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)

9. Check the system for emergency transfer operation as follows:

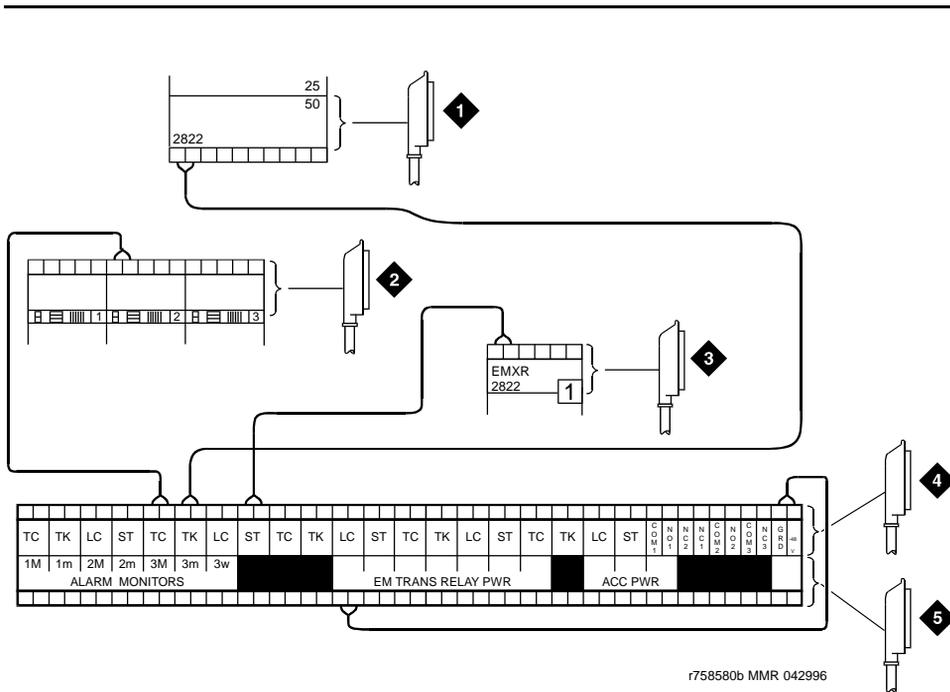
- a. Place the test switch (switch 12) in the ACTIVATED position.
- b. The power LED should be OFF.
- c. Verify there is dial tone on all emergency transfer sets.

1 Install and Cable the Cabinets

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10. Connect the 808A to the MDF with a B25A or A25B cable. [Figure 1-44](#) 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 | 4. To power transfer unit |
| 2. To CO trunk circuit pack | 5. To control carrier AUX connector |
| 3. To blue or white station distribution field | |

Figure 1-44. Connections for Telephone Used for Emergency Transfer

Figure 1-45 shows the connections at the trunk/auxiliary field for a telephone used for emergency transfer and as a normal extension.

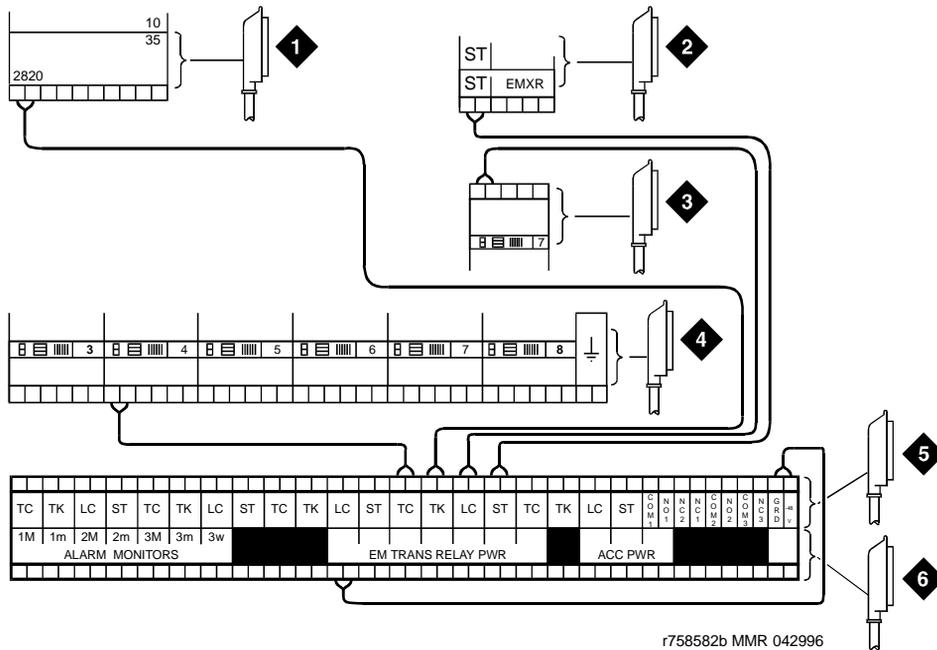


Figure Notes

- | | |
|-----------------------------------|-------------------------------------|
| 1. To network interface facility | 4. To CO trunk circuit pack |
| 2. To blue or white station field | 5. To power transfer unit |
| 3. To analog line circuit pack | 6. To control carrier AUX connector |

Figure 1-45. 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 1-44](#).
2. Connect CO trunk leads from the purple field to the TC terminals on the yellow emergency transfer row/connecting block for each trunk.
3. Connect CO trunk leads from the green field to the TK terminals on the yellow emergency transfer row/connecting block for each trunk.
4. Connect the 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 1-45](#).
2. Connect CO trunk leads from the purple field to the TC terminals on the yellow emergency transfer row/connecting block for each trunk.
3. Connect CO trunk leads from the green field to the 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 the 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.

Connect Modem to Telephone Network

1. Cross-connect the network jack on the modem to the network interface (via a 103A or modular wall jack). See [Table 1-19](#) for the pinout.

Table 1-19. Pinout of Network Jack

Pin Number	Signal
1	Unused
2	Tip
3	Ring
4	Unused

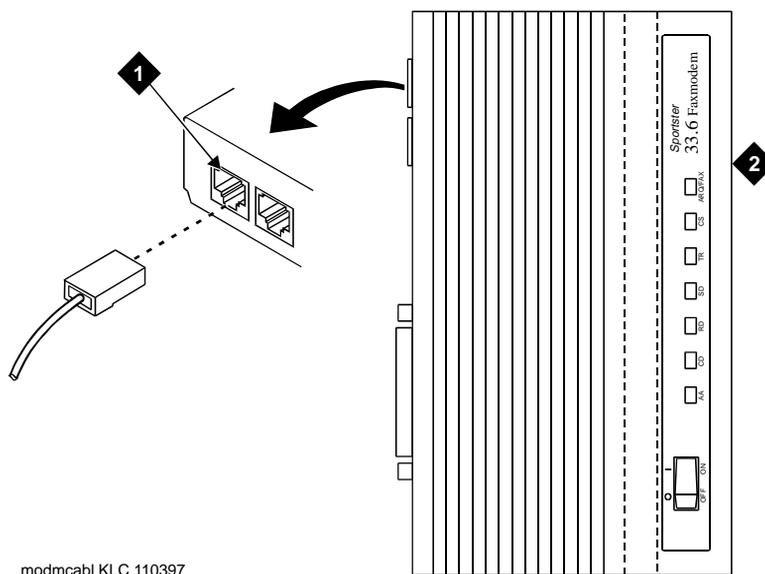


Figure Notes

1. Pin 1 of network jack

2. Modem

Figure 1-46. Network Jack on U.S. Robotics Modem

External Modem Option Settings

The U.S. Robotics Model 839 external modem is the recommended external modem for Release 7 CMC. A locally obtained, type-approved external modem may be used. Contact your Lucent Technologies representative for information.

1. If a non-U.S. Robotics Model 839 modem is installed, refer to the setup instructions provided with that modem. Refer to [Table 1-21](#) while setting up the modem. Go to Step 4 to complete the modem administration.
2. If no modem is installed, skip to step 5. If a U.S. Robotics Model 839 modem is installed, perform the following.
3. Use [Table 1-20](#) to set the 8 option switches on the U.S. Robotics modem.

Table 1-20. U.S. Robotics Model 839 External Modem Switch Settings

Switch	Setting	Function
1	OFF (Up)	DTR (Data Terminal Ready) override
2	OFF (Up)	Verbal result codes (text-formatted feedback characters such as <i>connected</i> or <i>no carrier</i>)
3	ON (Down)	Enable result codes
4	OFF (Up)	Displays keyboard commands (local echo)
5	OFF (Up)	Sets auto answer. Verify that the <code>Auto Answer Ring Count (rings):</code> on the maintenance-related system parameters form is <code>S0=10</code> .
6	OFF (Up)	CD (Carrier Detect) override (modem sends CD signal on connect, drops CD on disconnect)
7	OFF (Up)	Power-on and ATZ reset software defaults (loads Y or Y1 configuration from NVRAM)
8	ON (Down)	AT (Attention) command set recognition (enables recognition, smart mode)

4. At the management terminal, enter **change system-parameters maintenance** and press Enter. Scroll to page 3 of the form.
5. Set the `Modem Connection:` field to **external** if a modem is installed. Set the field to **none** if no modem is installed. This field must be administered or alarms will be generated.



NOTE:

The `Modem Connection:` field cannot be set to **none** if Alarm Origination is activated.

6. Set the `Data Bits:` field to **8** (default).
7. Set the `Parity:` field to **none** (default).

1 Install and Cable the Cabinets
Connect Modem to Telephone Network

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8. For non-United States installations, set the remaining modem fields as shown in [Table 1-21](#).
9. Press Enter when the modem fields are properly administered.

Table 1-21. Release 7 CMC Modem Fields

Field	Description
Modem Connection	Default is none for Release 7 CMC. Set to external if a modem is used.
Modem Name	This field is 20 characters long and permits alphanumeric characters to provide a unique qualifier for a given modem.
RTS/CTS Enabled	Informs modem that communication with the data source UART is driven with RTS/CTS flow control. The default 6-character field name is &H1 . Set the field name to \Q3 for Intel modems. This field is not case-sensitive.
Asynchronous Data Mode	Configures modem as an asynchronous device. This 8-character field name has a default value of &M0 (default) for Release 7 CMC. Set the field to &M0&Q0 for Intel modems. This field is not case-sensitive.
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 6-character blank default value. The Paradyne products use S90=1 to enable this functionality while the Intel product uses \J1 to enable similar functionality. This field is not case-sensitive.
Disable Data Compression	Turns off the default data compression algorithms used 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.
Enable Error Control	Turns on the V.42 LAPM and MNP error control protocols. The field has a blank default of 6 characters. 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.
Misc. Init. Param	This field has a 20-character blank default and supports any initialization parameters not already specified. The AT commands specified in this field are always the last initialization parameters to be sent to the external modem. This field is not case-sensitive.

Continued on next page

Table 1-21. Release 7 CMC Modem Fields — Continued

Field	Description
Auto-Answer Ring Number	This field controls the number of rings required before the modem answers an incoming call. This field should be set to S0=10.
Dial Type	This field controls the type of interregister signaling used between the modem and the CO. This 3-character field is denoted by "T" for tone dialing (default) and "P" for pulse dialing. This setting depends on type of line (tone or pulse) to the modem.
Adjustable Make/Break Ratio	This field controls the make/break ratios of pulses and DTMF dialing. Most modems have support for different make/ break options for pulse dialing only. Paradyne, Intel, and U.S. Robotics use the default &P0 to select a ratio of 39% make and 61% break for communication for the United States and Canada. The option &P1 sets a ratio of 33% make and 67% break for the United Kingdom and Hong Kong. This is a 5-character blank field (default) and is not case-sensitive.
Dial Command	This field has a default of "D" in a 3-character field. This field denotes the standard dialing command of the modem and is not case-sensitive.
No Answer Time-Out	Most modems provide a timer that abandons any outbound data call after a predetermined interval. This is a non-administrable parameter.

1	Install and Cable the Cabinets	
	<i>Connect Modem to Telephone Network</i>	

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Installation Completion and Cable Pinouts

2

Perform System Administration

⇒ NOTE:

Some of the interface units used between the system and other types of equipment require specific configuration settings and administration for each application. Refer to the user's guide for each equipment type for information on how to locate and set the configuration and option switches.

1. Administer the system by adding the customer data to match the wiring, telephones, and other equipment. See *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.
2. Return to this section when finished.

⇒ NOTE:

Refer to *DEFINITY Enterprise Communications Server Release 7 Installation for Adjuncts and Peripherals*, for data module and other peripheral installation and configuration requirements.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7csi*.
2. Refer to ["Power Supply LED Indications" on page 2-4](#) if power supply faults are suspected.

Enable Alarm Origination to INADS

No External Modem Installed (or No Alarm Origination to INADS)

1. Enter **change system-parameters maintenance** and press Enter.
2. Enter **n** in the *Alarm Origination Activated to OSS Numbers* field and press Enter.
3. For some software releases, enable *Cleared Alarm Notification* and *Restart Notification* before the submitting the form.

External Modem Installed

1. Enter **change system-parameters maintenance** and press Enter.
2. Enter **y** in the *Alarm Origination Activated to OSS Numbers* field and press Enter.
3. For some software releases, enable *Cleared Alarm Notification* and *Restart Notification* before the submitting the form.
4. Be sure the system is part of the 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.

NOTE:

When calling from a remote modem, you may need to disable error correction to allow the modems to connect successfully. For example, the AT&T Paradyne KeepInTouch[®] modem may require the "AT\n0" command.

5. Log off and log back in.

Place a Test Call

1. From any telephone connected to a digital line circuit pack, call any nearby telephone connected to an analog line circuit pack.
2. Verify that the dial tone, ringing pattern, and talk path are acceptable.
3. Place a call through the Central Office (outside call) to any nearby telephone. Verify that the dial tone, ringing pattern, and talk path are acceptable.

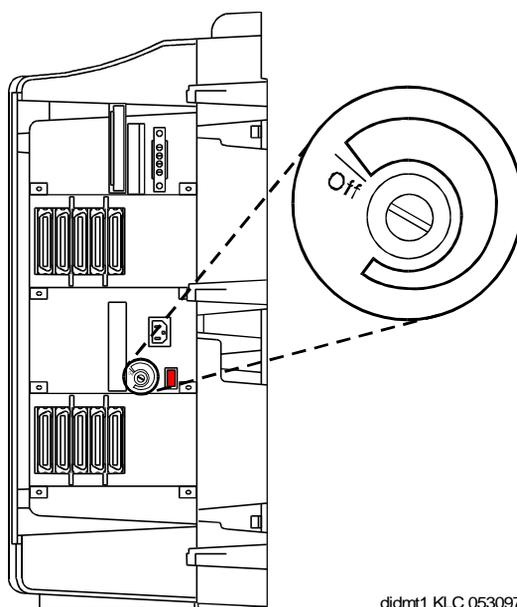
Set Neon Voltage — Ring Ping

⇒ **NOTE:**

If the ringing option is set to 50 Hz, neon voltage is not available. If 25 Hz is selected, the maximum voltage is 120 volts. Refer to [“Set Ringing Option” on page 1-51](#).

⇒ **NOTE:**

Set the control to OFF if there are no *neon* message waiting lamps or if LED message lamps are used. See [Figure 2-1](#).



didmt1 KLC 053097

Figure 2-1. Setting the Neon Voltage

1. Call a telephone with a neon message indicator and leave a message.
2. Check for “ring ping” (single ring pulse) each time the lamp flashes (approximately every 3 seconds).
3. Adjust the control clockwise in small increments until the ring ping stops. Be sure that the message lamp still lights when the adjustment is finished.

Installation Completion

1. Enter **logoff** and press Enter to prevent unauthorized changes to data.
2. Set the left and right doors onto the hinge pins and close the doors. The doors must be closed to prevent EMI emissions. Tighten the door screws.
3. Set the right cover panel onto the right panel and secure. Do not use force.

Power Supply LED Indications

It is not possible to view the alarm log to determine which power unit in a multi-cabinet system is defective. Use the LEDs on the front of each power unit to determine its state.

[Table 2-1](#) shows the LED and alarm conditions. Ring voltage and neon bus output do not activate alarm status.

Table 2-1. LED and Alarm Conditions

Condition	LED Status	Alarm State	Fan Alarm
Normal	Red off Yellow on	open	high
No Input Power	Red off Yellow off	closed	open
Any DC Output not Present	Red on Yellow off	closed	no state
Fan Alarm	Red on Yellow off	closed	low

TN760D Tie Trunk Option Settings

The TN760D Tie Trunk circuit pack interfaces between 4 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 2-2](#) and [Table 2-3](#)), set the switches on the TN760D and administer the port using [Figure 2-2](#) and [Table 2-4](#).

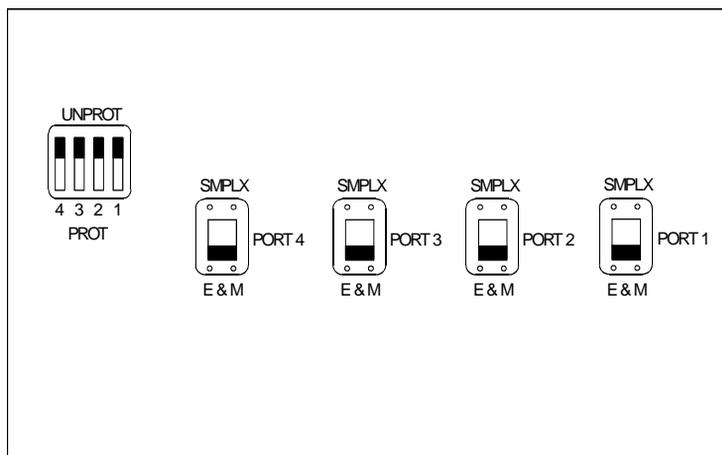
Table 2-2. Signaling Formats for TN760D

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 2-3. Signaling Type Summary

Signaling Type	Transmit (M-Lead)		Receive (E-Lead)	
	On-Hook	Off-Hook	On-Hook	Off-Hook
Type I Standard	ground	battery	open ¹ /battery	ground
Type I Compatible	open ¹ /battery	ground	ground	open ¹ /battery
Type V	open ¹ /battery	ground	open	ground
Type V Reversed	ground	open	ground	open

1. An open circuit is preferred instead of battery voltage.



r758183 RBP 050896

Figure 2-2. TN760D Tie Trunk Circuit Pack (Component Side)

Table 2-4. TN760D Option Switch Settings and Administration

Installation Situation		Preferred Signaling Format		E&M/SMPLX Switch	Prot/Unprot Switch	Administered Port
Circumstance	To	System	Far-End			
Collocated	DEFINITY	E&M Type 1 Compatible	E&M Type 1 Standard	E&M	Unprotected	Type 1 Compatible
Inter-Building	DEFINITY	Protected Type 1 Compatible	Protected Type 1 Standard Plus Protection Unit	E&M	Protected	Type 1 Compatible
Collocated	Net Integrated	E&M Type 1 Standard	Any PBX	E&M	Unprotected	Type 1

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 2-5](#) and [Figure 2-3](#). If the top switch setting is set to 32 Channel, then set the lower switch setting to either 120 Ohm or 75 Ohm.

Table 2-5. Option Switch Settings on TN464E/F

120 Ohms	Twisted pair
75 Ohms	Coaxial requiring 888B adapter
32 Channel ¹	2.048 Mbps
24 Channel ¹	1.544 Mbps

-
1. If the 24/32 channel switch is not set per administration (or vice versa), the circuit pack alarms and will not be present in the list configuration command.
-

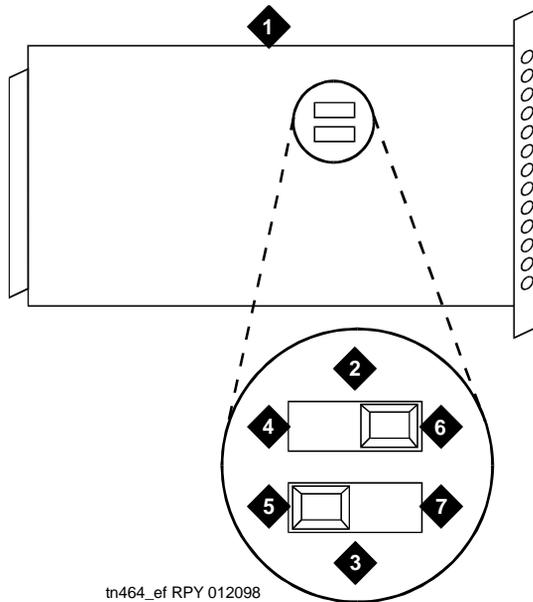


Figure Notes

- | | |
|---------------------------|--------------------------------|
| 1. TN464E/F | 5. 120 Ohm (shown selected) |
| 2. 24/32 Channel Selector | 6. 24 Channel (shown selected) |
| 3. 75/120 Ohm Selector | 7. 75 Ohm |
| 4. 32 Channel | |

Figure 2-3. TN464E/F Option Settings

Connector and Cable Diagrams — Pinout Charts

See [Table 2-6](#) for typical lead designations. The circuit packs and auxiliary equipment are classified as shown in the following tables.

Table 2-6. 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 2-6. 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

Processor Interface Cable Pinout

[Table 2-7](#) shows the pinout for the Processor Interface Cable.

Table 2-7. Processor Interface Cable Pinout

Signal Name	Processor (P1) (Amphenol Connector)	AUX (J1)	TERM (J3)	DCE (J2)	Modem (P2)
ACC48A	40	19			
AP1 (alarm in)	2	26			
AP2 (alarm in)	27	27			
EXTALMA	5	48			
EXTALMB	30	23			
XFER48	38	36			
MOD-CTS	21				5
MOD-DCD	46				8
MOD-DSR	8				6
MOD-DTR	7				20
MOD-GRD	20				1 & 7
MOD-RTS	34				4
MOD-RXD	33				3
MOD-TXD	45				2
TERM-CTS	9		5		
TERM-DTR	47		20		
TERM-GRD	35		1 & 7		
TERM-RXD	10		3		
TERM-TXD	22		2		
CDR-CTS	49			5	
CDR-DCD	24			8	
CDR-DSR	12			6	
CDR-DTR	37			20	
CDR-GRD	23			1 & 7	
CDR-RXD	36		3	3	
CDR-TXD	48		2	2	
GRD	25, 50	1-7, 11-17, 44-46	1, 7	1, 7	1, 7

2 Installation Completion and Cable Pinouts
Connector and Cable Diagrams — Pinout Charts

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Table 2-8. Port Circuit Pack Lead Designations

Cross-Connect Pin	TN742/B TN747B TN753 TN769 TN2147 TN465	TN754 TN726	TN760/B TN760C TN760D TN2209	TN762/B	TN763 TN763B TN763C	TN735	TN767B TN464E TN2207	TN746/B TN2183 TN793 TN2793	TN2224/B
1	T.1		T.1	T.1	T.1	T.1	C_5	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	C_ENAB	T.2	T.2
4		TXR.1	R1.1	TXR.1	SZ1.1	BR.1		R.2	R.2
5		PXT.1	E.1	PXT.1	S.1	LT.1	C_SYNC*	T.3	T.3
6		PXR.1	M.1	PXR.1	S1.1	LR.1		R.3	R.3
7	T.2		T.2	T.2	T.2	T.2	C2D-DATA	T.4	T.4
8	R.2		R.2	R.2	R.2	R.2	RDATA*	R.4	R.4
9		TXT.2	T1.2	TXT.2	SZ.2	BT.2	TDATA*		T.5
10		TXR.2	R1.2	TXR.2	SZ1.2	BR.2	TRSYSNC		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	SCLK*		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	PAHER*		R.8
17		PXT.3	E.3	PXT.3	S.3	LT.3		T.5	T.9
18		PXR.3	M.3	PXR.3	S1.3	LR.3	C_48V	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		R.6	R.10
21		TXT.4	T1.4	TXT.4	SZ.4	BT.4	C_P2SCLK	T.7	T.11
22		TXR.4	R1.4	TXR.4	SZ1.4	BR.4	LI (RX)	R.7	R.11
23		PXT.4	E.4	PXT.4	S.4	LT.4	LO* (TX)	T.8	T.12
24		PXR.4	M.4	PXR.4	S1.4	LR.4	LBACK1	R.8	R.12
25	T.5		T.5	T.5	T.5	T.5	GND	T.9	T.13
26	R.5		R.5	R.5	R.5	R.5	C_5V	R.9	R.13
27		TXT.5	T1.5	TXT.5	SZ.5	BT.5		T.10	T.14
28		TXR.5	R1.5	TXR.5	SZ1.5	BR.5		R.10	R.14
29		PXT.5	E.5	PXT.5	S.5	LT.5		T.11	T.15
30		PXR.5	M.5	PXR.5	S1.5	LR.5	C_RST	R.11	R.15
31	T.6		T.6	T.6	T.6	T.6		T.12	T.16
32	R.6		R.6	R.6	R.6	R.6		R.12	R.16
33		TXT.6	T1.6	TXT.6	SZ.6	BT.6	RDATA		T.17
34		TXR.6	R1.6	TXR.6	SZ1.6	BR.6	TDATA		R.17
35		PXT.6	E.6	PXT.6	S.6	LT.6	TRSYNC		T.18
36		PXR.6	M.6	PXR.6	S1.6	LR.6	GRD		R.18
37	T.7		T.7	T.7	T.7	T.7	SCLK		T.19
38	R.7		R.7	R.7	R.7	R.7			R.19
39		TXT.7	T1.7	TXT.7	SZ.7	BT.7			T.20

Continued on next page

Table 2-8. Port Circuit Pack Lead Designations — Continued

Cross-Connect Pin	TN742/B TN747B TN753 TN769 TN2147 TN465	TN754 TN726	TN760/B TN760C TN760D TN2209	TN762/B	TN763 TN763B TN763C	TN735	TN767B TN464E TN2207	TN746/B TN2183 TN793 TN2793	TN2224/B
40		TXR.7	R1.7	TXR.7	SZ1.7	BR.7			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	C_PRES*	T.14	T.22
44	R.8		R.8	R.8	R.8	R.8		R.14	R.22
45		TXT.8	T1.8	TXT.8	SZ.8	BT.8		T.15	T.23
46		TXR.8	R1.8	TXR.8	SZ1.8	BR.8	DC2_DATA	R.15	R.23
47		PXT.8	E.8	PXT.8	S.8	LT.8	LI* (RX)	T.16	T.24
48		PXR.8	M.8	PXR.8	S1.8	LR.8	LO (TX)	R.16	R.24
49	GRD	GRD	GRD	GRD	GRD	GRD	LBACK2	GRD	GRD
50	GRD	GRD	GRD	GRD	GRD	GRD	GRD	GRD	GRD

* Denotes high side of line.

Table 2-9. 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	W-BR	LO (High)
49	W-SL	LOOP2	06	W-SL	LOOP2
24	SL-W	LOOP1	05	SL-W	LOOP1

All other pins are empty.

[Table 2-10](#) shows the pinouts for the TN2185 ISDN-BRI 4-wire S Interface.

Table 2-10. TN2185 ISDN-BRI — 4-Wire S Interface Pinout

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
1	TXT.1	1	W-BL	26	102
	TXR.1	2	BL-W	01	002
	PXT.1	3	W-O	27	103
	PXR.1	4	O-W	02	003
2	TXT.2	5	W-G	28	104
	TXR.2	6	G-W	03	004
	PXT.2	7	W-BR	29	105
	PXR.2	8	BR-W	04	005
3	TXT.3	9	W-SL	30	106
	TXR.3	10	SL-W	05	006
	PXT.3	11	R-BL	31	107
	PXR.3	12	BL-R	06	007
4	TXT.4	13	R-O	32	108
	TXR.4	14	O-R	07	008
	PXT.4	15	R-G	33	109
	PXR.4	16	G-R	08	009
5	TXT.5	17	R-BR	34	110
	TXR.5	18	BR-R	09	010
	PXT.5	19	R-SL	35	111
	PXR.5	20	SL-R	10	011
6	TXT.6	21	BK-BL	36	112
	TXR.6	22	BL-BK	11	012
	PXT.6	23	BK-O	37	113
	PXR.6	24	O-BK	12	013
7	TXT.7	25	BK-G	38	302
	TXR.7	26	G-BK	13	202
	PXT.7	27	BK-BR	39	303
	PXR.7	28	BR-BK	14	203
8	TXT.8	29	BK-SL	40	304
	TXR.8	30	SL-BK	15	204
	PXT.8	31	Y-BL	41	305
	PXR.8	32	BL-Y	16	205

[Table 2-11](#) shows the pinout for the TN793 and TN2793 24-Port Analog Line circuit pack.

Table 2-11. TN793 Analog Line Circuit Pack Pinout

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
1	T.1	1	W-BL	26	102
	R.1	2	BL-W	01	002
2	T.2	3	W-O	27	103
	R.2	4	O-W	02	003
3	T.3	5	W-G	28	104
	R.3	6	G-W	03	004
4	T.4	7	W-BR	29	105
	R.4	8	BR-W	04	005
5	T.5	9	W-SL	30	106
	R.5	10	SL-W	05	006
6	T.6	11	R-BL	31	107
	R.6	12	BL-R	06	007
7	T.7	13	R-O	32	108
	R.7	14	O-R	07	008
8	T.8	15	R-G	33	109
	R.8	16	G-R	08	009
9	T.9	17	R-BR	34	110
	R.9	18	BR-R	09	010
10	T.10	19	R-SL	35	111
	R.10	20	SL-R	10	011
11	T.11	21	BK-BL	36	112
	R.11	22	BL-BK	11	012
12	T.12	23	BK-O	37	113
	R.12	24	O-BK	12	013
13	T.13	25	BK-G	38	302
	R.13	26	G-BK	13	202

Continued on next page

Table 2-11. TN793 Analog Line Circuit Pack Pinout — Continued

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
14	T.14	27	BK-BR	39	303
	R.14	28	BR-BK	14	203
15	T.15	29	BK-SL	40	304
	R.15	30	SL-BK	15	204
16	T.16	31	Y-BL	41	305
	R.16	32	BL-Y	16	205
17	T.17	33	Y-O	42	306
	R.17	34	O-Y	17	206
18	T.18	35	Y-G	43	307
	R.18	36	G-Y	18	207
19	T.19	37	Y-BR	44	308
	R.19	38	BR-Y	19	208
20	T.20	39	Y-SL	45	309
	R.20	40	SL-Y	20	209
21	T.21	41	V-BL	46	310
	R.21	42	BL-V	21	210
22	T.22	43	V-O	47	311
	R.22	44	O-V	22	211
23	T.23	45	V-G	48	312
	R.23	46	G-V	23	212
24	T.24	47	V-BR	49	313
	R.24	48	BR-V	24	213
25		49	V/SL	50	314
50		50	SL/V	25	214

Table 2-13. Circuit Pack and Auxiliary Equipment Leads (Pinout Charts)

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

Continued on next page

2 Installation Completion and Cable Pinouts
Connector and Cable Diagrams — Pinout Charts

Table 2-13. 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	Four Port DIOD
BK-O	37		T8	PXT4	T12	P-4	PXT4	S4				E4		
O-BK	12		R8	PXR4	R12	P-4	PXR4	S14				M4		
BK-G	38	T5	T9		T13	V1T5			T5		T5			
G-BK	13	R5	R9		R13	V1R5			R5		R5			
BK-BR	39		T10	TXT5	T14	CT4								
BR-BK	14		R10	TXR5	R14	CR4								
BK-S	40		T11	PXT5	T15	P-5								
S-BK	15		R11	PXR5	R15	P+5								
Y-BL	41	T6	T12		T16	V1T6			T6		T6			
BL-Y	16	R6	R12		R16	V1R6			R6		R6			
Y-O	42			TXT6	T17	CT6								
O-Y	17			TXR6	R17	CR6								
Y-G	43			PXT6	T18	P-6								
G-Y	18			PXR6	R18	P+6								
Y-BR	44	T7			T19	V1T7			T7		T7			
BR-Y	19	R7			R19	V1R7			R7		R7			
Y-S	45			TXT7	T20	CT7								
S-Y	20			TXR7	R20	CR7								
V-BL	46		T13	PXT7	T21	P-7								
BL-V	21		R13	PXR7	R21	P+7								
V-O	47	T8	T14		T22	V1T8			T8		T8		LI*	
O-V	22	R8	R14		R22	V1R8			R8		R8		LI	

Continued on next page

Table 2-13. Circuit Pack and Auxiliary Equipment Leads (Pinout Charts)

Color	Connector Pin Numbers	Analog Line 8 ports	2-Wire Digital Line Analog Line 16 ports	Data Line and Digital Line 4-wire	Digital Line 24 Ports	Hybrid Line	MET Line	AUX Trunk	CO Trk	CO Trunk 3-wire	DID/DIOD Trunk	Tie Trk	DS1 Tie Trunk	Four Port DIOD
V-G	48		T15	TXT8	T23	CT8							LO	
G-V	23		R15	TXR8	R23	CR8							LO*	
V-BR	49		T16	PXT8	T24	P-8							LBACK2	
BR-V	24		R16	PXR8	R24	P+8							LBACK1	
V-S	50													
S-V	25													

Continued on next page

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

Release 6csi to Release 7csi Upgrade

3

This chapter provides the information to upgrade from a DEFINITY ECS Release 6csi to a DEFINITY ECS Release 7csi. There should be a TN798B in the cabinet. If not, refer to the maintenance book for changing the processor circuit pack. Installation of the TN799 (C-LAN) circuit pack is optional.

DEFINITY Enterprise Communications Server Release 7 Administrator's Guide lists DEFINITY ECS Release 7 features and functions and provides the commands, procedures, and forms to initialize and administer the system.

Task Table

[Table 3-1](#) provides the high-level tasks to perform the upgrades in this chapter. Refer to the appropriate page for instructions for each step.

Table 3-1. Tasks to Upgrade to Release 7csi

✓	Task Description	Page
	Check Link Status	3-6
	Disable TTI (<i>Do not skip this section!</i>)	3-6
	Disable Scheduled Maintenance and Alarm Origination to INADS	3-6
	Save Current Translations onto Translation Card	3-7
	List Configuration Software Version	3-7
	Install the TN798B Circuit Pack	3-8
	Administer the System	3-8
	Enable TTI	3-13
	Check Link Status	3-13
	Enable Scheduled Maintenance	3-14
	Resolve Alarms	3-14
	Enable Customer Options and Alarm Origination	3-14
	Save Upgraded Translations onto New Translation Card	3-14
	Return Equipment	3-15

Read This First

Service Interruption

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

Shut Down DEFINITY AUDIX System

WARNING:

Neglecting to shut down the AUDIX assembly before powering down the system cabinet where it resides can damage the AUDIX disk.

1. Shut down the AUDIX assembly and allow the disk to completely spin down. Refer to ["DEFINITY AUDIX Power Procedures" on page 3-16](#).

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.

Translation Card Upgrade Procedures

Release 6 formatted translation cards are compatible with Release 7 systems and, therefore, can be reused. It is not necessary to obtain a new Release 7 formatted translation card.

DC Isolator

Each peripheral device connecting to a DC-powered system, from the asynchronous EIA RS-232 interface, requires a 116A or 105C 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.

Usable Circuit Packs

Every port or control circuit pack used in the upgraded system must conform to the minimum usable vintage requirements for Release 7. Those circuit packs must meet the usable vintage specifications. At a presale site inspection, the vintages of every circuit pack must be checked. 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* from your regional distributor.

Software Upgrade

Even though the Release 6 translations upgrade automatically to Release 7, 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. 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 Enterprise Communications Server Release 7 Administrator's Guide*

No administration changes should be made during the upgrade procedure. There can be 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 anti-static wrist ground strap. Connect the strap to an approved ground such as ground jack on the DEFINITY System.

Required Hardware

The equipment in [Table 3-2](#) must be on-site before the upgrade begins. 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)
- New translation card provided via upgrade PEC



NOTE:

The csi cabinet must have a TN798B processor circuit pack. Apply the remediation. The TN799 (C-LAN) circuit pack is optional for packet bus support and Distributed Communications System (DCS).

Table 3-2. Required Hardware

Equipment	Description	Quantity
406805481	Release 7 Generic Program Card (Orange Card)	1
601817448 or 601817422 or 601817430	2 Mbyte Mass-Storage Translation Card (White Card) or 4 Mbyte Mass-Storage Translation Card (White Card) or 10 Mbyte Mass-Storage Translation Card (White Card)	1 ¹

1. 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 books:
 - *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7csi*
 - *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*

Upgrade to Release 7

Check Link Status

1. Enter **display communication-interface links** and press Enter.
2. Make note of all enabled links.
3. Enter **status link <number>** and press Enter.
4. Check the following items and note which links are in-service. You will need this information after the upgrade.
 - PPP links
 - Audix links
 - ISDN
 - BX25
 - Ethernet

Disable TTI

 **CAUTION:**

If you do not disable the TTI, the translations can be corrupted.

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

Disable Scheduled Maintenance and Alarm Origination to INADS

1. Enter **change system-parameters maintenance** and press Enter. Disable scheduled daily maintenance so it does not interfere with the upgrade.
2. If scheduled maintenance has begun, set the `Stop Time` field to 1 minute after the current time. If scheduled maintenance has not yet begun, change the `Start Time` field to a time after the upgrade will be finished.
3. Enter **neither** in the *Alarm Origination Activated to OSS Numbers* field.

 **NOTE:**

Disabling alarm origination prevents the system from generating alarms, thus preventing unnecessary trouble tickets.

4. Disable *Cleared Alarm Notification* and *Restart Notification* before pressing Enter.

Save Current Translations onto Translation Card

1. Enter **save translation** and press `Enter` to get translations onto the translation card. This takes about 10 minutes. Save Recorded Announcements (TN750/B only)



NOTE:

The TN750C Multiple Announcement circuit pack contains on-board, non-volatile memory. Saving announcements is not needed.

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** `<port network>` `<carrier>` `<slot>` and press `Enter`. This takes about 40 minutes.

List Configuration Software Version

1. Insert the Release 7 generic program card (orange card) into the TN798/B.
2. Enter **list configuration software-version**. Under the `UPDATE FILE` column, note whether any patches have been applied.



NOTE:

If the system must be restored to the old software, these patches must be downloaded onto the system.

Install the TN798B Circuit Pack

If the processor circuit pack is TN798, replace it with TN798B.

1. Power down the cabinet.
2. Replace the TN798 processor circuit pack with the TN798B circuit pack.
3. Insert the Release 7 generic program card (orange card) into the TN798B.
4. Power up the cabinet. The system automatically loads the Release 7 software.
5. When prompted, replace the orange card with the original translation card.
6. When the `login:` prompt appears, the software is loaded onto the TN798B.

If the translations were corrupted, the following error message displays when logging in:



WARNING:

Translation corruption detected; call Lucent distributor immediately.



NOTE:

The **save translation** command cannot function if the translation corruption message appears. Refer to [“Translation Corruption Detected” on page 5-2](#) to clear the problem.

Display Memory-Configuration

1. Log in as **craft**. If the `Translation Corruption Detected` message appears, refer to [“Translation Corruption Detected” on page 5-2](#).
2. Ignore the translation copy protection message that appears for now. It will be resolved by the INADS later in this chapter.
3. Enter **display memory-configuration**. Check the `total DRAM` field. SIMM field “A” must contain a 16.

Administer the System

1. Enter **status system 1** to check out unusual status (for example, links down) in the system.

Set Daylight Savings Rules

You can set up to 15 customized daylight savings time rules. If you have switches in several different time zones, you can set up rules for each. A daylight savings time rule specifies the exact time when you want to transition to and from daylight savings time. It also specifies the increment at which to transition.

1. Type **change daylight-savings-rules** and press Enter.

DAYLIGHT SAVINGS RULES						
Rule	Change Day	Month	Date	Time	Increment	
0:	No Daylight Savings					
1:	Start: first <u>Sunday</u>	on or after	<u>April</u>	1	at <u>3:00</u>	<u>01:00</u>
	Stop: first <u>Sunday</u>	on or after	<u>October</u>	<u>25</u>	at <u>3:00</u>	
2:	Start: first <u>Sunday</u>	on or after	<u>April</u>	1	at <u>4:00</u>	<u>01:00</u>
	Stop: first <u>Sunday</u>	on or after	<u>October</u>	<u>25</u>	at <u>4:00</u>	
3:	Start: first _____	on or after	_____	__	at <u>:</u>	
	Stop: first _____	on or after	_____	__	at <u>:</u>	
4:	Start: first _____	on or after	_____	__	at <u>:</u>	
	Stop: first _____	on or after	_____	__	at <u>:</u>	
5:	Start: first _____	on or after	_____	__	at <u>:</u>	
	Stop: first _____	on or after	_____	__	at <u>:</u>	
6:	Start: first _____	on or after	_____	__	at <u>:</u>	
	Stop: first _____	on or after	_____	__	at <u>:</u>	
7:	Start: first _____	on or after	_____	__	at <u>:</u>	
	Stop: first _____	on or after	_____	__	at <u>:</u>	

2. Type the appropriate start and stop information in the Change Day, Month, Date, Time, and Increment (for example, **1:00** equals one hour) fields for each rule.

⇒ NOTE:

You can change any rule except rule 0 (zero). You cannot delete a daylight savings rule if it is in use on either the Locations or Date and Time screens.

3. Press Enter.

Set Locations

After you set the daylight savings rules, you must set the locations for all switches. It is possible to have switches in different time zones.

1. Type **change locations** and press Enter.

Page 1 of 3

LOCATIONS

ARS Prefix 1 Required for 10-Digit NANP Calls? _

Number	Name	Timezone Offset	Daylight-Savings Rule	Number Plan Area Code
1	<u>Main</u>	<u>± 00:00</u>	<u>_1</u>	<u>303</u>
2	_____	__:_	__	__
3	_____	__:_	__	__
4	_____	__:_	__	__
5	_____	__:_	__	__
6	_____	__:_	__	__
7	_____	__:_	__	__
8	_____	__:_	__	__
9	_____	__:_	__	__
10	_____	__:_	__	__
11	_____	__:_	__	__
12	_____	__:_	__	__
13	_____	__:_	__	__
14	_____	__:_	__	__

2. Type **y** in the ARS Prefix 1 Required for 10-Digit NANP Calls? field.
3. Type the information in the various fields for each switch.



NOTE:

Use the name of the switch or "Local Switch" in the Name field for the first location.

4. Press Enter.

Set Date and Time

1. Type **set time** and press Enter.
2. Verify the screen displays the Date and Time screen. See [Screen 3-1](#). The cursor is positioned on the Day of the Week: field.

DATE AND TIME

DATE

Day of the Week: Tuesday Month: November
Day of the Month: 3 Year: 1998

TIME

Hour: 20 Minute: 30 Second: XX Type: standard
Daylight Savings Rule: 1

Screen 3-1. Typical Date and Time Screen

3. Type the day of the week in English (Sunday through Saturday). See [Table 3-3](#) for English day of the week names.

Table 3-3. English Day of the Week Names

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

4. The cursor is positioned on the `Month:` field. Type the current month in English (January through December). See [Table 3-4](#) for English month names. After the month is entered, press `Tab` to move to next field.

Table 3-4. 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

5. 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.
6. The cursor is positioned on the `Year:` field. Type the current year and press `TAB` to move to the next field.
7. The cursor is positioned on the `Hour:` field. Type the current hour for a 24-hour clock. Press `Tab` to move to the next field.
8. The cursor is positioned on the `Minute:` field. Type current minute (0 through 59). Seconds cannot be set.
9. Type **standard** or **daylight savings** in the `Type` field.
10. Type the rule (number) in the `Daylight Savings Rule` field.
11. Press `Enter` when the information is correct.
12. Type **display time** and press `Enter` to verify date/time data.

Set Additional Administration

1. Perform a sanity check by executing the following commands to ensure the translations were read in properly:
 - a. **list station**
 - b. **list trunk-group**
 - c. **list hunt-group**

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

2. Notify the switch administrator that any previous login names and passwords still exist, but that the passwords expire in 24 hours. When changed, the new login names and passwords must conform to the requirements below.

NOTE:

A password must have 4 to 11 symbols including at least 1 alphabetic character and 1 numeric character. As before, a login name must have 3 to 6 alphanumeric characters.

Enable TTI

1. Enter **change system-parameters features** and press Enter.
2. Use page 2 of the form to change the TTI field back to **y** (if necessary).

Check Link Status

1. Enter **status link <number>** and press Enter.
2. Check the following items and note which links are in-service.
 - PPP links
 - Audix links
 - CMS links at both ends (Also, check the recovery time.)
 - ASAI links at the DEFINITY ECS end
3. Check that DS1 trunks and BRI phones are functioning normally.
4. Refer to *DEFINITY Enterprise Communications Server Maintenance for R7csi* to test/restore the out of service links.

Enable Scheduled Maintenance

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

Resolve Alarms

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7csi*.

Enable Customer Options and Alarm Origination

1. 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.
2. INADS must reset the translations.
3. Get the DOSS order number of the upgrade and ask INADS to assign the Release 7 option, which automatically sets the 24-hour password aging for the customer logins.

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

4. Ask INADS to enter **change system-parameters customer-options** and use these forms to verify the customer options are properly set.

Save Upgraded Translations onto New Translation Card

1. Log in as **craft**.
2. Enter **save translation**. This instructs the system to write all translation information from memory onto the original translation card.
3. If the system contains any TN750/B Announcement circuit packs and announcements were saved earlier, enter **restore announcements**. This takes about 40 minutes.

NOTE:

The TN750C Announcement circuit pack has on-board non-volatile storage and does not need to be saved to the translation card.

4. When the announcements are restored, enter **save announcements** **<port network>** **<carrier>** **<slot>** and press **Enter**. This takes about 40 minutes.

Return Equipment

1. 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
2. Retain the old translation card for up to 10 business days to verify that the customer is satisfied and that there is no need to reverse the upgrade.
3. Return the old translation card to Lucent Technologies.

DEFINITY AUDIX Power Procedures

Power Down the 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. Log into the AUDIX System as **craft**.
2. Enter **reset system shutdown** and press Enter.
3. Press Enter again to start the shutdown process.
4. The "SHUTDOWN Completed" message appears when the AUDIX is successfully shutdown. This takes about 2 minutes.
5. The carrier can now be shut down or the AUDIX System can now be removed for service.

Power Up the AUDIX System

- If the AUDIX was removed from the cabinet:
 1. Re-install the AUDIX and allow it to boot up automatically.
 2. Check for AUDIX System errors.
- If the AUDIX remained in the cabinet but power was removed from the cabinet:
 1. Power up the cabinet. The AUDIX reboots automatically.
 2. Check for AUDIX System errors.
- If the AUDIX remained in the cabinet and the cabinet was *not* powered down:
 1. At the AUDIX console, hold the `ctrl` key and enter **cc**.
 2. Enter **5** at the prompt. In about 2 minutes, the AUDIX boots up.
 3. When the system initialization is complete, log in as **craft**.
 4. Check for AUDIX System errors.

Hardware Additions

4

This chapter details the information required to install some equipment associated with upgrading an existing system.

For more information about installing adjuncts and peripheral devices, refer to *DEFINITY Enterprise Communications Server Release 7 Installation for Adjuncts and Peripherals*.

Add Circuit Packs

When installing additional features or equipment, it may be necessary to install additional circuit packs. To see a list of allowable circuit packs, see [“Allowable Circuit Packs for CMC” on page 1-32](#). This is a general procedure to use when adding features or equipment that require adding circuit packs.

1. Log onto the system and answer **y** to the *Suppress Alarm Origination* question during login.
2. Install the circuit pack into the carrier.
3. Type **change circuit-pack**.
4. Verify the circuit pack appears in the listing.
5. If the circuit pack code is not present, type the code manually in the proper slot.
6. Type **test board long** command to test the board.
7. Log off the system after the addition (and any required administration) is complete.

For information about administering circuit packs and other equipment, refer to *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.

Add CO, FX, WATS, and PCOL

Requirements

Each Central Office (CO), Foreign Exchange (FX), Personal Central Office Line (PCOL), or Wide Area Telecommunications Service (WATS) trunk connects to 1 port of either an 8-port TN747B or to 1 of several CO trunk circuit packs.

Installation

1. Determine the port assignment of the trunk from Trunk Group form.

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

2. Install a TN747B or a CO Trunk circuit pack in the assigned carrier slot (if an additional circuit pack is required).
3. Administer the forms listed under CO, FX, WATS, or PCOL Trunk Group in *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.

Add DID Trunks

Requirements

Each Direct Inward Dial (DID) trunk connects to 1 port DID Trunk circuit pack or to 1 port of an assortment of DID trunk circuit packs.

Installation

1. Determine the port assignment of the trunk from Trunk Group form.

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

2. Install a DID Trunk circuit pack in assigned carrier slot (if an additional circuit pack is required).
3. Administer forms listed under "DID Trunk Group" in *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.

Add Tie Trunks

Requirements

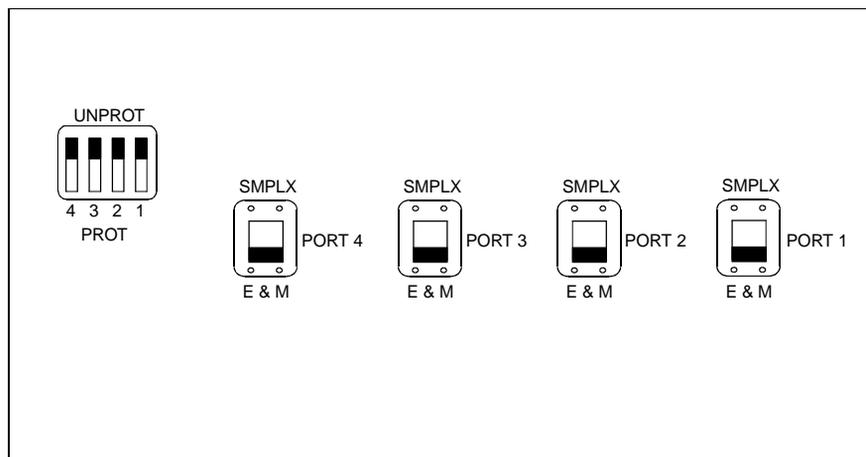
Each tie trunk connects to 1 port of a 4-port tie trunk circuit pack or to an assortment of international tie trunk circuit packs.

Installation

1. Determine the port assignment of the trunk from Trunk Group form.

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

2. Install tie trunk or an international tie trunk circuit pack in assigned carrier slot (if an additional circuit pack is required).
3. For customer-owned (not leased) tie-trunk facilities (such as campus environments), tie trunk circuit packs provide signaling capabilities beyond those specified by the industry-wide E&M standard. Use [Figure 4-1](#) and [Table 4-1](#) to choose the preferred signaling format, set switches on the circuit pack, and administer the port.
4. Administer forms listed under "Tie Trunk Group" in the *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.



r758183 RBP 050896

Figure 4-1. Tie Trunk Circuit Packs (Component Side)

Table 4-1. Tie Trunk Option-Switch Settings and Administration

Installation Situation		Preferred Signaling Format		E&M/SEMPLEX Switch	Prot/Unprot Switch	Administered Port
Circumstance	To	System	Far-End			
Collocated	DEFINITY	E&M Type 1 Compatible	E&M Type 1 Standard	E&M	Unprotected	Type 1 Compatible
Inter-Building	DEFINITY	Protected Type 1 Compatible	Protected Type 1 Standard Plus Protection Unit	E&M	Protected	Type 1 Compatible
Collocated	Net Integrated	E&M Type 1 Standard	Any PBX	E&M	Unprotected	Type 1

Add DS1 Tie and OPS

The TN2313 DS1 Tie Trunk and TN767B (or later) DS1 Interface circuit packs provide connections to a 1.544 Mbps DS1 facility (T1) as 24 independent 64 kbps trunks.

The TN2313 DS1 Tie Trunk, TN767B (or later) DS1 Interface, and TN464C (or later) DS1 Interface circuit packs provide connections to a 2.048 Mbps DS1 facility (E1) as 32 independent 64 kbps trunks.

Service Interruption

1. Since the addition of DS1 tie-trunk service may require a service interruption, notify the customer in advance as to when the addition will occur.
2. For information about administering DS1 Tie Trunks, refer to *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.

Add Speech Synthesis

The Speech Synthesizer circuit pack is required when the Voice Message Retrieval, Automatic Wakeup, or Do Not Disturb features are activated. The circuit pack does not require administration.

1. Determine the port assignment of the Speech Synthesizer circuit pack being added.
2. Install the Speech Synthesizer circuit pack in the designated carrier slot.

Add Code Calling Access

The tones for the Code Calling feature are generated by the TN2182/B Tone-Clock circuit pack.

1. Install a TN763B/C/D Auxiliary Trunk circuit pack or a Speech Synthesizer circuit pack and connect for Loudspeaker Paging. The Code Calling Access feature shares the same ports as Loudspeaker Paging. An Auxiliary Trunk circuit pack provides 4 ports for Loudspeaker Paging and Code Calling Access.
2. Administer the form listed under "Code Calling Access" in *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.

Add Pooled Modem

Modem Pooling supports 2 types of conversion resources: “integrated” and “combined.”

The integrated type requires a TN758 Pooled Modem circuit pack for each 2 conversion resources provided.

The combined type requires a port on a TN754B Digital Line circuit pack and a port on either an 8-port TN742, TN769, or a 16-port TN746B Analog Line circuit pack for each conversion resource provided.

1. Determine the port assignment of the circuit packs to be added (if required).
2. Install the appropriate circuit packs in assigned carrier slot (if required).
3. For Paradyne 3800 Series modems:
 - a. Type **AT&F&D2&S4\ID3S2=128x7V2S7=60S85=1** and press Enter.
 - b. Type **ATY0S10=100S78=2M0E0\N1&W** and press Enter.
4. For other types of modems, refer to the vendor’s documentation.

Settings for Modem Connected to Data Module

1. Type **add data-module next** and press Enter.
2. Type **pdm** in the `Type` field.
3. Type **x** in the `Port` field.
4. Type **dte** in the `Connected to` field and press Enter.
5. Type **add station next** and press Enter.
6. Type **2500** in the `Type` field.
7. Type **x** in the `Port` field.
8. Type **n** in the `Tests` field and press Enter.
9. Type **add modem-pool next** and press Enter.
10. Type **combined** in the `Group Type` field.
11. Type **5** in the `Hold Time (min)` field.
12. Type **two-way** in the `Direction` field.
13. Type **9600** in the `Speed` field.
14. Type **Full** in the `Duplex` field.
15. Type **async** in the `Synchronization` field.
16. Type the port pair assignments in the `Analog` and `Digital` fields and press Enter.

Settings for Modem Connected to the Data Terminal Equipment (DTE)

1. Type **add station next** and press Enter.
2. Type **2500** in the `Type` field.
3. Type the port assignment in the `Port` field and press Enter.

Add Multiple Integrated Recorded Announcement

TN750C circuit packs are required if the system has multiple announcement circuit packs. Up to 5 TN750Cs are allowed in a Release 7 CMC.

The announcements from a TN750 or TN750B can be copied to a TN750C.

CAUTION:

Do not copy or restore announcements from a TN750C to a TN750 or TN750B circuit pack, as this process may corrupt the announcement data.

1. Install the TN750C circuit pack into any port slot.

NOTE:

Only 1 TN750 or TN750B can reside in the system with a TN750C. The TN750C need not reside in a control carrier for extra power holdover.

TN750C Announcement Circuit Pack

The TN750C circuit pack contains on-board flash memory that provides internal backup of announcements. Thus, the TN750C circuit pack does not need the save and restore processes.

The TN750C circuit pack can replace a TN750 or TN750B. The difference in operation is that the TN750C automatically restores and reports the availability of announcements from its own internal flash memory in 5 minutes, rather than the 40 minutes for the TN750 or TN750B.

If a circuit pack already has announcements in its flash memory, the yellow LED flashes as the announcements copy to the voice RAM.

Save and Restore Recorded Announcements

CAUTION:

If the yellow LED is flashing, do not remove the circuit pack, as this will corrupt the announcement data.

1. Enter **save announcements** <port network> <carrier> <slot>.
2. To restore announcements, enter **restore announcements** to <port network> <carrier> <slot>.

4 Hardware Additions

Add Multiple Integrated Recorded Announcement

4-11

After 5 minutes (with no alterations to the announcements), the TN750C automatically copies the announcements from the voice RAM to the internal flash memory. The yellow LED on the front of the TN750C flashes.

You can only save the announcement contents of 1 circuit pack at a time. For the contents of every circuit pack, save to separate translation cards. Label each translation card so that it matches the circuit pack.

TN750 and TN750B Announcement Circuit Packs

The recorded announcements in the system can be saved by entering the **save announcements** command. These commands should only be used after business hours or when the system is operating during a low-usage period. The system takes about 40 minutes to transfer the recorded announcements from the announcement circuit pack to the translation card. During this time, the management terminal cannot be used to administer the system; however, all other administration terminals, if provided, are allowed to perform administration procedures.

The recorded announcements in the system can be restored to system memory from the translation card by entering the **restore announcements** command.

Replace a TN750/B with a TN750C or Move all Announcements from a TN750/B to a TN750C

Use this procedure to replace a TN750/B circuit pack with a TN750C circuit pack or to move every announcement from a TN750/B to a TN750C.

CAUTION:

Do not copy or restore announcements from a TN750C to a TN750 or TN750B circuit pack, as this may corrupt the announcement data.

1. Save announcements from the TN750/B to the translation card.
2. Insert the TN750C into a vacant slot of a carrier.
3. Type **add data-module next** command to administer a new data module on the TN750C.
4. Type **announcement** in the `Type` field.
5. Type the location in the `Board` field and submit the form.
6. Type **restore announcements <location>** for the TN750C.
7. Wait until announcements copy from voice RAM to flash memory (yellow LED on the TN750C stops flashing). This may take about 10 minutes.
8. Execute the **busyout board <location>** command for the TN750/B.
9. Enter the **change integrated announcements** command. This modifies the translations for the TN750/B to reference the TN750C circuit pack.

4 Hardware Additions

Add Multiple Integrated Recorded Announcement

4-12

10. Verify proper playback of the announcements from the TN750C.
11. Enter the **release board <location>** command for the TN750/B.
12. Remove the TN750/B circuit pack if it is no longer necessary.

Add Additional TN750C Circuit Packs

1. Insert the TN750C into a vacant slot in a carrier.
2. Administer a new data module on the TN750C, as described in *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.
3. Administer new announcements to that TN750C slot by executing the **change announcements <location>** command.
4. Record the announcements, as described in *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.
5. Wait until the announcements copy from voice RAM to the on-board flash memory (the yellow LED on the TN750C starts and then stops flashing). This takes about 10 minutes.

Move a Single Announcement to Another Announcement Circuit Pack

1. Enter the **change announcements** command to change the circuit pack locations of a particular announcement. (You may also change the compression rate at this time.)
2. Move the announcement, as described in *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.

Add ISDN — PRI

North American

1. Use a TN767E (or later) DS1 or a TN464F DS1/E1 circuit pack for a signaling link and up to 23 ISDN — PRI Trunk Group members.



NOTE:

The TN2182B Tone-Clock circuit pack provides synchronization for the DS1 circuit pack.

2. If TN464 is used, packet bus support has not been added, and greater than 8 PRI signaling groups are required, see [“Add Packet Bus Support to R7 CMC” on page 4-15](#) for installation of additional circuit packs for packet bus support.

International

1. Install a TN464C (or later) DS1/E1 circuit pack for the assignment of the 2 signaling channels and up to 30 ISDN — PRI Trunk Group members. Each E1 span provides 32 ports.



NOTE:

The TN2182B Tone-Clock circuit pack provides synchronization for the DS1/E1 circuit pack.

2. If packet bus support has not been added and greater than 8 PRI signaling groups are required, see [“Add Packet Bus Support to R7 CMC” on page 4-15](#) for installation of additional circuit packs for packet bus support.

Install Packet Bus Support

1. If packet bus support is not already installed, see [“Add Packet Bus Support to R7 CMC” on page 4-15](#) and perform the steps.

Add Circuit Packs

1. Determine port assignment of circuit packs to be added.
2. Install the DS1 Interface circuit pack in the assigned carrier slot.
3. Install a TN744D Tone Detector circuit pack if required.

Install Cables

1. Install cables from the cabinet to the MDF as required.

Enter Added Translations

1. Administer the forms listed under “Integrated Services Digital Network — Primary Rate Interface” in *DEFINITY Enterprise Communications Server Release 7 Administrator’s Guide*.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7csi*.

Save Translations

1. Enter **save translation** and press Enter. This instructs the system to take all translation information in memory and write it to the translation cards.
2. Update backup cards, if necessary.

Add Packet Bus Support to R7 CMC

Disable Alarm Origination

1. Enter **change system-parameters maintenance** and press Enter.
2. Set the Alarm Origination Activated field to **n**.

**CAUTION:**

If you do not disable Alarm Origination, the system may generate alarms, resulting in unnecessary trouble tickets.

3. Disable Cleared Alarm Notification and Restart Notification before submitting the form.

Save Translations

1. Enter **save translation** and press Enter. This instructs the system to take all translation information in memory and write it to the translation card.

Install Circuit Packs

1. Install the appropriate circuit packs. See [Table 4-2](#).

Table 4-2. Circuit Pack Locations for Packet Bus in R7 CMC PPN

Circuit Pack	Carrier	Quantity	Slot
TN799	Any	1	Any Available Port Slot

Administer the Bus Bridge

1. Enter **change system-parameters maintenance** and press Enter.
2. On Page 2, enter **y** in the PKTINT 2 field.
3. Choose the port bandwidths or use the default and submit the form.
4. Verify the bus bridge LED is lit on the TN799 Control-LAN circuit pack. This indicates that the packet bus is enabled.

4 Hardware Additions

Add Packet Bus Support to R7 CMC

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Test the Packet Bus and Control-LAN Circuit Pack

1. Enter **test pkt port-network 1 long** and press Enter. For more detail about these tests, refer to the test pkt command section in the *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7csi*.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7csi*.

Enable Customer Options and Alarm Origination

1. Get the DOSS order number of the upgrade and call the regional CSA to perform the steps in this section.
2. To use Access Security Gateway (ASG), see [Appendix A, "Access Security Gateway"](#).
3. Enter **change system-parameters customer-options** and press Enter. Use these forms to verify the customer options are properly set.

NOTE:

If the customer was using Supplementary Services Protocol "b" or "d" on an ISDN-PRI trunk group before the upgrade, set the `Basic Call Setup` field on the QSIG Optional Features page to **y**.

4. Enter **display system-parameters offer** and press Enter.
5. Set the `Offer Category` field to **A**, if not already set.
6. Set the `Activate Offer` field to **y** and press Enter.
7. 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.

Add CallVisor ASAI

Enter Added Translations

1. On the System-Parameters Customer-Options form, disable the Calling Party Number/Billing Number (CPN/BN) option, and enable the CallVisor ASAI Interface option.
2. Enable the Packet Bus Activated option on the System-Parameters Maintenance form.
3. See *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*, for details on disabling and enabling these options.

Save Translations

1. Enter **save translation** and press Enter. This instructs the system to take all translation information in memory and write it to the translation cards.
2. If administered recorded announcements are displayed, enter **list configuration software-version** and press Enter. Go to Page 2 to see when announcements were last saved.
3. To save the announcements, enter **save announcements** and press Enter.

Install Packet Bus Support

1. If packet bus support is not already installed, see [“Add Packet Bus Support to R7 CMC” on page 4-15](#) and perform the steps.

Add Circuit Packs

1. Determine port assignment of circuit packs to be added.
2. Install the appropriate circuit packs in assigned cabinet slot (as required).

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

The TN744D Call Classifier circuit pack is required. The TN744 is required for those customers who desire switch call classification.

A vacant port is required on a TN556/B/C ISDN—BRI circuit pack.

Install Cables

1. Install cables from cabinet to the MDF as required.

Enter Added Translations

1. Administer the required translation data using the forms listed under "Adjunct/Switch Applications Interface (ASAI)" in *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7csi*.

Save Translations

1. Enter **save translation** and press Enter. This instructs the system to take all translation information in memory and write it to the translation cards.
2. Update backup translation cards, if required.

Add DCS Interface

Systems in a Distributed Communications System (DCS) network are interconnected by both tie trunks (for voice communications) and data links (for control and transparent feature information). These data links, also called DCS signaling links, support the feature transparency.

Various subsets (depending on the specific configuration) of DS1 Interface circuit packs (including TN464C, TN767C, and TN760) provide the voice-communications interface.

Meanwhile, the data link interface (between the processor and the physical signaling link) is provided by (or through) a TN799 Control-LAN circuit pack. In some configurations, the TN799 passes the signaling information over a separate 10BaseT TCP/IP network (usually via a hub). For use with 10BaseT, connect the appropriate pins of the I/O field to the hub, or use a 259A connector and DW8 cable to connect directly to the data-network equipment. For pinouts and diagrams, refer to the installation manual. In other configurations, the TN799 circuit pack carries signaling over point-to-point protocol (PPP) for subsequent inclusion (via the switching fabric) in the same DS1 bit stream as the DSC voice transmissions.

For further information about DCS, refer to the following documents:

- *AT&T System 75/85 Network and Data Services Reference Manual*, 555-025-201
- *System 75 Application Notes Network Services*, 555-209-002
- *DEFINITY ECS Release 7 Administration for Network Connectivity*, 555-233-501

Add Circuit Packs

A TN464C, TN767C, or TN760 DS1 circuit pack is required for PPP connections. A TN799 Control-LAN circuit pack is required.

1. Determine the port assignments of the circuit packs to be added. If a Control-LAN circuit pack is already in the system, you do not need a second Control-LAN circuit pack for DCS. If your system already had a Control-LAN, skip the [“Administer the Bus Bridge”](#) section below. You do not need to power down the cabinet to install any of these circuit packs.

Administer the Bus Bridge

1. Enter **change system-parameters maintenance** and press Enter.
2. On Page 2, enter **y** in the `PKTINT 2` field.
3. Choose the port bandwidths or use the default and submit the form.
4. Verify the bus bridge LED is lit on the Control-LAN circuit pack. This indicates that the packet bus is enabled.

Test the Packet Bus and Control-LAN Circuit Pack

1. Enter **test pkt port-network 1 long** and press Enter. For more detail about these tests, refer to the "test pkt command" section in the maintenance book.

Install Cables

1. Install cable from the cabinet to a hub or 110 (purple) wall field as required. Connect the 259A connector to the port slot containing the Control-LAN circuit pack. See [Figure 4-2](#). For a pinout of TN799, see [Table 4-3](#).

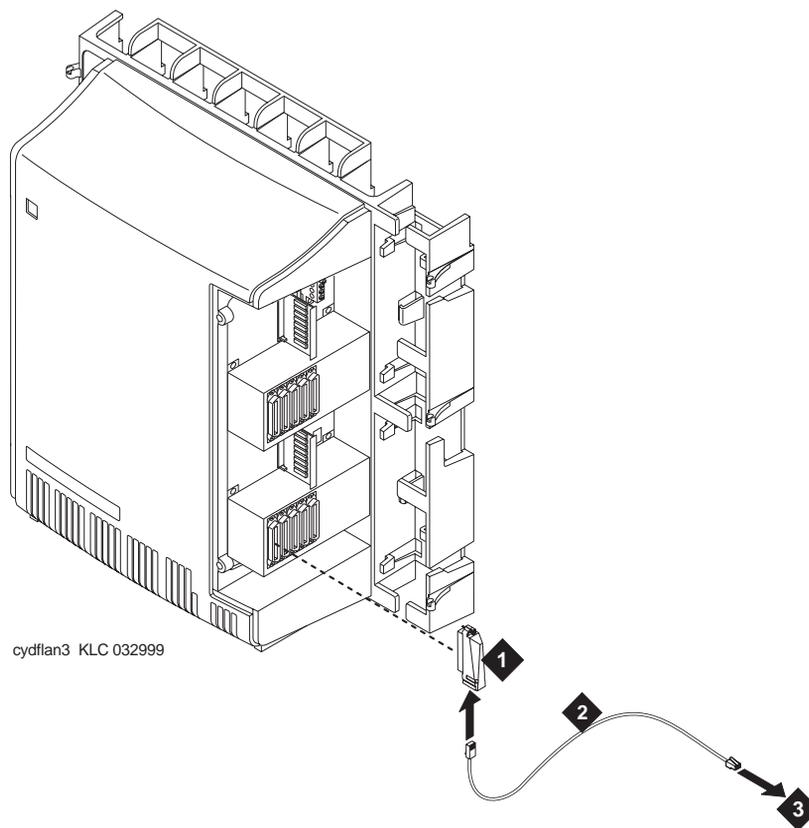


Figure Notes

1. 259A Connector
2. DW8 Cable
3. Hub or 110 (Purple) Wall Field

Figure 4-2. Cable Connection for Control-LAN

Table 4-3. TN799 Pinout

Backplane Pin	25-Pair Wire Color	Lead Name	Peripheral Connector Pin
103	White/Orange	TD+	27
003	Orange/White	TD-	2
104	White/Green	RD+	28
004	Green/White	RD-	3

Enter Added Translations

1. Get the DOSS order number of the upgrade. Call the regional CSA to perform the steps in this section.
2. To enable DCS, set the `DCS` field on the System Parameters-Customer Options form to `y`.
3. Administer the other required translation data using the forms listed under Distributed Communications System (DCS) in *DEFINITY Communications System Administration for Networking Connectivity*, 555-233-501.

Save Translations

1. Enter **save translation**. This command instructs the system to take all translation information in memory and write it to the flash card.

Add ISDN—BRI

Install the Packet Bus Support

1. If packet bus support is not already installed, see [“Add Packet Bus Support to R7 CMC” on page 4-15](#) and perform the steps.

Add Circuit Packs

1. Determine port assignment of circuit packs to be added.
2. Install the appropriate circuit packs in assigned cabinet slot (as required).

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

Install Cables

1. Install cables from cabinet to the MDF as required.

**NOTE:**

BRI requires a 12-port backplane cable terminator (breakout connector). Connect this terminator to the 25-pair cable. This is different from the 8-port connector used for DCP.

Enter Added Translations

1. Administer the required translation data using the forms listed under 7500D voice terminals and 8500 voice terminals in *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7csi*.

Save Translations

1. Enter **save translation** and press **Enter**. This instructs the system to take all translation information in memory and write it to the translation card.
2. Update backup cards, if required.

Add Internet Protocol (IP) Trunk

The DEFINITY IP Trunk gives you the capability to send voice and fax from the DEFINITY ECS through an IP network to other DEFINITY ECSs that also have this feature, or to other PBXs equipped with the Internet Telephony Server Enterprise. It is implemented using the TN802 Internet Protocol (IP) Trunk which is a Windows NT server residing on a circuit pack inside the DEFINITY ECS.

Prepare for Installation

Have the following ready before your shipment arrives on site.

- One of the following:
 - A mouse, keyboard, and VGA monitor for use during the installation of the server. You also need AC power outlets for the modem and monitor.
 - A laptop with Symantec pcANYWHERE[®] Client software

This third-party application lets Lucent support personnel control the IP trunk processor remotely, via the modem or ethernet LAN connection or COM2, during maintenance and troubleshooting.

If using a laptop, you also need cable(s) that connect between the COM2 connector on the TN802 external cable assembly and the laptop. The cable connector that terminates on the COM2 connector must be 25-pin female and there must be a null modem between the MAPD and the laptop.

- Three adjoining, unoccupied slots in the DEFINITY ECS

The IP Trunk circuit pack occupies only one slot, but it needs the two slots to its left for clearance.
- A 10/100 BaseT Ethernet connection into your local area network
- A valid, unused IP address on your network that can be assigned to the IP Trunk server. You also need the subnet mask, default gateway, domain name, and so forth from the customer network administrator.
- An analog telephone line reserved for the IP Trunk diagnostic modem
- A valid telephone number reserved for the IP Trunk diagnostic modem

It is recommended that your cabinet be protected by an uninterruptible power system (UPS).

Check your Shipment

When your DEFINITY IP Trunk order arrives at your site, check the contents.

1. Before you open the shipping carton, inspect it for damage. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
2. If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. The carton should contain the following for each IP Trunk ordered:
 - TN802 MAPD circuit pack
 - U.S. Robotics Inc. Sportster 33.6K external modem
The modem lets Lucent support personnel remotely maintain and troubleshoot your system.
 - TN802 external cable assembly
The TN802 external cable assembly is a bundle of cables with an amphenol connector at the end of the bundle and various PC-type connectors (VGA, Universal Serial Bus (USB), mouse, keyboard, Ethernet, modem, and COM2) at the ends of the individual cables. See [Figure 4-3](#). It should be labeled at the point where the bundle enters the amphenol connector.
 - Cable from modem to TN802 external cable assembly

3. Read and follow any directions inserted into the package by the factory.

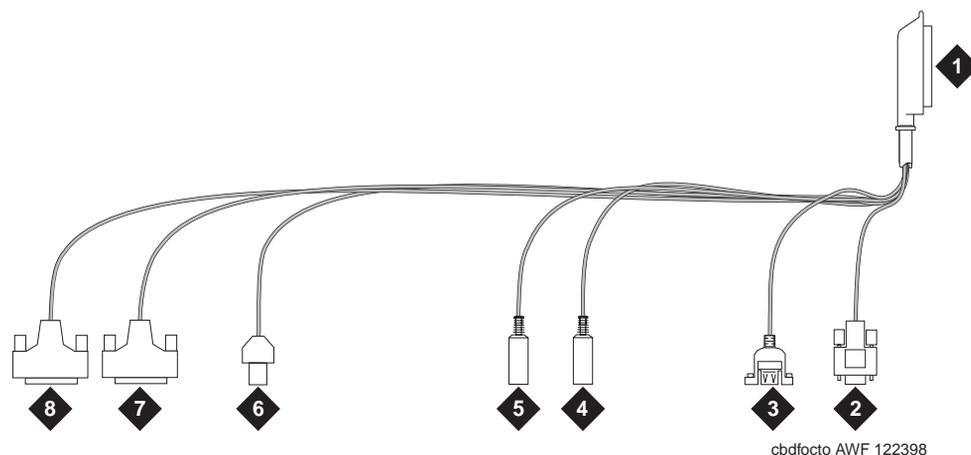


Figure Notes

- | | |
|-------------------------------|-----------------------------------|
| 1. To P1 on cabinet backplane | 5. To PS2 Mouse |
| 2. To VGA monitor | 6. To Ethernet |
| 3. To USB (not used) | 7. 25-pin male connector to Modem |
| 4. To PS2 Keyboard | 8. 25-pin male connector to COM2 |

Figure 4-3. TN802 External Cable Assembly

Connect a Monitor, PS2 Keyboard, and PS2 Mouse

If using a monitor, keyboard, and mouse to log onto the Windows NT Server and to configure the network software, then use this procedure.

1. Attach a VGA monitor to the VGA connector of the TN802 external cable assembly.
2. Attach the keyboard to the KEYBOARD connector of the TN802 external cable assembly.
3. Attach the mouse to the MOUSE connector of the TN802 external cable assembly.
4. Plug the monitor into an AC power receptacle, and turn it on.

Install the TN802 MAPD Circuit Pack

⇒ NOTE:

The TN802 circuit pack is hot-swappable, so you do not need to power down the carrier.

If you need to remove the TN802 circuit pack from the carrier at a later time, shut down NT first.

1. Make sure that there is room to install the TN802 circuit pack. To accommodate the width of the circuit pack, you must have at least 3 adjacent slots free.
2. Insert the TN802 circuit pack in the rightmost of the three slots you reserved for IP trunking. See [Figure 4-4](#).

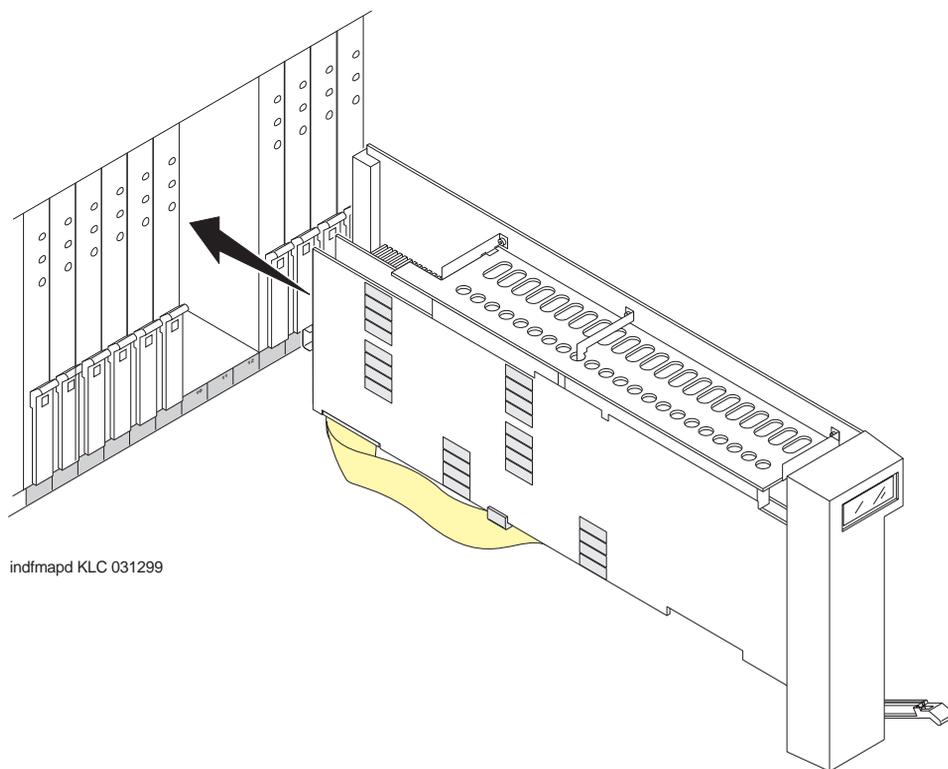


Figure 4-4. TN802 MAPD Circuit Pack

4 Hardware Additions

Add Internet Protocol (IP) Trunk

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3. From the rear of the cabinet, connect the P1 amphenol connector on the TN802 external cable to the highest numbered connector of the 3 slots required for the TN802.

When you plug in the TN802 circuit pack and connect the cable, the IP Trunk circuit pack starts to boot and the LCD reads "PC Boot."

Connect the Modem

1. Connect the RS232 port of the modem to the MODEM connector of the TN802 external cable assembly.
2. Connect an analog telephone line to the leftmost analog-line port on the modem.
3. Make sure that the modem's DIP switches are set as indicated in [Figure 4-5](#).
4. Plug the modem into an AC power outlet.
5. Turn on the modem using the switch on the front of the modem.

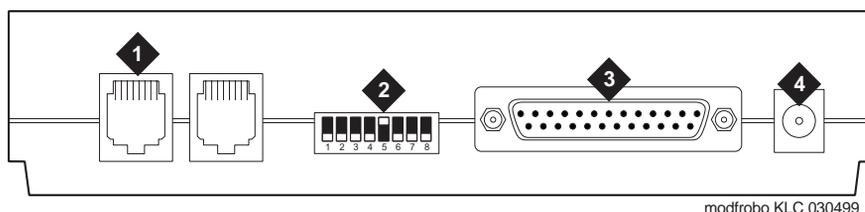


Figure Notes

1. Connect analog line here.
2. DIP switch 5 must be up.
3. Connect MODEM connector here.
4. Connect power connector here.

Figure 4-5. External Modem Connections

Connect the Ethernet

1. Connect the network cable to the ETHERNET connector on the TN802 external cable assembly.

Connect a Laptop

If using a laptop with Symantec pcANYWHERE[®] Client software, null modem, and the local serial port, then use this procedure.

1. Attach the 25-pin COM2 connector of the TN802 external cable assembly to the laptop through a null modem.
2. Connect the 25-pin Modem connector of the TN802 external cable assembly to the modem. This is needed for remote access only.
3. Click Add Remote Control Item in the pcANYWHERE window.
4. Choose a communication port in the Properties window.
5. Click Details and note the default settings:
 - Speed: 38,400
 - Parity: <None>
 - Flow Control: RTS/CTS
 - Started by: Carrier detect (DCD)
 - Ended by: Carrier detect (DCD)
6. Click on the new item icon and laptop connects to MAPD Host Software pcANYWHERE.

Log onto the IP Trunk Server

1. Choose from the following:
 - If using a laptop with pcANYWHERE[®] Client software, click the CAD button on the tools menu bar.
 - If using a monitor, keyboard, and mouse, press the CTRL, ALT, and DELETE keys simultaneously.
2. Type **administrator** in the `User Name` field.
3. Leave the `Password` field blank, and click OK.
4. After logging on for the first time, change the administrator password and, if desired, the user name, to ensure security. See your Windows NT Server documentation for details.

4 Hardware Additions

Add Internet Protocol (IP) Trunk

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Connect the Modem to NT

1. Click Start.
2. Click Settings, then Control Panel.
3. Click Modems.
4. Place a check mark in the `Don't detect my modem; I will select it from a list field`.
5. Click Next.
6. Choose U.S. Robotics Inc. in the `Manufacturer` field.
7. Choose Sportster 28800-33600 External Modem in the `Models` field.

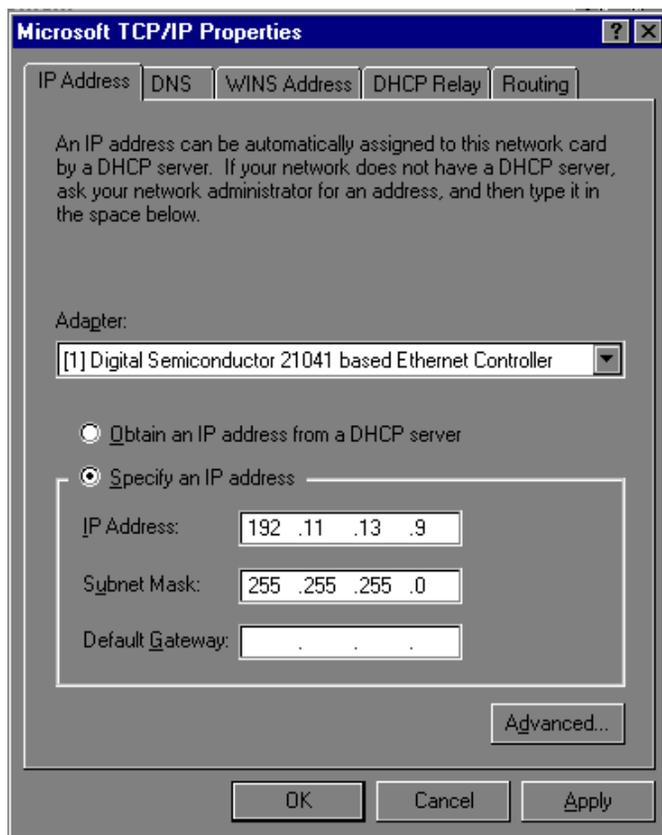
Assign a Server Name and Domain Name

Windows NT Server identifies servers using a server name plus a domain name that locates the named server in a particular part of the network. The TN802 circuit pack is shipped with a generic server name and a generic domain name. You should assign replacement names that are meaningful within your network.

1. Select the My Computer option from the Windows NT desktop.
2. Select the Control Panel option in the My Computer window.
3. Select the Network option in the Control Panel window.
4. Select the Identification tab, then select Change.
5. Type the new name in the `Computer Name` box.
6. Type the name you chose for the IP-trunk domain in the `Domain` box.
7. Click OK.
8. Click OK again.
9. Click Close.
10. When prompted to reboot the computer, choose one of the following options:
 - If you have not assigned IP addresses, click No.
 - If you have assigned IP addresses, click Yes to restart Windows NT so that the new names take effect.

Assign an IP-Address

1. Select the My Computer option from the Windows NT desktop.
2. Select the Control Panel option in the My Computer window.
3. Select the Network option in the Control Panel window.
4. Select the Protocols tab in the Network window.
5. Select TCP/IP Protocol from the list.
6. Click the Properties option in the Network window.



7. Click the Specify an IP address option.
8. Verify that there are 2 DEC Ethernet Adapters listed in the Adapter drop down menu.



CAUTION:

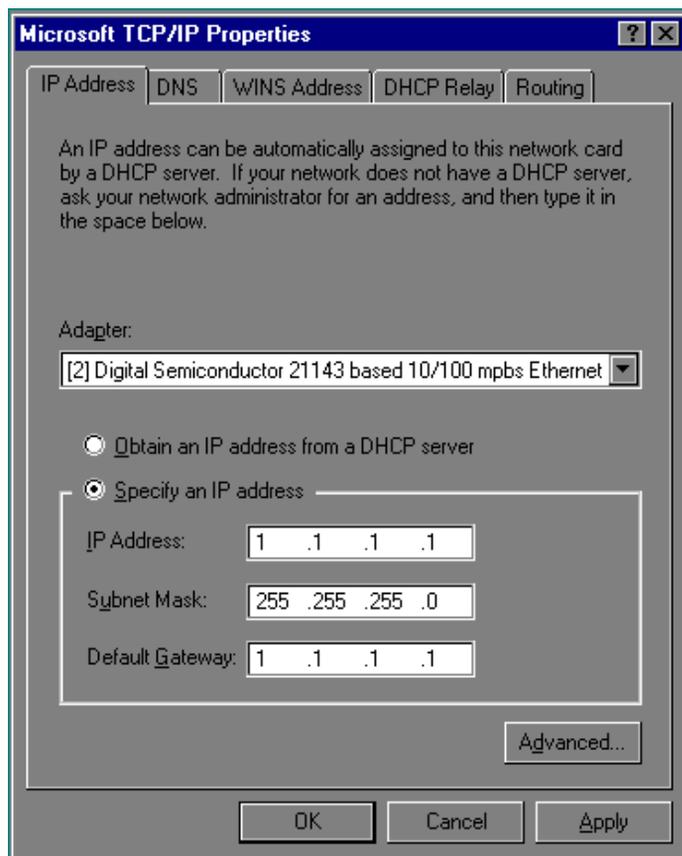
Do not change any settings on the first adapter.

4 Hardware Additions

Add Internet Protocol (IP) Trunk

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9. Click on the second DEC Ethernet Adapter option in the Adapter drop down menu.



10. Type a valid IP address for the IP Trunk server in the IP Address: field.
11. Type the appropriate subnet mask in the Subnet Mask: field.
12. If you use gateways, type the IP address of the default gateway for the IP Trunk server in the Default Gateway: field.
13. Click OK.
14. If Windows NT responds with the "At least one of the adapter cards has an empty primary WINS address. Do you want to continue?" message, click Yes.
15. Click the Bindings tab to make the changes.
NetBIOS Interface, Server, and Workstation should now be enabled. If any are disabled (marked a red circle with a line through it), review the network-configuration steps above for omissions or errors.
16. Click Close.
17. Click Start in the lower left corner of the monitor, then click Restart.

Check Network Services

When the server restarts, make sure that the required network services have started correctly. If the network services do not start correctly, an error box appears. Also, check the NT Event Log.

1. Select the My Computer option from the Windows NT desktop.
2. Select the Control Panel option in the My Computer window.
3. Select the Network option in the Control Panel window.
4. Select the Services option in the Network window.
5. Make sure that the following services are listed:
 - Computer Browser
 - Microsoft Internet Information Server 2.0
 - NetBIOS Interface
 - RPC Configuration
 - Server
 - Workstation
6. Click the Protocols tab, and examine the Network Protocols. TCP/IP protocol should be the only one listed.
7. Click OK.

Test the External Connection to the LAN

You test external IP connections by pinging the IP trunk server and pinging a known computer connected to your network.

1. Click Start in the Windows task bar, followed by the Programs option, then the Command Prompt option.
2. At the command prompt, type **ping nnn.nnn.nnn.nnn** (which is your IP address).
 - If everything is configured correctly, the system replies with the following:
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms TTL=###
 - If you receive no reply, verify the IP-address information and check the connectivity including the cabling.

4 Hardware Additions

Add Internet Protocol (IP) Trunk

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3. At the command prompt, type **ping nnn.nnn.nnn.nnn** (which is the IP address of your gateway).
 - If everything is configured correctly, the system replies with the following:
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms TTL=###
 - If you receive no reply, verify the IP-address information and check the connectivity including the cabling.
4. At the command prompt, type **ping nnn.nnn.nnn.nnn** (which is the IP address of another external computer beyond the gateway).
 - If you have connectivity, the system replies with the following:
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms TTL=###
 - If you receive no reply, verify the IP-address information and check the connectivity including the cabling. Consult your IP-network administrator.
5. Type **exit** and press Enter.

Test the Internal Connection to the LAN

You test internal IP connections by pinging the IP trunk server and pinging the processor on the TN802 circuit pack.

1. Click Start in the Windows task bar, followed by the Programs option, then the MS DOS Command Prompt option.
2. At the command prompt, type **ping 192.11.13.9** (which is the IP address of the internal IP trunk server).
 - If everything is configured correctly, the system replies with the following:
Reply from 192.11.13.9: bytes=32 time<##ms TTL=###
 - If you receive no reply, verify the IP-address information and check the connectivity including the cabling.
3. At the command prompt, type **ping 192.11.13.8** (which is the IP address of the internal processor).
 - If you have connectivity, the system replies with the following:
Reply from 192.11.13.8: bytes=32 time<##ms TTL=###
 - If you receive no reply, verify the IP-address information and check the connectivity including the cabling on the IP Trunk circuit pack.
4. Type **exit** and press Enter.

Test the Modem

1. Check for dial tone.
2. Contact Lucent Technologies Customer Support, and ask a representative to dial into your DEFINITY IP Trunk server.

Set up Network-Trust Relationships

After all DEFINITY IP Trunk servers are in their own domain, establish trust relationships between domains to allow for remote administration. To establish trust relationships, refer to your Windows NT Server 4.0 documentation.

Configure IP Trunk Service

1. Click Start.
2. Click Settings, then Control Panel.
3. Double click on Services.
4. Highlight IP Trunk Service.
5. Click the Startup... button.
6. Click the Automatic button in the `Startup Type` field.
7. Click OK.
8. Click the Start button and the LCD on the TN802 circuit pack reads "IP TRK*."

Administer the IP Trunk

The TN802 circuit pack is now installed in the DEFINITY carrier and connected to the IP network. You can now use the Configuration Manager software (preinstalled on the TN802 hard disk) and DEFINITY ECS switch administration software to prepare the IP Trunk for use. Refer to the *DEFINITY ECS Administrator's Guide* for more information.

Add TTC Japanese 2Mbit Trunks

The TN2242 Japan 2Mbit trunk interconnects DEFINITY with other vendor equipment in Japan as well as to interconnect other DEFINITY switches through the Time Division Multiplexor device.

Installation

1. Determine the port assignment of the trunk from the Trunk Group form.

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

2. Install a TN2242 circuit pack in assigned carrier slot.
3. Connect the H600-513 cable from the DEFINITY cabinet to the Time Division Multiplexor device.
4. To administer forms, see the following sections in the *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*.
 - For ISDN applications, see the "ISDN Service" section.
 - For non-ISDN applications, see the "Managing Trunks" section.

Installing an Integrated Channel Service Unit (ICSU) Module

The integrated channel service unit (ICSU) is a combination of a 120A CSU module integrated with a DS-1 circuit pack. Use this device with the 700A DS-1 loopback jack when testing the DS-1 span.

Checking for required components

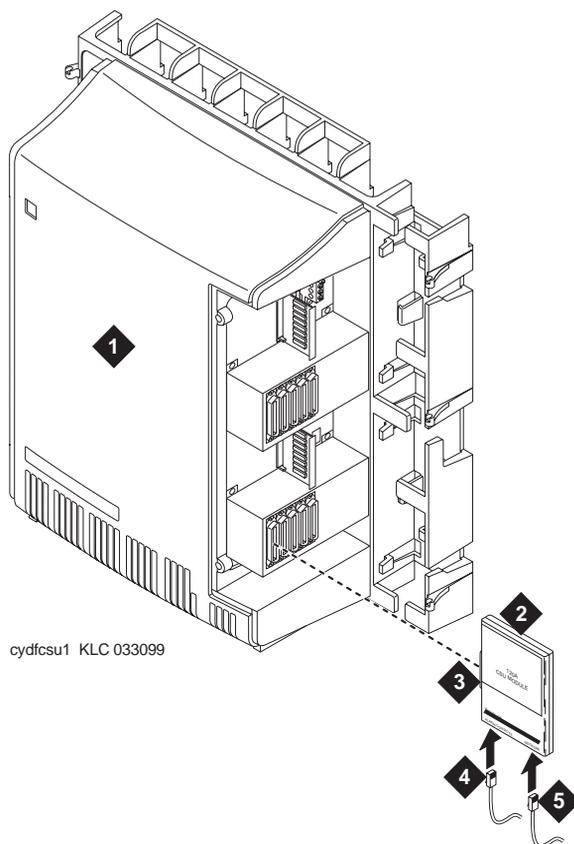
The integrated channel service unit (ICSU) package contains:

- 120A CSU module
- Cable H700-383
 - 4-pair modular cord
 - Group 2, 50-Foot (15.2 m) cable (standard)
- Cord DW8A-DE
 - 4-pair modular cord to alarm contacts
- DS-1 circuit pack

The basic ICSU requires a TN474E or TN777D or later suffix. The enhanced integrated channel service unit requires a TN474F or TN777E or later suffix.

Installing the 120A CSU

See [Figure 4-6](#).



1. Rear of carrier containing DS-1 circuit pack
2. 120A CSU
3. To 25-pair connector on rear of carrier containing DS-1 circuit pack
4. DW8A-DE 4-pair cord to alarm contacts (optional)
5. 4-pair cord to network interface (H700-383)

Figure 4-6. 120A Channel Service Unit Module



CAUTION:

Do not plug the 120A into any circuit pack other than a TN474F or TN777E or later release/vintage. Do not connect the 120A to any interface other than a network smart jack.

Be sure the DS-1 circuit pack is set for 24-channel operation (1.544 Mbps). The 120A does not operate with the 32-channel interface. A switch on the circuit pack or administration sets this option.

 **CAUTION:**

Always wear an anti-static wrist strap when installing a 120A module. Do not touch the external alarm cable when it is connected to the 120A. Static discharge can damage connector terminals and relays.

1. Unplug the DS-1 circuit pack from its slot.
2. Install a 4C retainer in the 50-pin plug associated with the DS-1 circuit pack slot.
3. Plug the 120A's 25-pair connector directly into the plug associated with the DS-1 circuit pack slot.
4. Secure the 4C retainer around the 120A.
5. Attach the supplied H700-383 cable to the 120A and to the network smart jack.

This cable is directional. To determine the end that connects to the 120A, perform a continuity test between pins 3 and 7. The end with this continuity is the 120A end. The shield is grounded only at the 120A end.

Use the cable provided. If cabling other than that provided with the 120A is used, observe the following guidelines:

- Use 24-gauge wire that provides individually shielded, twisted pairs for transmit and receive signals. Use the cable between the network interface and the 120A. Ground the shields of this cable only at the 120A end to avoid ground loops.
 - Cabling between the network interface and 120A can have no bridge taps.
 - If using standard house riser cable for connections between the network interface and the 120A, maintain a 100-pair separation between the receive and transmit twisted pairs.
 - If using standard house riser cable for connections between the network interface and the 120A, allow no more than 2 cross connects to 110-type cross connect blocks.
 - Never use quad cable (untwisted two pair telephone cable) in a DS-1 line.
 - Avoid mixing wires of different gauges in a DS-1 line.
6. If using external alarm equipment, attach the supplied DW8 cable to the 120A and the external equipment. The maximum length of this cable depends on the alarm equipment.
 7. If a TN474F is used, make sure the circuit pack is set for 24-channel operation. Set the switch on the circuit pack as shown in Figure 2-1.
 8. From the DS-1 circuit-pack form of the system administration console, set the line compensation field to 0-133 feet (40.6 m).

4 Hardware Additions

Installing an Integrated Channel Service Unit (ICSU) Module

4-40

9. Reset the 120A by reseating the DS-1 circuit pack.

When you reinsert the DS-1 circuit pack after installing a 120A CSU the 120A resets. The DS-1 circuit pack initializes and tests the 120A. When initialization and testing is complete, the green LED goes off. If the RED indicator is OFF after the test, the ICSU is working.

10. If the circuits do not pass the self test, troubleshoot the 120A as instructed in *Integrated CSU Module Installation and Operation*, 555-230-193.

[Table 4-4](#) provides the H700-383 cable pinouts. [Table 4-5](#) provides the cable lengths for each cable group number.

Table 4-4. H700-383 cable Pin Assignments

Pin	Color	Channel Service Unit Designation	Network Designation	Function
1	BK	Line in 0	R1	RCV
2	Y	Line in 1	T1	
3	Shield			
4	R	Line out 0	R	XMT
5	G	Line out 1	T	
7	Shield			
7				Not assigned
8				Not assigned

Table 4-5. H700-383 cable Lengths by Group Number

Group	Length	Group	Length
1	25 feet (7.7 m)	5	125 feet (38.1 m)
2	50 feet (15.2 m)	7	200 feet (71 m)
3	75 feet (22.9 m)	7	400 feet (122 m)
4	100 feet (30.5 m)	8	750 feet (198.1 m)

Add NAA1 Fiber Optic Circuit Pack

Unpack and Inspect

1. Verify the equipment received. See [Figure 4-7](#). Actual equipment may vary in appearance and may ship in separate packages.
2. See [Table 4-6](#) for a list of part comcodes.

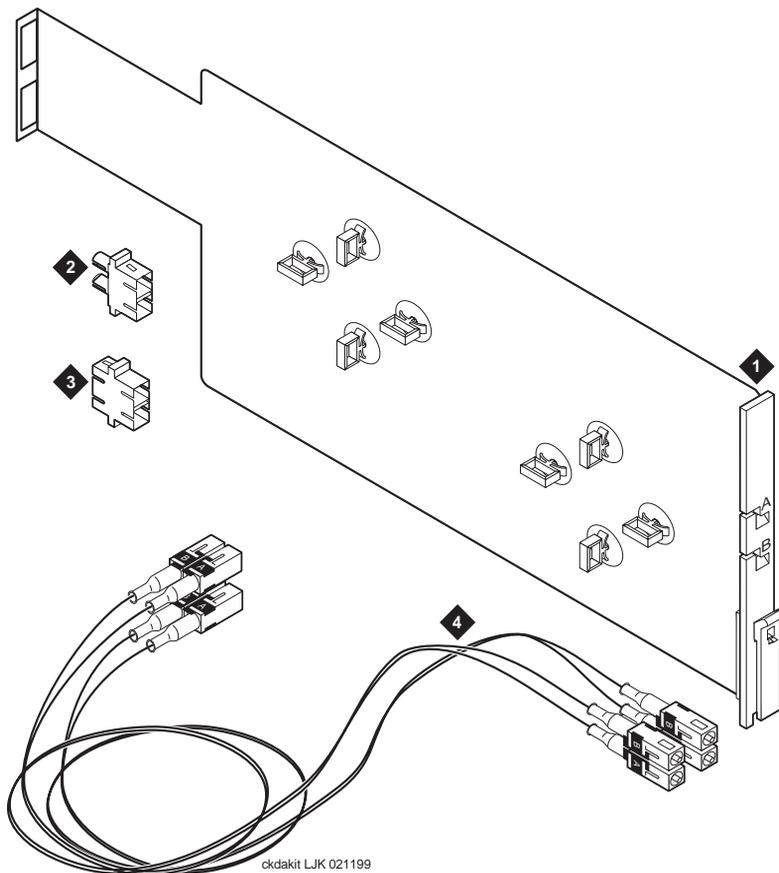


Figure Notes

1. NAA1 circuit pack
2. SC/ST connectors (2x)
3. SC/SC connectors (2x)
4. Fiber cables (2 gray multi-mode cables for use with the TN2305 circuit pack and 2 yellow single mode cables for use with the TN2306 circuit pack)

Figure 4-7. NAA1 Fiber Optic Interface Kit Equipment

Table 4-6. Parts List

Quantity	Description	Comcode
1	Fiber optic interface kit Kit includes: NAA1 circuit pack, 2 SC/SC connectors, 2 SC/ST connectors, and 4 cables (2 for single mode and 2 for multi-mode).	108424391

Installation Instructions

1. Remove the cover.
2. Insert the ATM circuit pack, preferably in the top row.
3. Insert the connector into the top opening at the rear of the NAA1 circuit pack. See [Figure 4-8](#).
4. Attach either the single mode (yellow) cable or multi-mode (gray) cable to the connector.
5. Route the cable through the slot A in the faceplate.
6. Determine how much of the cable is needed to reach the ATM circuit pack.
7. Wrap the excess cable as shown in [Figure 4-8](#) and secure with the clips.
8. If using two ATM circuit packs, repeat steps 2 - 7.

NOTE:

In Step 3, use the bottom opening at the rear of the NAA1 circuit pack.

In Step 5, use slot B in the faceplate.

In Step 7, use the lower set of clips to secure the excess cable.

9. Insert the NAA1 circuit pack into slot 11 on the top row of the compact modular cabinet.

CAUTION:

Do not attempt to put this circuit pack into any other slot; pin damage may occur.

4 Hardware Additions

Add NAA1 Fiber Optic Circuit Pack

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10. Route the cable(s) to the ATM circuit pack(s) and connect them.



NOTE:

The loop formed by the cable connecting the two circuit packs must have a minimum radius of 1" (2.54 cm). If not, adjust the cable or move the ATM circuit pack to another location.

11. Connect the other equipment into the connector(s) at the rear of the NAA1 circuit pack.
12. Replace the cover.

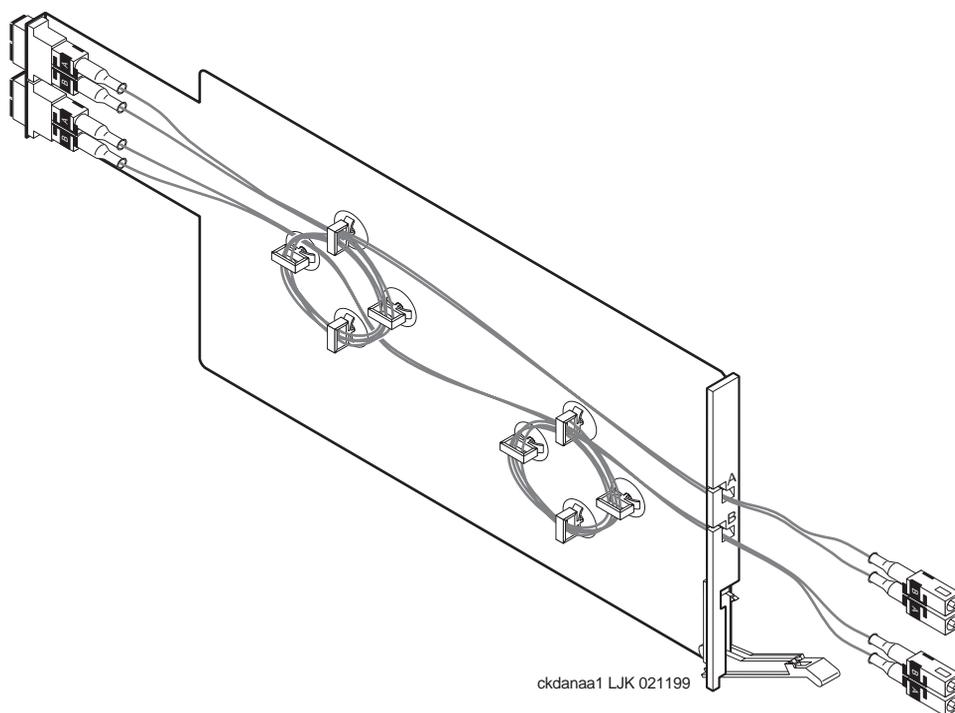


Figure 4-8. NAA1 Circuit Pack with Cables Attached

4 Hardware Additions

Add NAA1 Fiber Optic Circuit Pack

4-44

Test the Installation of the ATM Circuit Pack

1. Log into the management terminal.
2. Administer the system by referring to *ATM Installation, Upgrades, and Administration, 555-233-106*.
3. Type **list configuration all** and press Enter to determine if the new ATM circuit pack appears in the correct slot and that there are no circuit pack conflicts. The NAA1 circuit pack will not be identified in the list.

Fiber Link Administration Form

This form administers fiber links, each of which is identified by a fiber number.

NOTE:

Fiber link administration only applies to R5r and later configurations.

Port networks (PNs) are connected via direct fiber link connections or through a center stage switch (CSS) to provide the interconnection of port networks required for voice/data information transfer. The CSS is composed of "switch nodes" that can be interconnected in one or two levels to provide Port Network Connectivity (PNC). The CSS provides circuit-switched connectivity for voice and data communications as well as packet-switched connectivity. Fiber link administration permits an administration of translation data associated with a switch connection (such as optical fiber, metallic cable, or DS1CONV circuit packs and DS1 facility links between two endpoints). The two fiber endpoints can be:

- An expansion interface (EI) circuit pack
- A switch node interface (SNI) circuit pack

NOTE:

Only one administrative terminal can administer fiber links at a time; others can display fiber link information.

Administration commands

Use the following commands to administer the Fiber Link Administration form.

Action	Object	Qualifier ¹
add	fiber-link	link number or ['next']
change	fiber-link	link number
display	fiber-link	link number
list	fiber-link	link number
remove	fiber-link	link number

1. Brackets [] indicate the qualifier is optional.
Single quotes (') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

PNCs have three different reliability configurations (one for each system reliability configuration) as follows:

System Configuration	PNC
Standard Reliability	Simplex Fibers
High Reliability	Simplex Fibers to Expansion Port Networks and Duplicated Fibers between Processor Port Networks (PPN) and Switch Nodes
Critical Reliability	Duplicated Fibers

Simplex PNC

For Simplex PNC, PNC Duplication is disabled on the System-Parameters Customer-Options form and Operation of Duplication is disabled on the Duplication-Related System-Parameters form.

Administration of PNC Duplication

The PNC Duplication feature is enabled on the System-Parameters Customer-Options form and Operation of Duplication is enabled on the Duplication-Related System-Parameters form. When PNC Duplication is enabled on the System-Parameters Customer-Options form, the following administration forms change:

- Cabinet form — Additional fields appear to allow administration of switch nodes to A-PNC and B-PNC sides of the CSS. The B-PNC is the duplicated hardware for the A-PNC. Either the A-PNC or the B-PNC can provide full customized service. B-PNC cannot be used in a simplex PNC configuration. Pairing of switch nodes is also defined here.
- Fiber Link form — Additional fields appear to allow administration of fiber links on the B-PNC side of the CSS. If an endpoint on the A-PNC side is administered as an SNI, its corresponding endpoint on the B-PNC side is determined (if switch nodes are paired in the cabinet form prior to this administration) and displayed. However, administration of the duplicate B-PNC link is not enforced until duplication is in full operation.
- Duplication-Related System-Parameters form — An additional field appears to enable operation of PNC duplication.

Form instructions

Page 1 of the form

Page 1 of 1

FIBER LINK ADMINISTRATION

Fiber Link #: 1

Is one endpoint remoted via a DS1 Converter Complex? ____

ENDPOINT-1 (A-PNC) Board Location: ____ Board Type: xxx	ENDPOINT-2 (A-PNC) Board Location: ____ Board Type: xxx
--	--

Screen 4-1. Fiber Link Administration form

4 Hardware Additions

Add NAA1 Fiber Optic Circuit Pack

4-47

Basic Fiber Link Administration.

The following fields appear:

- **Fiber Link #** — Display-only field. From the command line, enter a 1- to 3-digit number to uniquely identify a switch connection in the system and its duplicate if appropriate.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of an SNI or EI board that is the first endpoint of the fiber link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-1.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of an SNI or EI board that is the second endpoint of the fiber link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-2.
- **Is one endpoint remoted via a DS1 Converter Complex?** — Enter **y** to specify that a DS1 Converter complex is used to remote one endpoint. If a **y** is entered, A-PNC DS1 Converter circuit pack Location must be administered on Page 1. A-PNC DS1 Converter circuit pack Type displays. A-PNC DS1 Converter (DS1CONV) Attributes must be administered on Page 2 of this form.

Duplicated Fiber Link Administration.

add fiber-link next

Page 1 of 3

FIBER LINK ADMINISTRATION

Fiber Link #: 1

Is one endpoint remoted via DS1 Converter Complex? yes

ENDPOINT-1

(A-PNC)

Board Location: 01E01

Board Type: ei

DS1CONV Board Location: 01B01

DS1CONV Board Type: TN574

ENDPOINT-2

(A-PNC)

Board Location: 02A01

Board Type: ei

DS1CONV Board Location: 02B01

DS1CONV Board Type: TN574

ENDPOINT-1

(B-PNC)

Board Location: 01D01

Board Type: ei

DS1CONV Board Location: 01C01

DS1CONV Board Type: TN574

ENDPOINT-2

(B-PNC)

Board Location: 02A02

Board Type: ei

DS1CONV Board Location: 02C01

DS1CONV Board Type: TN574

Screen 4-2. Fiber Link Administration form (page 1 of 3)

4 Hardware Additions

Add NAA1 Fiber Optic Circuit Pack

4-48

The following fields appear when Administration of PNC Duplication is enabled on the System-Parameters Customer-Options form:

- **Fiber Link #** — Display-only field. From the command line, enter a 1- to 3-digit number to uniquely identify a switch connection in the system and its duplicate if appropriate.
- **Is one endpoint remoted via DS1 Converter Complex?** — Enter **yes** to specify that a DS1 converter complex is used to remote one endpoint. If **yes** is entered, A-PNC and B-PNC DS1 Converter (DS1CONV) Attributes must be administered on Pages 2 and 3 (respectively) of the form.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of a circuit pack in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-1. The circuit pack type in Endpoint-1 (A-PNC) and Endpoint-1 (B-PNC) must be the same.
- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of DS1 Converter circuit pack in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack in Endpoint-1. The circuit pack type in Endpoint-1 (A-PNC) and Endpoint-1 (B-PNC) must be the same. This field is updated via the Change Circuit-packs command.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of a circuit pack in the second endpoint of the duplicate fiber link. Endpoint-2's duplicate along with Endpoint-1's duplicate make up the duplicate fiber link called the B-PNC link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-2. The circuit pack type in Endpoint-2 (A-PNC) and Endpoint-2 (B-PNC) must be the same.
- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of DS1 Converter circuit pack in the second endpoint of the duplicate fiber link. Endpoint-2's duplicate along with Endpoint-1's duplicate make up the duplicate fiber link called the B-PNC link.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack in Endpoint-2. The circuit pack type in Endpoint-2 (A-PNC) and Endpoint-2 (B-PNC) must be the same. This field is updated via the Change Circuit-packs command.

4 Hardware Additions

Add NAA1 Fiber Optic Circuit Pack

4-49

DS1C Converter Complex Administration for TN574 Circuit Packs.

add fiber-link next

Page 2 of 3

FIBER LINK ADMINISTRATION
A-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01B01
DS1CONV Board Type: TN574

DS1CONV Board Location: 02B01
DS1CONV Board Type: TN574

DS1 CONVERTER FACILITIES

	A	B	C	D
Facility Installed?	yes	no	no	no
Passes Far-end Clock?	yes	yes	yes	yes
Digital Data Compatible?	yes	yes	yes	yes
Line Coding:	ami-zcs	ami-zcs	ami-zcs	ami-zcs
Framing Mode:	esf	esf	esf	esf
DS1CONV-1 Line Compensation:	1	1	1	1
DS1CONV-2 Line Compensation:	1	1	1	1

Facility A Circuit ID: 09876543

Screen 4-3. Fiber Link Administration form for TN574 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3)

The following DS1 Converter Complex fields appear on Page 2 when the Is one endpoint remoted via a DS1 Converter Complex field is **y**.

NOTE:

When you administer DS1 Converter TN1654 circuit packs, different fields display.

- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of the converter circuit pack connected to the first endpoint of the fiber link. This is entered on Page 1 and displays on Page 2.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack for the first endpoint.
- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of the converter circuit pack connected to the second endpoint of the fiber link.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack for the second endpoint. This field is updated via the Change Circuit-packs command.

4 Hardware Additions

Add NAA1 Fiber Optic Circuit Pack

4-50

- **Facility Installed** — Enter **yes** in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is physically installed. At least facility A must be installed within the converter complex. Default is **yes** for Facility A.
- **Passes Far-end Clock** — Enter "**yes**" in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is suitable to be used as a clock source. If the DS1 signal does not come directly from the far end converter circuit pack or the network (such as when the signal is converted from digital to analog and then back to digital), enter "**no**." Default is **yes** for Facility A.

This field determines whether the DS1 converter circuit pack can use receive DS1 signal timing to time the transmit fiber signal. This is necessary for passing timing from a master PN to a slave PN across a Converter Complex.

- **Digital Data Compatible** — Enter **yes** (default) in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is suitable for transmission of digital data. At least Facility A must be suitable for transmission of digital data. If Customer Premises Equipment that alters digital data exists on this facility (such as with a channel expansion multiplexer), enter **no**.
- **Line Coding** — Enter the line coding format, **ami-zcs** (default), or **ami-basic**, **b8zs**, or **hdb3** in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility.

When ami-zcs line coding is used, all-zero bytes are prevented from being transmitted on the DS1 facility because a 1 is arbitrarily written into the second position of each byte. Thus, if no measures are taken to prevent it, ami-zcs line coding results in data corruption. The DS1CONV circuit pack protects the packet facility (one of up to four facilities dynamically allocated by the DS1CONV circuit pack) from corruption through a special escape mechanism.

When b8zs line coding is used, it maintains DS1 facility's ones-density requirements by encoding a zero data byte into a specific unique pattern of bipolar violations on the DS1 line. The opposite end recognizes this pattern and replaces it with a zero data byte when the data is recovered at the receiving end.

 **NOTE:**

Note that although the esf framing mode and b8zs line coding are the preferable modes of operation, you should confirm that the DS1 facilities support them before selecting this line coding.

4 Hardware Additions

Add NAA1 Fiber Optic Circuit Pack

4-51

- **Framing Mode** — Enter the framing format, **esf** (default) or **d4**, in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility.

 **NOTE:**

The D4 format is supported by the Converter circuit packs, but because of problems inherent with this format (specifically, inability to frame on a bit stream that contains data that emulates the D4 framing pattern), its use is discouraged.

- **DS1CONV-1 Line Compensation** — Enter the line compensation (1 to 5) in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility connected to ENDPOINT-1 (see [Table 4-7](#)).

The DS1 line signal is pre-equalized at the transmitter so that DS1 line pulses are the correct amplitude and shape when they reach the Network Interface. The amount of equalization necessary is determined by the distance to the Network Interface (when the endpoint supplies a DSX-1 interface) and also by the type of wiring used to connect to the Network Interface. The types of wiring allowed are 22 gauge ABAM (shielded twisted pair) cable, 24 gauge Premises Distribution System (PDS) wiring, and 26 gauge PDS wiring.

Table 4-7. Distance to DSX-1 Interface (feet)

Equalizer Setting	22 AWG ABAM & 24 AWG PDS	26 AWG PDS
1	1 to 133	0 to 90
2	133 to 266	90 to 180
3	266 to 399	180 to 270
4	399 to 533	270 to 360
5	533 to 655	360 to 450

 **NOTE:**

The line equalization setting defaults to 2 and remains in effect until changed by administration. Because incorrect equalizer settings cause a potentially higher error rate on the DS1 facility, it is necessary to provide the correct settings based on the distance to the Network interface.

If it is a TN574 circuit pack, the default for all facilities is 1.

4 Hardware Additions

Add NAA1 Fiber Optic Circuit Pack

4-52

- **DS1CONV-2 Line Compensation** — Enter the line compensation (1 to 5) in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility connected to ENDPOINT-2 (see [Table 4-7](#)). The DS1 line signal is pre-equalized at the transmitter so that DS1 line pulses are the correct amplitude and shape when they reach the Network Interface. The amount of equalization necessary is determined by the distance to the Network Interface (when the endpoint supplies a DSX-1 interface) and also by the type of wiring used to connect to the Network Interface. The types of wiring allowed are 22-gauge ABAM (shielded twisted pair) cable, 24-gauge Premises Distribution System (PDS) wiring, and 26-gauge PDS wiring.
- **Facility A Circuit ID** — Displays when the value in Facility Installed for Facility A is **yes**. Enter up to 40 characters to identify the cabinet, carrier, and slot of the DS1 Converter circuit pack's physical location.

Similarly, Facility B Circuit ID, Facility C Circuit ID, and Facility D Circuit ID fields display for each of the DS1 Converter Facilities when **yes** is entered in the corresponding Facility Installed field.

**Duplicated DS1C Converter Complex Administration
for TN574 Circuit Packs.**

```

add fiber-link next
Page 3 of 3

                FIBER LINK ADMINISTRATION
                B-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01C01          DS1CONV Board Location: 02C01
DS1CONV Board Type: TN574             DS1CONV Board Type: TN574

                DS1 CONVERTER FACILITIES

                A           B           C           D
Facility Installed?  yes        no         no         no
Passes Far-end Clock?  yes        yes        yes        yes
Digital Data Compatible?  yes        yes        yes        yes
                Line Coding:  ami-zcs   ami-zcs   ami-zcs   ami-zcs
                Framing Mode:  esf         esf         esf         esf
DS1CONV-1 Line Compensation:  1         1         1         1
DS1CONV-2 Line Compensation:  1         1         1         1

Facility B Circuit ID: 01112343
    
```

Screen 4-4. Fiber Link Administration form for TN574 Circuit Pack (Duplicated DS1 Converter Complex Administration) (page 3 of 3)

4 Hardware Additions

Add NAA1 Fiber Optic Circuit Pack

4-53

Page 3 appears when the Is one endpoint remoted via a DS1 Converter Complex field is "yes" and duplication is enabled.

⇒ NOTE:

When you administer DS1 Converter TN1654 circuit packs, different fields display.

For field definitions of the fields displayed on page 3 of the Fiber Link Administration form, refer back to the previous section.

DS1 Converter Complex Administration for T1 TN1654 Circuit Packs.

```

add fiber-link next
Page 2 of 3

                FIBER LINK ADMINISTRATION
                A-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01B01                DS1CONV Board Location: 02B01
DS1CONV Board Type: TN1654                  DS1CONV Board Type: TN1654

                DS1 CONVERTER FACILITIES

                A          B          C          D
Facility Installed? yes    yes    no     no
                Bit Rate: 1.544
Facility Startup Idle Code: 11101000
                Line Coding: ami-zcs  ami-zcs  ami-zcs  ami-zcs
                Framing Mode:
DS1CONV-1 Line Compensation: 1          1          1          1
DS1CONV-2 Line Compensation: 1          1          1          1

Facility A Circuit ID: 09876543
Facility B Circuit ID: 234567889
    
```

Screen 4-5. Fiber Link Administration form for T1 TN1654 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3)

The following unique fields display when administering a T1 TN1654 DS1 Converter.

- **Bit Rate** — Displays when the DS1 Converter circuit pack is TN1654. Enter either **1.544** for domestic T1 operation or **2.048** for international E1 operation.

⇒ NOTE:

Since one bit rate applies for all facilities within the same DS1 Converter complex, the `Bit Rate` field displays only under Facility A.

4 Hardware Additions

Add NAA1 Fiber Optic Circuit Pack

4-54

- **Facility Startup Idle Code**— Displays when the DS1 Converter circuit pack is TN1654. Enter 8 digits, each digit must be **0** or **1**. The second digit must be **1**. Default is **11101000**. You can administer this field on a per circuit pack basis. This is the idle code used when a TN1654 first establishes a link on a T1/E1 facility. The initial idle code used by the TN1654 is overwritten by the center stage switch to an “all ones” pattern once framing is established on that T1/E1 facility.
- **Framing Mode** — For TN1654 with 1.544 Mbps Bit Rate, this is a display-only field.

Duplicated DS1 Converter Complex Administration for T1 TN1654 Circuit Packs.

```

add fiber-link next
Page 2 of 3

                FIBER LINK ADMINISTRATION
                A-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01B01                DS1CONV Board Location: 02B01
DS1CONV Board Type: TN1654                  DS1CONV Board Type: TN1654

                DS1 CONVERTER FACILITIES

                A          B          C          D
Facility Installed?  yes      yes      yes      no
                Bit Rate:  2.048
Facility Startup Idle Code: 11101000
                Line Coding: hdb3      hdb3      hdb3      hdb3
                CRC?      yes
                Line Termination:

Facility A Circuit ID: 09876543
Facility B Circuit ID: 234567889
Facility C Circuit ID: 434566335
    
```

Screen 4-6. Fiber Link Administration form for E1 TN1654 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3)

The following unique fields display when administering a TN1654 DS1 Converter.

- **Bit Rate** — A display-only field for TN1654 entered on page 3 of the form. See previous section. **1.544** indicates domestic T1 operation and **2.048** indicates international E1 operation.

DS1 Converter Complex Administration for E1 TN1654 Circuit Packs .

The following unique fields display when administering a E1 TN1654 DS1 Converter.

- **Bit Rate** — Displays when the DS1 Converter circuit pack is TN1654. Enter either **1.544** for domestic T1 operation or **2.048** for international E1 operation.

NOTE:

Since one bit rate applies for all facilities within the same DS1 Converter complex, *Bit Rate* displays only under Facility A. To activate the desired Bit Rate, the toggle switch on the circuit pack must be set and it must correspond to the Bit Rate.

- **Idle Code MSB(1) ... LSB(8)** — Displays when the DS1 Converter circuit pack is TN1654. Enter 8 digits, each digit must be **0** or **1**. The second digit must be **1**. Default is **11101000**. You can administer this field on a per circuit pack basis.
- **CRC** — Displays when the DS1 Converter circuit pack is TN1654 and the Bit Rate is 2.048 Mbps. Enter **yes** to receive a “yellow 2” alarm for E1 operation. Default is **no**. You can administer this field on a per circuit pack basis.
- **Line Termination** — A display-only field for DS1 Converter circuit packs that are TN1654 and have a Bit Rate of 2.048 Mbps. It identifies facility connections as CEPT 75 ohm coaxial or 120 ohm CEPT twisted pair.

4 Hardware Additions

Add NAA1 Fiber Optic Circuit Pack

4-56

Duplicated DS1 Converter Complex Administration for E1 TN1654 Circuit Packs.

See the previous sections for screen layout and field definitions.

add fiber-link next

Page 3 of 3

FIBER LINK ADMINISTRATION
B-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01C01
DS1CONV Board Type: TN1654

DS1CONV Board Location: 02C01
DS1CONV Board Type: TN1654

DS1 CONVERTER FACILITIES

	A	B	C	D
Facility Installed?	yes	yes	yes	no
Bit Rate:	2.048			
Facility Startup Idle Code:	11101000			
Line Coding:	hdb3	hdb3	hdb3	hdb3
CRC?	yes			
Line Termination:				

Facility A Circuit ID: 0AABB01
Facility B Circuit ID: 0CCDD02
Facility C Circuit ID: 0EEFF03

Screen 4-7. Fiber Line Administration form for B-PNC DS1 Converter (DS1CONV) Attributes

Troubleshooting an Upgrade

5

This chapter provides the information necessary to correct many problems when upgrading a system.

The information in this chapter is a compilation of the most commonly reported troubles received by Tier 4 Support at Lucent Technologies.

It is the desire of the Product Documentation Department to update this chapter with new information at each product/document release. If you have information that you feel would be valuable to other technicians, please FAX your comments to us at 1-303-538-1741 (United States).

Translation Corruption Detected

This usually means that the translations were not successfully backed up to the translation card or that the current software version may not be compatible with the new software version.



NOTE:

The Terminal Translation Initialization (TTI) must be disabled before you save translations.

Unsuccessful Translation Backup

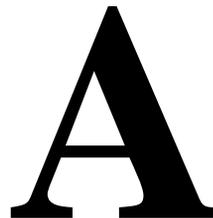
1. If the processor circuit pack was replaced as part of the upgrade, remove the processor and replace it with the original processor circuit pack.
2. Insert the original translation card (or backup translation card) into the TN798B.
3. Enter **reset system 4** to reboot the system and to reinstall the original translations.
4. To correct the translation corruption problem, contact your Lucent Technologies representative.

Software Incompatibility

If the above procedures do not clear the corruption problem, then software incompatibility is suspected. It is possible that the current software version must be upgraded to an interim software version before being upgraded to the final software version.

1. Consult the remediation that came with the upgrade software.
2. Contact your Lucent Technologies representative for this information.

Access Security Gateway



This appendix provides information on how to administer Access Security Gateway (ASG). ASG employs a challenge/response protocol to confirm the validity of a user and reduce the opportunity for unauthorized access. ASG authentication will be imposed for Lucent services logins as indicated below:

- init - all types of access require ASG authentication
- inads - all types of access require ASG authentication
- craft - if accessing remotely, ASG authentication is required.



NOTE:

Craft login sessions from a direct connect management terminal continue to rely on password authentication.

Using the ASG Mobile

1. Double click on the ASG Mobile V1.1 on your desktop and an ASG Mobile V1.1 Login window appears.
2. In the `Tech ID` field, type your login ID, which is the name of the attached file (without the ".asg"). Your login ID is the same as your Lucent login (or an abbreviated part of it).
3. Type the password twice. Note that the password is case-sensitive.

NOTE:

Your new password will be sent to you in a separate email.

4. Click the OK button and an ASG Mobile V1.1 Authentication window appears.
5. Use your communications package (for example, DSA, ProComm, or TerraNova) to dial the switch you need to contact.
6. Log into your communications package window as either **init**, **inads**, or **craft**. Instead of a password prompt, a seven-digit (challenge) number appears in the window of your communications package.
7. Move to the ASG Mobile V1.1 Authentication window.
8. Type the 10-digit Product ID in the `Equipment ID` field. The default ID is 10 zeros (0000000000).
9. Type **init**, **inads**, or **craft** in the `Equipment Login` field. The **craft** login ID is the default.
10. Type the challenge number (from your communications package window) into the `Challenge` field. Do not use the "-" character.
11. Type the trouble ticket number in the `Ticket Number` field. If there is no ticket number, you can use this field as a one-word comment field or leave it blank.
12. Click the `Start` button. The `Activity Status` field displays "Started" and the `Response` field displays a new seven-digit number.
13. Move to your communications package window.
14. Type the new seven-digit (response) number in the `Response` field. Do not use the "-" character.

DEFINITY ECS verifies the response. If correct, DEFINITY logs you on. If the response is incorrect, return to step 1. If this is the third rejection, see the *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7csi*.

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