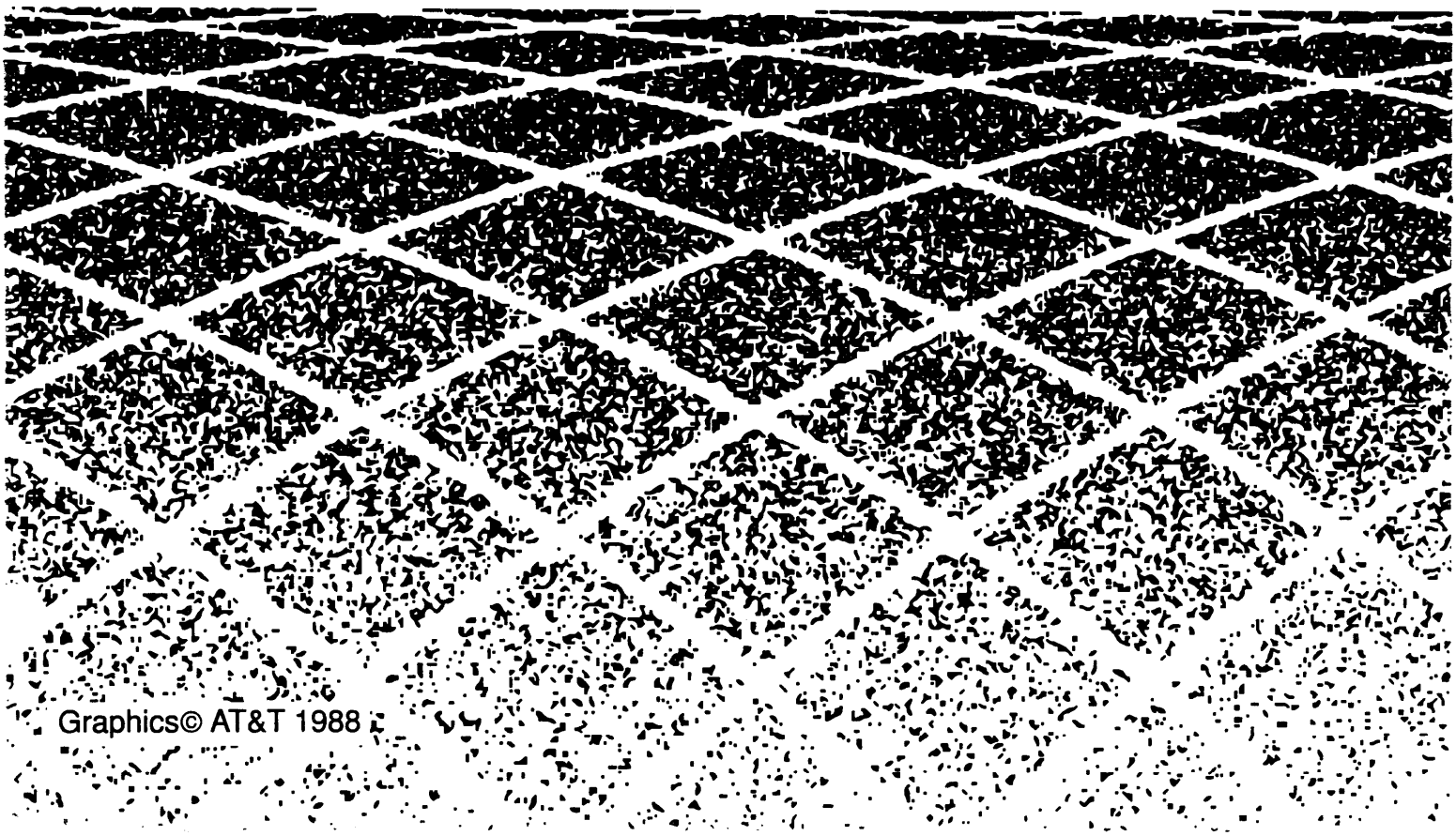
AT&T 555-230-600
Issue 2, August 1992

DEFINITY® Communications System Generic 1 and Generic 3

Planning and Configuration



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INTRODUCTION

General Information

This document, *DEFINITY® Communications System Generic 1 and Generic 3 Planning and Configuration,* 555-230-600, is used by the AT&T Account Team to determine a customer's requirements and to collect the information needed to estimate hardware quantities for DEFINITY Communications System Generic 1 or Generic 3. Throughout the rest of this document, this system is referred to as either DEFINITY Generic 1, Generic 3, G1, G3i, G3i-Global (for DEFINITY installations outside of the United States), or G3r. Software releases G1 (a Generic 1 release), G3i (a Generic 3 release), G3i-Global (a Generic 3 release), and G3r (a Generic 3 release) are covered. The term G3 applies to both G3i, G3i-Global, and G3r. Where there is a difference between the G3i/G3i-Global and G3r releases, the text specifies the release.

The hardware quantities estimate can be recorded on the tables provided in this document. The information obtained during the planning and configuration process is used for negotiations and for initially pricing a system. This information serves as the foundation for the proposal and for the post-sale communications survey.

This document assumes that AT&T Account Team members are familiar with DEFINITY Generic 1 and Generic 3 and its associated Price Element Codes (PECs).

The Business Communications Systems (BCS) Design Center (BDC) should always be consulted to provide engineering support for Automatic Alternate Routing (AAR), Distributed Communications System (DCS), Integrated Services Digital Network (ISDN), Uniform Dial Plan (UDP) and DS1 feature configurations, and any time processor occupancy is in question.

If a configuration has a Processor Port Network (PPN) and an off-premises (out of building or in a different room) Expansion Port Network (EPN), the Premises Services Consultant (PSC) must be consulted for design of the fiber link.

Any statement appearing in the following material is limited by, and subject to, all terms and provisions of the Purchase or Master Agreement for DEFINITY Generic 1 or DEFINITY Generic 3, including those limiting warranties and liabilities of AT&T.

For a complete listing of the system's technical specifications including cabling distances, call progress and signaling tones, signaling protocols, trunk specifications, etc., refer to the *DEFINITY Communications System Generic 1 and Generic 3 System Description,* 555-230-200.

This issue replaces all previous issues of this document.

How to Use This Document

This document is written to lead you, step by step, through the planning and configuration process. Detailed instructions are given throughout the document. The following list is a brief summary of the steps to be followed when planning and configuring your system.

1. Use Tables A-D to help determine the general guidelines for your configuration.
2. Use Table E to identify all desired features.
3. Use Table F to determine any additional hardware and/or software that may be required for specific features. Table F should be used in conjunction with Tables Q-AH for G3i-Global installations.
4. Review Tables G and H. These tables, in conjunction with information derived from Tables E and F, should be helpful in determining which version of the system is needed.
5. Use Table I to list the system users and their individual equipment needs.
6. Use Table J to determine the total number of each type of voice and data terminals. Information for this table is obtained from Table 1.
7. Use Table K to determine the total number of each type of voice and data terminal adjunct. Information for this table is obtained from Table 1.
8. Use Table L to determine if any of the terminal equipment limits have been exceeded.
9. Review the data communications equipment information that is provided.
10. Use Table M to list the quantities of data communications equipment.
11. Determine if traffic engineering calculations should be made.
12. Use Table N to determine which data terminals are needed, and in particular the Manager I or G1 G3r-Management Terminal (G3r-MT).
13. Use Table O to determine which system printer is needed.
14. Determine the number of each type of network access facility to be used per Table P.
15. Tables Q-AH are used to determine which circuit packs are used when configuring a G3i-Global system. The tables describe the appropriate circuit packs for various countries.
16. Determine the number of each type of circuit pack to be used and list the totals in Table AI.
17. Table AJ contains the system softwarer PEC codes.
18. Determine the combination of cabinets for DEFINITY Generic 1 using the tables in “Multi-carrier Cabinet Configuration” and “Single-Carrier Cabinet Configuration.”
19. Complete the ordering information using the information listed in the tables that have already been filled out.

20. Review the following sections so that any necessary equipment room preparations and advance planning considerations can be made for the new system.
    - "Environmental Requirements"
    - "Power and Grounding"
    - "Upgrades and Additions"

The system supports the use of many other AT&T products. Refer to each product's respective documentation for planning and configuration information.

The rest of this document is divided into the following sections:

- **Feature Description**
- **System Parameters**
- **System Version Determination**
- **Hardware and Software Determination**
- **Environmental Requirements**
- **Power and Grounding**
- **Upgrades and Additions**
- **References**
- **Abbreviations and Acronyms**
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CONFIGURATION GUIDELINES

This section describes the method used in determining the customer's requirements and collecting the information needed to design a DEFINITY Generic 1 or Generic *3* system for the customer. The section highlights information used by the Account Team, along with the Delivery Operation and Support System (DOSS) configuration, in performing this task. Refer to the following documents for a more detailed discussion.

- For G1 systems, *DEFINITY Communications System, Generic 1 Implementation,* 555-204-654.
- For G3i systems, *DEFINITY Communications System, Generic 3i Implementation,* 555-230-650.
- For G3i-Global systems, *DEFINITY Communications System, Generic 3i-Global Implementation,* 555-230-652.
- For G3r systems, *DEFINITY Communications System, Generic 3r Implementation,* 555-230-651.

The section is divided into two parts. Part 1 provides a communications survey with the steps that must be performed by the Account Team and/or the client. Part 2 includes information that can be used to identify system requirements needed in completing some of the steps in Part 1.

Information in this section assumes that Account Team members are familiar with DEFINITY Generic 1 and Generic 3 systems and associated Price Element Codes (PECS).

For domestic sales, the BC Systems Design Center (BDC) should always be consulted to provide engineering support for Automatic Alternate Routing (AAR), Distributed Communications System (DCS), Integrated Services Digital Network (ISDN), Uniform Dial Plan (UDP), complex DS1 feature configurations, and any time processor occupancy is in question.

If a configuration has a Processor Port Network (PPN) and an Expansion Port Network (EPN) in different rooms (same premises or different premises) or if the cabinets are more than 1-inch apart, the Premises Services Consultant (PSC) must be consulted for design of the fiber link.

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Communications Survey

General

The communications survey identifies system information along with the users' job functions and communications needs. This information is then matched with available features and hardware to design a System that fulfills a customer's requirements.

Basically, the survey:

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

Survey Steps

Complete each of the survey steps in the order given. Some steps are best performed by a imperative effort between the account team and the customer or customer's representative. Where applicable, these steps are so indicated. A copy of the screen forms is required in completing some of the survey steps. Blank hard copy of the screen forms are available in the the *DEFINITY Communications System, Implementation* documents, along with detailed instructions for completing these forms.

Step 1— (Account Team)

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

Find out what features and services are to be provided.

Refer to the section on **Identifying System Requirements** to complete this step.

Step 2—Port Assignments (Account Team/Client)

This section contains the Port Assignment procedures for the System.

Port assignments play an important role in how a System is initialized and administered. Ports are the physical location on a circuit pack where terminals, trunks, or System adjuncts are connected. Once a port number is assigned, it becomes the "address" of the associated equipment or facility in the System. A record of port assignments must be made and kept. The record will eventually be used for System installation/initialization and ongoing administration.

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

Using the hardware Configuration Layout record (obtain from the factory or Customer Support Service Organization, etc.), complete the Port Assignment Records per the following instructions. The System cabinet configuration can include a combination of multicarrier and single-carrier cabinets. Instructions for completing the Port Assignment Records survey for single-carrier cabinets follow the multicarrier cabinet information.

Multicarrier Cabinet—Port Assignment Records:

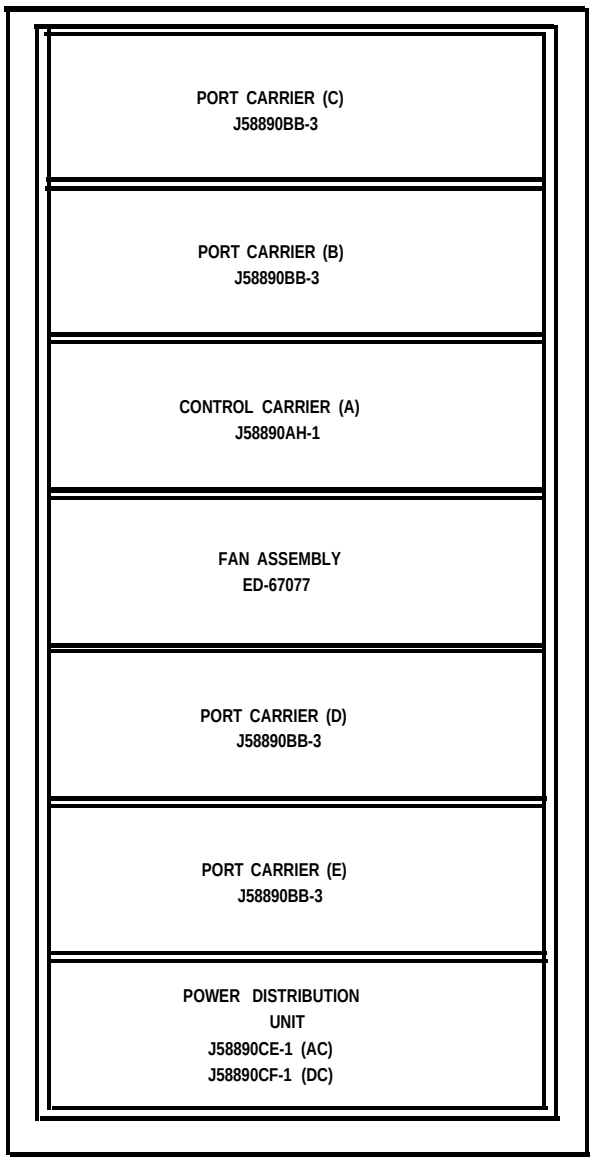
Identify on Table A the cabinet type(s) and the number of port carriers to be used in the System. Figures 1 through 3 show the cabinet configurations listed in the table.

TABLE A. Multicarrier Cabinets

Cabinet	Port Carriers	Port Circuit Packs*
PPN Without Duplication	1	29
	2	49
	3	69
	4	89
PPN With Duplication	1	38
	2	58
	3	78
EPN 1 or 2 Without Duplication	1	38
	2	58
	3	78
	4	98
EPN 1 or 2 With Duplication	1	36
	2	56
	3	76
	4	96

* Number represents all universal port slots in cabinet (that is, does not exclude slots associated with Tone Clocks, Expansion Interface, etc.).

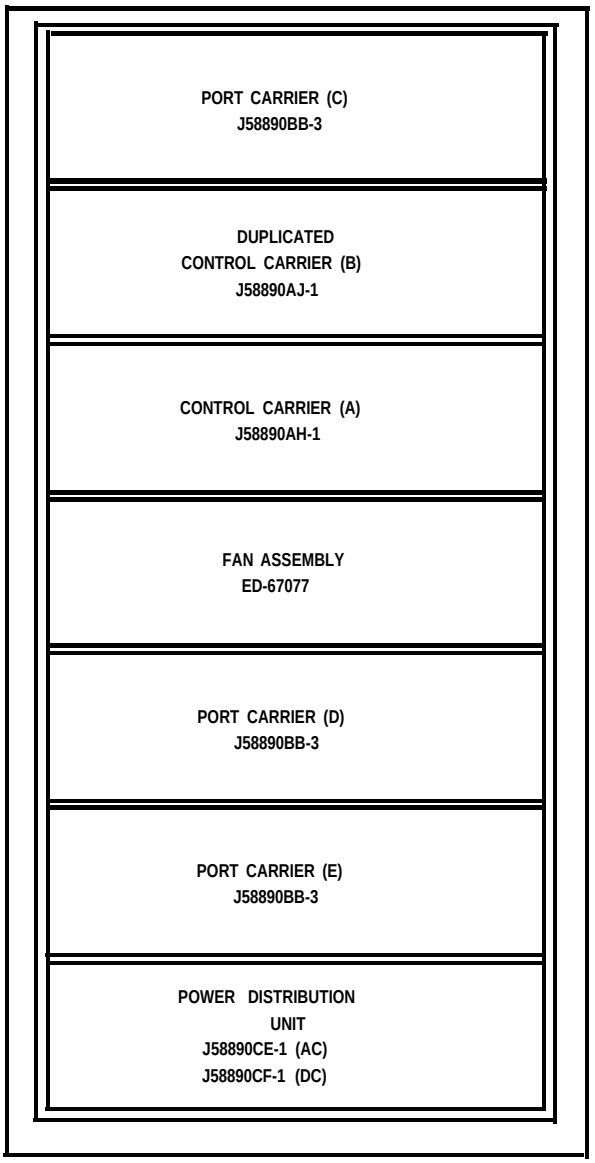
Remove the blank Port Assignment Record forms (Figures 4 and 5) and duplicate as many times as necessary to have enough pages for each type carrier and associated circuit packs to be assigned in the System. A blank Port Assignment Record for eight ports (Figure 4) is required for all circuit packs that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



NOTE: THE CABINET IS AVAILABLE IN THE FOLLOWING ARRANGEMENTS

1. PORT CARRIER IN POSITION B.
2. PORT CARRIERS IN POSITIONS B AND C.
3. PORT CARRIERS IN POSITIONS B, C, AND D.
4. PORT CARRIERS IN POSITIONS B, C, D, AND E.

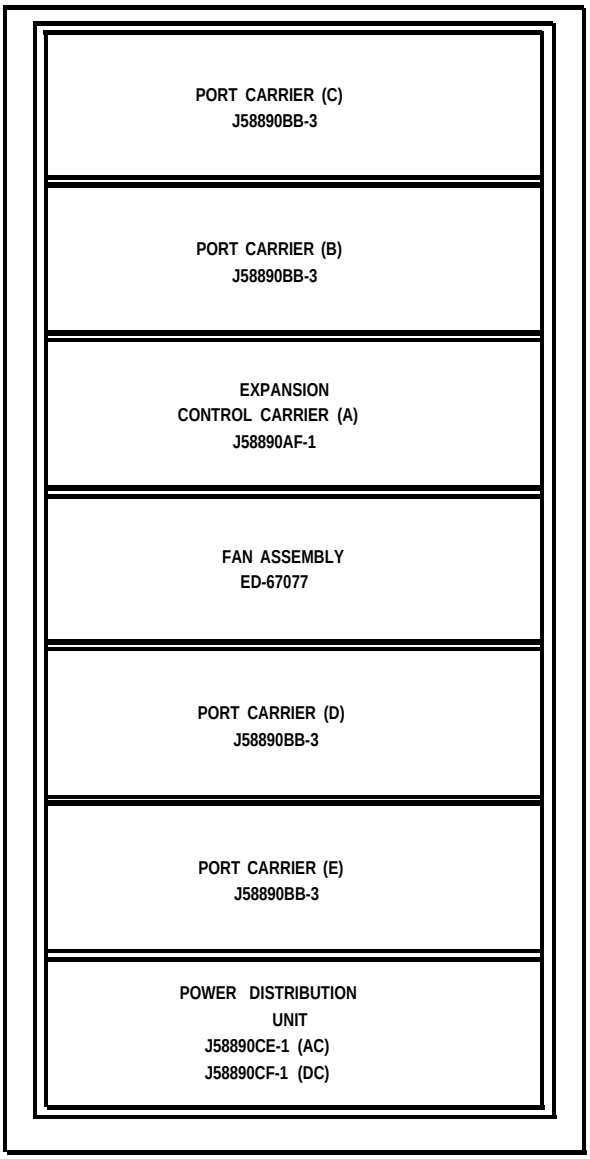
FIGURE 1. Fully Equipped Multicarrier PPN Cabinet (J58890A-1) Without Duplication Option (Front View)



NOTE: THE CABINET IS AVAILABLE IN THE FOLLOWINQ ARRANGEMENTS:

1. PORT CARRIER IN POSITION C.
2. PORT CARRIERS IN POSITION C AND D.
3. PORT CARRIERS IN POSITION C, D, AND E.

FIGURE 2. Fully Equipped Multicarrier PPN Cabinet (J58890A-1) With Duplication Option (Front View)



NOTE: THE CABINET IS AVAiLABLE IN THE FOLLOWING ARRANGEMENTS:

1. PORT CARRIER IN POSITION B.
2. PORT CARRIERS IN POSITIONS B AND C.
3. PORT CARRIERS IN POSITIONS B, C, AND D.
4. PORT CARRIERS IN POSITIONS B, C, D, AND E.

FIGURE 3. Fully Equipped Multicarrier EPN Cabinet (J58890A-1) With or Without Duplication Option (Front View)

CARRIER ______ CABINET ______ PORT ASSIGNMENT RECORD Page ______

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

*To be completed by installer

Figure 4-6. Port Assignment Record (Forupto Eightt Ports)

FIGURE 4. Port Assignment Record (for up to Eight Ports)

CARRIER _____ CABINET _____ PORT ASSIGNMENT RECORD Page _____

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

"To be completed by installation technician

Figure 4-7. Port Assignment Record (For up to 24 Ports)

FIGURE 5. Port Assignment Record (for up to 24 Ports)

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

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

TABLE B. Multicarrier Cabinet—Universal Port Slots and Associated Circuit Packs

Circuit Pack		Ports	Port Carder (B, C, D, E) (J58890BB-3)		Control Carrier (1A) (J58890AH-1)		Dupllcated Control Carrier (1B) (J58890AJ-1)		Expansion Control Carrier (2A) (J58890AF-1)	
Name	Code		Port Slot	Note	Port Slot	Note	Port Slot	Note	Port Slot	Note
Analog Line (8)	TN742	8	1-20	1	1-9	1	1-9	1	2-19	1
Analog Line (neon)	TN769	8	1-20	1	1-9	1	1-9	1	2-19	1
Analog Line (16)	TN746B	16	1-20	1	1-9	1	1-9	1	2-19	1,11
Announcement	TN750B				1-9	7	1-9	7	2-19	7
Auxiliary Trunk	TN763C	4	1-20	1	1-9	1	1-9	1	2-19	1
Call Classifier	TN744		1-20		1-9		1-9		2-19	
CO Trunk	TN747B	8	1-20	1	1-9	1	1-9	1	2-19	1,10
Data tine	TN726B	8	1-20	1	1-9	1	1-9	1	2-19	1
DID Trunk	TN753	8	1-20	1	1-9	1	1-9	1	2-19	1,12
Digital Line	TN754B	8	1-20	1	1-9	1	1-9	1	2-19	1
DS1 Tie Trunk	TN722B	24	1-20	1	1-9	1	1-9	1	2-19	1
DS1 Interface	TN767	24	1-20	1	1-9	1	1-9	1	2-19	1,13
Expansion Interface	TN776		2,3	4	1,2	4	1,2	4	1,2	3,4
Expansion Interface	TN570		2,3	4	1,2	4	1,2	4	1,2	3,4
Hybrid Line	TN762B	8	1-20	1	1-9	1	1-9	1	2-19	1
ISDN Line	TN556	12	1-20	1	1-9	1	1-9	1	2-19	1
Maintenance/Test	TN771B		1-20	1	1-9	1	1-9	1	2-19	8
MET Line	TN735	4	1-20	1	1-9	1	1-9	1	2-19	1
Pooled Modem	TN758	2	1-20	1	1-9	1	1-9	1	2-19	1
Power Unit	TN755 B				9	2	9	2	19	2
Speech Synthesizer	TN725 B	4	1-20	1	1-9	1	1-9	1	2-1 9	1
Tie Trunk	TN760 C	4	1-20	1	1-9	1	1-9	1	2-1 9	1
Tone-Clock	TN768		1	6						
Tone-Clock (Stratum 3)	TN780		1	9						
Tone Detector	TN748C		1-20	5	1-9	3	1-9	3	2-1 9	1

Notes:

1. Provided as required.
2. TN755B Power Unit-required when neon message waiting power is required.
3. One always required.
4. TN776 El may be used when no CallVisor ASAI functions are supported, TN570 required for CallVisor ASAI.
5. TN748C Tone Detector—one always required when equipped in cabinet positions B and C.
6. TN768 Tone Clock—required when connecting to a duplicated PPN. Only required in carrier cabinet position B mounted in an EPN.

TABLE B *(continued).*
Multicarrier Cabinet—Universal Port Slots and Associated Circuit Packs

7. Only one TN750B Announcement circuit pack may be assigned in the System, Assign in Control Carrier 1A when possible.
8. One TN771 B required in a duplicated system.
9. Required when connecting to an external Stratum 3 clock.
10. Use TN465 in G3i-Global where administrable timers and 16 kHz PPM are required.
11. Use TN479 in G3i-Global where a 24 volt limit or Japanese ring cadence is required.
12. Use TN429 in G3i-Global where Japanese signaling scheme is required.
13. Use TN464 in G3i-Global where 32 channels and 2.0 Mb communications are required.

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

   Some of the System forms require port information. When competing such a form, first determine the type circuit pack that is required. Obtain the Port Assignment Record and select the next available vacant port on the appropriate circuit pack. Then, complete the following Port Assignment Record items as required:

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

   Extension Number— enter the extension number.

   - old—enter the old extension number to be replaced
   - new—enter the new extension number

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

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

   Voice Terminal Adjunct— enter adjunct equipment associated with the terminal, for example, speakerphone, headsets, etc.

Module— enter MPDM, DTDM, MTDM, Z702AL1-DSU Data Module Base (Optional base for 7407D voice terminal), Z703AL1-DSU Data Module Base (Optional base for 7406D voice terminal), 7400A, 7400B, 7500B, Call Coverage, Feature, or Display module, as applicable.

Power— to be completed by the installation technician.

Blank— use as necessary.

User Name/Use— enter the name of the user or the feature name as appropriate, for example, SMDR.

Once the preceding information has been entered on the Port Assignment Record, enter the port number on the System form you are completing. The port number consists of a network number (1 = PPN Cabinet, 2 = EPN Cabinet 1, 3 = EPN Cabinet 2), the letter assigned the carrier, and four numbers that consist of the slot number (01 to 20) and the port number (01 to 08 or 01 to 24). A0208 is a port number example for a single multi-carrier cabinet System (no EPN Cabinet) and designates the Control Carrier with a circuit pack mounted in slot 2 with port 08 assigned.

Single-Carrier Cabinet—Port Assignment Records:

Identify on Table C the cabinet type(s) and number of cabinets to be used in the system. Figures 6 through 8 show various single-carrier cabinet configurations. These are examples only and do not depict all possible configurations. For example, some configurations may require fewer port cabinets than are shown in the figures. Use the figures along with Table C to identify the type cabinet (Control, Expansion, and Port) and number of each type cabinet in your System.

TABLE C. Single-Carrier Cabinets

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

* Number represents all universal port slots in cabinet (that is, does not exclude slots associated with Tone Clocks, Expansion Interface, etc.).

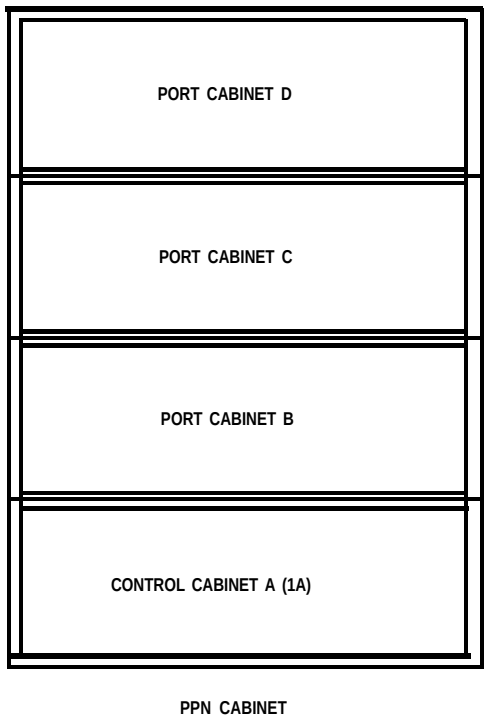


FIGURE 6. Single-Carrier Cabinets—Without Duplication (Four-Cabinet System—Front View)

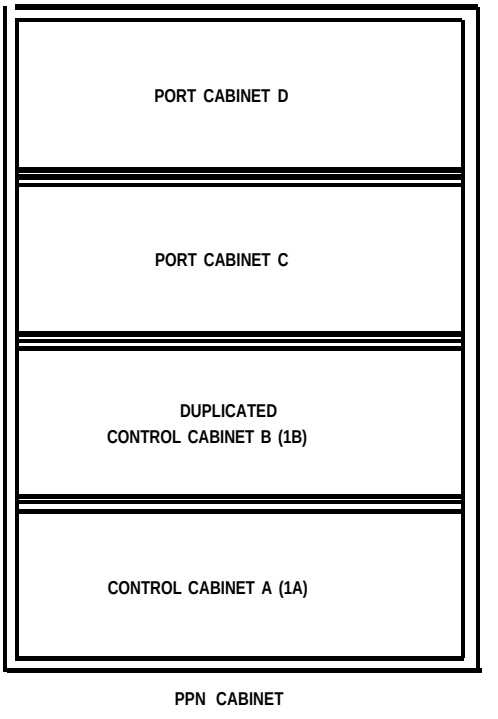


FIGURE 7. Single-Carrier Cabinets—With Duplication (Four-Cabinet System—Front View)

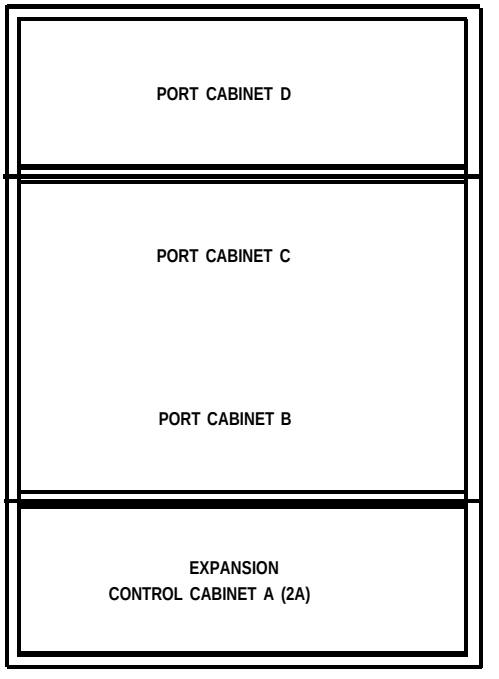


FIGURE 8. Single-Carrier Cabinets—Expansion Port Network 1 (Four-Cabinet System—Front View)

Remove the blank Port Assignment Record forms (Figures 4 and 5) and duplicate as many times as necessary to have enough pages for each type cabinet and associated circuit packs to be assigned in the System. A blank Port Assignment Record for eight ports (Figure 4) is required for all circuit packs that contain up to eight ports. Each 8-port record provides assignment space for four slots on a cabinet. A blank Port Assignment Record for 24 ports (Figure 5) is required for each slot that will house circuit packs that contain more than eight ports, for example, the TN767 DS1 Interface or TN746 Analog Line circuit pack.

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

1. With a set of records for a single-carrier cabinet-following the “CARRIER” entry at the top of the form, enter the applicable cabinet ID as follows:
   - Enter 1 A for the Control Cabinet (J58890L-1) without the Duplication Option.
   - Enter 1 B for the Control Cabinet (J58890M-1) with the Duplication Option.
   - Enter 2A (EPN 1) or 3A (EPN 2) for the Expansion Control Cabinet (J58890N-1).
   - Assign a letter (B, C, or D) to all records for each Port Cabinet (J58890H 1). Use the letter as noted on Figure 6, 7, or 8 for the Port Cabinet location in a single port cabinet configuration.
2. Following the “CABINET” entry at the top of the record, enter the applicable type cabinet as either PPN, EPN 1, or EPN 2.
3. Repeat the above steps and complete a set of records for each System cabinet.
4. Assign port circuit pack slot numbers on the sets of records as follows (refer to Table D for circuit pack port slot availability and associated notes):
   - For Control Cabinet 1A, begin with slot number 1 and number through 10.
   - For Control Cabinet 1 B, begin with slot number 1 and number through 10.
   - For the Expansion Control Cabinet 2A or 3A, begin with slot 1 and number through 17.
   - All Port Cabinets (B, C, or D) slots should be numbered 1 through 18.

TABLE D. Single-Carrier Cabinet—Universal Port Slots and Associated Circuit Packs

Circuit Pack			Port Cabinet (J58890H-1)		Control Cabinet (J58890L-1)		Duplicated Control Cabinet (J58890M-1)		Expansion Control Cabinet	
Name	Code	Ports	Port Slot		Port Slot	Notes*	Port Slot	Notes*	Port Slot	Notes*
Analog Line (8)	TN742	8	1-18	4	1-10	4	1-10	4	2-17	4
Analog Line (neon)	TN769	8	1-18	4	1-10	4	1-10	4	2-17	4
Analog Line (16)	TN746B	16	1-18	4	1-10	4	1-10	4	2-17	4,11
Announcement	TN750B				1-10	7	1-10	7	2-17	7
Auxiliary Trunk	TN763C	4	1-18	4	1-10	4	1-10	4	2-17	4
Call Classifier	TN744		1-18		1-10		1-10		2-17	
CO Trunk	TN747B	8	1-18	4	1-10	4	1-10	4	2-17	4, 10
Data Line	TN726B	8	1-18	4	1-10	4	1-10	4	2-17	4
DID Trunk	TN753	8	1-18	4	1-10	4	1-10	4	2-17	4, 12
Digital Line	TN754B	8	1-18	4	1-10	4	1-10	4	2-17	4
DS1 Tie Trunk	TN722B	24	1-18	4						
DS1 Interface	TN767	24	1-18	4	1-10	4	1-10	4	2-17	4, 13
Expansion Interface	TN776		2,3	3	1.2	3	1.2	3	1,2	6
Expansion Interface	TN570		2,3	3	1,2	3	1,2	3	1,2	9
Hybrid Line	TN762B	8	1-18	4	1-10	4	1-10	4	2-17	4
ISDN Line	TN556	12	1-18	4	1-10	4	1-10	4	2-17	4
Maintenance/Test	TN771B				1-10	8			2-17	8
MET Line	TN735	4	1-18	4	1-10	4	1-10	4	2-17	4
Pooled Modem	TN758	2	1-18	4	1-10	4	1-10	4	2-17	4
Power Unit	TN755B		18	4	10	4	10	4	17	4
Speech Synthesizer	TN725B	4	1-18	4	1-10	4	1-10	4	2-17	4
Tie Trunk	TN760C	4	1-18	4	1-10	4	1-10	4	2-17	4
Tone-Clock	TN768		1	5						
Tone-Clock (Stratum 3)	TN780		1	5						
Tone Detector	TN748C		1-18	2	1-10	4	1-10	6	2-17	4

* See notes on next page.

Notes:

1. Required instead of TN768 when connecting to an external Stratum 3 clock.
2. TN748C Tone Detector—one always required if the cabinet is the first or second Port Cabinet in the System. The TN748C is not required if the cabinet is the third Port Cabinet in the System.
3. Required when connecting to an EPN. The TN776 El maybe used when no CallVisor ASAI functions are supported, TN570 is required for CallVisor ASAI.
4. Provided as required.
5. The TN768 Tone Clock is required in Cabinet B of an EPN with duplica - tion. The TN780 is required when connecting to an external Stratum 3 clock.
6. One always required.
7. Maximum of one per System. Mount in the Control Cabinet when pos - sible.
8. One TN771 B required for a duplicated system.
9. Provide instead of TN776 when CallVisor ASAI functions are supported.
10. Use TN465 in G3i-Global where administrable timers and 16 kHz PPM are required.
11. Use TN479 in G3i-Global where a 24 volt limit or Japanese ring cadence is required.
12. Use TN429 in G3i-Global where the Japanese signaling scheme is required.
13. Use TN464 in G3i-Global where 32 channels and 2.0 Mb communica - tions are required.

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

Some of the forms you will be completing require port information. When completing such a form, first determine the type circuit pack that is required. Next, obtain the Port Assignment Record and select the next vacant port on the appropriate circuit pack. Then, complete the following Port Assignment Record items as required:

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

Extension Number— enter the extension number.

- old—enter the old extension number to be replaced
- new—enter the new extension number

Bldg., Fir., Rm.— enter the identifying information for the location of the terminal or equipment.

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

Voice Terminal Adjunct— enter adjunct equipment associated with the terminal, for example, speakerphone, headsets, etc.

Module— enter MPDM, DTDM, MTDM, Z702AL1-DSU Data Module Base (Optional base for 7407D voice terminal), Z703AL1-DSU Data Module Base (Optional base for 7406D voice terminal), 7400A, 7400B, 7500B, Call Coverage, Feature, or Display module, as applicable.

Power— to be completed by the installation technician.

Blank— use as necessary.

User name/use— enter the name of the user or the feature name as appropriate, for example, SMDR.

Once the preceding information has been entered on the Port Assignment Record, enter the port number on the System form you are completing. The port number consists of a network number (1 = PPN cabinet, 2 = EPN cabinet 1, 3 = EPN Cabinet 2), the letter assigned the cabinet, and four numbers that consist of the slot number (01 to 18) and the port number (01 to 08 or 01 to 24). A port number example for a single cabinet System (Control Cabinet only) with a circuit pack mounted in slot 02 with port 08 assigned is A0208.

Step 3—Complete Circuit Pack Forms (Account Team/Client)

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

The Circuit Pack form allows the user to administer circuit packs to carrier slots before the circuit packs are actually installed in the carrier or cabinet. This allows the System to be configured (administered) when the circuit packs have not yet been physically inserted in the appropriate slots. In order for any end-user equipment (voice terminals, data terminals, etc.) to be translated into the System, either a circuit pack must be physically inserted in the appropriate slot or be logically installed using the circuit pack form.

The Circuit Pack forms are shown in Figure 9. The information entered on the form can be taken from the Port Assignment Record.

```
                                                  Page 1 of 5
                          CARRIER 1A

Slot  Code   Sfx     Name                      Slot  Code  Sfx    Name
01:   ____    _   ________________              11:   ____    _   ________________
02:   ____    _   ________________              12:   ____    _   ________________
03:   ____    _   ________________              13:   ____    _   ________________
04:   ____    _   ________________              14:   ____    _   ________________
05:   ____    _   ________________
06:   ____    _   ________________             *Use slots AO1-A14 with
07:   ____    _   ________________             *J58890G-1 Control Carrier.
08:   ____    _   ________________             *Use slots A01-A10 with J58890L-1
09:   ____    _   ________________             *or J58890M-1 Control Cabinet.
10:   ____    _   ________________             *Use slots A01-A09 with J58890AH
 '#' indicates circuit pack conflict          *or J58890AJ Control Carrier.
```

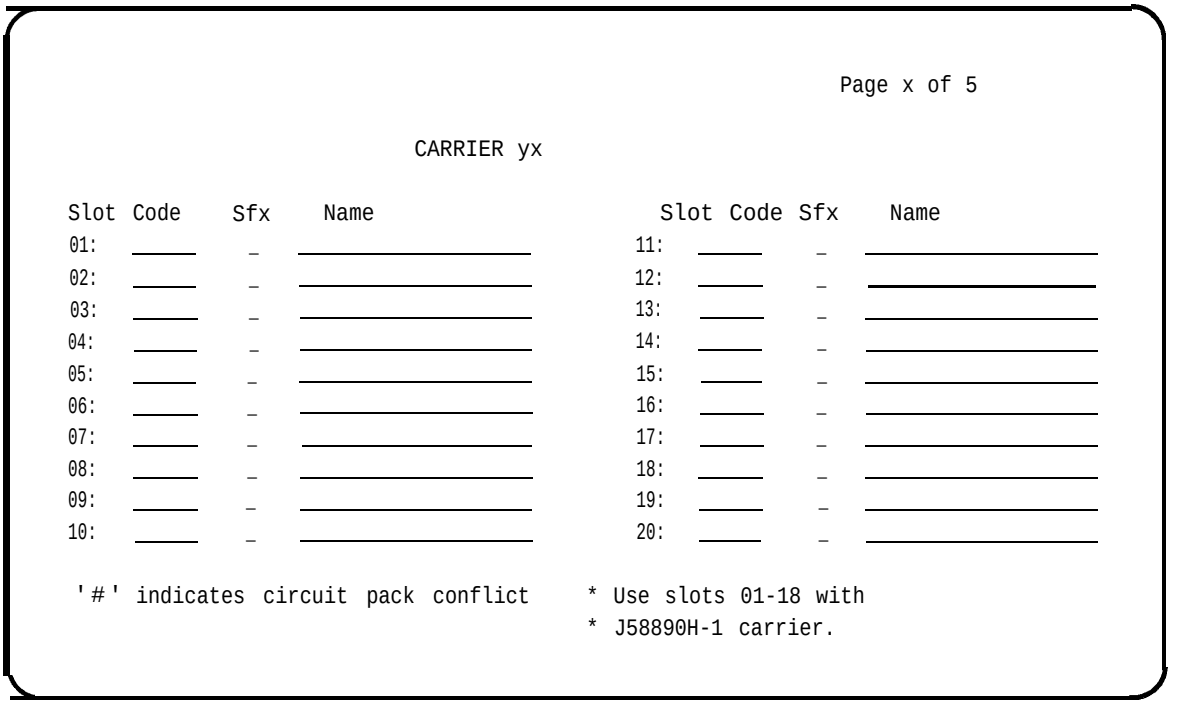
```
                                                  Page 1 of 5
                          CARRIER 2A

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

 '#'  indicates circuit pack conflict
```

FIGURE 9. Circuit Pack Administration Forms

Note that a ”#” displayed beside a logically administered circuit pack name indicates a conflict between the administered name and the physical circuit pack mounted in that slot.



Page x of 5

CARRIER yx

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

'#' indicates circuit pack conflict

* Use slots 01-18 with
* J58890H-1 carrier.

FIGURE 10. Circuit Pack Administration Forms *(continued)*

Implementation Note:

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

Multicarrier Cabinet: The number of circuit pack forms and associated pages to be completed is dependent on the multicarrier system configuration. For example, a multicarrier PPN cabinet With Duplication requires one control carrier (use one circuit pack CARRIER 1A form), one duplicated control carrier (use one circuit pack CARRIER 1A form), and up to three port carriers (use three circuit pack CARRIER xy forms—one for each port carrier). For a PPN cabinet, mark each circuit pack form as “PPN.” In the above example five forms must be completed.

When an EPN is supported, the Expansion Control carrier requires one circuit pack CARRIER 2A form to be completed in addition to a circuit pack CARRIER xy form for each port cabinet in the EPN configuration. Mark the associated circuit pack forms as “EPN 1 or EPN 2,” as appropriate. Use the circuit pack code (TN number) when assigning the circuit packs to slots.

Single-Carrier Cabinet: The number of circuit pack forms and associated pages to be completed is dependent on the single-carrier cabinet system configuration. For example, a PPN With Duplication requires one control cabinet (use one circuit pack CARRIER 1A form), one duplicated control cabinet (use one circuit pack CARRIERS 1A form), and up to two port cabinets (use two circuit pack CARRIER xy forms—one for each port cabinet). For a PPN cabinet, mark each circuit pack form as “PPN." In this example, four forms must be completed.

When an EPN is supported, the Expansion Control Cabinet requires one circuit pack CARRIER 2A form to be completed in addition to a circuit pack CARRIER xy form for each port cabinet in the EPN configuration. Mark EPN circuit pack forms as “EPN 1 or EPN 2,” as appropriate. Use the circuit pack code (TN number) when assigning the circuit packs to slots.

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

The remaining steps in the survey consist of instructions for completing System forms. As you proceed, there will be times when the data for a field on a form has not yet been identified. For those cases, note the fields requiring completion and then proceed. Later, complete the form when the applicable data is identified.

The screen forms listed below are required in all Systems and should be completed in the order given. For the Dial Plan, Class of Restriction, and Class of Service features, identify the fields on the form to be completed and determine the number of forms required. Complete the fields on all form(s) as required.

- Dial Plan
- Class of Restriction
- Class of Service
- Feature Access Codes
- Feature Related System Parameters
- System-Parameters Customer-Options (not administrable by customer)

Note: SMDR can be provided on selected trunk groups. Talk with the customer to determine the trunk groups that should be marked for SMDR. This can be done concurrently with the next step.

Step 5—Trunk Groups (Account Team)

A complete list of all trunk groups supported by the System is provided below. Identify the associated trunk group forms required and the fields on the form(s) to be completed, and determine the number of forms needed. Complete the appropriate fields on all screen forms as required.

- Access
- Advanced Private Line Termination (APLT)
- CO
- CPE
- DMI
- DID
- FX
- ISDN-PRI
- Personal Central Office Line Groups (PCOLG)

- Release Link
- Tandem
- T i e
- W A T S

Step 6—Optional Feature Software (Account Team)

Each of the following features and associated screen forms are optional and may or may not be provided with the System. Identify the associated System screen forms, the fields on the forms to be completed, and determine the number of forms required. Complete the appropriate fields on the duplicated forms as required.

- Abbreviated Dialing Enhanced List
- CallVisor ASAI
- CallVisor ASAI Capability Groups
  - Adjunct Call Control Group
  - Adjunct Routing Group
  - Event Notification Group
  - Request Feature Group
  - Set Value Group
- Authorization Codes
- ACD
- ARS
- ARS/AAR Digit Conversion
- ARS/AAR Partitioning
- Basic Call Management System
- Call Work Codes
- CAS Branch
- CAS Main
- DCS
- Emergency Access to the Attendant
- Forced Entry of Account Codes
- Hospitality
- Hospitality Parameter Reduction
- ISDN-PRI
- Lookahead Interflow

- Private Networking (AAR)
- Service Observing
- Time of Day Routing
- Uniform Dial Plan
- Vectoring (Basic)
- Vectoring (Prompting)

Do not complete screen forms or fields on screen forms associated with an optional feature that is not provided.

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

For each feature to be assigned, identify the associated System screen forms, the fields on the screen forms to be completed, and determine the number of screen forms required. Complete the fields on the duplicated screen forms as required.

Audio Information Exchange System (AUDIX) (Client)

The following features and associated screen forms are used to assign AUDIX. To implement these features, complete the appropriate screen forms assigned to each feature.

- Voice Terminals
- Hunt Groups
- Processor Interface Data Module
- Processor Channel Assignments
- Interface Links
- Hop Channels (only required for AUDIX In a DCS)
- MPDM
- Recorded Announcements
- 2500 Station Forms (used to assign AUDIX voice ports)

Automatic Call Distribution (ACD) (Client)

The following screen forms and features are associated with ACD.

- Abandoned Call Search
- Adjunct Routing
- CallVisor ASAI
- Agent Call Handling
- CMS
- Call Prompting

- Call Vectoring
- Call Work Codes
- Central Office Trunk Group
- Class of Restriction
- Foreign Exchange Trunk Group
- Hunt Group (see Hunting feature description)
- Intraflow and Interflow
- Lookahead Interflow
- Recorded Announcements
- Queue Status Indications
- Service Observing
- Stroke Counts
- Vector Directory Number (VDN)
- Voice Terminals
- WATS

Call Management System (CMS)

The following screen forms are used to assign the CMS interface. To implement the CMS Interface, complete the appropriate forms as required.

- Hunt Groups
- M P D M
- Processor Interface Data Module
- Processor Channel Assignment
- Interface Links

Incoming Call Management (ICM)

The following screen forms are used to assign the ICM interface. To implement the ICM Interface, complete the appropriate forms as required.

- Call Vector
- Class of Restriction
- Hunt Groups
- ISDN Trunk Group
- Station (Agent)

Distributed Communications System (DCS)

The following screen forms and features are used to assign DCS. To implement these features, complete the appropriate forms assigned to each feature.

- Dial Plan and Uniform Dial Plan
- DS1 Circuit Pack
- Hop Channel Assignments
- Processor Interface Data Module
- Processor Channel Assignments
- Interface Links
- Netcon Data Module
- Routing Patterns
- RNX Translation Table
- Synchronization Plan
- Tie Trunk Group

Hospitality Features

The following features are used to assign the Hospitality features. To implement these features, complete the appropriate screen forms assigned to each feature.

- Automatic Wakeup
- Do Not Disturb
- Property Management System Interface
  - Call Rating
  - Check-In/Check-Out
  - Controlled Restriction
  - Housekeeping Status
  - Message Waiting Notification
  - Names Registration
  - Room Change/Room Swap

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

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

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

If required, enter each user name, terminal type, and extension number on a floor plan, or equivalent drawing. The floor plan will help you visualize various work groups and make later group assignments such as call answering groups or call pickup groups easier.

For all terminal types and quantities of each type identified, obtain the applicable blank station forms and duplicate as many times as necessary.

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

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

Step 9—Group Forms (Account Team/Client)

For each of the following features to be provided, identify the associated screen forms and the fields on the forms to be completed, and determine the number of forms required. Obtain the applicable blank forms and duplicate as many times as necessary. Complete each field on the duplicated form as required.

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

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

Complete the various fields on the previously obtained station forms. Before actually assigning features on the forms, review the features that can be assigned to each terminal type, the recommended button nomenclature, and the abbreviated feature name that must be entered on the form. The maximum number of buttons that can be assigned to a feature or function must also be considered. The maximum number of buttons that can be assigned features (administrable buttons) is shown on each terminal type. You must not exceed this number when assigning feature buttons to the terminal.

The recommended button nomenclature is also used in the System's Console Operations manual, 555-200-700, Voice Terminal Operations manual, 555-200-701 and related User Instructions. If different nomenclature is used than that recommended, the related documentation should be marked to reflect the changes and the nomenclature then used in all System assignments. When the terminal is installed, the button nomenclature is then entered on a label and inserted next to the button that is assigned the feature. A set of preprinted labels comes with each voice terminal.

Step 11—Review (Account Team/Client)

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

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

This completes the Communications Survey.

FEATURE DETERMINATION

Table E provides an alphabetical list of all DEFINITY Generic 1 and Generic 3 features. The table identifies the system version that supports each feature and whether additional hardware and/or software are required. If additional software is required, it must either be loaded in the system and/or the associated feature option must be enabled on the System Parameters Customer Options form. Features and hardware must be identified to determine which version of the system to order. For example, if Integrated Digital Services Network-Basic Rate Interface (ISDN-BRI) is required, a G3 system must be ordered because ISDN-BRI is not supported by G1 .

On Table E, place a check mark (✓) in the *Desired* column beside each required feature.

Note: Additional information on features can be found in the *DEFINITY Communications System Generic 1 and Generic 3 Feature Description,* 555-230-201.

After the features have been identified, use Table F (Features Requiring Additional Hardware and/or Software) to identify the specific hardware and/or software required for each feature.

Use Table G (System Parameters) to determine which version of the system is required, based on the configuration of features and hardware selected.

TABLE E. Feature Determination

Feature	G1	G3i	G3r	G3i-Global	Additional Hardware Required	Additional Software Required	Desired
Abandoned Call Search	✓	✓	✓	✓	✓		
Abbreviated Dialing	✓	✓	✓	✓	✓	✓	
Administered Connection/Access Endpoint		✓	✓	✓	✓		
Administration Without Hardware		✓	✓	✓			
Agent Call Handling	✓	✓	✓	✓		✓	
Alphanumeric Dialing		✓	✓	✓			
Alternate Facility Restriction Levels							
Answer Detection		✓	✓	✓			
Attendant Auto-Manual Splitting	✓	✓	✓	✓			
Attendant Call Waiting	✓	✓	✓	✓			
Attendant Control of Trunk Group Access	✓	✓	✓	✓	✓		
Attendant Direct Extension Selection With Busy Lamp Field	✓	✓	✓	✓	✓		
Attendant Direct Trunk Group Selection	✓	✓	✓	✓	✓		
Attendant Display	✓	✓	✓	✓	✓		
Attendant Incoming Serial Calling			✓				
Attendant Intrusion (Call Offer)			✓				
Attendant Override of Diversion Features			✓				
Attendant Position Report			✓				
Attendant Priority Queue			✓				
Attendant Recall	✓	✓	✓	✓	✓		
Attendant Release Loop Operation	✓	✓	✓	✓			
Audio Information Exchange (AUDIX™) Interface	✓	✓	✓	✓	✓		
Authorization Codes	✓	✓	✓	✓		✓	
Automatic Alternate Routing (AAR) and Automatic Route Selection (ARS)	✓	✓	✓	✓		✓	
Automatic Alternate Routing (AAR) Analysis	✓	✓	✓	✓		✓	
Automatic Available Split			✓				
Automatic Callback	✓	✓	✓	✓	✓		
Automatic Call Distribution	✓	✓	✓	✓	✓	✓	
Automatic Circuit Assurance	✓	✓	✓	✓			
Automatic Incoming Call Display	✓	✓	✓	✓	✓		
ARS Partitioning	✓	✓	✓	✓		✓	
Automatic Trunk Measurement System			✓				
Automatic Wakeup	✓	✓	✓	✓	✓		
Basic Call Management System (BCMS)	✓	✓	✓	✓		✓	
Bridged Call Appearance Multi-Appearance Voice Terminal	✓	✓	✓	✓			

TABLE E *(continued).*
Feature Determination

Feature	G1	G3i	G3r	G3i-Global	Additional Hardware Required	Additional Software Required	Desired
Bridged Call Appearance Single-Line Voice Terminal	✓	✓	✓	✓			
Busy Verification of Terminals and Trunks	✓	✓	✓	✓			
Bulk Station Administration			✓				
Call-By-Call Service Selection	✓	✓	✓	✓	✓	✓	
Call Coverage	✓	✓	✓	✓	✓		
Call Detail Recording (CDR)	✓	✓	✓	✓	✓		
CDR Account Code Dialing	✓	✓	✓	✓			
CDR Internal		✓	✓	✓			
CDR Privacy		✓	✓	✓			
CDR Variable Format Reports			✓				
Call Forvarding AII Calls	✓	✓	✓	✓			
Call Park	✓	✓	✓	✓			
Call Party Number/Billing Number	✓	✓	✓	✓	✓	✓	
Call Pickup	✓	✓	✓	✓			
Call Prompting		✓	✓	✓	✓	✓	
Call Vectoring		✓	✓	✓		✓	
CallVisor® Adjunct Switch Application Interface		✓	✓		✓	✓	
Call Waiting Termination	✓	✓	✓	✓			
Centralized Attendant Service (CAS) Branch	✓	✓	✓	✓	✓	✓	
CAS Main (Enhanced Systems Only)	✓	✓	✓	✓	✓	✓	
Class of Restriction	✓	✓	✓	✓			
Class of Service	✓	✓	✓	✓			
Code Calling Access	✓	✓	✓	✓	✓		
Conference—Attendant	✓	✓	✓	✓			
Conference—Terminal	✓	✓	✓	✓			
Consult	✓	✓	✓	✓			
Coverage Callback	✓	✓	✓	✓			
Coverage Incoming Call Identification	✓	✓	✓	✓			
Customer-Provided Equipment (CPE) Alarm	✓	✓	✓	✓			
D-Channel Backup		✓	✓	✓	✓		
Data Call Setup	✓	✓	✓	✓	✓		
Data Hot Line	✓	✓	✓	✓			
Data-only Off-Premises Extensions	✓	✓	✓	✓	✓		
Data Privacy	✓	✓	✓	✓			
Data Restriction	✓	✓	✓	✓			
DCS Alphanumeric Displav for Terminals	✓	✓	✓	✓	✓	✓	
DCS Attendant Control of Trunk Group Access	✓	✓	✓	✓	✓	✓	
DCS Attendant Direct Trunk Group Selection	✓	✓	✓	✓	✓	✓	
DCS Attendant Display	✓	✓	✓	✓	✓	✓	
DCS Automatic Callback	✓	✓	✓	✓	✓	✓	
DCS Automatic Circuit Assurance	✓	✓	✓	✓	✓	✓	
DCS Busy Verification of Terminals and Trunks	✓	✓	✓	✓	✓	✓	
DCS Call Forwarding All Calls	✓	✓	✓	✓	✓	✓	
DCS Call Waiting	✓	✓	✓	✓	✓	✓	
DCS Distinctive Ringing	✓	✓	✓	✓	✓	✓	
DCS Leave Word Calling	✓	✓	✓	✓	✓	✓	
DCS Multi-Appearance Conference/Transfer	✓	✓	✓	✓	✓	✓	

TABLE E *(continued).*
Feature Determination

Feature	G1	G3i	G3r	G3i-Global	Additional Hardware Required	Additional Software Required	Desired
DCS Over ISDN-PRI D-Channel	✓	✓	✓	✓	✓	✓	
DCS Trunk Group Busy/Warning Indication	✓	✓	✓	✓	✓	✓	
Default Dialing		✓	✓	✓	✓		
Dial Access to Attendant	✓	✓	✓	✓			
Dial Plan	✓	✓	✓	✓			
Dialed Number Identification Service (DNIS)	✓	✓	✓	✓	✓		
Digital Multiplexed Interface (DMI)	✓	✓	✓	✓	✓		
Direct Department Calling (DDC) and Uniform Call Distribution (UCD)	✓	✓	✓	✓	✓		
Direct Inward Dialing (DID)	✓	✓	✓	✓	✓		
Direct Inward/Outward Dialing (DID)	✓	✓	✓	✓	✓		
Direct Outward Dialing (DOD)	✓	✓	✓	✓	✓		
Distinctive Ringing	✓	✓	✓	✓			
Do Not Disturb	✓	✓	✓	✓	✓		
DS1 Tie Trunk Service	✓	✓	✓	✓	✓		
EIA Interface	✓	✓	✓	✓	✓		
Emergency Access to the Attendant	✓	✓	✓	✓			
Enhanced Trunk Signaling and Error Recovery			✓				
Extended Trunk Access			✓				
Extension Number Portability			✓				
Facility Busy Indication	✓	✓	✓	✓			
Facility Restriction Levels and Traveling Class Marks	✓	✓	✓	✓		✓	
Facility Test Calls	✓	✓	✓	✓			
Foeced Entry of Account Codes	✓	✓	✓	✓		✓	
Functional Scheduling Enhancements			✓				
Generalized Route Selection	✓	✓	✓	✓			
Go To Cover	✓	✓	✓	✓			
Hold	✓	✓	✓	✓			
Hot Line Service	✓	✓	✓	✓			
Hunting	✓	✓	✓	✓			
Inbound Call Management	✓	✓	✓	✓			
Individual Attendant Access	✓	✓	✓	✓			
Information System Network (ISN) Interface	✓	✓	✓	✓	✓		
Integrated Directory	✓	✓	✓	✓			
Integrated Services Digital Network -Basic Rate Interface (ISDN-BRI)		✓	✓	✓	✓		
Integrated Services Digital Network -Primary Rate Interface (ISDN-PRI)	✓	✓	✓	✓	✓	✓	
Intercept Treatment	✓	✓	✓	✓	✓		
Intercom—Automatic	✓	✓	✓	✓			
Intercom—Dial	✓	✓	✓	✓			
Inter-PBX Attendant Calls	✓	✓	✓	✓	✓		
Intraflow and Interflow	✓	✓	✓	✓		✓	
Last Number Dialed	✓	✓	✓	✓			
Leave Word Calling	✓	✓	✓	✓			
Line Lockout	✓	✓	✓	✓			
Lookahead Interflow	✓	✓	✓	✓			
Loudspeaker Paging Access	✓	✓	✓	✓	✓		
Loudspeaker Paging Access-Deluxe	✓	✓	✓	✓	✓		

TABLE E *(continued).*
Feature Determination

Feature	G1	G3i	G3r	G3i-Global	Additional Hardware Required	Additional Software Required	Desired
M-to-N Digit Conversion		✓	✓	✓		✓	
Main/Satellite Extended Trunk Access			✓				
Malicious Call Trace			✓				
Manual Message Waiting	✓	✓	✓	✓			
Manual Originating Line Service	✓	✓	✓	✓			
Manual Signaling	✓	✓	✓	✓			
Modem Pooling		✓	✓	✓	✓		
Move Agent From Call Management System (CMS)	✓	✓	✓	✓	✓	✓	
Multi-Appearance Preselection and Preference	✓	✓	✓	✓			
Multiple Listed Directory Numbers	✓	✓	✓	✓			
Multi-User System Management Access			✓				
Music-on-Hold Access	✓	✓	✓	✓	✓		
Names Registration	✓	✓	✓	✓	✓		
Network Access—Private	✓	✓	✓	✓	✓		
Network Access—Pubfic	✓	✓	✓	✓	✓		
Night Service—Hunt Group	✓	✓	✓	✓			
Night Service—Night Console Service	✓	✓	✓	✓			
Night Service—Night Station Service	✓	✓	✓	✓			
Night Service—Trunk Answer from Any Station	✓	✓	✓	✓	✓		
Night Service—Trunk Group	✓	✓	✓	✓			
Off-Premises Station	✓	✓	✓	✓			
Outgoing Trunk-to-Outgoing Trunk Transfer			✓				
PC/PBX Connection		✓	✓	✓	✓	✓	
Permanent Switched Calls	✓						
Pesonal Central Office Line (PCOL)	✓	✓	✓	✓	✓		
Personalized Ringing	✓	✓	✓	✓			
Power Failure Transfer	✓	✓	✓	✓	✓		
Priority Calling	✓	✓	✓	✓			
Privacy—Attendant Lockout	✓	✓	✓	✓			
Privacy—Manual Exclusion	✓	✓	✓	✓			
Property Management System (PMS)	✓	✓	✓	✓	✓	✓	
Queue Status Indications	✓	✓	✓	✓	✓	✓	
Recall Signaling	✓	✓	✓	✓	✓		
Recent Change History	✓	✓	✓	✓			
Recorded Announcement	✓	✓	✓	✓	✓		
Recorded Telephone Dictation Access	✓	✓	✓	✓	✓		
Remote Access	✓	✓	✓	✓	✓		
Remote Administration	✓	✓	✓	✓	✓		
Report Scheduler and System Printer	✓	✓	✓	✓	✓	✓	
Restriction—Controlled	✓	✓	✓	✓			
Restriction—Miscellaneous Terminal	✓	✓	✓	✓			
Restriction—Miscellaneous Trunk	✓	✓	✓	✓			
Restriction—Toll	✓	✓	✓	✓			
Restriction—Toll/Code	✓	✓	✓	✓			
Restriction—Voice Terminal	✓	✓	✓	✓			
Ringback Queuing	✓	✓	✓	✓			

TABLE E *(continued).*
Feature Determination

Feature	G1	G3i	G3r	G3i-Global	Additional Hardware Required	Additional Software Required	Desired
Ringer Cutoff	✓	✓	✓	✓			
Rotary Dialing	✓	✓	✓	✓			
Security Violation Notification (SVN)	✓	✓	✓	✓			
Send All Calls	✓	✓	✓	✓			
Senderized Operation	✓	✓	✓	✓			
Service Observing	✓	✓	✓	✓		✓	
Single-Digit Dialing and Mixed Station Numbering	✓	✓	✓	✓			
Station Identification/Automatic Number Identification	✓	✓	✓	✓	✓	✓	
SMDR Account Code Dialing	✓	✓	✓	✓			
Straightforward Outward Completion	✓	✓	✓	✓			
Subnet Trunking	✓	✓	✓	✓	✓	✓	
System Measurements	✓	✓	✓	✓			
System Reload Indication			✓				
System Status Report	✓	✓	✓	✓			
Temporary Bridged Appearance	✓	✓	✓	✓			
Ten-Digit to Seven-Digit Conversion	✓				✓		
Terminal Translation Initialization			✓				
Terminating Extension Group	✓	✓	✓	✓			
Through Dialing	✓	✓	✓	✓			
Time of Day Routing	✓	✓	✓	✓		✓	
Timed Reminder	✓	✓	✓	✓			
Touch-Tone Dialing	✓	✓	✓	✓			
Transfer	✓	✓	✓	✓			
Transfer - Outgoing Trunk to Outgoing Trunk	✓	✓	✓	✓			
Trunk Flash	✓	✓	✓	✓			
Trunk Group Busy/Warning Indicators to Attendant	✓	✓	✓	✓			
Trunk Identification By Attendant	✓	✓	✓	✓			
Trunk-to-Trunk Transfer	✓	✓	✓	✓			
Uniform Call Distribution (UCD)	✓	✓	✓	✓			
Uniform Dial Plan (UDP)	✓	✓	✓	✓		✓	
Unrestricted 5-Digit Uniform Dial Plan			✓				
Vector Directory Number (VDN) Reports			✓				
Visually-Impaired Attendant Service		✓	✓	✓	✓		
Voice Message Retrieval	✓	✓	✓	✓	✓		
Voice Terminal Display	✓	✓	✓	✓	✓		

Features That Require Additional Hardware and/or Software

Table F lists the features that require additional hardware and/or software. Please note that additional hardware and/or software is not required in all cases. For example, if the special “wait” character is used extensively with the Abbreviated Dialing feature, additional tone detectors may be needed, but if the “wait” character is not used, additional detectors may not be required. (The “wait” character ties up the detector through the “wait” period.)

If you are planning to use a feature that requires additional hardware or software, list the hardware and/or software in Table F.

Unless otherwise noted, the features listed in Table F are available in all versions of the system.

TABLE F. Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Abandoned Call Search	TN747 CO Trunk circuit pack.	
Abbreviated Dialing	Additional TN748 tone detectors or TN420B or C (depending on country - see Table R to determine which tone detector to use) are required if the special “wait” character is used frequently. Systems can have optional software to provide an enhanced Abbrevi - ated Dialing list with an additional 1000 entries.	
Administered Connection/Access Endpoint	Trunk Circuits: For G1 or G3i, TN767 DS1 interface, TN760 Tie Trunk, or, for G3r and G3i-Global, TN464 Universal DS1 circuit pack. For G3i-Global, TN767 DS1 Interface, TN760Dv11 Tie Trunk or TN464D Universal DS1 circuit pack (see Table S to determine which circuit pack for which country). Other circuit packs: TN726B Data Line, or TN754B Digital Line, TN556 ISDN-BRI Line, TN758 Pooled Modem. Data Modules: MPDM, MTDM, 7400D series voice terminal with DTDM, 7400B, 7500B.	

* Software is activated by enabling this feature on the System Parameters Customer Options form.

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Raquired	Actual Hardware and/or Software Needed
Agent Call Handling	ACD software.	
Attendant Direct Extension Selection With Busy Lamp Field	A selector console.	
Audio Information Exchange (AUDIX) Interface	Distributed Communications System (DCS) software if AUDIX is desired in a DCS arrangement.* An AUDIX machine and, for G1 and G3, an appropriate number of ports on a TN746 Analog circuit pack. For G3i-Global, an appropriate number of ports on any 16-port Analog Line circuit pack (see Table T for the circuit packs per country). AUDIX data link hardware is required as fol - lows: **Systems connected to AUDIX-L** PI jack on the TN765 Processor Interface circuit pack and an MPDM. If the PI jack is in use for another adjunct, one port on a TN754B Digi - tal Line, an MTDM, and an MPDM are required for G1 or G3i. G3r requires the TN577 Packet Gateway and an isolating data interface (IDI). **System connected to AUDIX-S or AUDIX-M** PI jack on the TN765 Processor Interface circuit pack. If the PI jack is in use for another adjunct, one port on a TN754B Digi - tal Line circuit pack and an MPDM are required for G1 and G3i and G3i-Global. G3r requires the TN577 Packet Gateway and an isolating data interface (IDI).	
Authorization Codes	Authorization Codes software. For outgoing calls, ARS or AAR software.	
Automatic Alternate Routing (AAR)	Private Networking software.	
Automatic Call Distribution (ACD)	For G1, G3i, and G3r, one port on a TN746 Analog Line circuit pack per auxiliary queue warning level lamp. For G3i-Global, one port on any 16-port Analog Line circuit pack (see Table T for circuit packs per country) per auxiliary queue warning level lamp.	

* Software is activated by enabling this feature on the System Parameters Customer Options form.

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Automatic Call Distribution (ACD)	Each analog announcement requires announcement equipment and one port on a TN746 Analog Line circuit pack for G1, G3i, or G3r, and any 16-port Analog Line circuit pack for G3i-Global (see Table T). Each announcement, accessed by a call, requires one port on a TN750B Announcement circuit pack. If music is to be heard after the delay announcement, a music source and a port on a TN763 Auxiliary Trunk circuit pack is required. Appropriate voice terminals are required for agents. 2500-type sets are not recom - mended. ACD software is required.*	
Automatic Circuit Assurance	Any Speech Synthesizer circuit pack (see Table Q for the correct circuit pack for each country) is required if the referral destination is not a display-equipped voice terminal.	
Automatic Incoming Call Display	A515 BCT, display-equipped voice terminal, or a voice terminal capable of displaying information through an attached data termi - nal. The terminals require a PRI or DCS link; otherwise they are station to station only.	
Automatic Route Selection (ARS)	ARS software and ARS Digit Conversion.*	
Automatic Route Selection (ARS) Partitioning	For G1, G3i, and G3r, additional TN748 tone detectors, or, for G3i-Global, TN420B or C tone detectors (choice depends on the country involved).	
Automatic Wakeup	If voice prompting is used, a Voice (or Speech) Synthesizer circuit pack is required. See Table Q for the correct circuit pack for each country. Each circuit pack has four ports to provide voice prompting. If voice synthesis announcements are used, two ports must be reserved for announcements.	

* Software is activated by enabling this feature on the System Parameters Customer Options form.

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Soflware Required	Actual Hardware and/or Software Needed
Automatic Wakeup	For customized recorded announcements, a model HQD614B Recorder/ Announcer manufactured by the Audichron® Company is required. This equipment requires a 48-volt power supply. Each Recorder/ Announcer requires four auxiliary trunk ports on the TN763 Auxiliary Trunk circuit pack.	
Basic Call Management System (BCMS)	BCMS Measurements software.*	
Call-By-Call Service selection	For G1 or G3i, a TN767 DS1 circuit pack, TN768 Tone Clock circuit pack, and a TN765 Processor Interface circuit pack. For G3r, a TN464 Universal DS1 circuit pack, TN768 Tone Clock, and a TN553 Packet Data circuit pack. For G3i-Global, a TN767 DS1, TN741 Tone Clock or TN768 Tone Clock circuit pack and a TN765 Processor Interface circuit pack Requires ARS software and ISDN-PRI software.*	
Call Detail Recording (CDR)	Hardware requirements depend on the type of output device used for CDR. For G3i or G3i-Global, the CDR output device can be connected directly to the Processor circuit pack (TN759 or TN773) which provides a standard EIA-232C interface. This elim - inates the need for a data module as described for the output devices given below. For G3r, the CDR output device is connected to a TN553 Packet Data circuit pack, which is connected to a TN726 Data Line circuit pack A printer, personal computer, tape unit, or the TELESEER® CDR unit (Data Terminal Equipment)—a Modular Processor Data Module (MPDM) to a port on a TN754 Digi - tal Line circuit pack or a 212A-type modem to a port on a TN746 Analog Line circuit pack. In the latter case, a standard pooled modem is required for the data path.	

* Software is activated by enabling this feature on the System Parameters Customer Options form.

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Call Detail Recording (CDR) *(continued)*	94A Local Storage Unit (LSU) (Digital Communications Equipment) (G1 Only)—a MTDM to a port on a TN754 Digital Line cir - cuit pack or a 212A-type modem to a port on a TN746 Analog Line circuit pack. In the latter case, a pooled modem is also required. Host computer—A private line terminated at the DEFINITY system with a Trunk Data Module. Also, a private line modem if off-premises (out-of-building). A TN726 Data Line circuit pack can be used in conjunction with an Asynchronous Data Unit (ADU) to connect a 94A LSU, TELESEER CDR unit, or printer. Older equipment may not support enhance - ments to World Class Routing (G3i-Global). Use Call Accounting System Plus for full functionality in such cases.	
Call Party Number/Billing Number	For G1, G3i, and G3r, Interface via the CallVisor ISDN Gateway Adjunct—refer to the Station Identification/Automatic Number Identification requirement for hardware requirements. For G3i-Global, Interface via the CallVisor ISDN Gateway Adjunct. Assign an Interface Link (requires a TN765 Processor Interface circuit pack) for a direct EIA-232 connection (if not already used). Alternately, a data module and TN754B Digital Line port can be used. Also, TN464D Universal DS1 circuit pack can be used. Note that the link is administered on the System's Processor Channel Assignments form. The link is used as an interface to a CaIIVisor ISDN Gateway adjunct (3B2 Processor) in support of CPN/BN. Requires display terminals.	

* Software is activated by enabling this feature on the System Parameters Customer Options form.

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Call Party Number/Billing Number	Requires ISDN-PRI software and CallVisor ISDN Gateway software.*	
Call Prompting	Each Call Prompting announcement requires a port on a TN750B Announcement circuit pack or an external announcement facility (analog announcements). Note that each announcement requires a port on any 16 port Analog Line circuit pack (see Table T for the correct circuit packs per country). The TN744 Call Classifier circuit pack is required to provide touch-tone receivers for use by the feature. Up to ten TN744s may be assigned. Each TN744 provides eight touch-tone receivers and requires Call Vec - toring Basic and Call Prompting software.	
Call Vectoring	If music source is required (recommended), refer to the Music-On-Hold feature for hardware requirements. Requires Vectoring-Basic. Vectoring—Prompting software is optional.*	
CallVisor Adjunct Switch Application Interface (ASAI)	Requires a port on a TN556 ISDN-BRI cir - cuit pack (12 ports) and a terminating resis - tor for each interface to be provided. Up to eight interfaces are supported. A TN778 Packet Control circuit pack is required for CallVisor ASAI applications. A TN771 Maintenance circuit pack is required in each port network of a duplicated CallVisor ASAI configuration. Requires CallVisor ASAI software.*	
Centralized Attendant Service (CAS) (Branch or Main)	For G1 or G3i, TN760 Tie Trunk or TN767 DS1 Interface circuit pack. For G3r, use TN464 Universal DS1 circuit pack instead of TN760 or TN767. For G3i-Global, use the TN760Dv11 Tie Trunk or TN767 or TN464 DS1 circuit pack. The TN760 will also serve all other tie trunk applications. As an alter- native, the TN722 DS1 Tie Trunk circuit pack can be used for the release link trunks of the CAS network. CAS Main or Branch software is required.	

* Software is activated by enabling this feature on the System Parameters Customer Options form.

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Code Calling Access	Loudspeaker paging equipment and one port on a TN763 Auxiliary Trunk circuit pack per zone. (These hardware requirements can be shared with the Loudspeaker Paging Access feature.)	
D-Channel Backup	Requires DS1 and ISDN-PRI facilities. Refer to ISDN-PRI for associated hardware and software requirements. Note that TN767 DS1 circuit pack does not provide DSO. TN464 Universal DS1 circuit pack does provide DSO.	
Data Call Setup	Each data module requires one port on a TN754B Digital Line circuit pack. [A Digital Terminal Data Module (DTDM) shares the port with the associated voice terminal.] Each AT&T 510D or 515 BCT requires one port on a TN754B Digital Line circuit pack for shared use of voice and data. Each digital voice terminal requires one poti on a TN754B Digital Line circuit pack for shared use of voice and data. Each modem requires one port on a TN746 Analog Line circuit pack. For modem pooling, requires either a TN758 Modem Pool circuit pack (two conversion resources per board) or one digital port with a Trunk Data Module or Modular Trunk Data Module (MTDM), and one analog port with an analog modem for each conversion resource. For G3i-Global, a TN726B Data Line circuit pack can be used to provide direct data ter - minal access. Keyboard Dialing to off-premises (out of building) data endpoints requires the use of a TN748C, TN420B, or TN420C Tone Detector circuit pack (depending on country - see Table R). Extensive use of features and services using tone detection may require additional TN748C, TN420B, or TN420C circuit packs (several other features also use a TN748).	

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Data-Only Off-Premises Extensions	A Trunk Data Module and one port on a TN754B Digital Line circuit pack.	
Dialed Number Identification Service (DNIS)	For non ISDN-PRI type calls, requires a port on a TN722/ TN760 (the TN760Dv11 for G3i-Global)/767TN764 DS1 group to support MEGACOM® 800 DNIS or a port on an Analog DID circuit pack (see Table S for the circuit packs for each country). Also requires display-equipped answering voice terminals.	
Distributed Communications System (DCS) Features	For G1, G3i, or G3i-Global, the TN765 Processor Interface circuit pack is required. For G3r, the TN553 Packet Data circuit pack is required. DCS software and ISDN-BRI or ISDN-PRI software are required for DCS features.*	
Digital Multiplexed Interface (DMI)	For G1 or G3i, one TN722 or TN767 DS1 circuit pack per 24 DMI trunks. For G3i-Global, one TN722 or TN767 DS1 circuit pack per 23 DMI trunks. If ISDN-PRI is used, a TN765 Processor Interface circuit pack is also required. For G3r, one TN464 per 24 DMI trunks.	
Direct Department Calling (DDC) and Uniform Call Distribution (UCD)	One port on a 16-port Analog Line circuit pack per queue warning level lamp, if needed (see Table T for the correct circuit pack for each country). Announcement equipment and one port on a 16-port Analog Line circuit pack per analog delay announcement (again, see Table T for the correct circuit pack for each country). If music is to be heard after the delay announcement, a music source and a port on a TN763 Auxiliary Trunk circuit pack is required. A TN750B Announcement circuit pack can be used to provide up to 64 different announcements.	

* Software is activated by enabling this feature on the System Parameters Customer Options form.

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Digital Multiplexed Interface (DMI)	For G1 or G3i, one TN722 or TN767 DS1 circuit pack per 24 DMI trunks. For G3i-Global, one TN722 ore TN767 DS1 circuit pack per 23 DMI trunks. If ISDN-PRI is used, a TN765 Processor Interface circuit pack is also required. For G3r, one TN464 per 24 DMI trunks.	
Direct Department Calling (DDC) and Uniform Call Distribution (UCD)	One port on a 16-port Analog Line circuit pack per queue warning level lamp, if needed (see Table T for the correct circuit pack for each country). Announcement equipment and one port on a 16-port Analog Line circuit pack per analog delay announcement (again, see Table T for the correct circuit pack for each country). If music is to be heard after the delay announcement, a music source and a port on a TN763 Auxiliary Trunk circuit pack is required. A TN750B Announcement circuit pack can be used to provide up to 64 different announcements.	
Direct Inward Dialing (DID)	One port on an Analog DID Trunk circuit pack (see Table S for the correct circuit pack for each country) or TN722/TN767/TN464 DS1 circuit pack for each DID trunk. For G3i-Global, if MFC signaling is to be used for DID, a TN744B Call Classifier circuit pack of vintage 4 is required. In Mexico, if you will have both DID and DOD using MFC signaling, instead of TN744Bv4, you need TN744Bv6. For more generalized MFC support, you need TN744Bv7.	
Direct Inward/Outward Dialing (DOD)	For G3i-Global, requires the TN429 DIOD Trunk circuit pack.	

* Software is activated by enabling this feature on the System Parameters Customer Options form.

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Direct Outward Dialing (DOD)	For G1, G3i, or G3r, one port on a TN747 Central Office (CO) Trunk circuit pack or TN722/TN767/TN464 DS1 circuit pack for each assigned trunk. For G3i-Global, one port on a TN747 Central Office (CO) Trunk or TN464D Universal DS1 circuit pack for each assigned trunk. In Mexico, if you will have both DID and DOD using MFC signaling, instead of the TN744B of vintage 4 you need the TN744B of vintage 6. For more generalized MFC support, you need the TN744B of vintage 7.	
Distinctive Ringing	Requires a voice terminal installed and connetted to any 16 port Analog Line circuit pack (see Table T for the correct circuit packs per country). Analog, DCP, BRI, or hybrid voice terminals all support Distinctive Ringing.	
Do Not Disturb	If voice prompting is used, a Voice (Speech) Synthesizer circuit pack. Each circuit pack has four ports. See Table Q for the correct circuit pack for each country.	
DS1 Tie Trunk Service	For G1, G3i, or G3i-Global, one TN722 or TN767 DS1 circuit pack per 24 Voice-Grade DS1 tie trunks required or per 23 Alternate Voice Data (AVD) DS1 tie trunks. Alternatively, for G3i-Global, one TN464D Universal DS1 circuit pack required per 32 Voice-Grade DS1 tie trunks or per 31 AVD DS1 tie trunks. A TN768 Tone Clock must also be used. For G3r, one TN464 Universal DS1 circuit pack required per 24 Voice-Grade DS1 tie trunks or per 23 AVD DS1 tie trunks. A TN768 or TN780 Tone Clock must also be used.	
EIA Interface	One TN726 Data Line circuit pack per eight EIA interfaces. One Asynchronous Data Unit (ADU) per port on the circuit pack.	

* Software is activated by enabling this feature on the System Parameters Customer Options form.

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Emergency Access to Attendant	Emergency Access to Attendant software.* Same hardware and software as for DCS features.	
Facility Restriction Levels (FRLs) and Traveling Class Marks (TCMs)	FRLs—ARS and/or Private Networking software* TCMs—Private Networking software and intertandem tie trunks.*	
Forced Entry of Account Codes	CDR Account Code Dialing software.*	
Generalized Route Selection	AAR, ARS, and ISDN-PRI services software.*	
Hunting	ACD requires ACD software. Call Vectoring is required for vector-controlled splits.	
Inbound Call Management (ICM)	Requires CallVisor ASAI hardware (refer to the CallVisor ASAI feature for hardware requirements). Requires use of the ACD feature (refer to the ACD feature for hardware require - ments). May use Call Prompting. Refer to the Call Prompting feature for hardware require - ments. Requires CallVisor ASAI software.*	
Information System Net - work (ISN) Interface	One TN726 Data Line circuit pack per eight ISN interfaces.	
Integrated Services Digital Network-Basic Rate Interface (ISDN-BRI)	One TN556 ISDN-BRI circuit pack for up to 12 BRI (2B+D) endpoints using the 4-wire T interface. It also supports up to 24 end - points in a passive bus arrangement. The circuit pack supports the frame relaying of ISDN Packet Mode data in either the D-channel or one of the B-channels, but G3i software will support only circuit switching of Mode 3 in the B-channel. For G3i or G3i-Global, the system must be equipped with a Packet Control (TN778) cir - cuit in order to support this circuit pack. For G3r, all TN776 Expansion Interface circuit packs must be replaced by TN570 Expan - sion Interface circuit packs.	

* Software is activated by enabling this feature on the System Parameters Customer Options form.

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Integrated Services Digital Network-Primary Rate Interface (ISDN-PRI)	For G1 or G3i, one TN767 DS1 Interface cir - cuit pack for a signaling link and up to 23 ISDN-PRI trunk group members, and a TN765 Processor Interface circuit pack. For G3i-Global, one TN767 DS1 Interface circuit pack for a signaling link and up to 23 ISDN-PRI trunk group members or one TN464D Universal DS1 circuit pack for a signaling link and up to 23 (U. S.) or 31 (all other countries) trunk group members, and a TN765 Processor Interface circuit pack. TN768 or TN780 Tone Clock circuit pack required. For G3r, one TN464 Universal DS1 circuit pack for a signaling link and up to 23 ISDN-PRI trunk group members, and a TN765 Processor Interface circuit pack. ISDN-PRI software and ARS software are required.	
Intercept Treatment	Announcement equipment and one port on any 16 port Analog Line circuit pack (see Table T for the correct circuit packs per country) per analog announcement. A TN750B Announcement circuit pack can provide up to 128 different announcements, which can be recorded directly onto the TN750B circuit pack.	
Inter-PBX Attendant Calls	A tie trunk group between the branch and main locations. CAS software (Main or Branch) is required.	
Intraflow and Interflow	ACD software.	
Lookahead Interflow	Requires an ISDN-PRI interface (see lSDN-PRI feature for hardware requirements). Requires Lookahead Interflow software, Private Networking Automatic Alternate Routing (PNA) software, and Call Vectoring software.*	

* Software is activated by enabling this feature on the System Parameters Customer Options form.

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Loudspeaker Paging Access	Loudspeaker paging equipment and one port on a TN763 Auxiliary Trunk circuit pack per zone. Paging interface equipment, consisting of a 278A Adapter (only if equipment is not FCC-registered) and a 24-volt power supply, per zone. (This hardware can be shared with the Code Calling Access feature.) If PagePac® paging system equipment is used, one port on a TN747 CO Trunk circuit pack, any 16 port Analog Line circuit pack (see Table T for the correct circuit packs per country), TN763 Auxiliary Trunk circuit pack (depending on the PagePac arrangement used).	
Loudspeaker Paging Access-Deluxe	See Loudspeaker Paging Access.	
M-to-N Digit Conversion (G3)	Either ARS and Private Networking software or ARS and UDP software.	
Modem Pooling	One TN758 Pooled Modem circuit pack per two integrated conversion resources provialed. Each combined conversion resource requires one port on the Digital Line circuit pack and one port on an Analog Line circuit pack, along with an analog modem and MTDM or 7400A Data Module.	
Move Agents From Call Management System (CMS)	ACD software and a CMS adjunct.	
Music-on-Hold Access	A music source and one port on a TN763 Auxiliary Trunk circuit pack. Also, a 36A Voice Coupler if the system is not FCC-registered.	
Names Registration	See Property Management System (PMS) feature for hardware requirements.	

* Software is activated by enabling this feature on the System Parameters Customer Options form.

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardwara and/or Soflware Required	Actual Hardware and/or Software Needed
Network Access—Private	For G1, G3i, or G3r, one port on a TN760, TN722 DS1, TN767, or TN464 DS1 circuit pack for each trunk assigned. For G3i-Global, see Table S for the specific trunk circuit pack needed for each country. Private Network Access uses 4-Wire and 2-Wire Analog Tie Trunk circuit packs and Digital Tie Trunk circuit packs.	
Network Access—Public	For G1, G3i, or G3r, one port on a TN760, TN722 DS1, TN767, or TN464 DS1 Tie Trunk circuit pack for each trunk assigned or one port on a TN747 CO Trunk circuit pack for each trunk assigned. For G3i-Global, see Table S for the specific trunk circuit pack needed for each country. Public Network Access uses Analog DID, CO with PPM, and CO without PPM Trunk circuit packs and Digital CO/DID and ISDN CO Trunk circuit packs.	
Night Service—Trunk Answer From Any Station	A ringing device and one port on any 16 port Analog Line circuit pack (see Table T for the correct circuit packs per country) or TN769 Analog Line circuit pack.	
Off-Premises Station	Cross-connecting capabilities and one port on any 16 port Analog Line circuit pack (see Table T for the correct circuit packs per country), TN769 Analog Line circuit pack, TN767 DS1 Interface circuit pack, or TN464D Universal DS1 circuit pack for each interface to be provided.	
PC/PBX Connection	A port on a TN754B Digital Line circuit pack for each PC to be connected. See *DEFINITY Communications System Generic 3i, Feature Description,* 555-230-200, Issue 1, for details of the software requirements.	
Personal Central Office Line (PCOL)	One port on a TN747 CO Trunk circuit pack or TN722/TN767/TN464 DS1 circuit pack for each CO, Foreign Exchange (FX), or WATS trunk assigned as a PCOL.	

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Power Failure Transfer	One emergency transfer panel per five or six trunks assigned to Power Failure Transfer, depending on which of the two panels is used. • 808A Panel—Serves up to five power failure transfer terminals. Provides automatic ground start or loop start and "restore after busy" feature. • PORTA SYSTEMS® Model 574-5 Panel—Serves up to five power failure transfer terminals. Provides automatic ground start or loop start.	
Property Management System (PMS)	Either a TN726B Data Line circuit pack with an ADU or a data module and port on a TN754B Digital Line circuit pack. Printer required.	
Queue Status Indication	One port on any 16 port Analog Line circuit pack (see Table T for the correct circuit packs per country) or TN769 Analog Line circuit pack for each auxiliary queue warning lamp (such as a 21 C-49). Requires ACD software.	
Recorded Announcement	Announcements can be either analog or integrated. Each analog announcement requires announcement equipment (Cook Electric 213300 Single Channel or Cook Electric 213400 Multichannel) and one port on a 16-port Analog Line circuit pack (see Table T for the correct circuit pack for each country). For customized recorded announcements, a model HQD614B Recorder/Announcer manufactured by the Audichron Company can be used. Each integrated announcement, accessed by a call, requires one port on a TN750B Announcement circuit pack. Up to 64 announcements can be recorded on the TN750B.	

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Recorded Telephone Dictation Access	Telephone dictation machines and, depending on the type of machine, one port on a 16-port Analog Line circuit pack (see Table T for the correct circuit pack for each country) or one port on a TN763 Auxiliary Trunk circuit pack for each machine assigned.	
Remote Access	Dedicated trunks, if Remote Access is not available via DID.	
Report Scheduler and System Printer	G3r requires a system port comprising a TN553 Packet Data circuit pack connected to a TN726B Data Line circuit pack. For G1, G3i, G3r, and G3i-Global, other hardware requirements depend on the type of interface used for the system printer (dedicated for the Report Scheduler feature). The printer may be an AT&T 470- or 570-series printer, which uses a serial interface, or a compatible printer. A Personal Computer (PC) may be connected to the system printer port for collection of data; however, a serial interface on the PC must be provided for the connection. The system printer can be connected as follows: • Using the Data Communications Equipment (DCE) jack on the back of the Control Cabinet which provides a standard EIA-232C interface. This eliminates the need for a data module. An appropriate 50-foot cable is required. • Using a TN754B Digital Line port and a data module. • Using a TN726B Data Line port and an ADU.	
Ringer Cutoff	Requires multi-appearance voice termimals.	

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Service Observing	Requires Service Observing Software.*	
Station Identification/ Automatic Number Identif - ication (SID/ANI) (G1 name) Calling Party Number/Billing Number (CPN/BN) (G3)	For G1, G3i, or G3i-Global, assign an Inter - face Link (requires a TN765 Processor Interface circuit pack) for a direct EIA-232 connection (if not already used). Alter- nately, a data module and TN754B Digital Line port can be used. For G3r or G3i-Global, a TN464 Universal DS1 circuit pack is used. Note that the link is administered on the System's Processor Channel Assignments form. The link is used as an interface to a CallVisor ISDN Gateway adjunct (3B2 Processor) in support of SID/ANI (G1) or CPN/BN (G3). Requires display terminals. Requires ACD-related hardware also. Refer to the ACD feature coverage elsewhere in this table. Requires ISDN-PRI software and CallVisor ISDN Gateway software.*	
Subnet Trunking	Additional TN748C or, depending on coun - try, TN420B or TN420C circuit packs, if Routing Patterns containing "wait" symbols are used heavily, and if dial tone detection is preferable to waiting for interval time-out. Private Networking, UDP, or ARS software. DCS software is optional.	
Ten-Digit to Seven-Digit Conversion (G1 Only)	Either ARS and Private Networking software or ARS and UDP software.	
Time of Day Routing	Time of Day Routing software. ARS software.	
Uniform Dial Plan (UDP)	A Processor Interface circuit pack is required for DCS applications. UDP software.	

* Software is activated by enabling this feature on the System Parameters Customer Options form.

TABLE F *(continued).*
Features Requiring Additional Hardware and/or Software

Feature	Hardware and/or Software Required	Actual Hardware and/or Software Needed
Visually-Impaired Attendant Service	Requires the TN457 Voice (or Speech) Synthesizer circuit pack for English-speaking countries and the TN433 Voice (Speech) Synthesis circuit pack for Italian-speaking countries.	
Voice Message Retrieval	A Voice (Speech) Synthesizer circuit pack (see Table Q for the correct circuit pack for each country). Each circuit pack has four ports to provide Voice Message Retrieval. Traffic Engineering is required to determine the number of circuit packs.	
Voice Terminal Display	A display-equipped voice terminal and one port on a TN754B Digital Line circuit pack for DCP services. See 'ISDN-BRI" in this table for ISDN-BRI requirements.	

SYSTEM PARAMETERS

Table G provides information on the overall capacities of the system. The numbers shown in the table are maximum limits for each of the items listed. This information, plus the information in Table E, can be used to determine which version of the system to order.

Additional information associated with the features listed in Table G is available in the *DEFINITY Communications System Generic 1 and Generic* 3 *Feature Description,* 555-230-201.

Note: One additional parameter of the G3r system that is not noted in the table is distance. Please note that there is a maximum 100-mile end-to-end circuit distance between any two DS1 remoted EPNs. That is, if two EPNs are DS1, the sum of the total circuit distance cannot exceed 100 miles. For example, if one EPN is 75 circuit miles from the Center Stage Switch (CSS), a second EPN cannot be more than 25 circuit miles away from the CSS.

Note: In the following table, the capacities for G3i and G3i-Global are generally the same. Where there is a difference, the G3i-Global capacity is listed in brackets next to the G3i capacity in the column.

TABLE G. System Parameters

Item	G1	G3i	G3r
Abbreviated Dialing (AD)			
AD Lists Per System	1,600	1,600 [2,400]	5,000
AD List Entry Size	24	24	24
AD Entries Per System	8,000	10,000 [12,000]	25,000
Auto Dialing Button (1)			
Entries per System	2	2	2
Enhanced List (System List)	1	1	1
Max. entries	1,000	1,000	1,000
Group Lists	100	100	1,000
Max. entries	90	90	90
Group lists/extension	3	3	3
System List	1	1	1
Max. entries	90	90	90
Personal Lists	1,600	2,000 [2,400]	5,000
Max. entries	10	10	10
Personal lists/extension	3	3	3
Applications Adjuncts			
ASAI Adjuncts	NA	8	8
Asynchronous Links (EIA-232)	5	5	10
SMDR Output Devices	2	2	2
Journal/System Printer	2/1	2/1	2/1
Property Management Systems	1	1	1
BX.25 Physical Links	8	8	16
Application Processors (i.e., 3B2-MCS)	1	1	7
AUDIX Adjuncts	1	1	5
CMS Adjuncts	1	1	1
ICM Adjuncts			
ISDN Gateway	1	1	1
BX.25 Processor Channels	64	64	128
Hop Channels	64	64	128
Attendant Servlce			
Attendant Consoles (day/night)	6/1	6/1 [15/1]	27/1
Attendant Console 100s Groups/Attendant	20	20	20
Attendant Control Restriction Groups	64	64	96
Centralized Attendant Service			
Release Link Trunks at Branch	99	99	99
Release Link Trk Grp at Branch	1	1	1
Release Link Trunks at Main	400	400	4,000
Release Link Trk Grp at Main (2)	99	99	666

(1) G1/G3 Facility Busy Indicators are equivalent.
(2) The number of release link trunk groups at Main is the same as the number of trunk groups in the system.

TABLE G *(continued).*
System Parameters

Item	G1	G3i	G3r
Attendant Service			
Other Access Queues			
Max. Number of Queues	1	1 [12]	12
Max Number of Queue Slots (3)	50	50 [80]	80
Size range of Resewed Queue	NA	NA [2–75]	2–75
Reserved Queue Default Size	NA	NA [5]	5
Queue Length	30	. 30 [80]	300
Switched Loops/Console	6	6	6
ARS/AAR			
AAR/ARS Patterns (Shared)	254	254	640
ARS/AAR Table Entries (NPA, NXX, RXX, HNPA, FNPA)	NA	2,000	2,000
Choices per RHNPA Table	12	12	12
Digit conversion Entries	180	300	300
Digits Deleted for ARS/AAR	11	18	18
Digits Inserted for ARS/AAR	36	36	36
Entries in HNPA& RHNPA Tables	800	1,000	1,000
FRLs	8	8	8
Inserted Digit Strings (4)	NA	1,200	3,000
Patterns for Measurement			
Shared Patterns for Measurement	20	20	25
RHNPA Tables	32	32	32
Routing Plans	8	8	8
Toll Tables	4	32	32
Entries per Toll Table	800	800	800
Trunk Groups in an ARS/AAR Pattern	6	6	16
UDP (Entries)	240	240	50,000
TOD Charts	8	8	8
ASAI			
Active Controlling Associations	NA	2,000	3,000
Call Controllers per Call	NA	1	1
Call Monitors per Call	NA	14	14
Extension Controllers per Station Domain	NA	2	2
Max, Simultaneous Call Classif.	NA	40	100
No. of ASAl Links	NA	8	8
Notification Requests	NA	170	460
Simultaneous Active Adj.Controlled Calls	NA	300	3,000
Switch to Adjunct Associations	NA	127	127

(3) “Maximum number of queue slots” is referred to as “emergency access queue length” in G1.
(4) This is the number of available 12-character inserted-digit-strings available for AAR/ARS preferences.

TABLE G *(continued).*
System Parameters

Item	G1	G31	G3r
Authorization			
Authorization codes	5,000	5,000	90,000
Classes of Restriction	64	64 [96]	96
Classes of Service	16	16	16
Length of Authorization Code	4—7	4—7	4—7
Length of Barrier Code	4—7	4—7	4—7
Length Forced Entry Account Cedes	1—15	1—15	1—15
Restricted Call List	NA	1	1
Remote Access Barrier Codes	10	10	10
SMDR Forced Entry Account Code List	1	1	1
Toll Call List	NA	1	1
Unrestricted/Allowed Call Lists	1	10	10
Total Call List Entries	10	1,000	1,000
Automatic Callback Calls	160	160 [240]	1,000
Automatic Wakeup			
Simultaneous Display Requests	10	10	10
Wakeup Requests per System	1,600	1,600 [2,400]	10,000
Wakeup Request per Extension	1	1	1
Wakeup Requests per 15 min. Interval	200	300	950
Basic CMS			
Daily Summary Reports	7	7	7
Measured Agents	30	200	200
Measured Splits	30	99	99
Measured Trunk Groups	32	32	32
Measured VDNs	NA	99	512
Reporting Periods (30 or 60 min)	25	25	25
Call Appearances			
Bridged Images/Appearance	7	7	15
Call Appearances/Station (5)	54	54	54
Max. Appearances per Ext.	10	10	10
Min. Appearances per Ext.	2	2	2
Total Bridged Appearances	1600	1600 [2,400]	10,000
Max. Simultaneous Off-Hook per Call (6)	5	5	5
Cabinets			
EPN			
MCC (7)	1	2	21
SCC (7)	4	8	80
Small (Upgrades only) (8)	1	2	20

(5) The number of call appearances is the sum of the primary and bridged appearances; at most 10 can be primary.
(6) Does not apply to conferencing.

TABLE G *(continued).*
System Parameters

Item	G1	G3i	G3r
Cabinets			
EPN			
MCC (7)	1	2	21
SCC (7)	4	8	80
Small (Upgrades only) (8)	1	2	20
Inter-Port Network Connectivity			
Port Networks	2	3	22
Max No. of Port Networks/Cabinet	1	1	2
Switch Nodes (Simplex)	NA	NA	2
Switch Nodes (Duplex)	NA	NA	4
DS1 Converter Complex (Simplex)	NA	NA	21
DS1 Converter Complex (Duplex)	NA	NA	42
PPN			
MCC (9)	1	1	1
SCC/ESCC	4	4	NA
Remote Port Network	1	2 [1]	20
Call Coverage			
Coverage Answer Groups (CAGs)	200	200	500
Coverage Paths	600	600	5,000
With Hospitality Parameter Reduction	5	5	5
Coverage Paths Incl. in Call Covg. Report	NA	100	100
Coverage Path per Station	4	4	4
Coverage Points in a Path	3	3	3
Max Users/Coverage Path (10)	2,900	2,900 [3,500]	21,875
Members per CAG	8	8	8
Call Detail Recordlng			
CDRU Trackable Extensions	1,600	1,600 [2,400]	10,000
lntra-Switch Call Trackable Extensions	NA	100	500
No. of CDRUs/System (11)	1	1	1
Call Forwarding (Follow-me)			
Call Forwarded Digits (off-net)	16	16	16
Call Forwarded Numbers	1,600	1,600 [2,400]	10,000
Call Park			
Attnd. Grp. Common Shared Exten. Nos.	10	10	40
No. of Parked Calls	482	723	5,302

(7) Only EPNs in G3r can be DS1-remote EPNs.
(8) Small systems refer to the 2-carrier cabinet systems that are no longer sold to new customers.
(9) MCC includes Medium Cabinet.
(10) Maximum number of users per coverage path equals the number of extensions.
(11) The CDRU adjunct capacity is 40,000 calls/hour, and it exceeds the system call capacity for all systems except G3r.

TABLE G *(continued).*
System Parameters

Item	G1	G3i	G3r
Call Pickup Groups			
Call Pickup Members/Group	50	50	50
Call Pickup Members/System	1,600	1,600 [2,400]	10,000
No. of Groups	800	800	5,000
With Hospitality Parameter Reduction	5	5	5
Call Vectoring/Call Prompting			
Multiple Splits for Agent Logins	NA	3	3
Priority Levels	NA	4	4
Recorded Announcement	128	128	256
Steps per Vector	NA	15	15
Vector Directory Numbers	NA	500	3,000
Vectors per System	NA	256	512
Conference Parties	6	6	6
simultaneous 3-way Conf. Calls (12)	241	483	3,542
Simultaneous 6-way Conf. Calls (13)	160	240 [160]	1,760
Data Parameters			
Administered Connections	NA	128	128
Alphanumeric Dialing			
Max. Entries	NA	200	1,250
Characters/Entry	NA	22	22
Digital Data Endpoints	800	800	5,000
Dial Plan			
DID LDNs	8	8	20
Extensions	2,500	2,900 [3,500]	21,875
Extension No. Portability (14)	240	240	50,000
Feature Dial Access Codes			
No. of Access Codes	70	70	70
No. of Digits	1—3	1—3 [1—4]	1—4
Integrated Directory Entries	1,600	1,600 [2,400]	10,000
Max. Extension Size	5	5	5
Min. Extension Size	1	1	1
Miscellaneous Extensions (15)	900	900	7,500

(12) Simultaneous 3-way conference Call=(483 / 3)* number PNs.
(13) Simultaneous 6-way conference Call=(483 / 6)* number PNs.
(14) The numbers shown in “Extension Number Portability” are Uniform Dialing Plan (UDP) entries.
(15) Used for PCOL groups, common shared extensions, access endpoints, administered TSCs, code calling ids, VDNs, LDNs, hunt groups, announcements, and TEGs.

TABLE G *(continued).*
System Parameters

Item	G1	G3i	G3r
Dial Plan			
Names			
No. of names (16)	3,408	3,406 [4,215]	22,569
No. of characters in a name	15	15	15
Non-DID LDNs	50	50	666
Prefix Extensions	Yes	Yes	Yes
Trunk Dial Access Codes			
No. of Access Codes	197	197	1,331
No. of digits	1–3	1–3	1–4
Do Not Disturb (DND)			
DND Requests per System	1,600	1,600 [2,400]	10,000
Simultaneous Display Requests	10	10	30
Facility Busy Indicators			
Buttons per Tracked Resource	100	100	100
No. of Indicators (Station & Trunk Groups)	2,400	2,400 [3,600]	2,400
Hunt Groups or Splits			
Announcements per Group	2	2	2
Announcements per System	64	128	256
Groups and/or Splits	99	99	255
With Hospitality Parameter Reduction	5	5	5
Group Members per Group/Split	200	200	999
Group Members per System	500	500	3,000
Measured ACD Agents (Switch Limits)			
Agents Logged in per System	400	400	1,023
Logged-in Splits per Agent	1	3 [1]	3
ACD Supervisor Assist Per System (17)	99	99	255
Queue Slots per Group	200	200	999
Queue Slots per System	1,000	1,000	6,000

(16) Number of Names = number of stations + attendant consoles + trunk groups + digital data endpoints + miscellaneous extensions.
(17) One supervisor assist per split.

TABLE G *(continued).*
System Parameters

Item	G1	G3i	G3r
Intercom Translation Table (ICOM)			
Automatic/Manual and Dial			
ICOM groups per system	32	32	256
Auto/Manual	32	32	256
Dial	32	32	256
Members per ICOM group			
Auto	32	32	32
Dial	32	32	32
Members per System	1,024	1,024	8,192
Malicious Call Trace			
Max. Simultaneous Traces	NA	NA	16
MLDN			
Via DID	8	8	20
Via CO	50	50	50
Last Number Dialed			
Entries/System (18)	2,400	2,400 [3,200]	15,000
Number of Digits	16	16	16
Leave Word Calling (Switch-Based)			
Messages Stored	2,000	2,000	2,000
Messages per User	10	10	16
Remote Message Waiting Indicators			
Per Extension	80	80	80
Per System	80	80	500
Simultaneous Message Retrievers	60	60	400
System-wide Message Retrievers	10	10	10
Modem Pool Groups			
Mode 2/Analog			
Group members per system	160	160	2,016
Number of groups	5	5	63
Members per group	32	32	32
Networking			
CAS Nodes	99	99	99
DCS Nodes			
BX.25	20	20	20
ISDN PRI	NA	63	63
Hybrid	NA	20	NA
UDP Nodes	240	240	1,000
Personal CO LInes (PCOL)			
PCOL Appearances	4	4	16
PCOL Lines (Trunk Groups)	40	40	100
PCOL Trunks Per Trunk Group	1	1	1

(18) Last Number Dialed Entries = Stations + Digital Data Endpoints.

TABLE G *(continued).*
System Parameters

Item	G1	G3i	G3r
Paging			
Code Calling IDs	125	125	125
Loudspeaker Zones	9	9	9
Port Circuit Pack Slots (19)			
Per EPN			
MCC Simplex	99	99	99
MCC Duplex	98	98	98
SCC Simplex	71	71	71
SCC Duplex	70	70	70
Small Cabinet Simplex (Upgrade only)	39	39	NA
Small Cabinet Duplex (Upgrade only)	38	38	NA
Per PPN			
MCC Simplex	89	89	80
MCC Duplex	78	78	60
SCC Simplex	64	64	NA
SCC Duplex	56	56	NA
Recorded Announcements			
Analog Queue Slots per Annc.	150	150	300
Analog Queue Slots per System	150	150	300
Calls Connected per Annc.			
Integrated Annc, or Aux. Trunk	5	5	255
Analog Trunk	5	5	128
Channels per Integrated Annc, Circuit Pack	16	16	16
Integrated Annc. Circuit Pack	1	1	1
Integrated Annc. Recording Time (Min:Sec)			
16 kB recording	NA	8:32	8:32
32 kB	4:16	4:16	4:16
Integrated Queue Slots per System	50	50	300
Recorded Announcements	64	128	256(20)
System Administration			
Admin History File Entries	NA	250	2,000
Simultaneous Administration Command	1	1	5
Simultaneous Maintenance Command	1	1	3
Simultaneous SM Sessions	5	5	8
Printer Queue Size	50	50	50

(19) Only port slots are included in this count. For example, there are 100 port slots per MCC EPN cabinet of which one is dedicated for the Tone/Clock board. There may be other service circuits required which would further reduce the number of port slots available.

In G3 carriers, a 21st slot may be equipped with service boards that do not require tip & ring connections.

Slot 0 in all carriers except the D carrier can contain service circuits.
(20) Analog & Aux. Trunk Ann.

TABLE G *(continued).*
System Parameters

Item	G1	G3i	G3r
Partitions (21)			
Attendant Partition	1	1	1
Ext. Partition Group	8	8	8
Extension Partition	8	8	8
Speech Synthesis Circuit Packs	6	6	40
Channels per Speech Circuit Pack	4	4	4
Terminating Extension Groups (TEGs)			
TEGs	32	32	32
Users That May Share a TEG	4	4	4
Time Slots			
Simultaneous Ckt Switched Calls (24)	482	723	5,302
Total Slots (22)	1,024	1,536	11,264
Time Slots for Voice & Data (23)	966	1,449	10,604
Time Slots per Port Network	512	512	512
Tone Classifiers			
Call Classifier Boards	NA	10	25
Call Progress/Touch Tone Receivers	NA	80	200
Tone Detector Boards	20	20	50
General Purpose Tone Detectors	40	40	100
Touch-Tone Receivers	80	80	200
TTR Queue Size	4	4	4
Trunks			
DS1 Circuit Packs	30	30	166
Queue Slots for Trunks	198	198	1,332
PRI Interfaces via PI	8	8	NA
PRI Interfaces via PKTINT	NA	NA	166
PRI Temporary Signaling Connections			
TSCs in System	NA	656	4,256
Call Associated TSCs	NA	400	4,000
Non Call Associated TSCs	NA	256	256
Administered TSCs	NA	128	128

(21) G1 and G3 do not support Tenant Services.
(22) 512 time slots per port network.
(23) 483 time slots for voice & data per port network.
(24) 241 Simultaneous circuit-switched calls per port network.

TABLE G *(continued).*
System Parameters

Item	G1	G3i	G3r
Trunks			
Ringback Queue Slots	120	120	1,000
Total PRI Interfaces	8	8	166
Trunk Group Hourly Measurements	NA	NA	75
Trunk Groups in the System	99	99	666
Trunk Members in a Trunk Group	99	99	255
Trunks in System (incl. Remote Access)	400	400	4,000
With Hospitality Parameter Reduction	50	50	50
Voice Terminals			
Associated Data Modules (e.g., DTDMs)	800	800	5,000
BRI Stations (27)	NA	1,000	5,000
Digital Stations (26)	712	1,600 [2,400]	10,000
Display Stations	500	1,600 [2,400]	10,000
Stations (25)	1,600	1,600 [2,400]	10,000
Station Button Capacity (K Units) (28)	NA	547.2	4120

(25) Including extensions administered without associated hardware.
(26) All digital stations can be display stations.
(27) All BRI stations can be display stations.
(28) “Station Button Capacity (units)” replaces “Maximum Button Modules”.

The following table shows the button module requirements of different station configurations.

TABLE H. Station Allocation Characteristics

Station Type	Required Records (G1,G3)	Required Records and Button Units*
Analog set 500	S	S+62
Analog set 2500	S	S+62
Analog set 7101A	S	S+62
Analog set 8102	S	S+62
Analog set 8110	S	S+62
10MET set -10 buttons	S	S+52
20MET set -20 buttons	S + [B]	S+152
30MET set -30 buttons	S + [B]	S+252
Hybrid set - 7303S	S	S+102
Hybrid set - 7305S	S + [B]	S+342
Hybrid set - 7309S	S	S+102
Digital set -7401 D	S	S+92
Digital set -7401 Plus	S	S+92
Digital set - 7403D	S	S+102
Digital set - 7404D	S + M	S+62
Digital set - 7404D w/display	S + B + M	S+192
Digital set - 7405D	S + [B]	S+342
Digital set - 7405D w/display	S + B + [B]	S+472
Digital set - 7406D	S + [B]	S+282
Digital set - 7406D w/display	S + B + [B]	S+342
Digital set -7406 Plus	S + [B]	S+282
Digital set - 7407D (w/display)	S + B + [B]	S+472
Digital set -7407 Plus	S + B + [B]	S+472
Digital set -7410D	S	S+102
Digital set - 7434D	S + [B]	S+342
Digital set - 7434D w/call coverage module	S + B + [B]	S+542
Digital set - 7434D w/display	S + 2 B + [B]	S+472
602A1	S + B + [B]	S+342
P C	S + B + [B]	S+472
510BCT	S + B + [B] + M	S+322
515BCT	S + B + M	S+232

TABLE H *(continued).*
Station Allocation Characteristics

Station Type	Required Records (G1,G3)	Required Records and Button Units*
Basic Attendant Console	A + 2 B	A
Enhanced Attendant Console	A + 2 B	A
Attendant Selector Console	A + 2 B	A
Feature Module	[B]	240
Display	B	**
DTDM	M	M
MPDM/MTDM/7400A/7400B /7500B	M	M
Call Coverage Module	B	200
EIA (PI-Simplex)	M	M
CDR	M	M
Netcon Data Channel	2M	2M
Processor Interface Link	2M	2M
[ISDN sets for G3 only]		
ISDN-BRI UDM -7500		M + I
ISDN-BRI set -7505		S + I + 1 9 0
ISDN-BRI set -7506 w/display		S + I + 2 5 0
ISDN-BRI set -7507 w/display		S + I + 4 8 0
ISDN-BRI set - 8503T		S + I + 5 0

LEGEND:

*

— Assumes 3 call appearances per station in button 1-3 with all other available buttons assigned.
— For call appearances other than 3, adjust total units by the following:
adjustment=(Nca-3)*[(10*Ndisp)+(6*Nbri)]
where: Nca=number of call appearance (assumes first Nca button is CA)
Ndisp=total number of display stations in system
Nbri=total number of BRI station in system

*

— Assumes 3 call appearances per station in button 1-3 with all other available buttons assigned.
— For call appearances other than 3, adjust total units by the following:
adjustment=(Nca-3)*[(10*Ndisp)+(6*Nbri)]
where: Nca=number of call appearance (assumes first Nca button is CA)
Ndisp=total number of display stations in system
Nbri=total number of BRI station in system

****** For G3, the number of button memory units required for a display depends on the station type. The number of button memory units required for a display is indicated for each station type in the table above. Note that these values depend on the assumptions in the previous footnote. (Call appearances are only translated on buttons 1-3.)

Notation	Meaning	G1	G3
A	Attendant record	7	7
S	Basic station record	1600	1600
B	Large button module	1000	2000
M	Data module record	800	800
I	ISDN-BRI endpoint record	N/A	N/A
#	Button memory units	N/A	547200

Notes:

Regarding station allocation:

1. For G1, [B] is equivalent to B. For G3, [B] indicates large button modules that are allocated only when a button on that module is administered.
2. Any digital DCP station can add a 7400B, requiring one data module record.
3. A DTDM can be added to a 7403D or 7405D, requiring one data module record.
4. The 6504-T is administered as a 7505D and the 6508-T is administered as a 7507D (G3 only).
5. A data module (ADM-T) can be added to a 7505D, 7506D, or 7507D, requiring one data module record (G3 only).
6. The PC/ISDN is administered as a 7506D or 7507D with ADM (G3 only).
7. An ISDN-BRI endpoint record is required for each distinct ISDN-BRI endpoint. Thus each voice-only, data-only, or voice-data endpoint uses one of these records.

SYSTEM VERSION DETERMINATION

From the information given in Tables E, G, and H, you should now be able to determine the system version needed. Check the version in one of the boxes provided.

G1 ❑

G3i ❑

G3r ❑

G3i-Global ❑

HARDWARE AND SOFTWARE DETERMINATION

Voice/Data Terminal Equipment Assignments

Use Table I to list the system users and their individual equipment needs. Blank columns are provided so that you can fill in the name, extension number, application (voice and/or data), type of terminal equipment, and adjunct(s) required for each user. A current phone directory and station survey may be helpful when filling in this table.

Note: Before entering the information in Table I, review the *DEFINITY Communications System Generic 1 and System 75 and System 85 Terminals and Adjuncts Reference,* 555-015-201, to strengthen your familiarity with the system's terminals and adjuncts.

Voice/Data Terminal Totals

Using the information listed in Table G and Table I, complete Tables J and K to summarize your terminal and adjunct needs. As mentioned above, detailed information for each voice terminal and adjunct can be found in the *DEFINITY Communications System Generic 1 and System 75 and System 85 Terminals and Adjuncts Reference,* 555-015-201.

After completing Tables J and K, complete Table L to ensure that the identified equipment is within the maximum limits of the system.

TABLE I. Users and Required Equipment

Name	Extension Number	Application (Voice/Data)	Voice and/or Data Terminal Equipment	Adjunct(s)

TABLE J. Voice/Data Terminal Quantities

Type	Model	Quantity
Orderable With G3		
Single-Line Analog[1]	2500 Series	
	2500DMGC	
	2500YMGK	
	510A	
	7102A	
	8102	
	8110	
Multi-Appearance Hybrid	7303S[2]	
	7305S[2]	
Multi-Appearance Digital[3]	7401D	
	7403D[2]	
	7404D[2]	
	7405D[2]	
	7406D	
	7407D	
	7410D	
	7434D	
	7401 Plus	
	7406 Plus	
	7407D Enhanced	
	7407 Plus	
	7410 Plus	
	7444 Plus	
	CallMaster®	
ISDN-BRI®	7505	
	7506	
	7507	
	8503T	

1. When used as on-premises, out-of-building stations, lightning protection is required. A carbon block, a wide-gap gas tube, or an equivalent solid-state device is required at each end of the interbuilding cable.
2. When used as on-premises, out-of-building stations, lightning protection is required. An ITW LYNX protector (LP2-100-068) or 4C3S-75 protector is required at each end of the interbuilding cable.
3. These terminals are no longer orderable. They have been Manufacturer Discontinued.

TABLE J *(continued).*
Voice/Data Terminal Quantities

Type	Model	Quantity
Orderable With G3		
Data Terminals (Including DEFINITY Manager I terminals or G3-MTs)	510D	
	513 BCT	
	515 BCT	
	610 BCT	
	615 MT	
	715 BCS	
	4410	
	4425	
Attendant Consoles	Basic Console	
	Selector Console	
Reusable From Earlier Systems		
Single-Line Analog[1]	500	
	7101A	
	7103A Fixed Feature	
	7103A Programmable	
Multi-Appearance Hybrid	7303H	
	7305H01 B	
	7305H02B	
	7305H03B	
	7309H	
Multi-Button Electronic Telephone (MET) Sets	10 Button	
	10 Button with Built-In Speakerphone	
	20 Button	
	30 Button	

1. When used as on-premises, out-of-building stations, lightning protection is required. A carbon block, a wide-gap gas tube, or an equivalent solid-state device is required at each end of the interbuilding cable.

TABLE K. Adjunct Quantities and Voice Terminal Compatibility

Adjunct	Terminal	Function	Quantity
Call Coverage Module, C401A*	7405D 7434D	Adds 20 call appearance/feature buttons	
Digital Display Module, D401A*	7405D 7434D	Displays call-related and personal service information	
Function Key Module, F401A	7405D	Adds 24 feature buttons	
Headset Adapter, 500A	7405D	Provides for connection and control of standard headset	
Headset Adapter, 502A	7303S 7305S	Provides for connection and control of standard headset	
Messaging Cartridge	7404D	Provides display of call-related and personal service information on data terminal screen	
Speakerphone, S101A	7405D	Provides hands-free calling	
Speakerphone, S102A	7303S 7305S	Provides hands-free calling	

* Combined maximum of 500 in G1, 800 in G3i, and 5000 in G3r.

Instructions

Enter the quantities of terminal equipment to be used in Table L. **Both** totals must be less than the allowed maximums for each terminal type. For each item, enter the quantity in the blank space provided. If both spaces are blank, enter the quantity in each space where applicable.

TABLE L. Terminal Equipment Limits

Terminal Type	Quantity	
	Terminals	Enhanced Term/Modules*
500		XXXXXXXX
2500		XXXXXXXX
2500 DMGC With Message Waiting		XXXXXXXX
2500 YMGK With Message Waiting		XXXXXXXX
2554		XXXXXXXX
510A		XXXXXXXX
7101 A		XXXXXXXX
7102A		XXXXXXXX
7103A		XXXXXXXX
7303S		XXXXXXXX
7305S		
7302H		XXXXXXXX
7303H		XXXXXXXX
7309H		XXXXXXXX
7401D		XXXXXXXX
7401 Plus		XXXXXXXX
7403D		XXXXXXXX
7404D (Without/with messaging cartridge)		XXXXXXXX
7405D		
7406D		
7403 Plus		
7407D		
7407D Enhanced		
7407 Plus		
7410D		XXXXXXXX
7410 Plus		XXXXXXXX
7434D		
7444 Plus		

* See the tables following Table G for the number of button modules per terminal type. Enter the total button modules for each terminal type in the “Enhanced Term/Modules” column.

TABLE L *(continued).*
Terminal Equipment Limits

Terminal Type	Quantity	
	Terminals	Enhanced Term/Modules*
7505		
7506		
7507		
8102		XXXXXXXX
8110		XXXXXXXX
8503T		
602A1 (CallMaster®)		
10 BTN MET		XXXXXXXX
20/30 BTN MET		
510D		
515 BCT		
610 BCT		XXXXXXX
615 MT		XXXXXXXX
715 BCS		XXXXXXXX
Attendant Console(s)	XXXXXXXX	
TOTAL		
TOTAL SHOULD NOT EXCEED:		
All G1	Max. 1,600 Voice Terminals	Max. 1,000 Enhanced Term/Modules
Ail G3i	Max. 1,600 Voice Terminals	Max. 1,000 Enhanced Term/Modules
All G3r	Max. 10,000 Voice Terminals	Max. 5,000 Enhanced Term/Modules
All G3i-Global	Max. 1,600 Voice Terminals	Max. 1,000 Enhanced Term/Modules

	Yes	No
Have either of the above limits been exceeded?	❑	❑

If yes, reconfigure the system to fall within the above limits.

* See the tables following Table G for the number of button modules per terminal type. Enter the total button modules for each terminal type in the “Enhanced Term/Modules” column.

Data Communications Equipment

Use the following information to determine the data communications equipment requirements for your system. Various data communications configurations are described. The system supports wideband area networks; private and switched data networks; and local host, terminal, and personal computer communications. The information includes the following:

- Illustrations of the physical relationships between the switch and data network components (including terminals, modems, modules, protocol converters, and host computers)
- Descriptions of data communications equipment associated with the system (including CDR and data modules)
- Descriptions of data terminals supported in the system (including display terminals and printers)
- Descriptions of the data communications adjuncts that are supported.

After reviewing this section, develop a data communications layout. Record existing equipment first; then indicate changes and additions that are specific to the system equipment and arrangements.

Enter the quantities of the data equipment required for your system in Table M.

TABLE M. Data Communications Equipment

Equipment	Quantity
Asynchronous Data Units (ADUs)	
EIA Terminals	
EIA Host Computer Ports	
Modular Processor Data Modules (MPDMs)	
Modular Terminal Data Modules (MTDMs)	
7400A Data Module	
7400B Plus Data Module	
7500B Data Module	
Pooled Modems (Integrated)	
Pooled Modems (Combined)	
Non-Pooled Modems	
3270A Data Modules	
3270T Data Modules	
3270C Data Modules	
Printers	
Personal Computers	

CDR Output Devices and Connections

The CDR output device can be one of the following:

- TELESEER CDR Unit
- 94A Local Storage Unit (LSU)
- Printer
- Host computer
- Customer-provided equipment such as a personal computer

CDR output devices are connected to DEFINITY Generic 1 or Genetic 3 using:

- Modular Processor Data Modules (MPDMs)
- Modular Trunk Data Modules (MTDMs)
- Data Line circuit packs and ADUs
- Modems
- Direct EIA-232C interface provided by the TN773 Processor circuit pack (G3i only)

The two preferred methods for connecting CDR equipment to the system are:

- Data Line circuit pack
- Direct EIA-232C connection (G3i only)

These two methods cost less than MPDMs or DTDMs.

Figure 11 shows some of the ways the output devices can be connected.

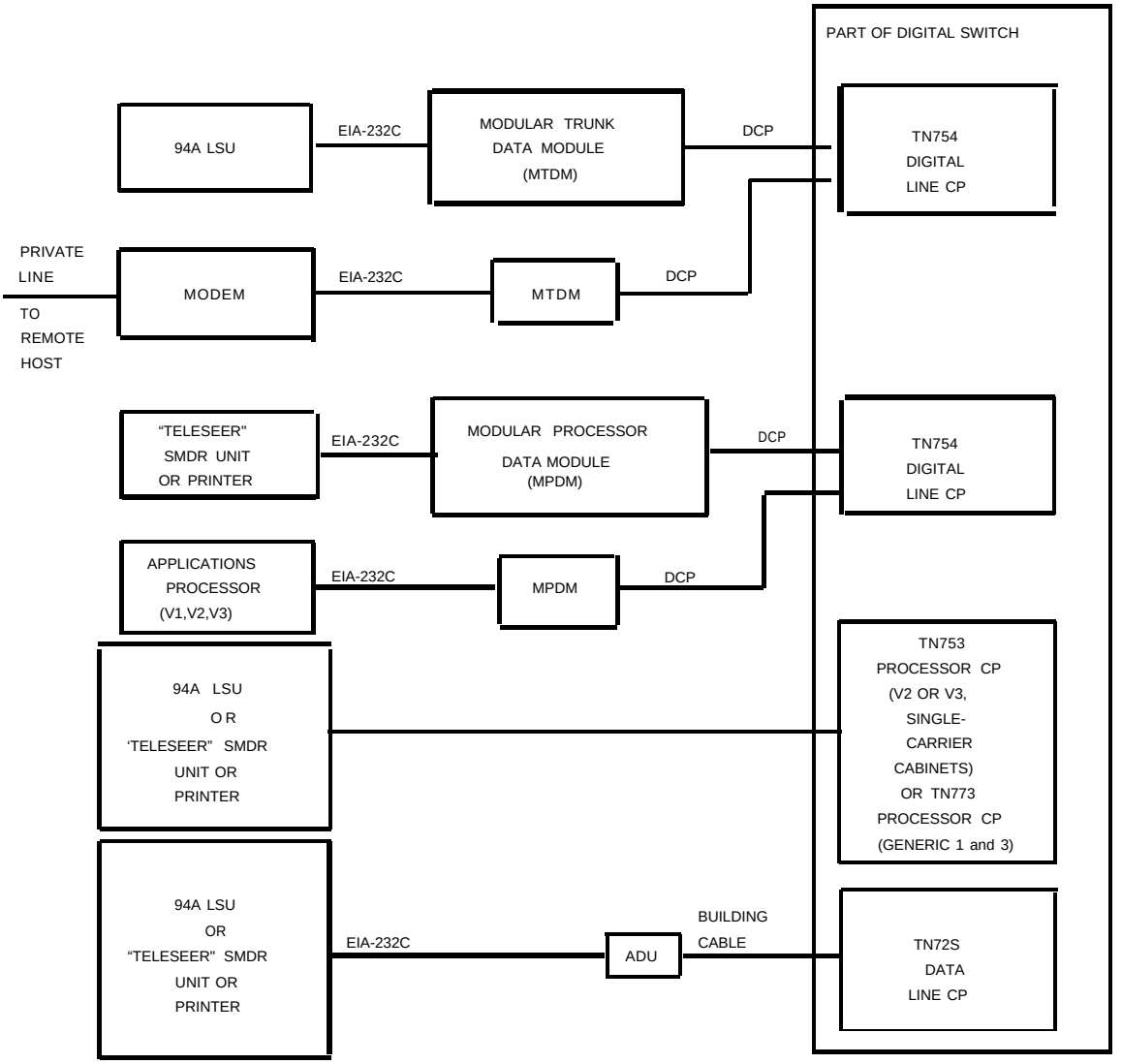


FIGURE 11. CDR Output Devices and Connections

Data Modules

Data modules are communications devices that provide an interface between the digital switch, Data Terminal Equipment (DTE), and Data Communications Equipment (DCE). Data modules transmit and receive data, converting between the system's Digital Communications Protocol (DCP) and the following interfaces: EIA-232C, RS-366, RS-449, V.35, and a Category A coaxial interface.

Figure 2 shows some of the ways modules can be connected in a Local Data Endpoint configuration. Figure 3 shows some of the ways modules can be connected in a Remote Data Endpoint configuration.

To protect existing investments, in-place equipment that performs the same function as DEFINITY Generic 1 or Generic 3 data modules may be used.

The following system data modules are covered:

- Digital Terminal Data Module (DTDM)
- Z702AL1-DSU Data Module Base
- Modular Trunk Data Module (MTDM)
- Modular Processor Data Module (MPDM)
- 7400A Data Module
- 7400B Data Module
- 7500B Data Module
- 3270 Data Module
- Z3A Asynchronous Data Unit (ADU)
- Pooled Modem

Digital Terminal Data Module (DTDM)

The DTDM provides synchronous or asynchronous voice and data communications to 7403D and 7405D digital voice terminal users who have a terminal or personal computer. The DTDM and voice terminal integrate data and voice into the DCP for the switch.

Z702AL1-DSU Data Module Base

The Z702AL1-DSU Data Module Base provides the DCE interface connection between a 7407D voice terminal and data terminals. The module provides full-duplex asynchronous operation only. The module and 7407D voice terminal integrate data and voice into the DCP for the switch.

Modular Trunk Data Module (MTDM)

The MTDM provides an EIA-232C DTE interface for connection to off-premises (out-of-building) private-line trunk facilities or a switched telecommunications network, and a DCP interface for connection to the switch. The MTDM may also serve as part of a conversion resource for modem pooling. The MTDM is also used to interface with DCE-type multiplexer.

Modular Processor Data Module (MPDM)

The MPDM provides a DCE asynchronous or synchronous interface for connection to data terminals, CDR output devices, Manager I or G3-MT terminals, on-premises (in-building) administration terminals, and host computers.

The MPDM can be preset in the factory to provide the following interfaces: EIA-232C, RS-449, V.35, and RS-366 to support ACU (Automatic Calling Unit)-type dialing.

The MPDM can be configured to support the Data Call Setup or Off-Premises Data-Only Extension feature. The MPDM also supports data rates of 56 and 64 kbps for downloading and other high-speed data transfer requirements.

7400A Data Module

The 7400A Data Module may be used instead of an MTDM when supporting the combined Modem Pooling feature. The 7400A Data Module supports asynchronous operation and provides a DCP interface to the switch and an EIA-232C interface to the associated modem.

7400B Data Module

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

7500B Data Module

The 7500B Data Module supports synchronous or asynchronous communications and can operate in the stand-alone mode for data-only service or in linked mode, which provides simultaneous voice and data service. The 7500B provides voice and data service to 7500-series voice terminals and the 8503T voice terminal. The 7500B integrates data and voice into the ISDN protocol required to interface to the switch via a port on the BRI circuit pack. The 7500B may be used instead of an Asynchronous Data Module (ADM) when synchronous operations at speeds of up to 64 kbps are required.

3270 Data Module

The 3270 Data Module provides a Category A coaxial DCE interface for connection to 3270-type data terminals or a cluster controller. It also provides a DCP interface connection to the digital switch.

The 3270 is available in the following three models:

- 3270T (Terminal)—Connects to a Category A 3270-type terminal, such as the 3278 information Delivery System. The 3270T Data Module must connect through the digital switch to a 3270C (Controller) Data Module.
- 3270A (Asynchronous)—Provides the same function as the 3270T Data Module. It also allows the 3270-type terminal to emulate a Digital Equipment Corporation (DEC) VT® 100 or an AT&T asynchronous terminal.
- 3270C (Controller)—Connects an IBM® 3274 or 3276 cluster controller to the digital switch®. A 3270C Data Module can contain up to eight ports.

Z3A Asynchronous Data Unit (ADU)

The Z3A ADU is a DCE-type device that allows direct connection between EIA-232C equipment and the TN726 Data Line circuit pack. The ADU can handle standard data rates from 300 to 19,200 bps, asynchronous, full duplex only.

The ADU is used when the DTE is located more than 50 feet from the Data Line circuit pack and is installed with the DTE. An optional originate or disconnect switch maybe used with the ADU.

Pooled Modem

Modem pools may reduce the number of modems and may also reduce the number of dial-up facilities needed for data transmissions. The integrated and external modem pools can handle up to 32 simultaneous data calls per group in up to 5 groups. Integrated modem pools can operate at speeds of 300, 1200, and 2400 bps. Combined modem pools (external modem pools) can operate at speeds up to 19.2 kbps.

Data Communications Adjuncts

Adjunct equipment may be connected to the switch without any unique switched-based call processing, administration, or maintenance capabilities. In addition to the Z3A Message Waiting Indicator, DEFINITY Generic 1 and Generic 3 can support the following adjuncts:

- EIA terminal such as the 4410 BCT (TTY 5410) and 4415 (TTY 5420)
- Personal computers, such as the AT&T PC 6300, PC 7300, PC 6312, or 6386 WorkGroup System (WGS)
- HORIZON® communications system, MERLIN® communications system, and information Systems Network (local area network) switching systems
- Two multiplexer, the Channel Expansion Multiplexer (which doubles the channel capacity of a DS1 facility to 44 voice band channels) and the Channel Division Multiplexer (which provides non-switched private line connections over DS1 facilities)
- Protocol converters to allow ASCII terminals and personal computers to communicate with SNA/SDLC IBM computer and bisynchronous networks, thus protecting investments in existing low-cost terminals as data networks grow or are integrated and as protocols change
- CONVERSANT® Voice Information System, AT&T's voice response unit offering

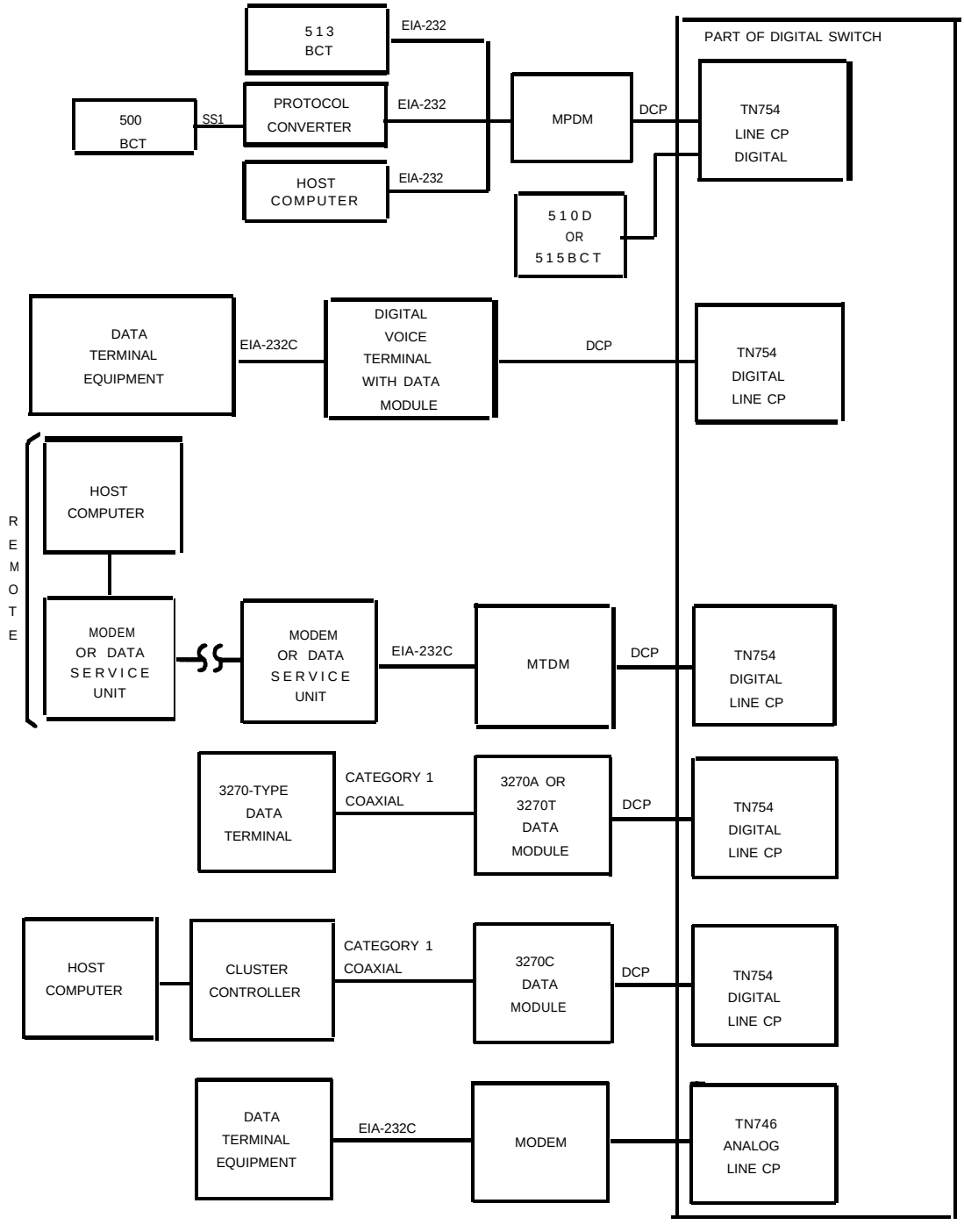


FIGURE 12. Data Endpoint (Terminal, Personal Computer, Host, and Customer-Provided Equipment) Connections

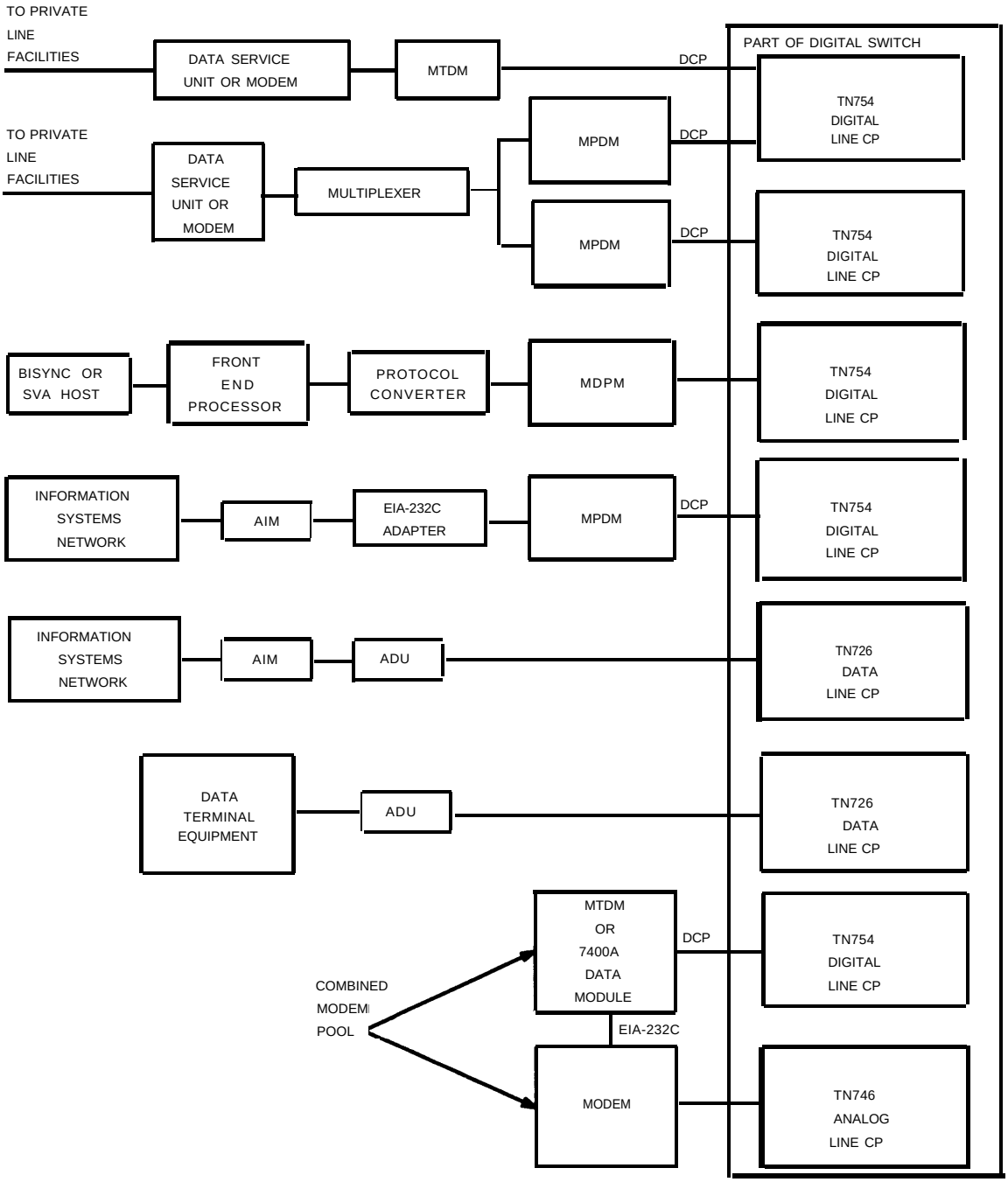


FIGURE 13. Data Endpoint (EIA-232C) Connections

Display Terminals and Printers

The DEFINITY Communications System Generic 1 and Generic 3 is compatible with terminals and printers having EIA-232C or DCP interfaces.

System access for administration of DEFINITY Communications System Generic 1 and Generic 3 is performed by a Manager I terminal for G1, G3i, and G3i-Global, or G3-MT for G3r, a Remote Administration terminal (that is, a Manager I or G3-MT terminal that is more than 50 feet from the system cabinet and uses a dial-up capability), or by an AT&T location. System maintenance can be performed from the Manager I or G3-MT terminal or from an AT&T location.

The Manager I or G3-MT terminal can be a 715 Business Communications Terminal (BCT), 615 Multi-Tasking Terminal (MT) with a 513 BCT emulation cartridge, 513 BCT, 515 BCT, 610 BCT, 4410 terminal, or 4425 terminal located within 50 feet of the system cabinet. A remote Manager I or G3-MT terminal requires the use of a modem to allow dial-up to the system.

Remote Administration

Remote Administration allows the system to be administered from a remote terminal located on or off the customer's premises. A terminal located more than 50 feet from the system cabinet is considered remote and can use a modem to dial-up the system. If it is on-premises, a data module or an ADU can be used in place of a modem. The remote terminal performs the same functions as the local Manager I or G3-MT terminal.

The 513 BCT, 515 BCT, 610 BCT, 615 MT, 715 BCT, 4410 terminal, or 4425 terminal may be used as the local (on-premises) Manager I or G3-MT terminal or the remote terminal for DEFINITY Generic 1 and Generic 3 systems. The 510D terminal can be used as an on-premises remote terminal for all systems if it is connected directly to the switch or as an off-premises remote terminal behind a remote G1 or G3 if modem pooling is used on the G1 or G3 that is being dialed.

If the remote terminal is a 4410 terminal, 513 BCT, 610 BCT, 615 MT, or 715 BCT, it must be connected to the switch via a Processor Data Module (PDM), Digital Terminal Data Module (DTDM), or Data Line circuit pack port. If a 4425 terminal (with integrated modem) or 515 BCT is used as a remote terminal, a PDM or DTDM is not required, but a System Access Port is required for G3r.

Table N provides a listing of the system data terminals.

TABLE N. System Data Terminals

Terminal/ (Protocol)	Description	Application
510D (DCP)	See *DEFINITY Communications System Generic 1 and System 75 and System 85 Terminals and Adjuncts Reference,* 555-015-201.	• Executive Voice/Data Terminal • Remote administration terminal
610 BCT (EIA)	See *DEFINITY Communications System Generic 1 and System 75 and System 85 Terminals and Adjuncts Reference,* 555-015-201.	• Local (within 50 feet of system cabinet) administration terminal • General purpose data terminal
615 MT (EIA)	See *615 Multi-Task Terminal User's Guide,* 999-300-302.	• Local or remote (Manager I or G3-MT) administration terminal • General purpose data terminal
715 BCS (EIA)	See *715 BCS User's Guide,* 999-300-765.	• Local or remote (Manager I or G3-MT) administration terminal • General purpose data terminal
513 BCT (EIA)	See *DEFINITY Communications System Genetic 1 and System 75 and System 85 Terminals and Adjuncts Reference,* 555-015-201.	• Remote SAT (G1) • General purpose data terminal
515 BCT (DCP/EIA)	See *DEFINITY Communications System Genetic 1 and System 75 and System 85 Terminals and Adjuncts Reference,* 555-015-201.	• Executive Voice/Data Terminal • Remote administration terminal • General purpose data terminal
4410 Display Terminal (EIA)	See *DEFINITY Communications System Genetic 1 and System 75 and System 85 Terminals and Adjuncts Reference,* 555-015-201.	• Local or remote administration terminal • General purpose data terminal
4425 Display Terminal (EIA)	See *DEFINITY Communications System Generic 1 and System 75 and System 85 Terminals and Adjuncts Reference,* 555-015-201.	• Local or remote administration terminal • General purpose data terminal

Table O provides a listing of the system printers and their typical applications.

TABLE O. System Printers

Printer	Description	Application
443	• 132 Columns • Matrix printer • Tractor feed • 30 characters per second (cps) • Draft quality output • SSI Interface	Provides hard copy of data received under the direction of a data communi - cations processor or controller.
445	• 132 Columns • Line printer with tractor feed • 55 cps • Draft quality output • 3 Interface options: – EIA – IBM computer – Centronics® • 96 Upper/Lower Case Characters	Printing messages received on-line from a Message Sewer or controller.
450	• 10, 12, 15 char. per inch (variable) • Vertical line spacing 3/6/8 lines per inch (variable) • Full font printer • Document quality output • 5000 feet maximum distance from host • SSI Interface • 45 cps	Auxiliary printer where document quality is the primary consideration. A slave device (auxiliary only) to an applications processor via an SSI data link.
460 and 572	• Medium speed • Bidirectional • Draft quality • Matrix printer • Interface options: – EIA – SSI – IBM computer • Up to 240 cps • 5000 feet maximum distance from host	Prints data received under direction of a communications processor or controller when copy quality is essential.

TABLE O *(continued).*
System Printers

Printer	Description	Application
470	• Desktop Dot Matrix • Draft quality • 120 cps or 10 cps • Interface Options: – IBM computer – Centronics	Prints data received under direction of a communications processor or controller.
475 and 573	• Letter quality matrix printer • 120 cps or 10 cps • Bidirectional • EIA Interface • 50 feet maximum distance from host	Interface to a printer system. Prints under the direction of a communications processor or controller. May be used as the System Printer in support of the Report Scheduler feature.

Distributed Communications System (DCS)

Distributed Communications System (DCS) allows two or more switches to provide transparency for certain attendant and voice terminal features as if the cluster were a single large switch. DCS simplifies dialing procedures between locations and allows the use of some of the system's features between locations. To clarify this further, if you have two switches in the same company that are networked together but do not have DCS, if a call from one display terminal is made to another display terminal, the terminal receiving the call displays only the trunk line over which the call was placed. If the switches have DCS, however, the extension from which the call is made appears. Another example is that the Leave Word Calling button can be used where two switches have DCS. Figure 4 shows how the DCS can be connected to the system.

For detailed information on how to add DCS to a system, see *DEFINITY Communications System Generic 1 and Generic 3i Upgrades and Additions,* 555-204-106 or *DEFINITY Communications System Generic 3r Upgrades and Additions,* 555-230-106.

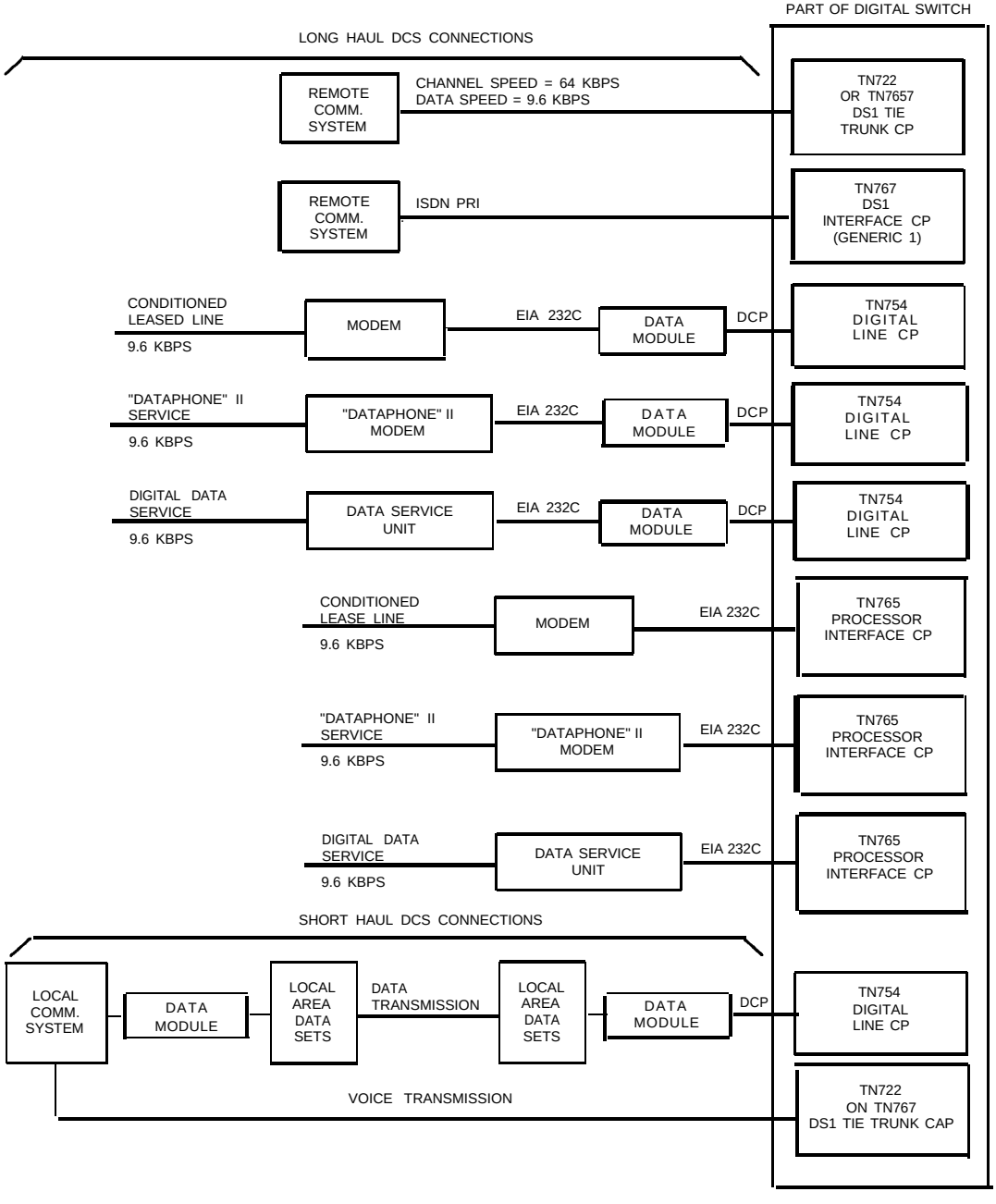


FIGURE 14. G1, G3i, and G3i-Global DCS Used in a Long Haul and Short Haul Connection

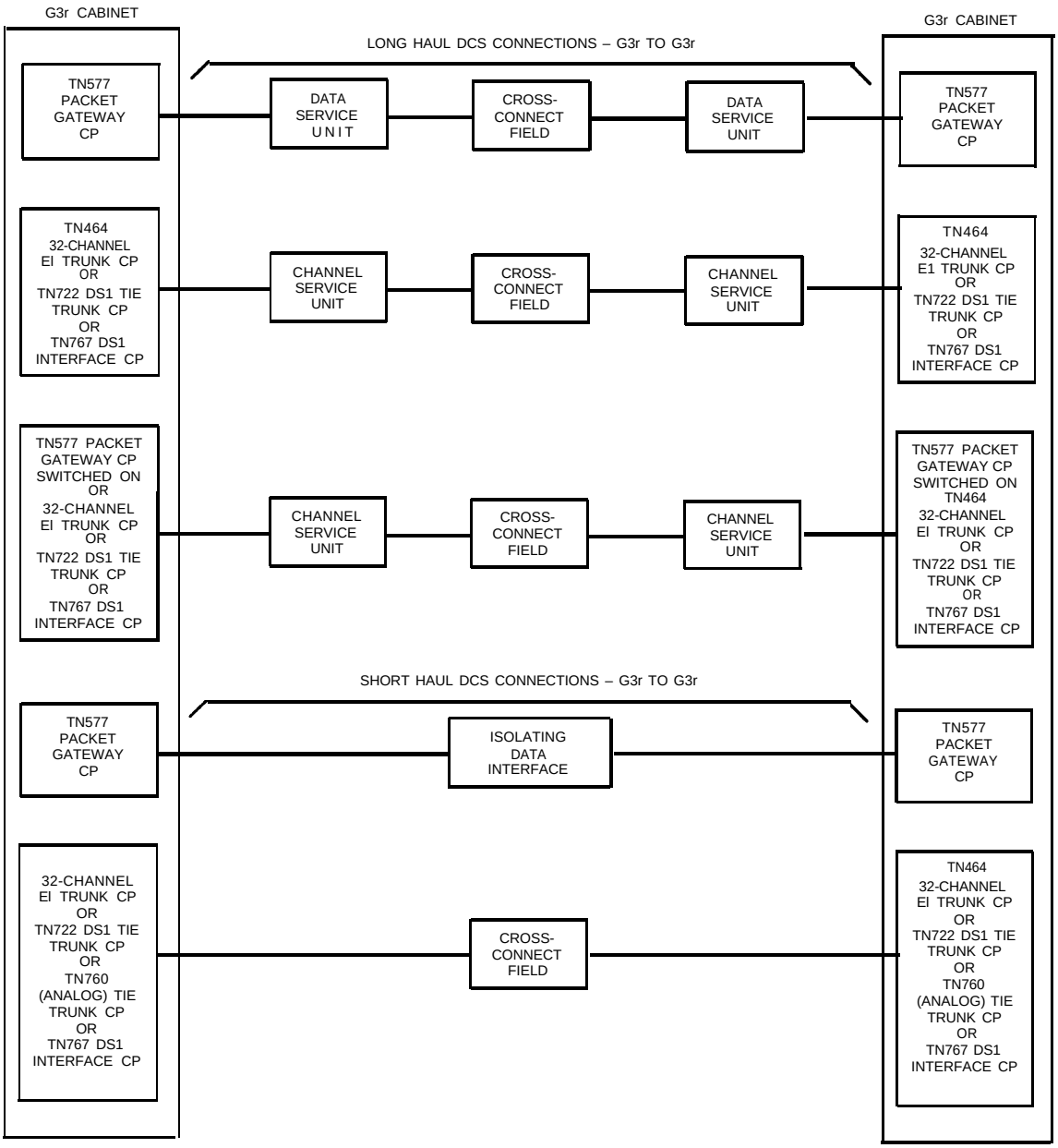


FIGURE 15. G3r to G3r DCS Used in a Long Haul and Short Haul Connection

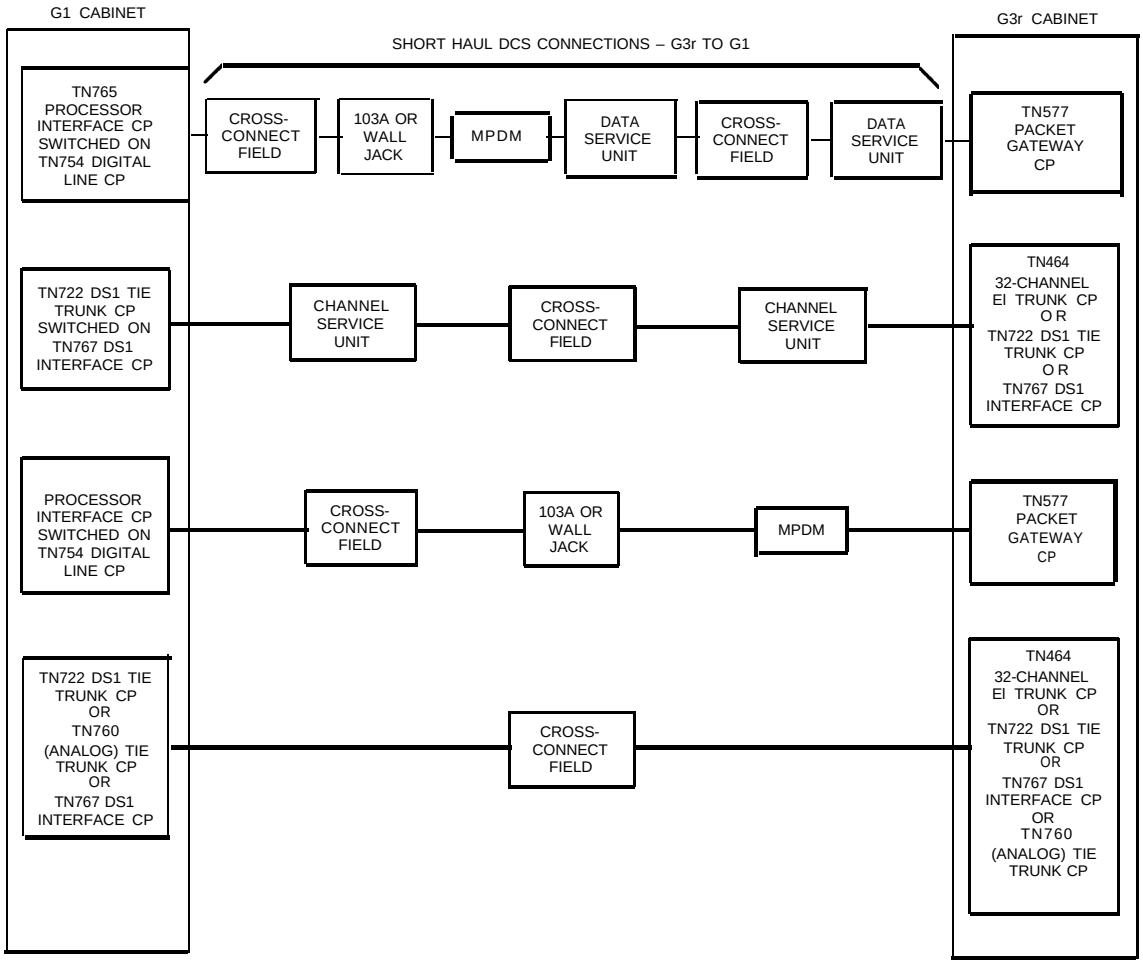


FIGURE 16. G3r to G1 DCS Used in a Short Haul Connection

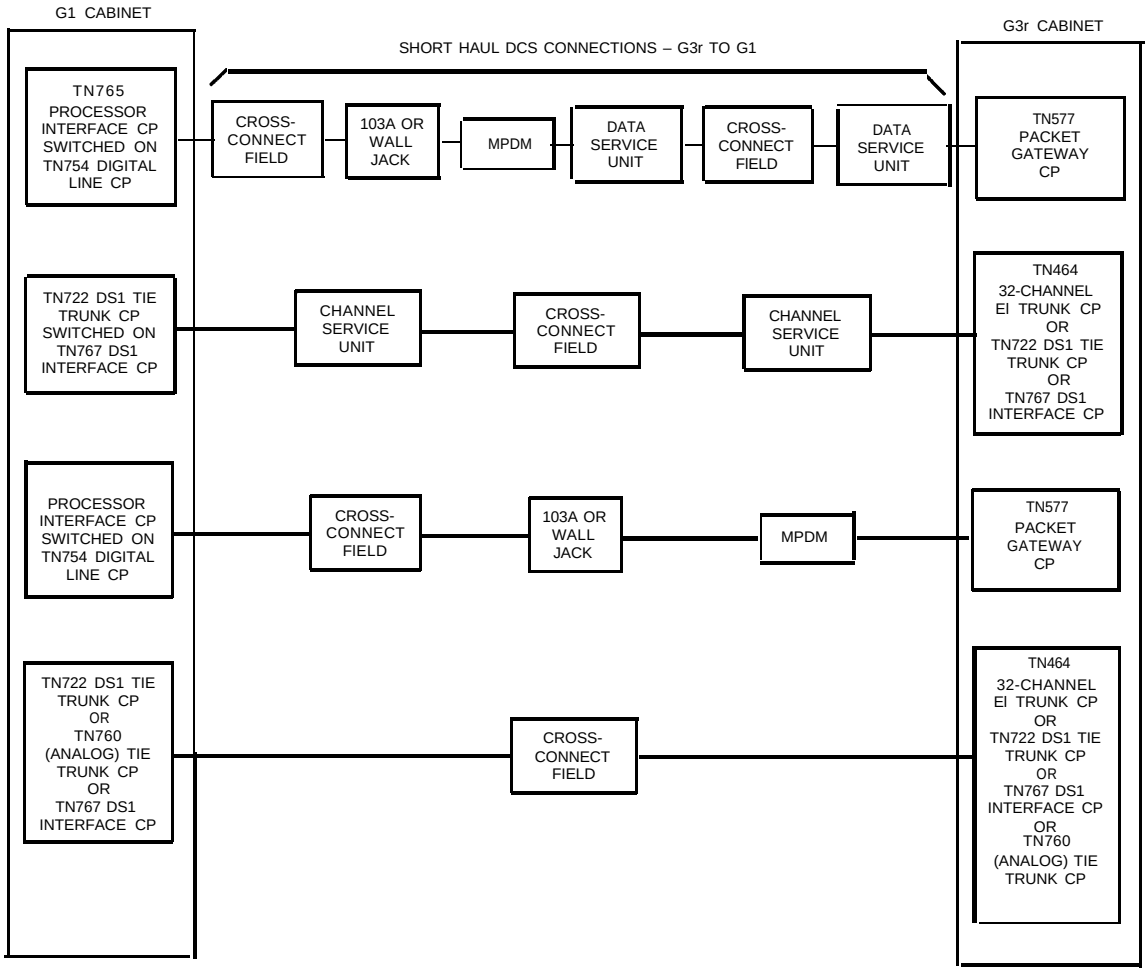


FIGURE 17. G3r to G2 Traditonal Module DCS Used in a Short Haul and Long Haul Connection

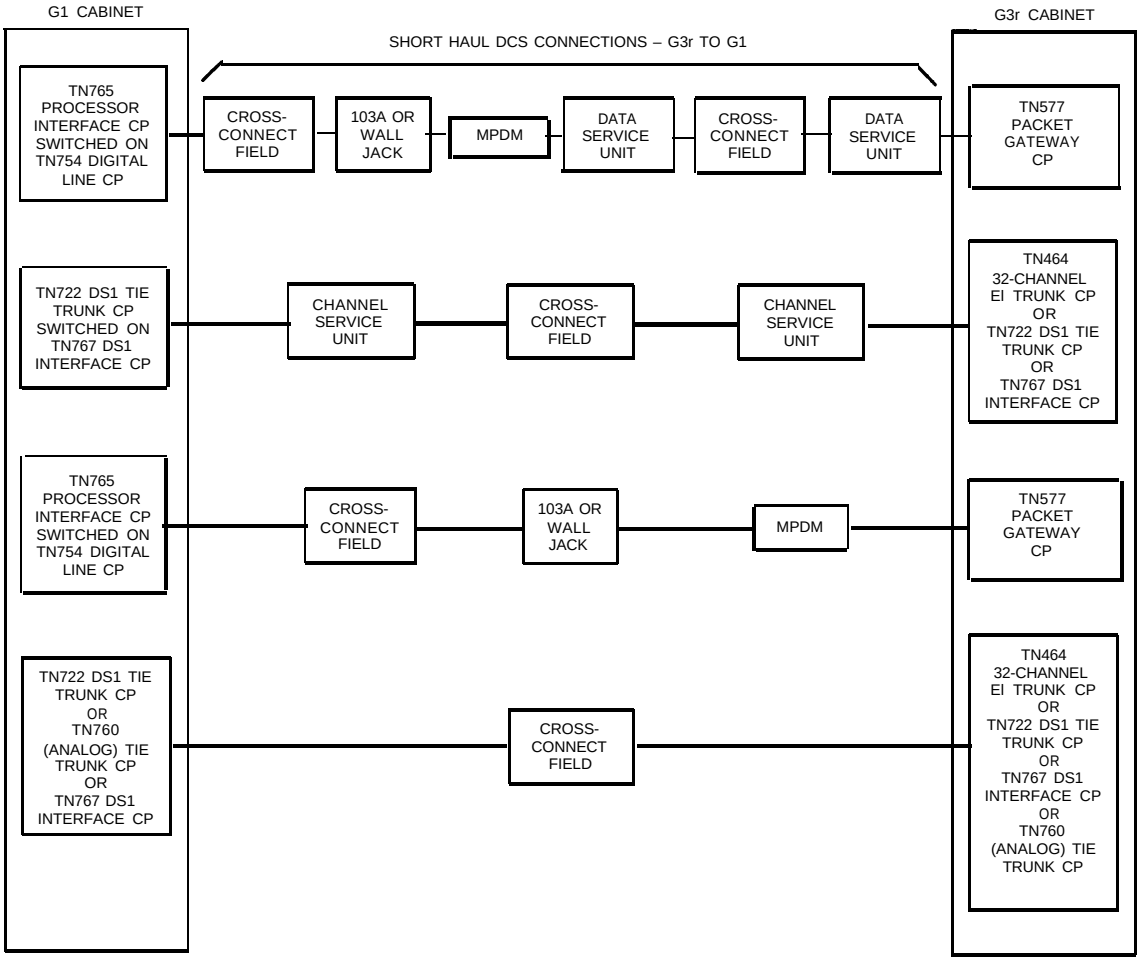


FIGURE 18. G3r to G2 Universal Module DCS Used in a Short Haul and Long Haul Connection

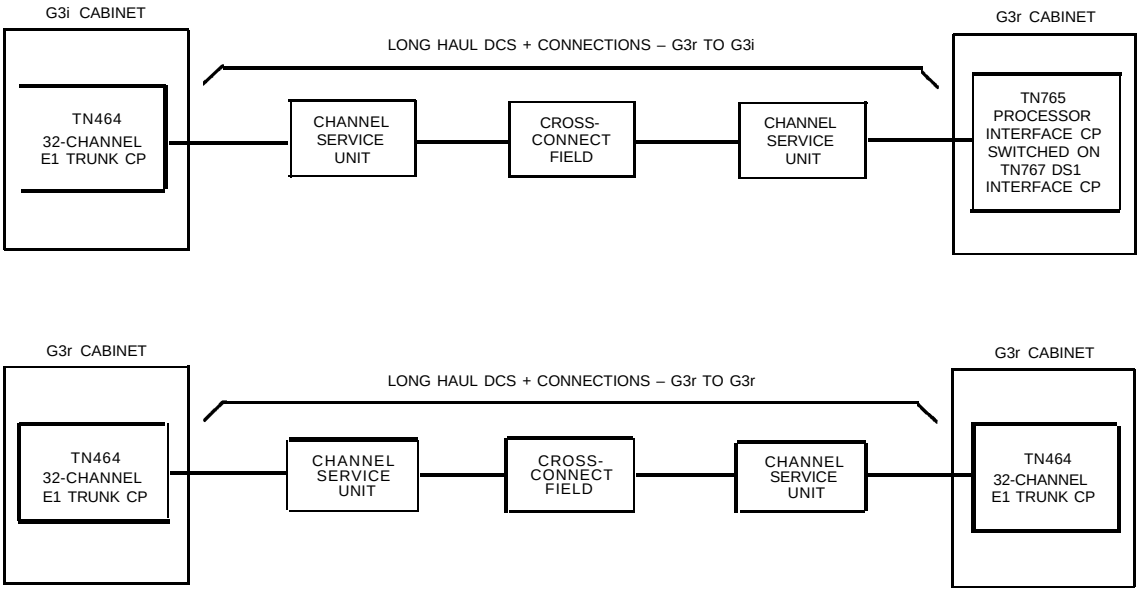


FIGURE 19. G3r to G3i or G3i-Global and G3r to G3r DCS Plus Used in a Long Haul Connection

Traffic Considerations

To determine if traffic engineering calculations should be made for G1, G3i, or G3i-Global, consider the following (for G3r, traffic engineering will be done regardless):

	YES	NO
1 - Will the number of busy-hour calls meet or exceed 7200 (G1) or 10,000 (G3i, G3i-Global)?	❑	❑
2 - WiII the call activity be different than the balance of 36% outgoing, 36% incoming, 28% intra-premises (±10%)?	❑	❑
3 - Will the trunk (all types) to terminal ratio exceed 50%?	❑	❑
4 - Is ARS requested with more than 425 terminals?	❑	❑
5 - Is DID with Message Center Service requested and are there more than 425 terminals?	❑	❑
6 - Will more than 50% of the incoming traffic be handled by the Attendant?	❑	❑
7 - WiII AUDIX be used?	❑	❑
8 - Will DCS or ISDN-PRI be used?	❑	❑

In most United States locations, the DOSS®/ATTOMS-CPS configurator must be used for all DEFINITY G1 and G3 designs. Note carefully any configurator report messages associated with the above items that are answered “yes.”
If the customer system is to have ISDN-PRI or ISDN-BRI, or is to serve a large, telemarketing application, contact your product support organization for assistance.

Network Access Facilities

For each type of facility listed on Table P, enter the quantity in the appropriate block. The Ground Start column is for record and order preparation purposes only.

TABLE P. Network Access Facilities

Facility	Quantity			If Ground Start	Total
	1-Way In	1-Way Out	2-Way		
1. LOCAL CENTRAL OFFICE a. CO Trunks					
b. Personal CO Lines					
c. Subtotal					
2. FOREIGN CENTRAL (FX) OFFICE a. CO Trunks					
b. Personal Lines					
c. Subtotal					
3. 800 SERVICE (Not applicable to G3i-Global) a. Band 1					
b. Band 2					
c. Band 3					
d. Band 4					
e. Band 5					
f. Subtotal					
4. WATS a. Number of WATS lines					
b. Personal Lines (included in a)					
g. Subtotal					

(continued on the next page)

TABLE P *(continued).*
Network Access Facilities

Facility	Quantity			If Ground Start	Total
	1-Way In	1-Way Out	2-Way		
5. DIRECT INWARD DIAL (DID) LINES a. DID Lines					
b. Subtotal					
6. TIE LINES (include DCS) a. Tie Lines (exclude b)					
b. Release Link Trunks					
c. Subtotal					
7. DS1 FACILITIES (TN722 or TN767 circuit pack or 464) a. Voice					
b. Alternate Voice/Data					
c. ISDN PRI (TN767 or 464 circuit pack)					
e. Subtotal					
8. PRIVATE LINES a.					
b.					
c.					
d. Subtotal					

Circuit Pack Determination

Terminals, trunks, auxiliary equipment, and customer-provided equipment (CPE) require an interface (circuit pack) to be connected to the system.

Note: All circuit packs in this section are referred to by their circuit pack numbers only. Version letters (for example, the "B" in TN750B, the "C" in TN464C) are not included. Assume the latest version is to be used for all circuit packs unless otherwise specified.

Any customer-provided equipment that is not FCC-registered requires a 36A Coupler (for music) or 278A adapter (for paging) and a 2012D Transformer. This enables a customer to connect an external music or paging system to the switch where the interface may not match exactly.

Determine the types and quantities of circuit packs on the following worksheets, and enter the totals in Table Q. Note especially that circuit pack selection may differ depending on the country in which the system is to be installed. Different country's having different signaling and tone requirements. Tables are provided below, before the worksheets, to help you determine which circuit packs are appropriate for the country in question. Information required in these worksheets may be obtained from the tables previously filled out in this manual and from the tables of circuit packs per country. For a detailed description of the system's circuit packs, see *DEFINITY Communications System Generic 3 System Description,* 555-230-200.

For a G3i or G3i-Global, two memory circuit packs are required for simplex systems and four for duplex systems (PEC 63526). For a G3r, the quantity is predetermined at two memory circuit packs, so no planning is required.

For G3i CallVisor® ASAl, one packet control circuit pack (PEC 63533) and one ISDN-BRI circuit pack (PEC 65512) are required for a simplex system. If G3i is duplicated with CallVisor ASAI, two packet control circuit packs plus one TN771 Maintenance circuit pack (PEC 65524) per port network are required.

For G3r CallVisor ASAl, the packet control circuit pack(s) and, for duplicated systems, maintenance circuit pack are already included in the configuration, so the only circuit pack required from planning is one ISDN-BRI circuit pack (PEC 65512).

In G1, G3i, and G3i-Global configurations, port networks are connected directly to each other. In G3r, where there are four or more port networks, they are connected to the TN573 Switch Node Interface circuit pack, with one TN573 for each port network. The TN573 circuit packs are located in a switch node carrier, usually the PPN, E Carrier. This configuration, called the Center Stage Switch (CSS), reduces the amount of connections needed between port networks. You can have a CSS for fewer than four port networks, but it is not recommended unless you anticipate expanding to four or more port networks.

Each G3r cabinet, including the PPN that contains the CSS, requires an Expansion Interface TN570. Only the CSS in the PPN contains a Switch Node Interface TN573 and Switch Node Clock TN572. If one of the cabinets is remoted, both ends of the connection require a DS1 Converter TN574. The TN776 Expansion Interface circuit pack cannot be used for the G3r CSS.

Note also that the TN776 Expansion Interface circuit pack is required with ISDN-BRI in the G3i or G3i-Global, but cannot be used at all in the G3r. The Expansion Interface circuit pack for the G3r is the TN570.

Table Q shows the capabilities of the different Speech Synthesis circuit packs. The TN457

provides English-speaking voice synthesis. The TN433 provides Italian-speaking voice synthesis. The TN725 does not provide the Visually-Impaired Attendant Service feature.

Tables R through AH are used to determine the appropriate circuit pack for the country in which the system is being installed. Because of differences in signaling and other requirements, circuit packs appropriate for one country do not necessarily work in another country. Therefore, use the circuit pack type (for example, Tone Detector) as listed in the following tables to determine which circuit pack is appropriate for your needs.

Note: Circuit packs in Tables R through AH that appear in regular font are supported for upgrades only. That is, if they are already on-site for an upgrade, they may be reused in the upgraded system. Circuit packs in these tables in bold font are for new installations.

In Tables V through AH, where a vintage is specified in the “Notes” column, it is the minimum vintage required to support a feature or G3i-Global.

TABLE Q. Speech Synthesis Circuit Pack Capabilities

Feature	TN725	TN457	TN433
Automatic Wakeup Call (Hotel/Motel Application)	Yes	No	No
Auto-Circuit Assurance	Yes	Yes	Yes
Leave Word Calling	Yes	Yes	Yes
Visually-Impaired Attendant Service (VIAS)	No	Yes	Yes
A-law	No	Yes	Yes
μ-law	Yes	Yes	Yes

TABLE R. G3i-Global Service and Auxiliary Trunk Circuit Pack Support Per Country

Country	A or μ Encoding	SERVICE CIRCUITS					Aux Trunk
		Tone Det	Tone Gen Clock	R2MFC Ckt	Speech Synth	Announcement	
U.S.	μ	TN748D	TN780	n/a	TN725B	TN750B	**TN763D**
Australia	A	**TN420C** TN420B	**TN780** TN419B	n/a	**TN457**	**TN750B**	**TN763D** TN417
Belgium	A	**TN420C**	**TN780v.4**	**TN744**	**TN457**	**TN750B**	**TN763D**
Greece	μ*	**TN748D**	**TN780** TN756	**n/a**	**TN725B**	**TN750B**	**TN763D** TN763C
Hong Kong	μ*	**TN748D**	**TN780** TN756	n/a	**TN725B**	TN750B	**TN763D** TN763C
Japan	μ*	**TN748D**	**TN780** TN756 TN741	n/a	**TN725B**	**TN750B**	**TN763D** TN763C
Mexico	μ*	**TN748D**	**TN780** TN756	**TN744**	**TN725B**	**TN750B**	**TN763D** TN763C
Netherlands	A	**TN420C**	**TN780**	n/a	**TN457**	**TN750B**	**TN763D**
Saudi**	μ*	**TN748D**	**TN780** TN756	**TN744**	**TN725B**	**TN750B**	**TN763D** TN763C
Singapore	μ *	**TN748D**	**TN780** TN756	**TN744**	**TN725B**	**TN750B**	**TN763D** TN763C
Taiwan	μ	**TN748D**	**TN780** TN756	n/a	**TN725B**	**TN750B**	**TN763D** TN763C
UK	A	TN420C **TN420B**	**TN780** TN419B	n/a	**TN457**	**TN750B**	**TN763D** TN417
Venezuela**	μ*	**TN748D**	**TN780** TN756	**TN744**	**TN725B**	**TN750B**	**TN763D** TN763C

* National standard is A-Law.

** A-Law V2 systems are currently found in Saudi Arabia and Venezuela. Such systems will be replaced by upgrades, including port and service circuit packs, with μ -Law hardware.

TABLE S. G3i-Global Trunk Circuit Pack Support Per Country

Country	Analog DID	Analog CO (no PPM)	Analog CO w/PPM	4W Tie	2W Tie	Digital Trunks		
						CO/DID	Tie	ISDN CO
U.S.& Canada	TN753	TN747B§	n/a	TN760D	n/a	TN767 TN464D	TN767 TN722 TN464D	TN767 TN464D
Australia	**TN436B** TN436	TN2147	**TN438B**	**TN437B** TN437	**TN439**	n/a	**TN464D** TN464C	**TN464D** TN464C
Belgium	**TN2146†**	**TN2147**	n/a	**TN760Dv11§§**	n/a	**TN464D†**	**TN464D**	**TN464D**
Greece	**TN753**	**TN747B**	TN465	**TN760D**			**TN464D** TN464C	n/a
Hong Kong	**TN753**	**TN747B§** TN465	n/a	**TN760D**		n/a	**TN464D** TN464C	TN464D
Japan	**TN429**	**TN429** TN465	n/a	**TN760D**	**TN439**	n/a	n/a	n/a
Mexico	n/a	**TN747B§**	**TN465**	**TN760D**		**TN464D**	**TN4640** TN464C	n/a
Netherlands	**TN2146**	**TN2147**	**TN2138**	**TN760Dv11§§**		**TN464D**	**TN464D**	**TN464D**
Saudi††	**TN753†**	**TN747B**		**TN760D**		n/a	**TN464D** TN464C TN464B	n/a
Singapore	**TN753†**	TN747B		**TN760D**			**TN464D** TN464C	n/a
Taiwan	**TN753**	**TN747B**		**TN760D**			**TN464D** TN464C TN767	n/a
UK	**TN459B** TN459	**TN2147**	**TN447**	**TN760Dv11**		**TN464D***	**TN464D** TN464C	**TN464D****
Venezuela††	**TN753†**	TN747B	**TN465**	**TN760D**	**TN439**	n/a	**TN464D** TN464C	n/a

* Only DID is supported.

** Needs a 3NET converter that converts the boards from ISDN to UK DASS-II/DPNSS.

† MFC Service Circuit needed.

†† In Saudi and Venezuela there are existing A-law V2 systems. Upgrading will replace such systems, including port and service circuit packs, with μ-law hardware.

§ If polarity-reversal signaling is required for disconnect supervision, vintage 12 or later must be used.

§§ Requires an external converter, Use the Prescom® model TS-X 1276.

TABLE T. G3i-Global Line Circuit Pack Support Per Counry

Country	8 Port Analog	16 Port Analog	Digital
US & Canada	TN742	TN746B	TN754B TN726B
Australia	TN467	**TN468B** TN468	**TN754B** TN413 TN726B
Belgium		**TN2149**	**TN754B** TN2136 TN726B
Greece	TN742	**TN746B**	**TN754B** TN726B
Hong Kong	TN742	**TN746B**	**TN754B** TN726B
Japan	TN742	**TN746B** TN479	**TN754B** TN726B
Mexico	TN742	**TN746B**	**TN754B** TN726B
Netherlands		**TN2144**	**TN754B** TN2136 TN726B
Saudi Arabia	TN742	**TN746B**	**TN754B** TN726B
Singapore	TN742	**TN746B**	**TN754B** TN726B
Taiwan	TN742	**TN746B**	**TN754B** TN726B
UK	TN467	**TN468B** TN468	**TN754B** TN413 TN726B
Venezuela	TN742	**TN746B**	**TN754B** TN413 TN726B

TABLE U. V2 CPs Not Supported in G31-Global

Number	Type	Countries Sold In
TN487	Tone Generator	Japan
TN488	Tone Detector	Japan
TN465	Tone Detector	Venezuela
TN449	4W Tie	Venezuela, Japan, . . .
TN466	2W E&M Tie	Venezuela, Japan, . . .
TN483	DS1 Tie	Japan
TN411B	8P Analog Line	Venezuela, . . .
TN431	8P Analog Line	Japan
TN432	8P Analog tine	Japan
TN443	FAX Port	Japan
TN448	16P Analog Line	Japan, Venezuela

TABLE V. Supported U.S and Canadian Port and Service CPs

CP Code	Function	Notes
TN464C TN464D	DS1 Interface DS1 Interface	
TN722 TN722B	DS1 Trunk DS1/DMl Trunk	
TN725B	Speech Synthesis	
TN726B	Data Line	
TN735	MET Line	
TN742	Analog tine	
TN746	Analog Line	
TN747 TN747B	Analog tine Analog Line	B Vintage needed for ACD
TN748 TN748B TN748D	Tone Detector Tone Detector Tone Detector	
TN750B	Announcement	
TN753	DID Trunk	
TN754 TN754B	Digital Line Digital Line	
TN756	Tone Detector	Used in XE only
TN758	Pooled Modem	
TN760,B,C,D	Tie Trunk	CAS needs ≥ B V.6
TN762	Hybrid Line	
TN763 TN763B TN763C	Aux Trunk (DA) Aux Trunk (DA) Aux Trunk	AUDICHRON requires B or C Vintage
TN767	DS1 Interface	
TN768	Tone Clock	Used with SE+
TN769	Analog Line (w. Neon)	
TN780	Tone Clock	

TABLE W. Recommended and Available CPs G3i-Global—Australia

Number	Function	Comments
TN420C TN420B	Tone Detector	V2 CP
TN780 TN419B	Tone Gen/Clock	
TN457	Speech Synth	V2 CP
TN726B	Data Line	
TN750B	Announcement	
TN763D TN417	Aux Trunk	
TN436B TN436	DID Trunk	
TN2147	CO/no ppm	
TN438B	CO+ppm	
TN437B TN437	4w Analog Tie	
TN439	2w Analog Tie	
TN464D TN464C	Digital Tie	
TN464D TN464C	ISDN CO	
TN467	8p Analog Line	V2 CP
TN468B TN468	16p Analog Line	V4 CP
TN754B TN413	Digital Line	

TABLE X. Recommended and Available CPs G3i-Global—Belgium

Number	Function	Comments
TN420C	Tone Detector	
TN780v4	Tone Gen/Clock	
TN744	R2-MFC	
TN457	Speech Synth	V2 CP
TN750B	Announcement	
TN763D	Aux Trunk	
TN2146	DID Trunk	MFC Only
TN2147	CO/no ppm	
TN760Dv11	Analog Tie	Requires a Prescom TS-X 1276 Converter
TN464D	Digital CO	MFC Only
TN464D	Digital Tie	
TN464D	ISDN CO	
TN2149	16p Analog Line	
TN754B	Digital Line 4-WIre DCP	
TN726B	Data Line	
TN2136	Digital Line 2-Wire DCP	

TABLE Y. Recommended and Available CPs G3i-Global—Greece

Number	Function	Comments
TN748D	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN725B	Speech Synth	
TN726B	Data Line	
TN750B TN750	Announcement	
TN763D TN763C	Aux Trunk	
TN753	DID Trunk	
TN747B (V.12)	CO/no ppm	
TN465	CO+ppm	
TN760D	Analog Tie	
TN464D TN464C	Digital Tie	
TN742	8p Analog Line	
TN746B	16p Analog Line	
TN754B	Digital Line 4-Wire DCP	

TABLE Z. Recommended and Available CPs G3i-Global—Hong Kong

Number	Function	Comments
TN748D	Tone Detector	V2 CP
TN780 TN756	Tone Gen/Clock	
TN725B	Speech Synth	V2 CP
TN726B	Data Line	
TN750B TN750	Announcement	
TN763D TN763C	Aux Trunk	
TN753	DID Trunk	
TN747B (Ver.12) TN465	CO/no ppm	
TN760D	Analog Tie	
TN464D TN464C	Digital Tie	
TN464D	ISDN CO	
TN742	8p Analog Line	
TN746B	16p Analog Line	
TN754B	Digital Line 4-Wire DCP	

TABLE AA. Recommended and Available CPs G3i-Global—Japan

Number	Function	Comments
TN748D	Tone Detector	V2 CP
TN780 TN756	Tone Gen/Clock	
TN725B	Speech Synth	V2 CP
TN726B	Data Line	
TN750B TN750	Announcement	
TN763D TN763C	Aux Trunk	
TN429	DID Trunk	
TN429 TN465		CO/no ppm
TN760D	4-w Analog Tie	
TN439	2-w Analog Tie	
TN464D TN464C TN767	Digital Tie	
TN742	8p Analog Line	
TN746B TN479	16p Analog Line	
TN754B	Digital Line	

TABLE AB. Recommended and Available CPs G3i-Global—Mexico

Number	Function	Comments
TN748D	Tone Detector	V2 CP
TN780 TN756	Tone Gen/Clock	
TN744	R2-MFC Service	
TN725B	Speech Synth	V2 CP
TN726B	Data Line	
TN750B TN750	Announcement	
TN763D TN763C	Aux Trunk	
TN747B (Ver.12) **TN465**	CO/no ppm CO w.PPM	Sold if PPM needed
TN760D	Analog Tie	
TN464D	Digital DID	
TN464D TN464C	Digital Tie	
TN742	8p Analog Line	
TN746B	16p Analog Line	
TN754B	Digital Line	

TABLE AC. Recommended and Available CPs G3i-Global—Netherlands

Number	Function	Comments
TN420C	Tone Detector	
TN780	Tone Gen/Clock	
TN457	Speech Synth	V2 CP
TN750B	Announcement	
TN763D	Aux Trunk	
TN2146	DID Trunk	
TN2147	CO/no ppm	
TN760Dv11	Analog Tie	Requires a Prescom TS-X 1276 Converter
TN464D	Digital CO/DID	
TN464D	Digital Tie	
TN464D	ISDN CO	
TN2144	16p Analog Line	V4 CP
TN754B	Digital Line	
TN726B	Data Line	

TABLE AD. Recommended and Available CPs G3i-Global—Saudi Arabia

Number	Function	Comments
TN748D	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN744	R2-MFC Service	
TN725B	Speech Synth	
TN726B	Data Line	
TN750B	Announcement	
TN763D TN763C	Aux Trunk	
TN753	DID Trunk	
TN747B (Ver.12)	CO/no ppm	
TN760D	Analog Tie	
TN464D TN464C TN464B	Digital Tie	
TN742	8p Analog Line	
TN746B	16p Analog Line	
TN754B	Digital Line	

TABLE AE. Recommended and Available CPs G3i-Global—Singapore

Number	Function	Comments
TN748D	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN744	R2-MFC Service	
TN725B	Speech Synth	
TN726B	Data Line	
TN750B **TN750**	Announcement	
TN763D TN763C	Aux Trunk	
TN753	DID Trunk	
TN747B (Ver.12)	CO/no ppm	
TN760D	Analog Tie	
TN464D TN464C	Digital Tie	
TN742	8p Analog Line	
TN746B	16p Analog Line	
TN754B	Digital Line	

TABLE AF. Recommended and Available CPs G3i-Global—Taiwan

Number	Function	Comments
TN748D	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN725B	Speech Synth	
TN726B	Data Line	
TN750B	Announcement	
TN763D TN763C	Aux Trunk	
TN753	DID Trunk	
TN747B (Ver.12)	CO/no ppm	
TN760D	Analog Tie	
TN464D TN464C TN767	Digital Tie	
TN742	8p Analog Line	
TN746B	16p Analog Line	
TN754B	Digital Line	

TABLE AG. Recommended and Available CPs G3i-Global—United Kingdom

Number	Function	Comments
TN420C	Tone Detector	V2 CP
TN780 TN419B	Tone Gen/Clock	
TN457	Speech Synth	V2 CP
TN750B	Announcement	
TN763D TN417	Aux Trunk	
TN459B TN459	DID Trunk	
TN2147	CO/no ppm	
TN447	CO+ppm	
TN760Dv11	Analog Tie	Requires a Prescom TS-X 1276 Converter
TN464D	Digital Tie	Requires a Prescom TS-X 1276 Converter
TN467	8p Analog Line	
TN726B	Data Line	
TN468B TN468	16p Analog Line	V4 CP
TN754B TN413	Digital Line	

TABLE AH. Recommended and Available CPs G3i-Global—Venezuela

Number	Function	Comments
TN748D	Tone Detector	
TN780 TN756	Tone Gen/Clock	
TN744	R2-MFC Service	
TN725B	Speech Synth	
TN726B	Data Line	
TN750B TN750	Announcement	
TN763D TN763C	Aux Trunk	
TN753	DID Trunk	
TN747B	CO/no ppm	
TN465	CO+ppm	
TN760D	4w Analog Tie	
TN439	2w Analog Tie	
TN464D TN464C	Digital Tie	
TN742	8p Analog Line	
TN746B	16p Analog Line	
TN754B TN413	Digital Line	

DIRECT INWARD AND OUTWARD DIALING (DIOD) TRUNK (TN429 - G3i-Global Only)

Enter the number of:

(A) DIOD Trunks ..... ____
(B) Future Growth ..... ____

PEC
TOTAL PORTS ____ + 8 = ____ 63802I

32-CHANNEL E1 TRUNK (TN464 - For G3i-Global and G3r)

Enter the number of:

(A) Voice Grade Data Tie Trunks * ..... ____
(B) Alternate Voice/Data Tie Trunks * ..... ____
(C) DMI Tie Trunks* ..... ____
(D) ISDN PRI Trunks* ..... ____
(E) DID Trunks ..... ____
(F) DIOD Trunks ..... ____
(G) DOD Trunks ..... ____
(H) Off Premises Extensions ..... ____
(I) Release Link Trunks ..... ____
(J) Future Growth ..... ____

PEC
TOTAL PORTS ____ +30/32*= ____ 63804I

Note: 30 channels can be used for voice or data when one channel is used for inbound signaling and one for frame alignment and network management. In situations where no inbound signaling channel is required, 31 channels can be used for voice or data.

* A + 32, B, C, & D + 30 or 31; a common circuit pack cannot be used for AVD, DMI, and ISDN.

CENTRAL OFFICE LOOP START TRUNK (TN465 - For G3i-Global Only)

Enter the number of lines that will terminate as either trunk lines or as personal lines:

(A) CO Lines ..... ____
(B) WATS Lines ..... ____
(C) 800 Service Lines ..... ____
(D) FX Lines ..... ____
(E) Future Growth ..... ____

PEC
TOTAL PORTS ____ + 8 = ____ 63801I

ANALOG LINE (TN479 - For G3i-Global Only)

Enter the number of:

(A) 7100 Series Sets ..... ____
(B) 2500/2554- Type Sets (On Premises) ..... ____
(C) 2500/2554-Type Off-Premises Extensions ..... ____
(D) 2500-Type Sets with Message Waiting Indicator/Recall capability ..... ____
(E) Rotary Dial Telephones (500-Type) ..... ____
(F) 510As ..... ____
(G) Recorded Announcement Lines ..... ____
(H) Teleconferencing Lines (QUORUM® teleconferencing equipment or CPE) ..... ____
(I) Lines Equipped With Modems Only ..... ____
(J) External Pooled Modems ..... ____
(K) Queue Warning Lamps (for UCD/DDC) ..... ____
(L) Loudspeaker Paging Access Lines ..... ____
(M) Code Calling Access Lines ..... ____
(N) Radio Paging Access Lines (Requiring Tip and Ring only) ..... ____
(O) Recorded Telephone Dictation Lines (Requiring Tip and Ring only) ..... ____
(P) Analog Lines for other CPE ..... ____
(Q) Line for TAAS External Alert ..... ____
(R) Future Growth ..... ____

PEC
TOTAL PORTS ____ +16= ____ 63803I

For additional information on analog line circuit pack characteristics, see “Analog Line (TN742).”

ISDN-BRI LINE (TN556)

Enter the number of:

(A) 7505 ISDN-BRI voice terminals
(B) 7506 ISDN-BRI voice terminals
(C) 7507 ISDN-BRI voice terminals
(D) 8503T ISDN-BRI voice terminals
(E) CallVisor ASAI adjuncts

PEC
TOTAL PORTS ____ + 12 = ____ 65512

Note: Using a passive bus arrangement, you can have up to 24 voice terminals per circuit pack. However, the terminals would have to be voice only.

PACKET DATA LINE (TN553) (G3r Only)

Every time you have a TN553, you'll need at least 1 TN726 port.

Enter the number of:

(A) CDR Ports
(B) Serial printer
(C) Manager 1 switch connected (instead of EIA-232 connected)
(D) Property Management System
(E) TN750 Announcement circuit pack
(F) BCMS Terminal
(G) G3r-MA Terminal

PEC
TOTAL PORTS ____ + 12 = ____ 63318

PACKET GATEWAY (TN577) (G3r Only)

Enter the number of:

(A) AUDIX Data Links
(B) 3B Applications (CMS, MSA, CallVisor ISDN Gateway)
(C) DCSS Between Switches

PEC
TOTAL PORTS ____ + 4 = ____ 63317

DS1 TIE TRUNK (TN722)

If you are reusing a TN722 circuit pack from an earlier system, enter the number of:

(A) Voice Grade Data Tie Trunks * ____
(B) Alternate Voice/Data Tie Trunks * ____
(C) DMI Tie Trunks * ____
(D) Release Link Trunks ____
(E) Future Growth ____

PEC
TOTAL PORTS ____ +23/24*= ____ 63122

SPEECH SYNTHESIZER (TN725)

Enter the number of:

(A) Speech Synthesizer Ports ____
(B) Future Growth ____

PEC
TOTAL PORTS ____ + 4 = ____ 63128

DATA LINE (TN726)

Enter the number of:

(A) EIA-232C Terminals/ADUs ____
(B) EIA-232C Host Computer Ports/ADUs ____
(C) (G3r Only) System Access Ports ____

PEC
TOTAL PORTS ____ + 8 = ____ 63130

* A + 24, B & C + 23; a common circuit pack cannot be used for both AVD and DMI.

MET LINE (TN735)

Enter the number of METS:

(A) 10 Button .....
(B) 20 Button .....
(C) 30 Button .....
(D) Future Growth .....

PEC
TOTAL PORTS ____ + 4 = ____ 63112

ANALOG LINE (TN742)

If you are reusing a TN742 from an earlier system, enter the number of

(A) 7100 Series Sets .....
(B) 2500/2554-Type Sets (On Premises) .....
(C) 2500/2554-Type Off-Premises Extensions .....
(D) 2500-Type Sets with Message Waiting Indicator/Recall capability .....
(E) Rotary Dial Telephones (500-Type) .....
(F) 510As .....
(G) Recorded Announcement Lines .....
(H) Teleconferencing Lines (QUORUM® teleconferencing equipment or CPE) .....
(I) Lines Equipped With Modems Only .....
(J) External Pooled Modems .....
(K) Queue Warning Lamps (for UCD/DDC) .....
(L) Loudspeaker Paging Access Lines .....
(M) Code Calling Access Lines .....
(N) Radio Paging Access Lines (Requiring Tip and Ring only) .....
(O) Recorded Telephone Dictation Lines (Requiring Tip and Ring only) .....
(P) Analog Lines for other CPE .....
(Q) Line for TAAS External Alert .....
(R) Future Growth .....

PEC
TOTAL PORTS ____ + 8 = ____ 63111

Additional information on analog line characteristics is in the following table.

Feature	Analog Line Circuit Packs				
	TN742	TN769	TN746	TN746B	TN479
Number of Ports	8	8	16	16	16
Neon Message Waiting Indicators	No	Yes	Yes	Yes	Yes
LED Terminals	Yes	Yes	Yes	Yes	Yes
Feed Voltage	-48 V	-48 V	-24 V	-48 V	-24V
Hard Bridging	Yes	Yes	No	Yes	No
Station Adjunct	Yes	Yes	No	Yes	No
Secondary Lightning Protection	Yes	Yes	No	Yes	No
Same Premises—Out-of-Building	Yes	Yes	No	Yes	No
Terminals	500-Type 2500-Type 7100 Series	500-Type 2500-Type 7100 Series	500-Type 2500-Type 7102A*	500-Type 2500-Type 7100 Series	500-Type 2500-Type 7100 Series
Range With 500-Type/ 2500-Type/7102A Terminals† (24-Gauge Wire)	20,000 Feet	20,000 Feet	3,100 Feet	20,000 Feet	3,000 Feet
Range With 7101A/7103A Terminals (24-Gauge Wire)	15,200 Feet	15,200 Feet	Not Supported	15,200 Feet	Not Supported
Ringer Loads	3	3	3	3	3
Simultaneous Ports Ringing Ringing	4	4	4	8 †	4

* The TN746 circuit pack supports the 7102A terminal, but does not support the 7101A or 7103A terminals.

† The TN746B circuit pack allows ringing on four ports of each half of the circuit pack (for a maximum of eight simultaneous ports ringing). A user attempting to ring one half of the circuit pack when all four ports are busy receives the busy tone.

CALL CLASSIFIER (TN744)

Eight touch-tone receiver ports are provided on each TN744 Call Classifier circuit pack. The TN744 circuit pack is used exclusively for receiving touch-tone input for the Call Prompting feature, classifying outgoing calls for the Answer Detection feature, and classifying outgoing calls for an outgoing call management system. Each of these are optional features that must be properly engineered. A maximum of 10 TN744 may be used in a G3i-Global system.

For G3i-Global, the number of TN744 ports required should also be calculated based on the traffic capacity. To determine the traffic capacity, determine the number of MFC service ciruits required by calculating the total time the service circuits are expected to be in use on calls during the busiest time of the day. If the G3i-Global is using a mixture of MFC DOD and MFC DID and call classification, add together the times calculated for each call type before looking up the combined total of TN744 ports required for each call type.

The number of service circuit ports required for DID maybe calculated as follows:

1. Determine the average number of seconds after seizure before reception of the first digit. This will vary depending on the type of switch on the other end, but assume 3 seconds if the answer is not known.
2. Determine the number of digits to be received. Include the equivalent of one or two extra digits for end of dial or group II signals.
   - Singapore - digits + a group II signal
   - Venezuela - digits
   - Belgium - digits
   - Saudi Arabia - digits + end of dial + group II signal
   - CCITT - (digits + group I) or (digits + group I)
   - Assume 6 if the answer is not known.
3. Multiply that by the seconds required to process each digit. Modem switches send at a rate of 6 digits per second, or 0.17 seconds per digit. Older switches may send at a lower rate. Belgian standard is 2 seconds per digit.

   Assume 0.17 seconds per digit if the answer is not known.
4. Add to that 1 second for call setup time within the G3i-Global.
5. If you lack the information necessary to perform the above calculation, assume the USA DTMF standard, which is 5.6 seconds, for the sum of all these things.
6. Multiply the sum by the expected number of DID calls per G3i-Global in the busy hour and divide by 100. The result is called CCS (hundred call seconds).
7. Use the CCS and the following table to determine the number of service circuit ports required.

CCS	Ports	TN744s	CCS	Ports	TN744s
0	1	1	940	41	6
3	2	1	970	42	6
12	3	1	998	43	6
24	4	1	1029	44	6
38	5	1	1057	45	6
55	6	1	1088	46	6
73	7	1	1117	47	6
92	8	1	1147	48	6
113	9	2	1177	49	7
134	10	2	1207	50	7
156	11	2	1237	51	7
178	12	2	1266	52	7
201	13	2	1296	53	7
224	14	2	1326	54	7
248	15	2	1355	55	7
273	16	2	1385	56	7
299	17	3	1415	57	8
322	18	3	1444	58	8
347	19	3	1474	59	8
373	20	3	1504	60	8
399	21	3	1534	61	8
424	22	3	1565	62	8
451	23	3	1595	63	8
477	24	3	1625	64	8
504	25	4	1655	65	9
531	26	4	1685	66	9
558	27	4	1715	67	9
585	28	4	1745	68	9
612	29	4	1775	69	9
640	30	4	1805	70	9
667	31	4	1835	71	9
695	32	4	1865	72	9
723	33	5	1895	73	10
751	34	5	1925	74	10
779	35	5	1955	75	10
807	36	5	1985	76	10
836	37	5	2015	77	10
864	38	5	2045	78	10
892	39	5	2075	79	10
921	40	5	2104	80	10

The number of service circuit ports required for DOD maybe calculated as follows:

1. Calculate expected service time for outgoing calls according to the following:

a. Assume USA DTMF standards for each call type:
   - 11-digit outgoing -10.15 seconds
   - 8-digit outgoing - 8.2 seconds
   - External operator assisted -14.3 seconds
   - 16-digit international - 33.4 seconds

b. or, to time the total time between starting dialing and ringing from the far end for one of each call type on a similar switch already connected to the same network using a stop watch.

- Determine the number of digits to be dialed. Include the equivalent of 1 extra digit for the group II signal.
- Multiply that by the seconds required to send each digit. The time may vary between 0.17 and 0.3 seconds per digit, depending on the CO. Assume 0.3 seconds per digit if the answer is not known.
- Add to that time for detecting end of dial. This may happen within the switch or by receiving a group B signal from the far end. Choose whichever of the following that applies to the type of call you are considering. If more than one applies, choose the longest time:

10 secs.	ARS not used
10 secs.	Number matches 1 ARS digit string
3 secs.	Number matches 2 or more ARS strings
The administered time of the forward signal absent timer.	
The administered time of the forward signal present timer or the typical call setup time within the national or private network. Call setup time within the network can vary greatly depending on the type of call and the country. Contact the local PTT for their typical call setup times.	

2. Multiply the time for each call type by the expected number of outgoing calls of each type in the busy hour, divided by 100. The result is called the CCS, which stands for hundred call seconds.
3. Use the CCS and the tables above to determine the number of service circuit ports required.

Add the number of DID and DOD service circuit ports together and use that figure in conjunction with the following table to determine the number of TN744 Call Classifier circuit packs you need.

Enter the number of:

(A) Touch-tone receivers for Call Prompting ..... ____

(B) Touch-tone receivers for Answer Detection ..... ____

(C) Touch-tone receivers for outbound call management ..... ____

(D) Number of Ports for DID and DOD ..... ____

PEC

TOTAL PORTS ____ + 8 = ____ 63532

ANALOG LINE (TN746)

Enter the number of:

(A) 7100 Series Sets ____
(B) 2500/2554-Type Sets (On Premises) ____
(C) 2500/2554-Type Off-Premises Extensions ____
(D) 2500-Type Sets with Message Waiting Indicator/Recall capability ____
(E) Rotary Dial Telephones (500-Type) ____
(F) 510As ____
(G) Recorded Announcement Lines ____
(H) Teleconferencing Lines (QUORUM® teleconferencing equipment or CPE) ____
(I) Lines Equipped With Modems Only ____
(J) External Pooled Modems ____
(K) Queue Warning Lamps (for UCD/DDC) ____
(L) Loudspeaker Paging Access Lines ____
(M) Code Calling Access Lines ____
(N) Radio Paging Access Lines (Requiring Tip and Ring only) ____
(O) Recorded Telephone Dictation Lines (Requiring Tip and Ring only) ____
(P) Analog Lines for other CPE ____
(Q) Line for TAAS External Alert ____
(R) Future Growth ____

PEC
TOTAL PORTS ____ + 16 = ____ 63136

For additional information on analog line circuit pack characteristics, see “Analog Line (TN742).”

CENTRAL OFFICE TRUNK (TN747)

Enter the number of lines that will terminate as either trunk lines or as personal lines:

(A) CO Lines ..... ____
(B) WATS Lines ..... ____
(C) 800 Service Lines ..... ____
(D) FX Lines ..... ____
(E) Future Growth ..... ____

PEC
TOTAL PORTS ____ + 8 = ____ 63115

TONE DETECTOR (TN748)

Two Call Progress Tone Receiver (CPTR) ports are provided on each TN748 Tone Detector circuit pack alongside the four Touch-Tone Receiver ports. CPTRs are required to provide dial tone detection for the enhanced Automatic Route Selection, Terminal Dialing, Abbreviated Dialing, and Last Number Dialed features. High usage of Terminal Dialing to locations outside the system may require a greater number of CPTRs and should be referred to your Technical Service Center (TSC) for review.

Note that up to 20 TN748s my be used in G1 systems, up to 10 in G3i or G3i-Global systems, and up to 50 in G3r systems.

In the following calculations, do **not** include TN748s that are provided as standard equipment.

Note: For G1 single-carrier systems, the TN768 Tone Clock circuit pack is used instead of the TN756 Tone Detector/Generator circuit pack when the duplication option, DS1 Tie Trunk (TN722), or DS1 Interface (TN767) circuit packs or ISDN-PRI is used.

Enter the number of:

(A) Touch-Tone Receivers ..... ____

SUBTOTAL A + 4 = ____

(B) Call Progress Receivers ..... ____

SUBTOTAL B + 2 = ____

PEC
ENTER LARGER OF SUBTOTALS ____ 63123

ANNOUNCEMENT (TN750)

Enter the number of:

(A) Announcement Ports ..... ____
(B) Future Growth ..... ____

PEC
TOTAL PORTS ____ + 16 = ____ 63141

Note: Only one TN750 circuit pack per system. The TN750 circuit pack should only be used in the Control Carrier which provides battery backup and reduces the chance of losing the announcements.

DIRECT INWARD DIALING TRUNK (TN753)

Enter the number of:

(A) DID Trunks ..... ____
(B) Future Growth ..... ____

PEC
TOTAL PORTS ____ + 8 = ____ 63116

DIGITAL LINE (TN754)

Enter the number of:

(A) 7401D Terminals ..... ____
(B) 7403D Terminals ..... ____
(C) 7404D Terminals ..... ____
(D) 7405D Terminals ..... ____
(E) 7406D Terminals ..... ____
(F) 7407D Terminals ..... ____
(G) 7410D Terminals ..... ____
(H) 7434D Terminals ..... ____
(I) 7444 Terminals ..... ____
(j) 7400A & BaData Modules ..... ____
(I) CallMaster® (602A1) ..... ____
(J) PDM/MPDM ..... ____
(K) TDM/MTDM ..... ____
(L) Attendant Consoles (Max 7,6 Day + 1 Night) ..... ____
(M) Personal Terminal 510D ..... ____
(N) 515 BCT ..... ____
(O) External Pooled Modems ..... ____
(P) Future Growth ..... ____

PEC

TOTAL PORTS ____ + 8 = ____ 63114

POOLED MODEM (TN758)

Enter the number of:

(A) Pooled Modems ..... ____
(B) Pooled Modems for growth ..... ____

PEC

TOTAL PORTS ____ + 2 = ____ 63119

TIE TRUNK (ANALOG) (TN760)

Enter the number of:

(A) Tie Trunks (Including Release Link Trunks) ..... ____
(B) Future Growth ..... ____

PEC
TOTAL PORTS ____ + 4 = ____ 63117

HYBRID LINE (TN762)

Enter the number of:

(A) 7303S Terminals ..... ____
(B) 7305S Terminals ..... ____
(C) 7302H Terminals ..... ____
(D) 7303H Terminals ..... ____
(E) 7305H01B Terminals (4122) administered as 7305S Terminals ..... ____
(F) 7305H02B Terminals (4170) administered as 7305S Terminals ..... ____
(G) 7305H03B Terminals ..... ____
(H) Future Growth ..... ____

PEC
TOTAL PORTS ____ + 8 = ____ 63113

AUXILIARY TRUNK (TN763)

Enter the number of:

(A) Trunks for Code Calling (Max 10) ..... ____
(B) Trunks for Loudspeaker Paging Access (Max 10) (See Note) ..... ____
(C) Trunks for Recorded Telephone Dictation ..... ____
(D) Music-on-Hold (Max 1) ..... ____
(E) Trunks for other CPE (Audichron) ..... ____
(F) Future Growth ..... ____
(G) (G3r Only) Malicious Call Trace ..... ____
(H) (G3r Only) Recorded Announcements ..... ____

PEC
TOTAL PORTS ____ +4= ____ 63118

Note: A 278A adapter and power supply is required for each paging zone, unless PagePac paging system equipment is used.

DS1 TIE TRUNK (TN767)

Enter the number of:

(A) Voice Grade Data Tie Trunks † ..... ____
(B) Alternate Voice/Data Tie Trunks † ..... ____
(C) DMI Tie Trunks † ..... ____
(D) ISDN PRI Trunks † ..... ____
(E) DID Trunks ..... ____
(F) DOD Trunks ..... ____
(G) Off Premises Extensions ..... ____
(H) Release Link Trunks ..... ____
(I) Future Growth ..... ____

PEC
TOTAL PORTS ____ +23/24*= ____ 63156

† A + 24, B, C, & D + 23; a common circuit pack cannot be used for AVD, DMI, and ISDN.

TONE CLOCK (TN768)

For G1 and G3, Tone Clock TN768 is always required instead of TN741 or TN714. G1 and G3 multicarrier cabinets ship with a TN768 as part of the basic PEC. G1 single-carrier cabinets ship with a TN756 as part of the basic PEC. When a G 1 single-carrier cabinet system has the duplication option, EPN, DS1 service, or OCM, a TN768 Tone Clock (PEC 65515) is required.

When either a TN741 or TN768 is used, the Tone Detector must be the TN748.

ANALOG LINE (TN769)

This circuit pack is used for voice terminals with neon message waiting lamps.

If you are reusing a TN769 from an earlier system, enter the number of

(A) 7100 Series Sets ..... ____
(B) 2500/2554-Type Sets (On Premises) ..... ____
(C) 2500-Type Sets with Message Waiting
Indicator/Recall capability ..... ____
(D) Rotary Dial Telephones (500-Type) ..... ____
(E) 510As ..... ____
(F) Recorded Announcement Lines (Max 10) ..... ____
(G) Teleconferencing Lines (Max 28)
(QUORUM® teleconferencing equipment or CPE) ..... ____
(H) Lines Equipped With Moderns Only ..... ____
(I) External Pooled Modems ..... ____
(J) Queue Warning Lamps (for UCD/DDC) ..... ____
(K) Loudspeaker Paging Access Lines ..... ____
(L) Code Calling Access Lines ..... ____
(M) Radio Paging Access Lines (Requiring Tip and Ring only) ..... ____
(N) Recorded Telephone Dictation Lines
(Requiring Tip and Ring only) ..... ____
(O) Analog Lines for other CPE ..... ____
(P) Line for TAAS External Alert ..... ____
(Q) Future Growth ..... ____

PEC
TOTAL PORTS ____+ 8 = ____ 63142

For additional information on analog line circuit pack characteristics, see “Analog Line (TN742).”

TONE CLOCK (TN780)

The TN780 connects and monitors an optional external Stratum 3 clock. The TN780 also couples the Stratum 3 clock's output to local clocks. Only the processor carrier, which supplies master timing to the system, uses this circuit pack. The TN780 provides the following tones: call progress, touch tones, answer-back, and trunk transmission test. It also provides the following clocks: 2MHz, 160kHz, and 8kHz. This circuit pack can transmit the system clock and tones on either TDM bus A, TDM bus B, or both buses.

TONE DETECTOR (TN748)

Two Call Progress Tone Receiver (CPTR) ports are provided on each TN748 Tone Detector circuit pack alongside the four Touch-Tone Receiver ports. CPTRs are required to provide dial tone detection for the enhanced Automatic Route Selection, Terminal Dialing, Abbreviated Dialing, and Last Number Dialed features. High usage of Terminal Dialing to locations outside the system may require a greater number of CPTRs and should be referred to your Technical Service Center (TSC) for review.

Note that up to 20 TN748s my be used in G1 systems, up to 10 in G3i or G3i-Global systems, and up to 50 in G3r systems.

In the following calculations, do **not** include TN748s that are provided as standard equipment.

Note: For G1 single-carrier systems, the TN768 Tone Clock circuit pack is used instead of the TN756 Tone Detector/Generator circuit pack when the duplication option, DS1 Tie Trunk (TN722), or DS1 Interface (TN767) circuit packs or ISDN-PRI is used.

Enter the number of:

(A) Touch-Tone Receivers ..... ____

SUBTOTAL A + 4 = ____

(B) Call Progress Receivers ..... ____

SUBTOTAL B + 2 = ____

PEC

ENTER LARGER OF SUBTOTALS ____ 63123

DISK DRIVE (TN1657) (G3r Only)

Enter the number of:

(A) Center Stage Switches (CSSs)

One disk drive only is needed for a simplex G3r system with a CSS. Two are required for duplicated systems. Optionally, the disk drive may also be added to increase booting speed.

PEC
____63324

TABLE AI. Summation of Interface Circuit Packs

Circuit Pack	Description	PEC	Quantity
TN429 (Int'l Only)	DIOD Dialing Trunk	63802I	
TN464 (Int'l and G3r)	32-Channel E1 Trunk	63804I	
TN465 (Int'l Only)	CO Loop Start Trunk	63801I	
TN479 (Int'l Only)	Analog Line	63803I	
TN553	Packet Data Line	63318	
TN556	ISDN-BRI Line	65512	
TN577	Packet Gateway	63317	
TN722	DS1 Tie Trunk	63122	
TN725	Speech Synthesizer	63128	
TN726	Data Line	63130	
TN735	MET Line	63112	
TN741	Tone Clock	63127	
TN744	Call Classifier	63532	
TN746	Analog Line (16)	63136	
TN747	CO Trunk	63115	
TN748	Tone Detector	63123	
TN750	Announcement	63141	
TN753	DID Trunk	63116	
TN754	Digital Line	63114	
TN758	Pooled Modem	63119	
TN760	Tie Trunk	63117	
TN762	Hybrid Line	63113	
TN763	Auxiliary Trunk	63118	
TN765	Processor Interface	63153	
TN767	DS1 Interface	63156	
TN768	Tone Clock	65515	
TN780 (Int'l Only)	Tone Clock	63137	
TN574	DS1 Converter	63327	
		TOTAL CIRCUIT PACKS	

Software Determination

Table AJ provides a listing of system software PEC codes.

TABLE AJ. System Software PEC Codes

Description	G1 PEC	G3i and G3i-Global PEC	G3r PEC
Basic Voice Applications Software (always required)	1233VAS	1236VAS	1263VAS
CallVisor Adjunct Switch Application Interface		1236ASB	1263ASB
Authorization Codes	1233AUC	1236AUC	1263AUC
Automatic Call Distribution	1233ACD	1236ACD	1263ACD
Automatic Route Selection	1233AR	1236AR	1263ARS
Basic Call Management System Measurements	1233BCM	1236BCM	1263BCM
Call Vectoring Basic		1236CVB	1263CVB
Call Vectoring Prompting		1236CVP	1263CVP
Call Work Codes		1236CWC	1263CWC
Centralized Attendant Service (Branch)	1233CAS	1236CAS	1263CAS
Centralized Attendant Service (Main)	1233CAM	1236CAM	1263CAM
Distributed Communications System	1233DCS	1236DCS	1263DCS
Emergency Access to Attendant	1233VAS	1236VAS	1263VAS
Enhanced Abbreviated Dialing	1233EAD	1236EAD	1263EAD
Forced Entry of Account Codes	1233FEA	1236FEA	1263FEA
Hospitality Services	1233VAS	1236VAS	1263VAS
ISDN-PRI		1236PRI	1263PRI
Look Ahead Interflow		1236LAI	1263LAI
SID/ANI	1233PRI		
circuit packN/BN		1236PRI	1263PRI
Private Networking (AAR)	1233PNA	1236PNA	1263PNA
Service Observing	1233VAS	1236VAS	1263VAS
Uniform Dial Plan	1233UDP	1236UDP	1263UDP

Cabinet Determination (DEFINITY Generic 1 and Generic 3)

DEFINITY Communications Systems G1 and G3 have a duplication option for the control cabinet (that is, control circuits are duplicated). These systems also have an option for duplicating the expansion cabinet (that is, a second port cabinet can be added). A DEFINITY system is ordered according to the need for duplication, the number of ports required, and future growth expectations.

For DEFINITY systems with multicarrier cabinet(s), the cabinet that contains the control circuits (duplicated or unduplicated) is called the Processor Port Network (PPN). The PPN provides up to 89 port slots. If a second cabinet is required for additional ports, the cabinet is referred to as an Expansion Port Network (EPN).

Note: For G3r, the PPN is only supported by the multicarrier cabinet. EPNs in G3r can use the single-carrier cabinets.

In a DEFINITY system with single-carrier cabinet(s), the stack of one to four cabinets that includes the control circuits is called the PPN (G1, G3i, and G3i-Global only). The PPN also contains up to 64 port slots. If an additional stack of one to four cabinets is required, the stack is referred to as an EPN.

G1, G3i, and G3i-Global systems that contain both a PPN and an EPN must be connected by way of expansion interface circuits located in port slots in the PPN and EPN using fiber-optic cables.

The G3r uses a Center Stage Switch (CSS) for interconnections when there are four or more port networks (PPNs and EPNs). In this case, each port network's TN570 Expansion Interface and fiber module is connected by fiber-optic cable to a TN573 Switch Node Interface in a switch node. The CSS can consist of multiple switch nodes, in which case those switch nodes are interconnected by fiber-optic cables. When there are fewer than four port networks, the PPNs and EPNs are connected in the same fashion as for G1 and G3i. You can have a CSS for fewer than four port networks, but it is not recommended unless you anticipate expanding the system to four or more port networks. The TN573 Switch Node Interface circuit packs are usually installed in the E Carrier of the PPN.

Note: Although port networks can be interconnected using fiber-optic cable for G3r in the same fashion as for G1, G3i, and G3i-Global, it is more cost-effective and it is required, where there are four or more port networks involved, to use the CSS.

The mixing of multicarrier and single-carrier cabinets in an equipment configuration is allowed. For example, a fully equipped multicarrier PPN that requires a few additional ports can be supplemented by one single-carrier EPN cabinet. Such an arrangement would be more economical than adding a multicarrier EPN cabinet equipped with only one carrier.

Multicarrier Cabinet Configuration

A multicarrier cabinet configuration can be selected from the following equipment arrangements. The G3r data is given in the following table separately from the G1, ...G3i, and G3i-Global data.

The G3r data has special considerations and limitations:

- The PPN cabinet is the first cabinet and is available only in the multicarrier cabinet.
- The PPN cabinet supports only one port network.
- The PPN cabinet is configured with three different carriers:
  - — Processor Carrier - Minimum of one, maximum of two
  - — Switch Node Carrier - One or two, depending on connectivity duplication
  - – Port Carrier - Minimum of one, maximum of four
- The Switch Node Carrier can only be configured in a multicarrier cabinet.
- The EPN is available in both the single- and multicarrier cabinet.

Carriers	Max Port Slots*	PEC	Attribute for AC	Attribute for DC
PPN Without Duplication				
Control A + Port B	29 (28)	6300-05A	PRC02	PRC04
Control A + Ports B, C	49 (48)	6300-05B	PRC02	PRC04
Control A + Ports B, C, D	69 (68)	6300-05C	PRC02	PRC04
Control A + Ports B, C, D, E	89 (88)	6300-05D	PRC02	PRC04
G3r Control A + Ports B, C, D, E (No CSS)	80	6300-07D	PRC02	PRC04
G3r Control A + Ports B, C, D (E - With CSS)	60	6300-07C 63310	PRC02	PRC04
EPN Without Duplication (adds to PPN)				
Expansion Control A	18	63501		
Exp. Control A + Port B	38	63502	PRC02	PRC04
Exp. Control A + Ports B, C	58	63503	PRC02	PRC04
Exp. Control A + Ports B, C, D	78	63504	PRC02	PRC04
Exp. Control A + Ports B, C, D, E	98	63505	PRC02	PRC04
G3r Control A + Ports B, C, D, E (No CSS)	98	63505	PRC02	PRC04
G3r Control A + Ports B, C, D, E (With Simplex Switch Node Carriers)	78	63505	PRC02	PRC04
G3r Control A + Ports B, C, D, E (With Duplicate Switch Node Carriers)	58	63505	PRC02	PRC04

Carriers	Max Port Slots*	PEC	for AC	Attribute for DC
PPN With Duplication				
Duplication Equipment		63201		
Control A + Dup. Control B	18 (16)	6300-05A	PRC03	PRC05
Control A + Dup. B + Port C	38 (36)	6300-05B	PRC03	PRC05
Control A + Dup. B + Ports C, D	58 (56)	6300-05C	PRC03	PRC05
Control A+ Dup. B + Ports C, D, E	78 (76)	6300-05D	PRC03	PRC05
G3r Control A + Dup. B + Ports B, C, D, E (No CSS)	60	6300-07D	PRC03	PRC05
G3r Control A + Dup. B + Ports B, C, D (E-With CSS, Dup. Processor Only)	40	6300-07C	PRC03	PRC05
G3r Control A + Dup. B + Ports B, C, D (E-With CSS, Fully Dup.)	40	6300-07C	PRC03	PRC05
EPN With Duplication (adds to PPN)				
Duplication Equipment		63202		
Exp. Control A + Port B	36	63502	PRC03	PRC05
Exp. Control A + Ports B, C	56	63503	PRC03	PRC05
Exp. Control A + Ports B, C, D	76	63504	PRC03	PRC05
Exp. Control A + Ports B, C, D, E	96	63505	PRC03	PRC05
G3r Control A + Ports B, C, D, E (Two port networks, port network above fans)	59	63505	PRC03	PRC05
(Two port networks, port network below fans)	40	63505	PRC03	PRC05

* Figures in ( ) are maximum PPN slots when the system has EPN.

* Figures in ( ) are maximum PPN slots when the system has EPN.

Single-Carrier Cabinet Configuration

A single-carrier cabinet configuration can be selected from the following equipment arrangements. The G3r data is given in the following table separately from the G1 and G3i data.

Note: The G3r PPN is only available as a multicarrier cabinet. The G3r EPN is, however, available in single-carrier cabinets.

Cabinets	Max Port Slots*	PEC	Attribute
PPN Without Duplication			
Control A	10 (9)	6300-06A	TNC01-D
Control A + Port B	28 (27)	6300-06B	PRC02-D TNC01-D
Control A + Ports B, C	46 (45)	6300-06C	PRC02-D TNC01
Control A + Ports B, C, D	64 (63)	6300-06D	PRC02-D TNC01
EPN Without Duplication (adds to PPN)			
Expansion Control A	16	63601	PRC02-D
Exp. Control A + Port B	34	63602	PRC02-D
Exp. Control A + Ports B, C	52	63603	PRC02-D
Exp. Control A + Ports B, C, D	70	63604	PRC02-D
G3r Expansion Control A	17	63601	PRC02-D
G3r Exp. Control A + Port B	35	63602	PRC02-D
G3r Exp. Control A + Ports B, C	53	63603	PRC02-D
G3r Exp. Control A + Ports B, C, D	71	63604	PRC02-D
PPN With Duplication			
Duplication Equipment		63201	
Control A + Dup. Control B	20 (18)	6300-06B	PRC03 TNC02
Control A + Dup. Control B + Port C	38 (36)	6300-06C	PRC03 TNC02
Control A + Dup. Control B + Ports C, D	56 (54)	6300-06D	PRC03 TNC02

* Figures in ( ) are maximum PPN slots when the system has EPN.

Cabinets	Max Port Slots*	PEC	Attribute
EPN With Duplication (add to PPN)			
Duplication Equipment		63202	
Exp. Control A + Port B	32	63602	PRC03
Exp. Control A + Ports B, C	50	63603	PRC03
Exp. Control A + Ports B, C, D	68	63604	PRC03

Ordering Information

Enter the quantities of equipment to be ordered on the Order Summary Sheet which follows (make additional copies of the sheet if needed). The sheets, when completed, can be attached to the order. Use the information listed on the various tables in the manual to complete the entries.

To ensure all equipment and facilities are ordered, complete the following checklist.

Are the following pieces of equipment/facilities required and have they been ordered or addressed?

	Required		Ordered	
	Yes	No	Yes	No
DEFINITY cabinet(s) (1 required)	❑	❑	❑	❑
Circuit packs (required)	❑	❑	❑	❑
System adjuncts (See Note 1)	❑	❑	❑	❑
Attendant Console(s)	❑	❑	❑	❑
Manager I Terminal(s) (G1)	❑	❑	❑	❑
G3-Management Terminal(s) (G3)	❑	❑	❑	❑
Terminals (voice & data) (See Note 2)	❑	❑	❑	❑
Terminal adjuncts (See Note 3)	❑	❑	❑	❑
Trunk facilities (local & special)	❑	❑	❑	❑
Network Interface	❑	❑	❑	❑
Switch/Terminal wiring, cable access panel, power failure transfer arrangements (Contact Premises Service Consultants)	❑	❑	❑	❑

Notes:

1. System Adjuncts: Printers, Local Storage Units, Queue Warning Lamps, Adjunct Processors, Call Detail Recorders, TELESEER CDR
2. Terminals: Voice Terminals (2500, 7100, 7300, 7400D Series, and CallMaster-602A1) Data Terminals, Data Sets, Data Modules (PDM/MPDM, TDM/MTDM, 7400A, 7400B, 7500B, BCTs, Z3A-ADU)
3. Terminal Adjuncts: Cords, Speakerphones, Modules (DDM, FKM, CCM, DTDM), DC power for modules, Amplifier handsets, Headsets/Adapters)

ORDER SUMMARY SHEET

Price Element Code (PEC)	Description	Quantity

ENVIRONMENTAL REQUIREMENTS

General

This section provides information about the floor and wall space required for system and associated peripheral equipment installed in the equipment room. Specifications for temperature, humidity, air purity, and lighting levels are also included.

Floor Plans and Layouts

Floor plan arrangements will vary depending on the size and shape of the equipment room and the amount of growth planned for the system. Typical floor plans are shown in Figures 10, 11, 12, and 13. DEFINITY Generic 1 and DEFINITY Generic 3 can have either one system cabinet (PPN) or two system cabinets (PPN and EPN) plus an auxiliary cabinet in some cases. .

The wall behind the system cabinet must be clear of all objects (pictures, shelves, or windows) that are not required in the system installation. The entire area behind the cabinet must be reserved for the cross-connect field and the cable access panel (when provided). Also, room for system growth should be considered.

Floor Loading

The type of system cabinet determines the floor loading requirement.

With Multicarrier Cabinet(s)

The floor must have a commercial floor loading code of at least 50 pounds per square foot. A fully loaded multicarrier cabinet weighs about 800 pounds. Thus, a free maintenance area of at least 16 square feet is required for each cabinet.

With Single-Carrier Cabinet(s)

One single-carrier cabinet weighs about 130 pounds, a fully loaded two-cabinet system weighs about 255 pounds, a fully loaded three-cabinet system weighs about 380 pounds, and a four-cabinet system weighs about 500 pounds. Since the floor must have a commercial floor loading code of at least 50 pounds per square foot, a free maintenance area of at least 10 square feet is required for a four-cabinet system.

Earthquake Protection

When earthquake or disaster bracing is required by law, or when local engineering feels that bracing is necessary, the system cabinet can be bolted to the floor. Figure 24 shows the zones in the North American continent where bracing maybe desirable.

Note: A greater susceptibility of an area to earthquakes is indicated by a higher number in Figure 24. In the United States, 0 represents the lowest susceptibility and 4 represents the highest. In Canada, 0 represents the lowest susceptibility and 3 represents the highest.

Refer to the *DEFINITY Communications System Generic 1 and Generic 3 Installation and Test,* 555-230-104 manual for details regarding the installation of earthquake bracing.

Floor Space

The floor space requirements in the equipment room vary for each system.

With Single-Carrier Cabinet(s)

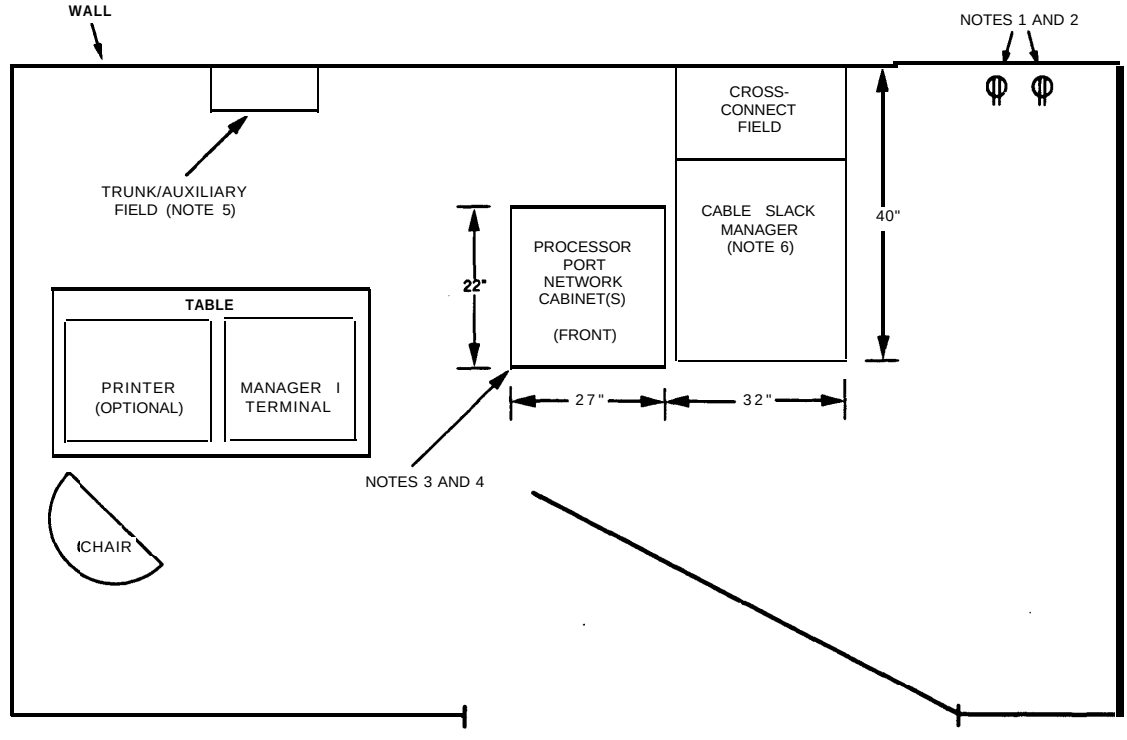
The following system equipment and optional peripheral equipment occupies floor space in the equipment room (Figure 20):

- System Cabinet and Cable Slack Manager—The system cabinet is 27 inches wide and 22 inches deep. A single cabinet is about 20 inches high, a two-cabinet system is 39 inches high, a three-cabinet system is 58 inches high, and a four-cabinet system is 77 inches high. The cable slack manager requires 38 inches between the cabinet and wall. The system cabinets and cable slack manager occupy about 8 square feet of floor space.

With Multicarrier Cabinet(s)

The following system equipment and optional peripheral equipment occupies floor space in the equipment room (Figures 21, 22, and 23):

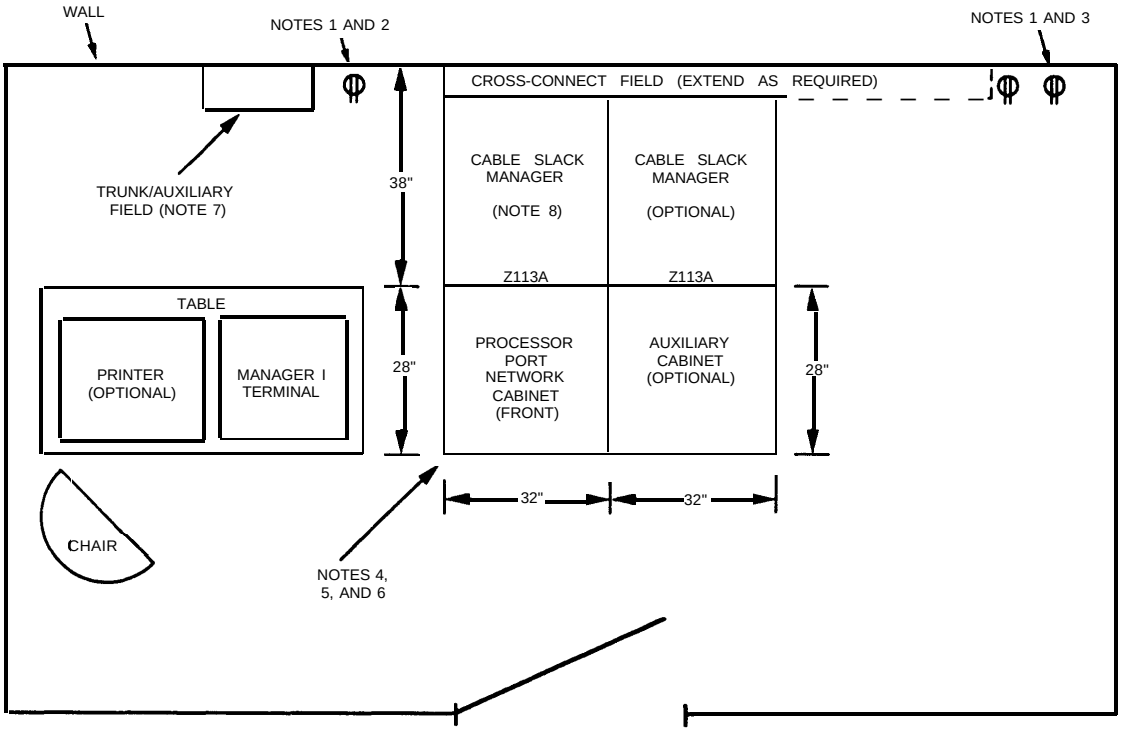
- System Cabinet and Cable Slack Manager—The system cabinet is 32 inches wide and 28 inches deep. The cabinet is 70 inches high. The cable slack manager requires 38 inches between the cabinet and wall. Each cabinet (including the door opening) and cable slack manager occupy about 22 square feet of floor space.
- Auxiliary Cabinet—The auxiliary cabinet is 32 inches wide, 24 inches deep, and 70 inches high. This cabinet (including the door opening and maintenance area behind the cabinet) occupies about 22 square feet of floor space.



NOTES:

1. POWER OUTLETS SHOULD BE LOCATED OUTSIDE THE CROSS-CONNECT FIELD AREA. POWER OUTLET(S) MUST NOT BE UNDER SWITCH CONTROL AND MUST NOT BE SHARED WITH OTHER EQUIPMENT
2. PROCESSOR PORT NETWORK CABINETS REQUIRE A SPECIAL 120-VOLT, 60-HZ, 15-AMP OR 20-AMP POWER OUTLET (NEMA 5-15 OR NEMA 5-20 RECEPTACLE, OR EQUIVALENT).
3. SYSTEM MUST BE GROUNDED BY ONE OF THE APPROVED METHODS LISTED IN THIS SECTION.
4. EARTHQUAKE PROTECTION MAYBE REQUIRED.
5. THE TRUNK/AUXILIARY FIELD MAYBE LOCATED WITHIN THE CROSS-CONNECT FIELD.
6. EACH SCC USES 10-FOOT B25A CABLES FROM THEA AND B CABINET POSITIONS AND 15-FOOT B25A CABLES FROM THE C AND D CABINET POSITIONS. FIBER CONNECTIONS BETWEEN PORT NETWORKS USE 20-FOOT (FL2P-P-20) FIBER CABLE.

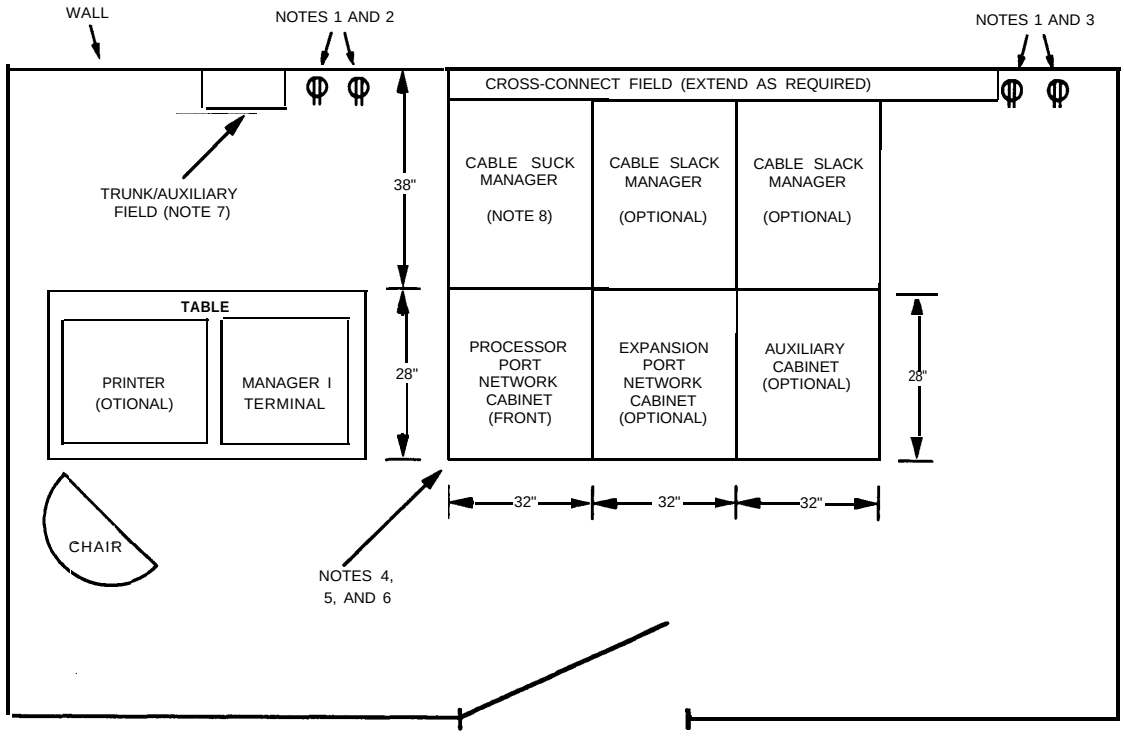
FIGURE 20. Typical Single-Carrier Cabinet Floor Plan With Processor Port Network Only



NOTES:

1. POWER OUTLETS MUST NOT BE UNDER SWITCH CONTROL, MUST NOT BE SHARED WITH OTHER EQUIPMENT, AND SHOULD BE LOCATED OUTSIDE THE CROSS-CONNECT FIELD AREA.
2. PROCESSOR PORT NETWORK CABINET REQUIRES A SPECIAL 120-VOLT, 60-HZ, 50-AMP POWER OUTLET (NEMA 5-50R RECEPTACLE, OR EQUIVALENT).
3. AUXILIARY CABINET REQUIRES A SPECIAL 120-VOLT, 60-HZ, 20-AMP POWER OUTLET (NEMA 5-20R RECEPTACLE, OR EQUIVALENT).
4. ALLOW AT LEAST 36 INCHES (91.4CM) OF SPACE IN FRONT OF CABINET TO PERMIT DOOR TO SWING OPEN.
5. SYSTEM MUST BE GROUNDED BY ONE OF THE APPROVED METHODS.
6. EARTHQUAKE PROTECTION MAY BE REQUIRED.
7. THE TRUNK/AUXILIARY FIELD MAYBE LOCATED WITHIN THE CROSS-CONNECT FIELD.
8. EACH MCC CABINET USES 10-FOOT B25A CABLES FROM THE D AND E CABINET POSITIONS AND 15-FOOT B25A CABLES FROM THE A, B, AND C CABINET POSITIONS, FIBER CONNECTIONS BETWEEN PORT NETWORKS USE 20-FOOT (FL2P-P-20) FIBER CABLE.

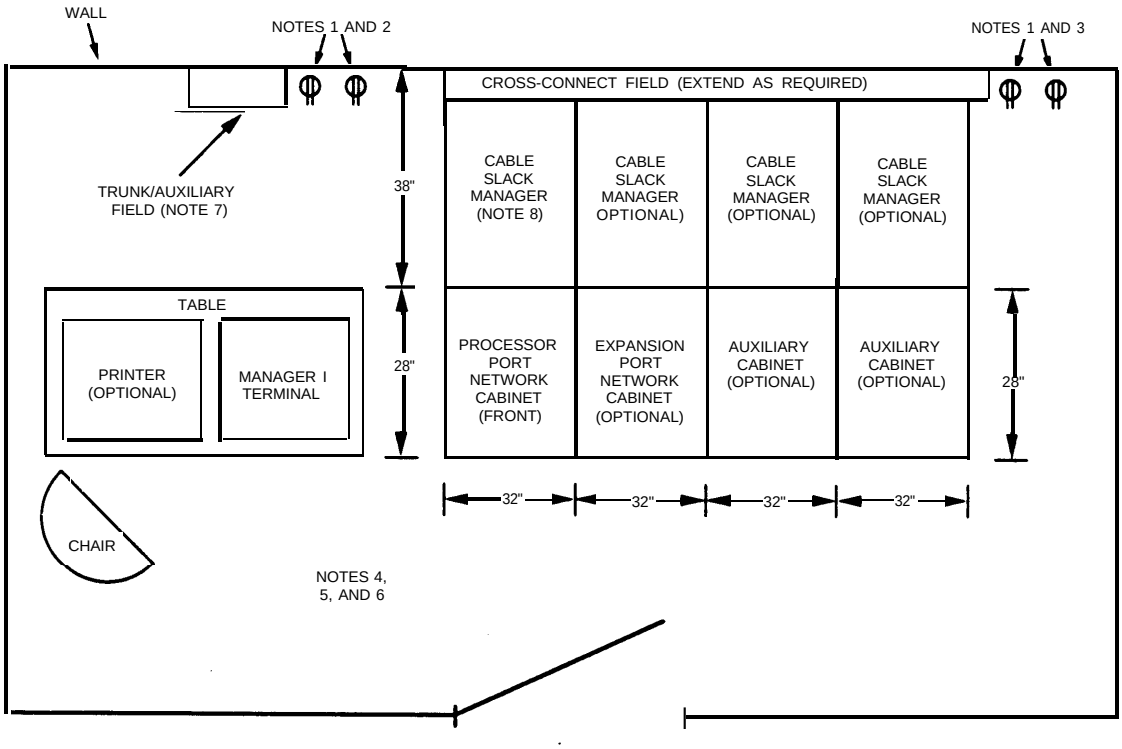
FIGURE 21. Typical Multicarrier Cabinet Floor Plan With Processor Port Network and Auxiliary Cabinet



NOTES:

1. POWER OUTLETS MUST NOT BE UNDER SWITCH CONTROL, MUST NOT BE SHARED WITH OTHER EQUIPMENT, AND SHOULD BE LOCATED OUTSIDE THE CROSS-CONNECT FIELD AREA.
2. PROCESSOR PORT NETWORK AND EXPANSION PORT NETWORK CABINETS REQUIRE SPECIAL 120-VOLT, 60-HZ, 50-AMP POWER OUTLETS (NEMA 5-50R RECEPTACLE, OR EQUIVALENT).
3. AUXILIARY AND AP CABINETS REQUIRE A SPECIAL 120-VOLT, 60-HZ, 20-AMP POWER OUTLET (NEMA 5-20R RECEPTACLE, OR EQUIVALENT).
4. ALLOW AT LEAST 36 INCHES (91.4CM) OF SPACE IN FRONT OF CABINET TO PERMIT DOOR TO SWING OPEN.
5. SYSTEM MUST BE GROUNDED BY ONE OF THE APPROVED METHODS.
6. EARTHQUAKE PROTECTION MAY BE REQUIRED.
7. THE TRUNK/AUXILIARY FIELD MAYBE LOCATED WITHIN THE CROSS-CONNECT FIELD.
8. EACH MCC CABINET USES 10-FOOT B25A CABLES FROM THE D AND E CABINET POSITIONS AND 15-FOOT B25A CABLES FROM THE A, B, AND C CABINET POSITIONS. FIBER CONNECTIONS BETWEEN PORT NETWORKS USE 20-FOOT (FL2P-P-20) FIBER CABLE.

FIGURE 22. Typical Floor Plan With Processor and Expansion Port Networks



NOTES:

1. POWER OUTLETS MUST NOT BE UNDER SWITCH CONTROL, MUST NOT BE SHARED WITH OTHER EQUIPMENT, AND SHOULD BE LOCATED OUTSIDE THE CROSS-CONNECT FIELD AREA.
2. PROCESSOR PORT NETWORK AND EXPANSION PORT NETWORK CABINETS REQUIRE SPECIAL 120-VOLT, 60-HZ, 50-AMP POWER OUTLETS (NEMA 5-50R RECEPTACLE, OR EQUIVALENT).
3. AUXILIARY AND AP CABINETS REQUIRE A SPECIAL 120-VOLT, 60-HZ 20-AMP POWER OUTLET (NEMA 5-20R RECEPTACLE, OR EQUIVALENT).
4. ALLOW AT LEAST 36 INCHES (91.4CM) OF SPACE IN FRONT OF CABINET TO PERMIT DOOR TO SWING OPEN.
5. SYSTEM MUST BE GROUNDED BY ONE OF THE APPROVED METHODS.
6. EARTHQUAKE PROTECTION MAY BE REQUIRED.
7. THE TRUNK/AUXILIARY FIELD MAYBE LOCATED WITHIN THE CROSS-CONNECT FIELD.
8. EACH MCC CABINET USES 10-FOOT B25A CABLES FROM THE D AND E CABINET POSITIONS AND 15-FOOT B25A CABLES FROM THE A, B, AND C CABINET POSITIONS. FIBER CONNECTIONS BETWEEN PORT NETWORKS USE 20-FOOT (FL2P-P-20) FIBER CABLE

FIGURE 23. Typical Floor Plan With Processor and Expansion Port Networks (G3r Only)

1. SEISMIC DATA FROM: "UNIFORM BUILDING CODE" INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS., 1976, WHITTIER, CALIFORNIA.
2. SEISMIC DATA FROM: "THE SUPPLEMENT TO THE NATIONAL BUILDING CODE OF CANADA", 1980, NRCC NO.17724.

FIGURE 24. Earthquake Environment (North American Continent)

Desktop Space

The 510A or 510D Personal Terminal and 513,515,610,615,715, 4410, and 4425 terminals can be located in the equipment room and require space on a desk or table.

The 513, 515, 610, 615, 715, 4410, and 4425 terminals each require approximately 3.2 square feet of space. The 510A or 510D with optional keyboard each requires approximately 2.1 square feet of space.

Optional Equipment Floor and Desktop Space

Refer to the following documents for additional information on optional equipment that can be used with the system and that will require floor or desk space.

445 Printer	999-700-023
443 Printer	999-700-024
450 Printer	999-700-025
460 Printer	999-700-022
470 Printer and 475 Printer	999-300-285IS
572 Printer and 573 Printer	999-300-562

Wall Space Required

Wall space required in the equipment room depends on the type of cross-connect equipment being installed—Z100-type (modular) or 110-type. The space required also depends on the size of the system. *DEFINITY Communications System Generic 1 and Generic 3i Wiring,* 555-204-111, provides details on the cross-connect hardware.

If existing cross-connect hardware is reused, the space requirements and hardware requirements must be detailed in the system floor plan. Contact the Technical Consultant for assistance in planning for reuse of existing equipment.

Temperature and Humidity

The system equipment should be installed in a well-ventilated area. Maximum equipment performance is obtained at an ambient temperature between 40 and 120 degrees Fahrenheit (4 and 49 degrees Celsius) for short term operation and up to 110 degrees Fahrenheit (43 degrees Celsius) for continuous operation. The relative humidity range is 10 to 95 percent up to 84 degrees Fahrenheit (29 degrees Celsius). Above 84 degrees Fahrenheit (29 degrees Celsius), maximum relative humidity decreases from 95 percent down to 32 percent at 120 degrees Fahrenheit (49 degrees Celsius). Installations outside these limits may reduce system life or impede operation. Table AK correlates room temperature with allowable relative humidity.

TABLE AK. Allowable Relative Humidity

Room Temperature	Allowable Relative Humidity
40 °F to 84 °F	10% to 95%
86 °F	10% to 89%
88 °F	10% to 83%
90 °F	10% to 78%
92 °F	10% to 73%
94 °F	10% to 69%
96 °F	10% to 65%
98 °F	10% to 61%
100 °F	10% to 58%
102 °F	10% to 54%
104 °F	10% to 51%
106 °F	10% to 48%
108 °F	10% to 45%
110 °F	10% to 43%
112 °F	10% to 40%
114 °F	10% to 38%
116 °F	10% to 36%
118 °F	10% to 34%
120 °F	10% to 32%

The system equipment can operate at the maximum short-term operational limits for a period not to exceed 72 consecutive hours or a total of more than 15 days in a year. For altitudes above 5,000 feet, reduce the maximum short-term temperature limit by 1 °F for each 1,000 feet of elevation above 5,000 feet. At 10,000 feet, for example, the maximum short-term temperature limit is 115 °F.

Air Purity

The cabinet should not be installed in an area where the air may be contaminated with any of the following:

- Excessive dust, lint, carbon particles, paper fiber contaminants, or metallic contaminants
- Corrosive gases, such as sulfur and chlorine

Lighting

Lighting should be bright enough to allow administration and maintenance personnel to perform their tasks. The recommended light intensity level is 50 to 70 footcandles. This level complies with the Occupational Safety and Health Act (OSHA) standards.

Noise

In most cases, electrical noise is introduced into the system through trunk or station cables, or both. However, electromagnetic fields near the system control equipment may also cause noise in the system. Therefore, the system and cable runs should not be placed in areas where a high electromagnetic field strength exists. Radio transmitted (AM or FM), television stations, induction heaters, motors (with commutators) of 0.25 horsepower (187 watts) or greater, and similar equipment are leading causes of interference. Small tools with universal motors are generally not a problem when they operate on separate power lines. Motors without commutators, whether synchronous or asynchronous, generally do not cause interference.

Field strengths below 1.0 volt per meter are unlikely to cause interference. These weak fields can be measured by a tunable meter such as the Model R-70 meter manufactured by Electrometric Division.

Field strengths rester than 1.0 volt per meter can be measured with a broadband meter such as the HOLADAY™ HI-3001 meter or the Model EFS-1 meter manufactured by Instruments for Industry, Inc.

The field strength produced by radio transmitters can be estimated by dividing the square root of the emitted power in kilowatts by the distance from the antenna in kilometers. This yields the approximate field strength in volts per meter and is relatively accurate for distances greater than about half a wavelength (150 meters for a frequency of 1000 kHz).

Additional Considerations

Noise and heat produced by the system also affect the selection of equipment location.

Acoustic Noise Levels

The acoustic noise levels for the various cabinet configurations are described below.

With Multicarrier Cabinet(s)

The noise produced by a cabinet with five carriers is 51, 53, and 56 dBa at low, medium, and high fan speeds, respectively, at a distance of 5 feet.

Note: If the system cabinet door is open, there is an additional 1 dBa of noise. The tape drive also causes additional noise. When the tape drive is reading data, there is an additional 1 dBa of noise. When the tape recorder is rewinding or fast winding, there is an additional 2 dBa of noise.

With Single-Carrier Cabinet(s)

The noise produced by the system is as follows:

- One cabinet— 48 dBa at a distance of 5 feet
- Two cabinets—50 dBa at a distance of 5 feet
- Three cabinets—52 dBa at a distance of 5 feet
- Four cabinets—53 dBa at a distance of 5 feet

Note: If the system cabinet door is open, there is an additional 1 dBa of noise. The tape recorder also causes additional noise. When the tape recorder is reading data, there is an additional 2 dBa of noise. When the tape recorder is rewinding or fast winding, there is an additional 4 dBa of noise.

Heat Dissipation

The amount of heat dissipated by DEFINITY cabinet configurations is described on the following page.

With Multicarrier Cabinet(s)

A fully-loaded multicarrier cabinet (five carriers) dissipates approximately 8000 BTUs per hour. However, the typical average dissipation for a cabinet of three carriers is 5000 BTUs per hour.

With Single-Carrier Cabinet(s)

A stack of four single-carrier cabinets (fully loaded) dissipates approximately 6700 BTUs per hour. However, the typical average dissipation for a one-carrier system is 1700 BTUs per hour.

Table AL shows the typical average and maximum system power consumption and also the system heat dissipation for different size SCC and MCC systems.

TABLE AL. System Power Consumption and Heat Dissipation

	System Power Consumption (Volt-Ampere Rating)				System Heat Dissipation (BTU per Hour)			
	SCC		MCC		SCC		MCC	
Size	Avg	Max	Avg	Max	Avg	Max	Avg	Max
Tier 1	540	760	540	760	1700	–	–	–
Tier 2	1080	1376	1080	1376	3400	–	–	–
Tier 3	1620	1976	1620	1976	5100	–	–	–
Tier 4	2160	2584	2160	2584	6700	–	–	–
Tier5	–	–	2700	3344	–	–	5000	8000

POWER AND GROUNDING

General

This section provides information on power, grounding, lightning protection, sneak current protection, standby power, and wiring requirements for system and associated peripheral equipment installed in the equipment room.

AC Power Requirements

The following section provides AC power and grounding requirements for DEFINITY Generic 1 and Generic 3 systems.

Multicarrier Cabinet System

The customer must provide the main AC distribution panel (panel board). Any available power source can be used, as long as the phase or leg provides 120-volt AC or 208-vott AC between any two legs or phases at the required current drain. The panel board must be equipped with a bolt-on 50-amp 120-volt or 208-vott thermal magnetic circuit breaker for each cabinet. One of the following panel boards, or equivalent, can be provided:

- QMR fusible panel board by General Electric
- QMB fusible panel board by Square D
- VB5 fusible panel by ITE
- FPD fusible panel by Westinghouse

Each system cabinet, along with the auxiliary cabinet, requires a separate power outlet. These outlets must not be shared with other equipment, must not be under switch control, and should be located outside the cross-connect field area, if possible. Individual requirements are as follows:

- PPN cabinet and EPN cabinet—Each cabinet requires a special 120-volt 60-Hz 50-amp power outlet (NEMA 5-50R or equivalent) or a special 208-volt 60-Hz 30-amp power outlet (NEMA L6-30R or equivalent). The outlet must be located within 10 feet of the cabinet.
- Auxiliary Cabinet (optional)—This cabinet requires a special 120-volt 60-Hz 20-amp power outlet (NEMA 5-20R or equivalent) or a special 208-volt 60-Hz 30-amp power outlet (NEMA L6-30R or equivalent). The outlet must be located within 12 feet of the cabinets.

Figure 25 depicts a typical power and grounding layout for colocated PPN and EPN cabinets. A ground wire from the ground block on the EPN cabinet connects to the single-point ground block on the PPN cabinet. A 6-AWG ground wire connects the single-point ground block on the PPN cabinet to an approved ground. (Also see “Grounding,” later in this section).

Note that the AC powering for a multicarrier cabinet is as shown in Figure 15 for the PPN cabinet.

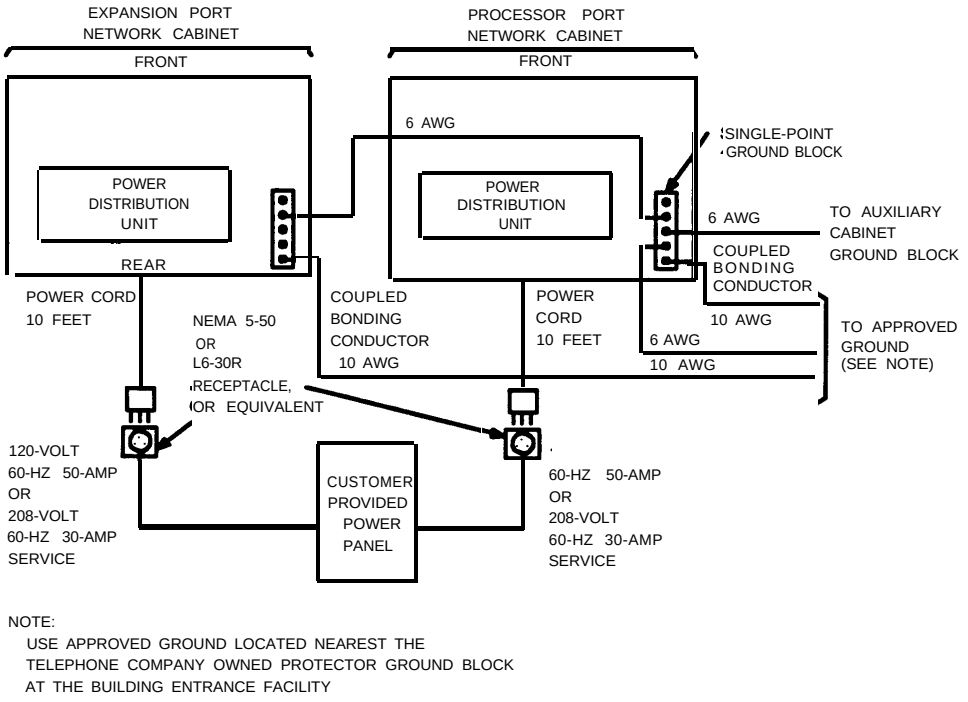
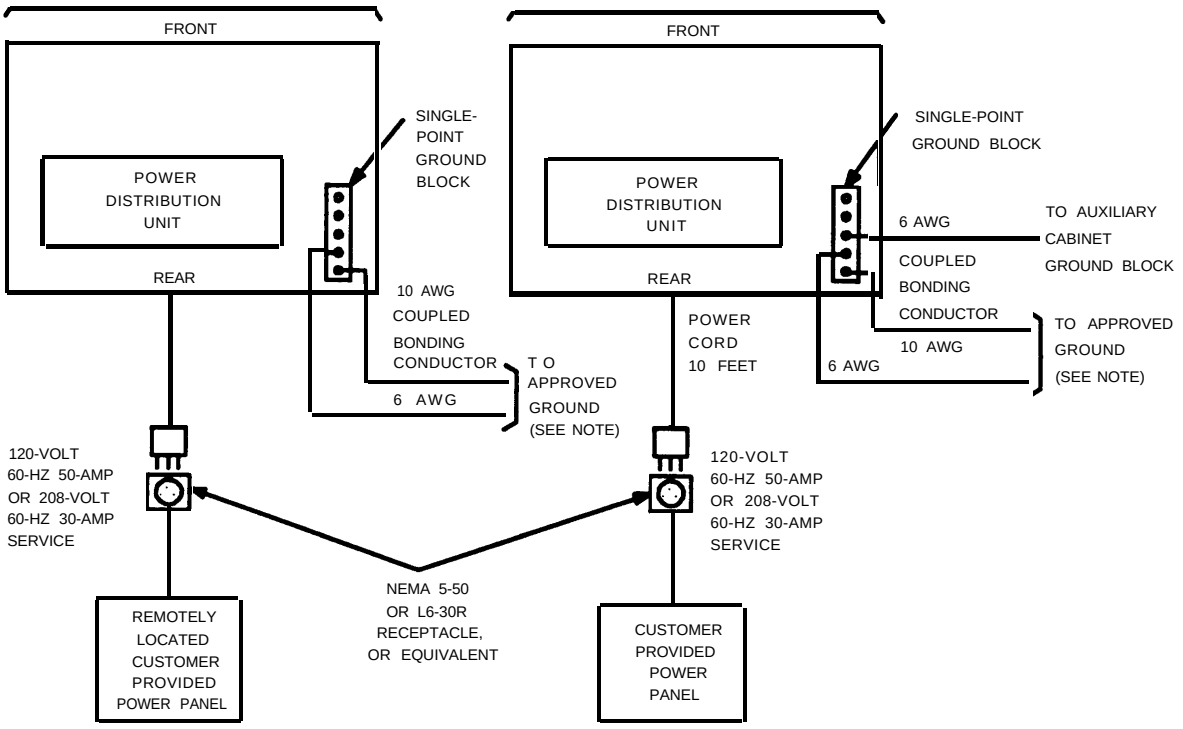


FIGURE 25. Typical Multicarrier System AC Power and Grounding (EPN Colocated)

Figure 26 shows a typical power and grounding layout for a remotely located EPN cabinet. A ground wire must be connected from the cabinet ground block of both the PPN and EPN cabinets to an approved ground. (Also see "Grounding" later in this section.)



NOTE:
USE APPROVED GROUND LOCATED NEAREST THE TELEPHONE COMPANY OWNED PROTECTOR GROUND BLOCK AT THE BUILDING ENTRANCE FACILITY

FIGURE 26. Typical Multicarrier AC Power and Grounding (Remote EPN)

Single-Carrier Cabinet System

Each cabinet requires a separate power outlet, as shown in Figures 27 and 28. These outlets must not be shared with other equipment, must not be under switch control, and should be located outside the cross-connect field area, if possible. Any available power source can be used as long as the phase or leg provides 120-volt AC at the required drain.

The Manager I terminal or G3r-MT should be connected to the “Administration Terminal” power outlet, as shown in Figures 27 and 28.

A system cabinet is UL-listed at 10 amperes, 120 volts, or 1200 watts per cabinet. Therefore, the power required for a two-cabinet system is 2400 watts, the power required for a three-cabinet system is 3600 watts, and the power required for a four-cabinet system is 4800 watts.

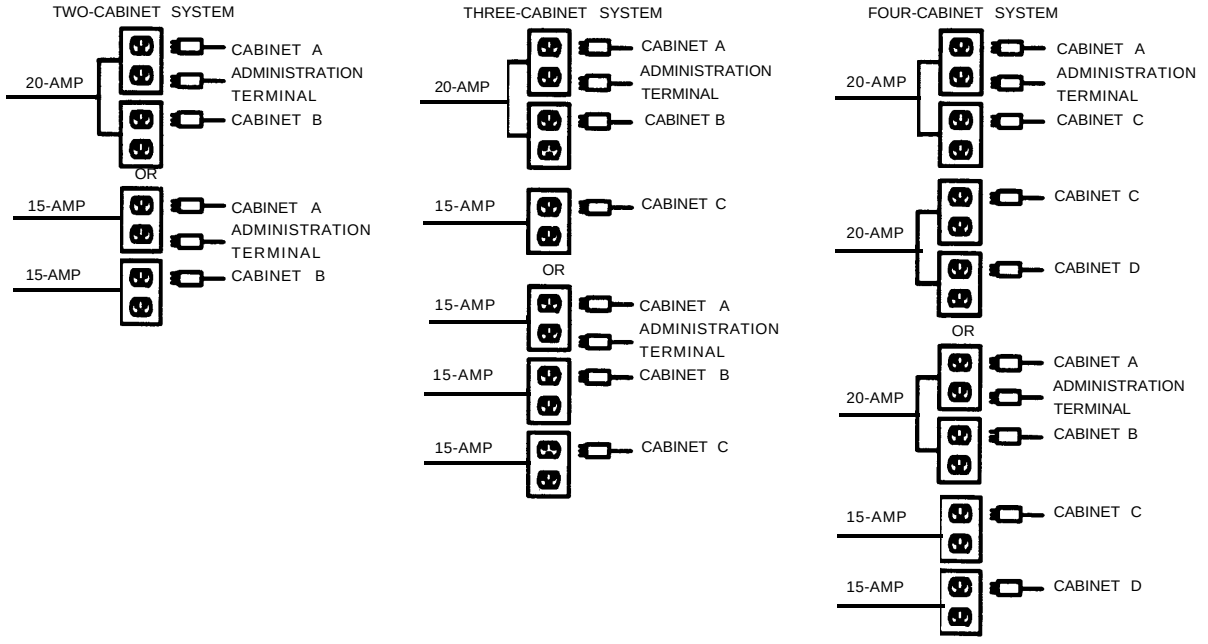


FIGURE 27. AC Power Requirements for a Single-Carrier Cabinet System

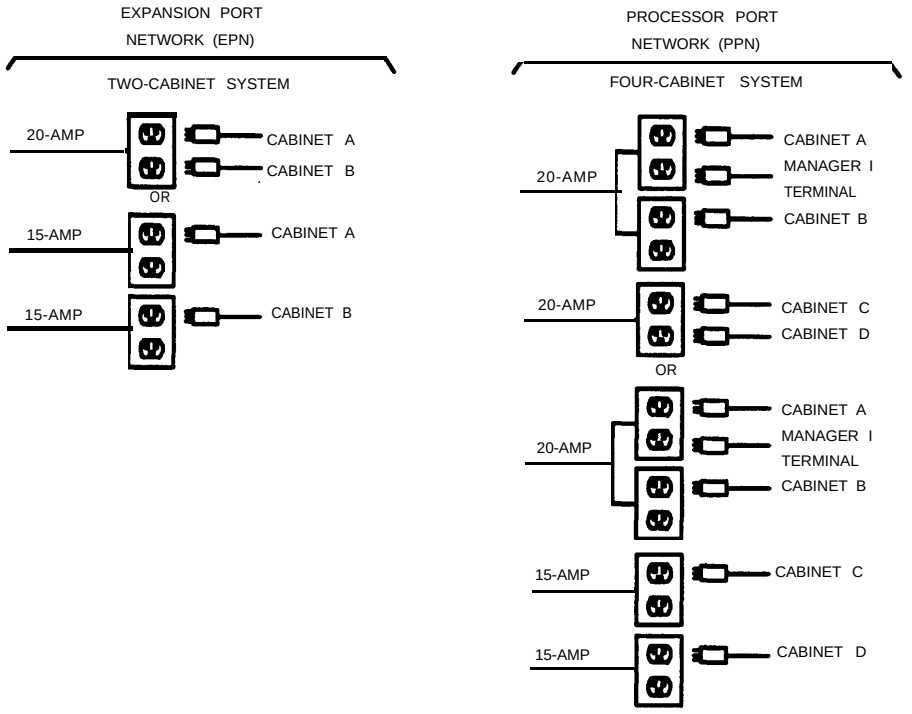
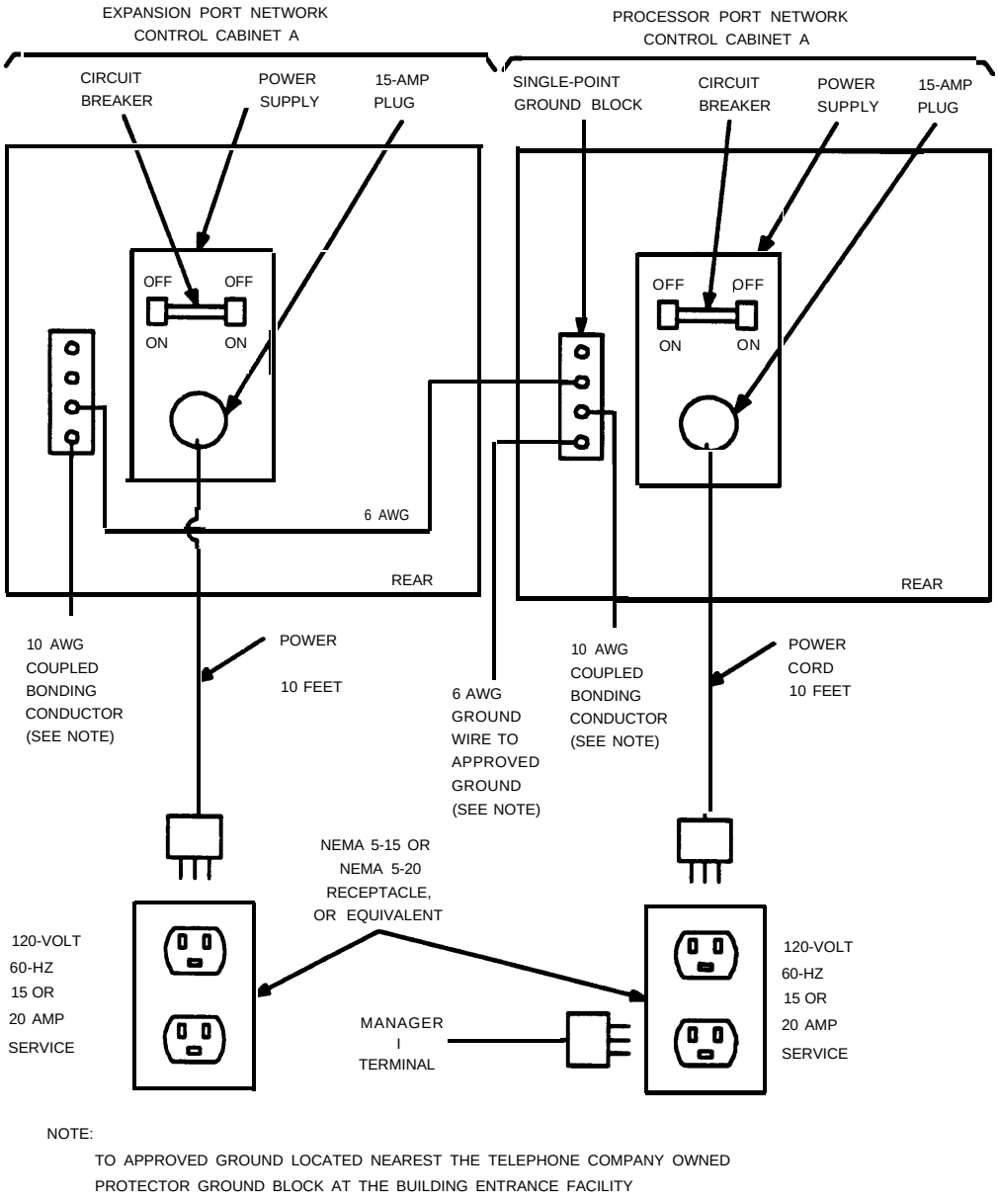


FIGURE 28. AC Power Requirements for a Single-Carrier System (Remotely Located EPN)

Figure 29 depicts a typical power and grounding layout for a single-carrier system with the PPN and EPN cabinets colocated. A ground wire from the ground block on the bottom cabinet of the EPN connects to the single-point ground block on the bottom cabinet of the PPN. A 6-AWG ground wire connects the single-point ground block to an approved ground. (Also see “Grounding,” later in this section).



NOTE:
TO APPROVED GROUND LOCATED NEAREST THE TELEPHONE COMPANY OWNED PROTECTOR GROUND BLOCK AT THE BUILDING ENTRANCE FACILITY

FIGURE 29. Typical Single-Carrier Power and Grounding Layout (EPN Colocated)

Figure 30 shows a typical power and grounding arrangement for a system with the EPN remotely located. A ground wire must be connected from the cabinet ground block of both the PPN and EPN to an approved ground. (Also see “Grounding,” later in this section).

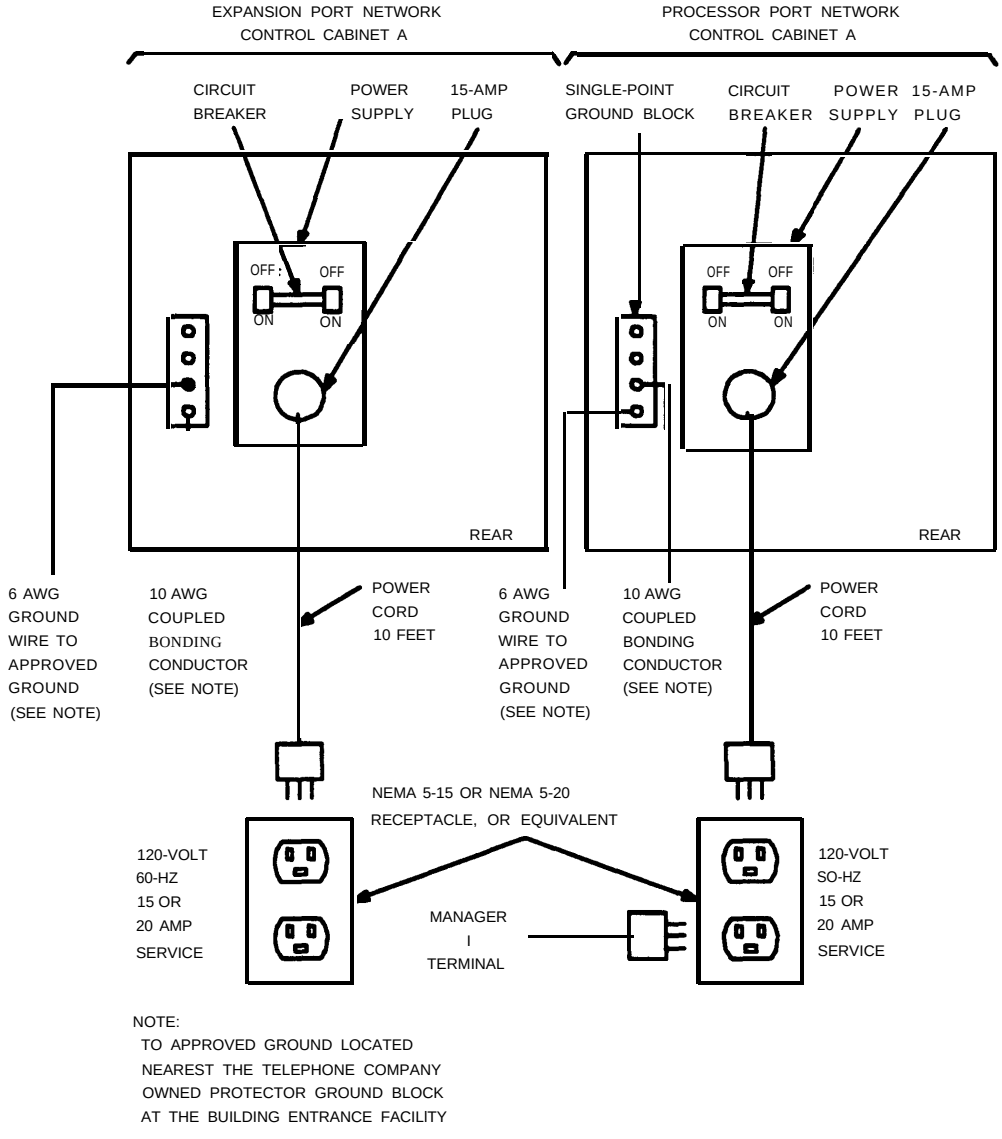


FIGURE 30. Typical Single-Carrier AC Power and Grounding Layout (Remotely Located EPN)

DC Power Requirements

Multicarrier Cabinet System

A DC power plant maybe used to power the multicarrier system cabinets. Figure 31 shows a typical power and grounding layout for a DC-powered multicarrier cabinet.

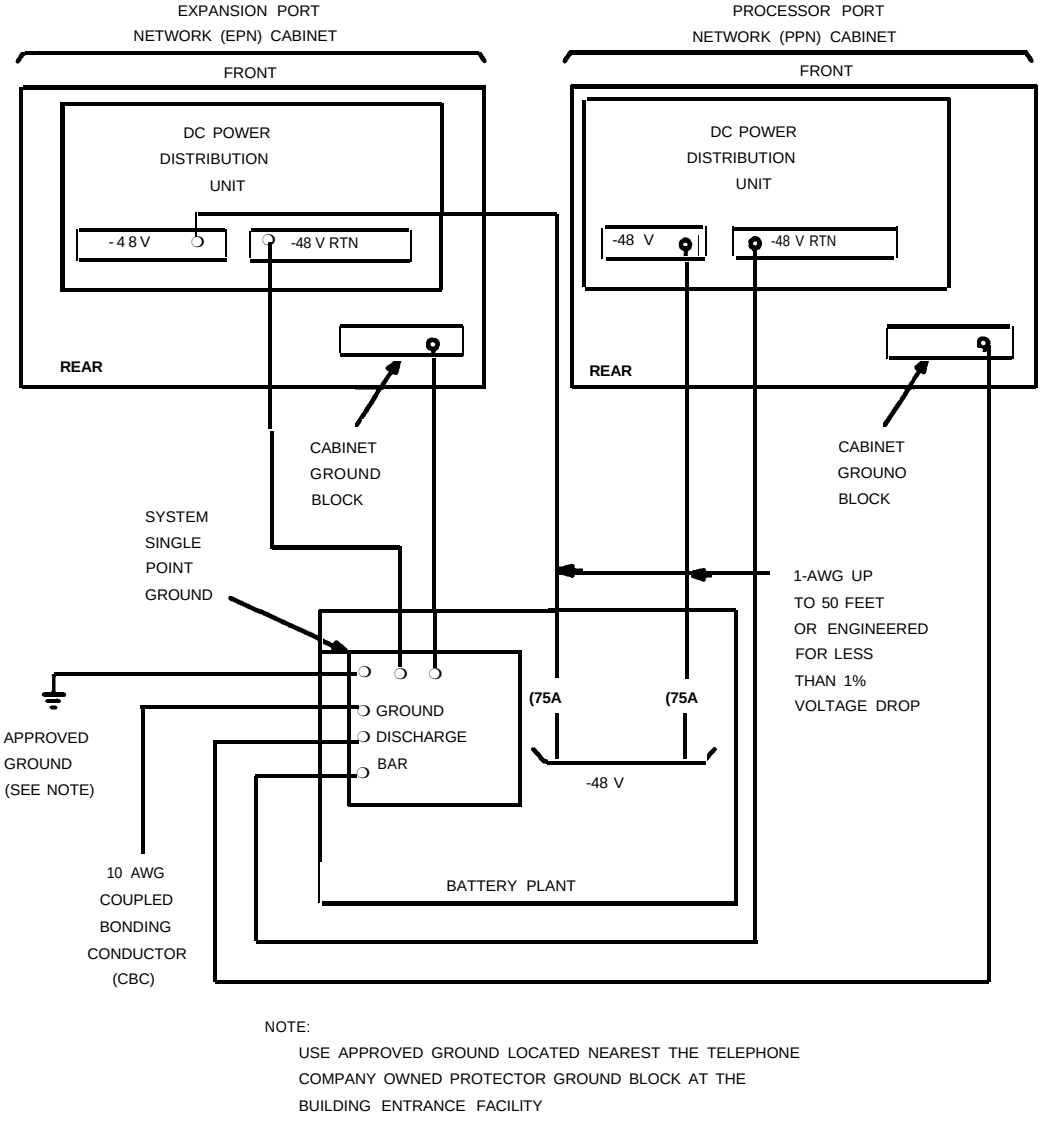


FIGURE 31. Typical Multicarrier Cabinet System DC Power and Grounding Layout (EPN Colocated)

Table AM provides the requirements for input DC power.

TABLE AM. -48 Volt DC Input Power Requirements

Parameter	Requirements
Static Voltage	-48 V DC nominal, -42.5 VDC minimum, -52.5 VDC maximum (measured at input to system cabinet)
Dynamic Voltage	Transient change in voltage (+/-5% of steady state voltage) Allowed transient duration (up to 200 milliseconds)
AC Ripple Voltage	Maximum wideband AC ripple (450 mvpp in the 3 kHZ-to-20 MHZ band)
Low Voltage Disconnect	Automatic disconnect occurs when input voltage becomes less than -42.5 VDC (control provided with battery plant).
Overvoltage Protection	Input voltage shall not exceed -52.5 V DC.
Voltage Drop	Maximum drop must not exceed 0.5 VDC one-way on feeder cable between the power board and the system cabinet. Feeders must be UL approved and CSA certified. Feeder gauge must be no smaller than 6 AWG and no larger than 1/0 gauge. Recommended -48 VDC feeder cable— ***Royal Electric #4905 or equivalent*** 1-AWG is required for distances up to 50 feet. Cable resistance must be equal to or less than 0.1290 ohms per 1000 feet.
Current Draw	The battery plant rectifiers must be capable of providing current for the system, including current required for system holdover and for charging the batteries. In addition, this may include DC current required for an inverter that provides AC power to peripheral equipment, if it is installed, and for future growth.
Circuit Breaker	A UL-listed and CSA-certified circuit breaker must be provided at the battery plant power board for each system cabinet feeder. The recommended circuit breakers are ***75 ampere Airpax UPLI-1-REC2-52-753 or Heinemann AM1-B2-A-75-2.***

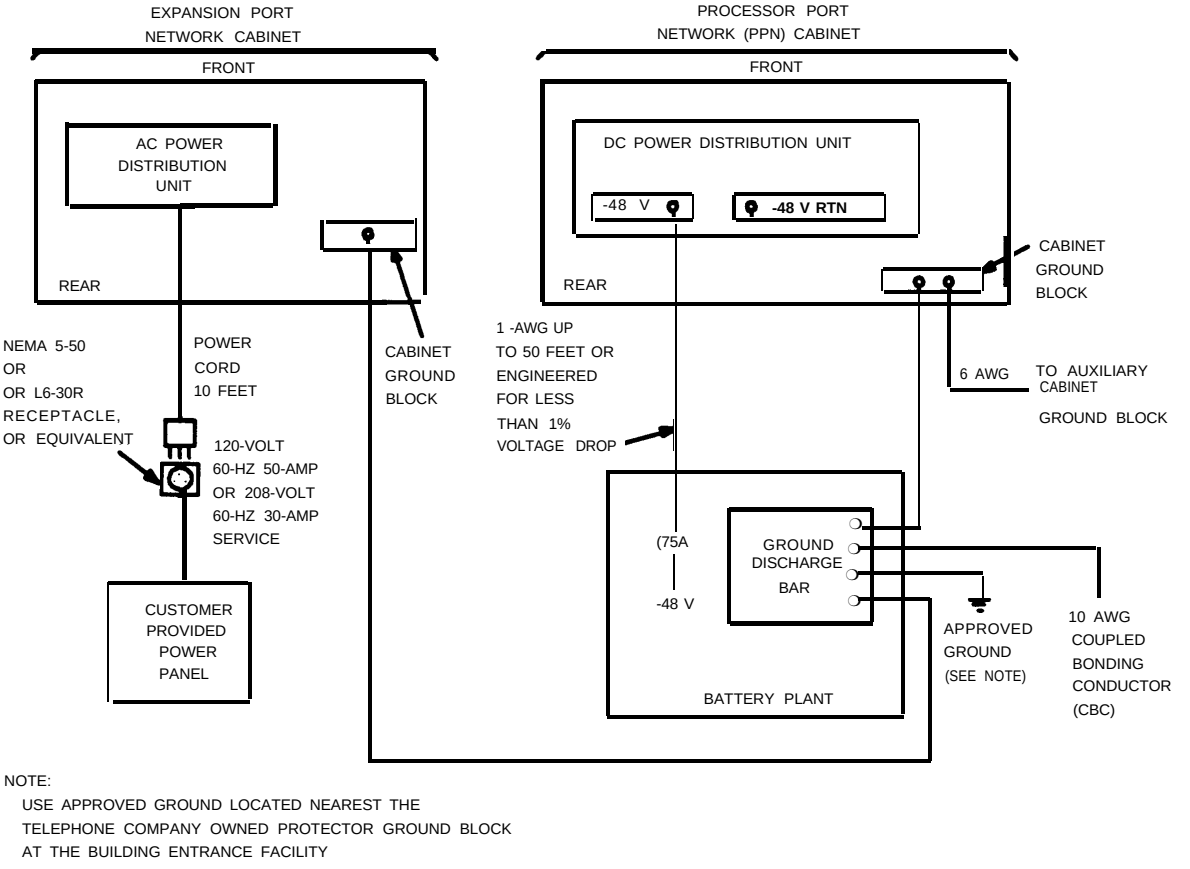
TABLE AM *(continued).*
-48 Volt DC Input Power Requirements

Parameter	Requirements
Redundancy	Redundancy of the battery chargers/rectifiers should be considered. This would also provide the additional current necessary to recharge the batteries after being fully discharged.
Electrical Noise	Voice band noise from the battery plant to the system must be less than 32dBmC.
Grounding	A single point ground must be maintained. A ground conductor must be installed from the isolated Ground Discharge Bar* to the closest Approved Ground via the shortest route as required by the NEC/REC. The gauge must be no smaller than the largest conductor in the system and larger than 6 AWG. The Ground Discharge Bar shall not be connected electrically to the chassis of the battery plant chargers, power board, or inserter. All output power shall be isolated from the input power.
Lightning Protection	There must be adequate lightning protection in the battery plant to ensure that the system will not be damaged.

As shown in Figure 31, the size of the wire required for the -48 V DC and -48 V return must be engineered so that ***the -48 V DC supplied by the battery plant to the G1 cabinets will be maintained between -42.5 and -52.5 V DC at all times*** to ensure proper operation and to prevent hardware damage.

* Refer to *DEFINITY Communications System Generic 1 and Generic* 3 *Instillation and Test,* 555-230-104, for parts and location information.

Figures 27 and 28 provide a power and grounding layout for mixed AC-/DC-powered multicarrier cabinet configurations.



NOTE:
USE APPROVED GROUND LOCATED NEAREST THE TELEPHONE COMPANY OWNED PROTECTOR GROUND BLOCK AT THE BUILDING ENTRANCE FACILITY

FIGURE 32. Typical Multicarrier Mixed AC/DC Power and Grounding Layout (EPN Colocated)

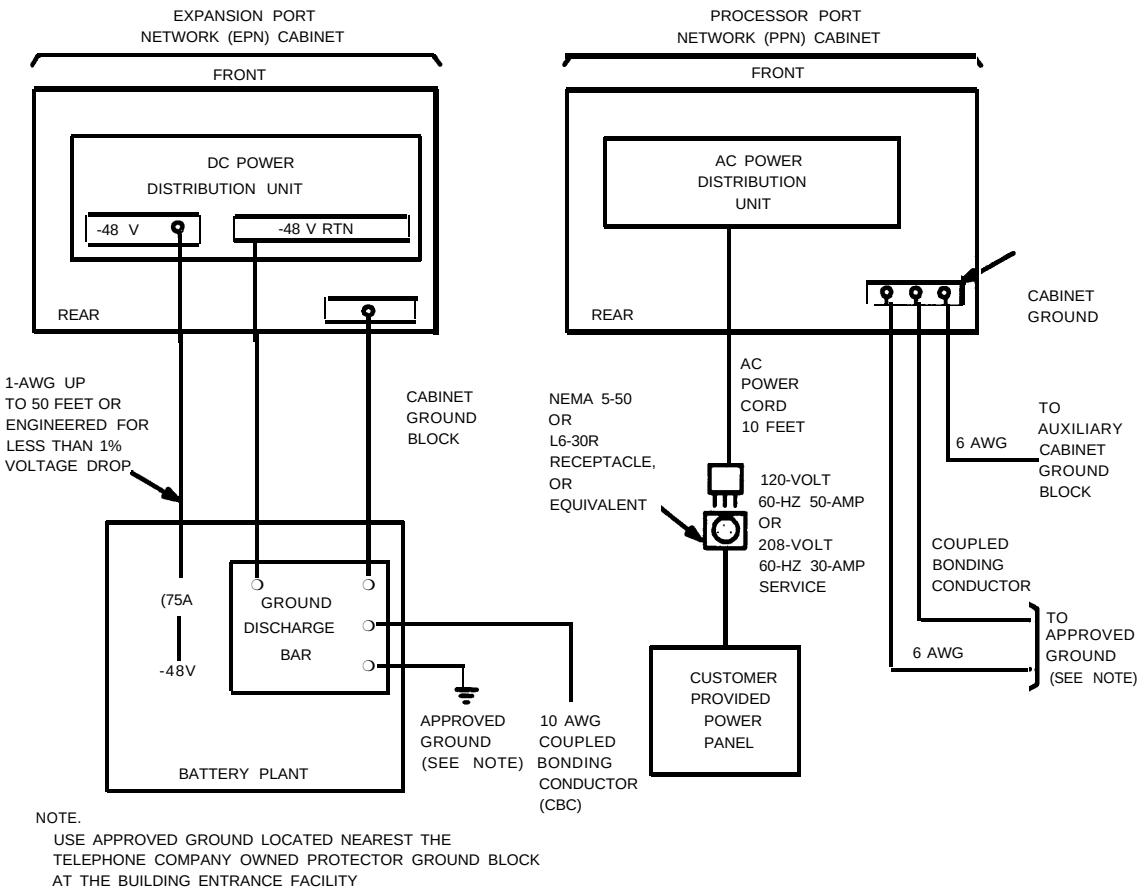


FIGURE 33. Typical Multicarrier Mixed AC/DC Power and Grounding Layout (Remotely Located EPN)

For DC-powered systems, a ground wire must be installed from the isolated Ground Discharge Bar on the battery plant to the Approved Ground. (See “Grounding.”) The size of the wire must be no smaller than the largest wire in the system and ***must be*** larger than 6 AWG. The approved ground connection must be identified with a Form 15657NR or equivalent grounding tag. The Ground Discharge Bar shall not be connected electrically to the chassis of the chargers, power board, or inverters. All output power must be isolated from the input power.

A 6-AWG ground wire must be connected to the ground block in the bottom of each cabinet (Figure 34). The ground wire is routed out of the cabinet and terminated on the battery plant.

Single-Carrier Cabinet System

Each cabinet requires a separate DC power input. See Table AM for input DC power requirements. Figure 34 provides a typical DC powered and grounding arrangement for a single-carrier cabinet system.

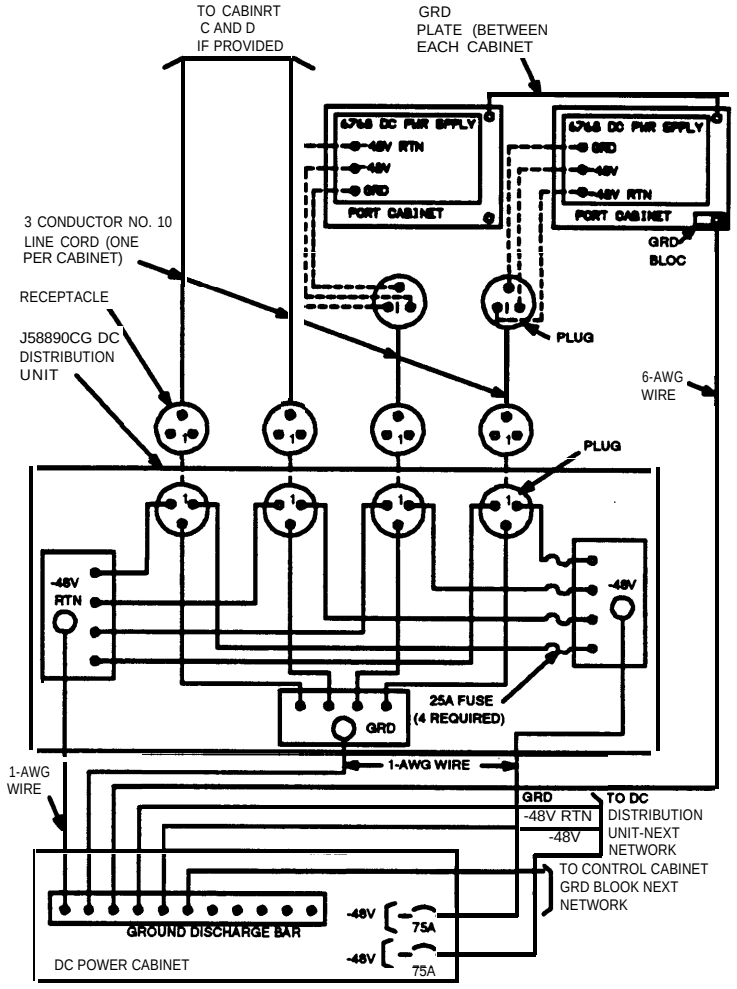


FIGURE 34. Typical Single-Carrier DC Power and Grounding Layout (EPN Colocated)

A ground wire is connected to the ground block of the bottom cabinet and routed to the battery plant for termination on the Ground Discharge Bar. An approved ground must be terminated on the Ground Discharge Bar.

Grounding

An approved ground for the cabinets used in the equipment room is essential. A typical approved ground is one of the following:

- ***Grounded Building Steel—*** The metal frame of the building where effectively grounded by one of the following grounds: acceptable metallic water pipe, concrete-encased ground, or a ground ring.
- ***Acceptable Water Pipe—*** A metal underground water pipe, at least 1/2-inch in diameter, in direct contact with the earth for at least 10 feet. The pipe must be electrically continuous (or made electrically continuous by bonding around insulated joints, plastic pipe, or plastic meters) to the point where the protector ground wire is connected. A metallic underground water pipe must be supplemented by the metal frame of the building, a concrete-encased ground, or a ground ring. If these grounds are not available, the water pipe ground can be supplemented by one of the following types of ground:
  - Metal underground gas piping system—An electrically continuous metal underground gas piping system that is uninterrupted with insulating sections or joints and without an outer nonconductive coating
  - Other local metal underground systems or structures—local underground structures such as tanks and piping systems
  - Rod and pipe electrodes—A 5/8-inch (solid rod) or 3/4-inch (conduit or pipe) electrode driven to a minimum depth of 8 feet
  - Plate electrodes—Expose a minimum of 2 square feet of metallic surface to the exterior soil
- ***Concrete-Encased Ground—*** An electrode encased by at least 2 inches 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 of one or more steel reinforcing bars or rods, not less than 1/2 inch in diameter, or at least 20 feet of bare, solid copper wire not smaller than 4 AWG.
- ***Ground Ring—*** A buried ground that encircles a building or structure at a depth of a least 2-1/2 feet below the earth's surface. The ring must consist of at least 20 feet of bare copper conductor not smaller than 2 AWG.

All approved grounds used must be bonded together to form a single grounding electrode system as required in Section 250-81 of the National Electrical Code.

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

- Building steel
- The grounding conductor for the secondary side of the power transformer feeding the floor
- Metallic water pipes
- Power feed metallic conduit supplying panel boards on the floor
- A grounding point specifically provided in the building for the purpose

Lightning Protection

A coupled bonding conductor is tie-wrapped to all trunks. The coupled bonding conductor can be any one of the following:

- 10-AWG ground wire
- Continuous cable sheath
- Six unused pairs of wire

The coupled bonding conductor connects the cabinet single-point ground block and runs all the way to the approved ground located nearest the telephone company-owned protector block at the building entrance facility.

When an auxiliary cabinet is provided with a multicarrier cabinet system, a 6-AWG ground wire connects the system cabinet single-point ground block to the auxiliary cabinet ground block. It is recommended that the ground wire be routed as close as possible to the cables connecting the system cabinet and the auxiliary cabinet.

If auxiliary equipment is not mounted in the auxiliary cabinet, then the power supply for this equipment must be plugged into one of the two convenience outlets located on the back of the multicarrier cabinet to preserve ground integrity. The convenience outlet is fused at 5 amps. The dedicated Manager I or G3r-MT terminal should be plugged into the other convenience outlet.

Sneak Current Protection

Sneak fuses protect the building wiring and circuit packs from “foreign potential” by providing a current interruption capability. Sneak fuse panels, when provided, are installed on the switch side of the network interface. All incoming and outgoing trunks and off-premises station lines pass through the sneak fuses. Sneak current protection is required for installations in Canada. The sneak fuses must be CSA certified.

Standby Power System—Multicarrier Cabinet System

Battery Reserve (Multicarrier System)

The system provides a 10-second power holdover during power interruptions. A battery reserve supplies power to a single control carrier for up to 10 minutes during a commercial power failure. With duplicated control carriers, power is available for 5 minutes. If additional holdover power is required, an alternate, independent source of on-premises power is required to maintain the system for a limited time. An external, commercial Uninterruptible Power Supply (UPS) or a battery backup arrangement are used as an altemate source of power during a commercial power failure.

Uninterruptible Power Supply (Multicarrier System)

The uninterruptible power supply (UPS) protects the system equipment from voltage lags, overvoltage conditions, blackouts, and line frequency fluctuations. The UPS uses a microprocessor controlled device to regulate and condition the commercial power. During commercial power failure, UPS provides dependable and reliable backup power for short durations.

Note: Any peripheral that is connected to the system and derives its power from a wall socket will not be supported during a power outage. This also applies to the 7407D and 7404D voice terminals.

For most multicarrier cabinet system configurations, any UPS that meets the requirements given in Table AN or Table AO can be used with the system for standby power.

TABLE AN. AC Power Requirements

No. of Control Carrier	No. of Port Carrier	Power Rating (KVA)	Frequency Hertz	Power Factor
1	0	0.90	60±5%	0.70
1	1	1.50	60±5%	0.70
1	2	2.10	60±5%	0.70
1	3	2.70	60±5%	0.70
1	4	3.30	60±5%	0.70

TABLE AO. DC Power Requirements

No. of Control Carrier	No. of Port Carrier	Input Power (Watts)
1	0	630
1	1	1050
1	2	1470
1	3	1890
1	4	2310

Battery Backup (Multicarrier System)

A battery supply and an inverter can be used to provide standby power for up to 8 hours after a commercial power failure.

When standby power is provided, the following items must be taken into consideration:

- Size and weight of the batteries
- Size and weight of the inserter(s)
- Heat dissipation
- Air flow and circulation
- Items of equipment to receive power

This standby power system contains the following:

- Inverter
- Batteries
- Battery stand

The system requires a 120-volt AC input that is provided by the inverter. The size of the inverter is determined by the carrier configuration and the additional equipment to be provided with power in the event of a commercial power failure. The size of the battery supply required depends upon the length of time power is to be provided and the particular power demands of the system. Tables AN and AO show the approximate power consumption requirements that can be used to size the system for emergency generators or battery backup.

Standby Power—Single-Carrier Cabinet System

The following provides Battery Reserve, Uninterruptible Power Supply, and Battery Backup information for single-cabinet systems.

Battery Reserve (Single-Carrier System)

During commercial power failure, the power supply provides a 250-millisecond power holdover to allow the system to remain in service. If power is restored within 250 milliseconds, there is no interruption of service.

A battery reserve is automatically activated if commercial AC power fails. These batteries allow the power supply to provide a 2-minute battery reserve holdover to the control circuit packs and fans during power failure beyond 250 milliseconds. All port circuit packs are out of service during this time. When commercial power is restored within 2 minutes, the system reinitializes from the memory stored in the Memory circuit pack. All port circuit packs continue to remain out of service during the approximately 25 seconds required to restore the system.

When commercial power is restored after 2 minutes, the system reinitializes from the system tape. Reinitialization takes approximately 10 minutes and the port circuit packs remain out of service during this time.

The Emergency Transfer feature becomes active if commercial power failure exceeds 250 milliseconds. Selected voice terminals are automatically connected to trunks in the central office.

If additional holdover power is required, an alternate, independent source of on-premises power is required to maintain the system for a limited time. An external, commercial Uninterruptible Power Supply (UPS) or a battery backup arrangement are used as an alternate source of power during a commercial power failure.

Uninterruptible Power Supply (Single-Carrier System)

If long-term holdover power is required, an external Uninterruptible Power Supply (UPS) can be provided as an alternate source of power during a commercial power failure. Any UPS that meets the requirements given in Table AP can be used with the system.

TABLE AP. UPS Power Requirements

No. of Cabinets	Volt-Ampere Rating	Frequency Hertz	Power Factor	Maximum Cut-In Time (milliseconds)
1	1200	60±5%	0.6	200
2	2400	60±59%	0.6	200
3	3600	60±5%	0.6	200
4	4800	60±5%	0.6	200

Battery Backup (Single-Carrier System)

A battery supply and an inverter can be used to provide standby power for up to 8 hours after a commercial power failure.

When standby power is provided, the following items must be taken into consideration:

- Size and weight of the batteries
- Size and weight of the inserter(s)
- Heat dissipation
- Air flow and circulation
- Items of equipment to receive power

This standby power system contains the following:

- Inverter
- Batteries
- Battery stand

The single-carrier cabinet system requires a 120-volt AC input that is provided by the inverter. The size of the inverter is determined by the system configuration and the additional equipment to be provided with power in the event of a commercial power failure. The size of the battery supply required depends upon the length of time power is to be provided and the particular power demands of the system. Table AP shows the approximate power consumption requirements that can be used to size the system for emergency generators or battery backup.

House Wiring

House wiring includes all on-premises wiring on the customer side of the cross-connect field. The cross-connect field can be either 66-type or 110-type hardware.

Wiring is distributed from the cross-connect field by 25-pair cables. The 25-pair cables are connected either directly to terminal wall jacks using adapters or to satellite locations. Satellite locations are used when already present or when required by the length of the wiring runs from the switch to the terminals. The 25-pair cables can be divided into either 4-pair or 3-pair wiring groups (4-pair wiring groups are recommended). From the satellite locations, 4-pair D-inside cables connect the satellite locations to information outlets (modular wall jacks).

See *DEFINITY Communications System Generic 1 and Generic 3i Wiring,* 555-204-111, for details on the cross-connect hardware and wiring distribution.

UPGRADES AND ADDITIONS

The upgrade process consists of changing the hardware and software of the a previously installed system to that of a later version system. An upgrade may be performed in response to increased call processing demands, need for greater feature capabilities, or other changes in customer requirements.

The addition process consists of adding voice terminals, circuit packs, carriers, or software features to an existing system without upgrading the version of the system.

The following provides a synopsis of the upgrades and additions process for DEFINITY Communications System Generic 1 and Generic 3.

For specific details on the upgrade process and associated administration, refer to the *DEFINITY Communications System Generic 1 and Generic 3i Upgrades and Additions,* 555-204-106, or *DEFINITY Communications System Generic 3r Upgrades and Additions,* 555-230-106.

System 75 Upgrade to DEFINITY Generic 1 PPN Without Duplication

The System 75 Versions 1 (V1), 2 (V2), or 3 (V3) upgrade to DEFINITY Generic 1 requires the following:

- Replacing the J58890AA-1/J58890AB-1 Control Carrier with a J58890AH-1 Control Carrier
- Replacing TN711 Processor circuit pack with a TN773 Processor circuit pack
- Replacing TN734 Memory circuit packs with a TN770 Memory circuit pack
- Replacing TN727 Network Control circuit pack with a TN777 Network Control circuit pack
- Replacing TN741 Tone Clock circuit pack with a TN768 Tone Clock circuit pack
- Replacing the TDM cables with new WP91716 L1 and L2 TDM/LAN cables
- Adding a new TN774 tape drive circuit pack and removing the HCMR/RMSS tape drive
- Adding a TN765 Processor Interface circuit pack if required
- Replacing the software tape
- Activating and administering new features

If an Expansion Port Network (EPN) is required, an EPN cabinet is added. A TN776 Expansion Interface circuit pack is added to the Processor Port Network (PPN) cabinet. A fiber link connects the Expansion Interface circuit packs.

System 75 Upgrade to DEFINITY Generic 1 PPN With Duplication

The System 75 Versions 1 (V1), 2 (V2), or 3 (V3) upgrade to DEFINITY Generic 1 with duplication requires the following:

- Replacing the J58890AA-1/J58890AB-1 Control Carrier with a J58890AH-1 Control Carrier
- Replacing TN711 Processor circuit pack with a TN773 Processor circuit pack
- Replacing TN734 Memory circuit packs with a TN770 Memory circuit pack
- Replacing TN727 Network Control circuit pack with a TN777 Network Control circuit pack
- Replacing TN741 Tone Clock circuit pack with a TN768 Tone Clock circuit pack
- Replacing the TDM cables with new WP91716 L1 and L2 TDM/LAN cables
- Adding a new TN774 tape drive circuit pack and removing the HCMR/RMSS tape drive
- Adding a TN765 Processor Interface circuit pack if required
- Replacing the J58890BB-3 Port Carrier in position B with a J58890AJ-1 Duplicated Control Carrier that contains the following circuit packs.
  - Processor circuit pack TN773
  - Memory circuit pack TN770
  - Tape Drive circuit pack TN774
  - Network Control circuit pack TN777
  - Duplication Interface circuit pack TN772
  - Tone Clock circuit pack TN768 in both J58890AJ-1 and J58890AH-1
- Adding a TN772 Duplication Interface circuit pack to the J58890AH-1 Control Carrier
- Adding the inter-carrier cable between the J58890AH-1 Control Carrier and the J58890AJ-1 Duplicated Control Carrier
- Adding the new software tape to the tape drive in both the J58890AH-1 Control Carrier and the J58890AJ-1 Duplicated Control Carrier
- Activating and administering new features

If an EPN is required, an EPN cabinet is added. Two TN776 Expansion Interface circuit packs are needed in the PPN cabinet. Two fiber links are required to connect the Expansion Interface circuit packs.

System 75 Upgrade to DEFINITY Generic 1 EPN Without Duplication

The System 75 Medium Cabinet is upgraded to the EPN Cabinet Without Duplication by:

- Removing the tape drive unit
- Removing the J58890AA-1/J58890AB-1 Control Carrier
- Installing the J58890AF-1 expansion Control Carrier
- Replacing TN741 Tone Clock circuit pack with a TN768 Tone Clock circuit pack
- Adding TN775 Maintenance circuit pack
- Replacing the TDM cables with new WP91716 L1 and L2 TDM/LAN cables
- Adding and restructuring the port circuit packs as required

A TN776 Expansion Interface circuit pack is added to the PPN cabinet. A fiber link connects the Expansion Interface circuit packs.

System 75 Upgrade to DEFINITY Generic 1 EPN With Duplication

The System 75 Medium Cabinet is upgraded to the EPN Cabinet With Duplication by:

- Removing the tape drive unit
- Removing the J58890AA-1/J58890AB-1 Control Carrier
- Installing the J58890AF-1 expansion Control Carrier
- Replacing TN741 Tone Clock circuit pack with two TN768 Tone Clock circuit packs (one in the first and one in the second carrier)
- Adding TN775 Maintenance circuit pack
- Replacing the TDM cables with new WP91716 L1 and L2 TDM/LAN cables
- Adding and restructuring the port circuit packs as required
- Adding two TN776 Expansion Interface circuit packs (one in the first port carrier in the EPN Cabinet and one in the second)

Two TN776 Expansion Interface circuit packs are needed in the PPN Cabinet as well. Two fiber links are required to connect the Expansion Interface circuit packs.

System 75 XE Upgrade To DEFINITY Generic 1 PPN Without Duplication

The System 75 XE Versions 2 (V2) or 3 (V3) upgrade to DEFINITY Generic 1 requires the following:

- Replacing the J58890G-1 Control Cabinet with a J58890L-1 Basic Control Cabinet containing the following
  - Tape Drive circuit pack TN774
  - Processor TN773
  - Memory TN770
  - Network Control TN777
- Replacing the TDM cables with WP91716 L3 TDM cables if required
- Adding a TN765 Processor Interface circuit pack if required
- Replacing the TN756 Tone Detector/Generator circuit pack with a TN768 circuit pack and a TN748 Tone Detector circuit pack when DS1, ISDN, or EPN applications are required
- Installing the old port circuit pack in the new J58890L-1 cabinet
- Replacing the software tape
- Activating and administering new features

If an EPN is required, an Expansion Control Cabinet is added. The TN776 Expansion Interface circuit pack is added to the Basic Control Cabinet. A fiber cable connects the Expansion Interface circuit packs.

System 75 XE Upgrade to DEFINITY Generic 1 PPN With Duplication

The System 75 XE Versions 2 (V2) or 3 (V3) upgrade to DEFINITY Generic 1 with duplication requires the following:

- Replacing the J58890G-1 Control Cabinet with a J58890L-1 Basic Control Cabinet containing the following:
  - Tape Drive circuit pack TN774
  - Processor circuit pack TN773
  - Memory circuit pack TN770
  - Network Control circuit pack TN777
- Replacing the TDM cables with WP91716 L3 TDM cables if required
- Replacing the TN756 Tone Detector/Generator circuit pack with TN768 Tone Clock circuit pack and a TN748 Tone Detector circuit pack
- Adding a TN765 Processor Interface circuit pack if required
- Adding the J58890M-1 Duplicated Control Cabinet in cabinet position B. This cabinet contains the following circuit packs.
  - Processor circuit pack TN773
  - Memory circuit pack TN770
  - Tape Drive circuit pack TN774
  - Network Control circuit pack TN777
  - Duplication Interface circuit pack TN772
  - Tone Clock circuit pack TN768 in both the J58890L-1 and J58890M-1 cabinets
- Adding the inter-cabinet cable between the J58890L-1 Control Cabinet and the J58890M-1 Duplicated Control Cabinet
- Adding the old port circuit packs in the new J58890L-1 Control Cabinet and J58890M-1 Duplicated Control Cabinet
- Adding the new software tape to the tape drive in both the J58890L-1 Control Cabinet and the J58890M-1 Duplicated Control Cabinet
- Activating and administering new features

If an EPN is required, an Expansion Control Cabinet and a Port Cabinet are added. A TN776 Expansion Interface circuit pack is needed in the Control Cabinet J58890L-1 and the Duplicated Control Cabinet J58890M-1. Two fiber cables connect the Expansion Interface circuit packs.

System 75 XE Upgrade to DEFINITY Generic 1 EPN Without Duplication

The System 75 XE is upgraded to the EPN Cabinet Without Duplication as follows:

- Replace the Control Cabinet J58890G-1 with an Expansion Control Cabinet J58890N-1
- Replace the TDM cables with WP91716 L3 TDM cables if required
- Add and restructure port circuit packs

System 75 XE Upgrade to DEFINITY Generic 1 EPN With Duplication

The System 75 Single-Carrier Cabinet is upgraded to the EPN cabinet With Duplication as follows:

- Replace the Control Cabinet J58890G-1 with an Expansion Control Cabinet J58890N-1
- Replace the TDM cables with WP91716 L3 TDM cables if required
- Add and restructure port circuit packs
- Add an Expansion Interface circuit pack to the first and second port cabinets
- Add two TN768 Tone Clock circuit packs (one in the first cabinet and one in the second cabinet)

Two TN776 Expansion Interface circuit packs are needed in the PPN cabinet. Two fiber links are required to connect the Expansion Interface circuit packs.

Circuit Pack Additions and Replacements

The following circuit packs, although not required for the basic upgrade, may need to be added or replaced for additional features:

- TN722—Provides connection capability to DS1, alternate/voice data (AVD), and Digital Multiplexed Interface (DMI) facilities.
- TN767 DS1 lnterface—Provides connection capability to ISDN feature in addition to the features supported by the TN722.
- TN725 Speech Synthesizer—Provides speech synthesis application for Leave Word Calling feature and supports the Automatic Wakeup feature.
- TN726 Data Line—Provides direct connection capability to asynchronous equipment with EIA-232C interfaces.
- TN760 Tie Trunk—Provides the release-link trunks required for Centralized Attendant Service (CAS). The release-link trunks can also be provided by the DS1 Tie Trunk circuit pack.
- TN746 Analog Line (16 ports)—Used to provide a 16 ports per circuit pack for on-premises (in building) analog terminals.
- TN750 Announcement—Provides an integrated means for recording announcements that can then be played back on demand from call processing as part of a calling feature. Messages can be recorded by customers from their voice terminals, on-or off-premises, and have flexible message lengths. Up to 16 different messages can be played back simultaneously. The TN750 cannot be used for the Automatic Wakeup feature.
- TN755 Power Unit—Converts 48 volt DC to neon lamp voltage required by the circuit packs.
- TN747 CO Trunk—Supports the Abandoned Call Search feature for ACD applications.
- TN763 Auxiliary Trunk—Supports Audichron announcement equipment.

Attendant Console Replacement

To support the Emergency Access to the Attendant feature, the attendant console must be a 301A1-A, 302A1-A, or 301B1-A.

Port Circuit Pack Upgrades for DEFINITY Generic 3r

It may be necessary, depending on the features required for a particular upgrade, to upgrade some of the port circuit packs. Table AR lists the port circuit packs that may need to be upgraded to a later vintage of the same circuit pack or to a different circuit pack, along with the circumstances that make the upgrade necessary.

TABLE AR. Port Circuit Pack Upgrades

Type	Code	Upgrade Reason
Service	TN725 Speech Synthesizer	Replace with lastest model of TN725 (for example, TN725B) for full functionality.
	TN748 or TN748B Tone Detector	Replace with latest model of TN748 (for example, TN748C) if the Outbound Call Management (OCM) feature is required for the system.
	TN714 Tone Clock	Replace all TN714 models with TN768 Tone Clock for full Functionality. If Stratum 3 interface is required in the PPN, replace with TN780 Tone Clock.
	TN741 Tone Clock	Replace all TN741 models with TN768 Tone Clock for full functionality. If Stratum 3 interface is required in the PPN, replace with TN780 Tone Clock.
	TN756 Tone Clock	Replace all TN756 models with TN768 Tone Clock for full functionality. if Stratum 3 interface is required in the PPN, replace with TN780 Tone Clock.
	TN776 Expansion Interface	Replace all TN776 models with TN570 Expansion Interface for connection to Switch Node Interface.
	TN775 EPN Maintenance	Replace with latest model for full functionality.
Line	TN762 Hybrid Line	Replace TN762 with TN762B or later model for 7300 sets and if dropping incoming calls.
Trunk	TN747 Central Office Trunk	Replace TN747 with TN747B or later model if ACD is required for the system.
	TN760 Tie Trunk	Replace TN760 with TN760B vintage 6 (or later model) if CAS is required for the system and if there is an end-to-end signal - ing problem.
	TN763 Auxiliary Trunk	Replace TN763 with latest model if Audichron Announcement Equipment is included in the system.
	TN722 DS1 Tie Trunk	Replace TN722 with TN722B vintage 6 (or later model) if CAS is required for the system.
	TN767 DS1 Interface	Replace with the latest model of TN464 32-Channel E1 Trunk if ISDN-PRI and the DS0 channel are required for the system. TN767 can be reused if only DS1 or NFS in-line service are required.

DEFINITY Generic 1 Upgrade to DEFINITY Generic 3r PPN

When upgrading an existing system to a DEFINITY G3r PPN, with or without duplication, only new shipments of PPNs are supported, so existing cabinets cannot be upgraded regardless of type. Please note that the PPN of a G3r system is only housed in a multicarrier cabinet.

DEFINITY Generic 1 PPN Upgrade to DEFINITY Generic 3r EPN MCC Without Duplication

The DEFINITY Generic 1 PPN multicarrier cabinet upgrade to DEFINITY Generic 3r EPN MCC requires the following:

- Remove all port circuit packs in the cabinet position A Control Carrier J58890AH. These will be reused in the carrier replacement.
- Remove TN776 Expansion Interface circuit pack (located in port slot 1).
- Remove all other control circuit packs. These will not be reused except for TN768 Tone Clock.
- Remove power units (631DA and 631DB for AC systems and 644A and 645B for DC systems). These will be reused. Also, power units 631AR and 631BR or 631WA and 631WB (AC systems) will work in the G3r, if present. However, if you do reuse the 631AR and 631BR or 631WA and 631WB power supplies, it is required that you reuse either the TN738 or TN752 Power Converter circuit pack with them.
- Remove inter-carrier cables. Only TDM/LAM bus cables (WP-91716) or terminator (ZAHF4) will be reused.
- Replace J58890AH in cabinet position A with Expansion Control Carrier J58890AF in the cabinet position A. The same cabinet interface cables (wiring harnesses) are reused.
- Install two power units (631DA and 631DB for AC systems and 644A and 645B for DC systems). You can also install power units 631AR and 631BR or 631WA and 631WB as an alternative. However, if you do reuse the 631AR and 631BR or 631WA and 631WB power supplies, it is required that you reuse either the TN736 or TN752 Power Converter circuit pack with them.
- Install TN775 Maintenance circuit pack.
- Install TN570 Expansion Interface circuit pack in port slot 1.
- Install TN768 Tone Clock circuit pack from the DEFINITY Generic 3i.
- Port circuit packs that were removed can be reinstalled in the Expansion Control Carrier. Port circuit packs that must be upgraded for G3r functionality can be installed at this time. See Table AR for a list of the circuit packs and their replacements.

- One current limiter (CFY1) circuit pack is installed on the Expansion Control Carrier in cabinet position A.
- Reapply the TDM/LAN bus cables or terminator.
- The AUX connection previously made to the A position Control Carrier can also be reused to the new A position Expansion Control Carrier. Note, however, that the AUX connection will no longer support the Initialization and Administration System (INADS) link. The terminal connections used previously can also be reused to the new A position Expansion Control Carrier.

DEFINITY Generic 1 EPN MCC Upgrade to DEFINITY Generic 3r EPN MCC With Duplication

The DEFINITY Generic 1 EPN MCC upgrade to DEFINITY Generic 3r EPN MCC requires the following:

- Remove TN776 Expansion Interface circuit pack (located in port slot 1 of cabinet position A Expansion Control Carrier J58890AF). This will not be reused.
- Remove TN776 Expansion Interface circuit pack (located in port slot 2 of cabinet position B Port Carrier J58890BB). This will not be reused.
- Install TN570 Expansion Interface circuit pack in port slot 1 of cabinet position A Expansion Control Carrier J58890AF.
- Install TN570 Expansion Interface circuit pack in port slot 2 of cabinet position B Port Carrier J58890BB.
- Port circuit packs that must be upgraded for G3r functionality can be installed at this time. See Table AR for a list of the circuit packs and their replacements.

DEFINITY Generic 1 EPN SCC Upgrade to DEFINITY Generic 3r EPN SCC Without Duplication

The DEFINITY Generic 1 EPN SCC upgrade to DEFINITY Generic 3r EPN SCC requires the following:

- Remove TN776 Expansion Interface circuit pack (located in port slot 1 of cabinet position A Expansion Control Cabinet J58890N). This will not be reused.
- Install TN570 Expansion Interface circuit pack in port slot 1 of cabinet position A Expansion Control Cabinet J58890N.
- Port circuit packs that must be upgraded for G3r functionality can be installed at this time. See Table AR for a list of the circuit packs and their replacements.

DEFINITY Generic 1 PPN SCC Upgrade to DEFINITY Generic 3r EPN SCC Without Duplication

The DEFINITY Generic 1 PPN SCC upgrade to DEFINITY Generic 3r EPN SCC requires the following:

- Remove all port circuit packs in the cabinet position A Control Carrier J58890L. These will be reused in the carrier replacement.
- Remove TN776 Expansion Interface circuit pack (located in port slot 1).
- Remove all other control circuit packs. These will not be reused except for TN768 Tone Clock. A Control Cabinet supporting a single port network will have a TN756 Tone Generator Clock instead of the TN768 Tone Clock. The TN756 Tone Generator clock cannot be used in the upgrade, and must be replaced with the TN768 Tone Clock.
- Remove power unit (WP91153 for AC systems and 676B for DC systems). This will be reused.
- Remove inter-carrier cables. Only TDM/LAM bus cables (WP-91716, L3) and terminator (AHF110) will be reused.
- Replace Control Cabinet J58890L in cabinet position A with Expansion Control Cabinet J58890N in the cabinet position A.
- Reapply the TDM/LAN bus cables and terminator.
- Install power unit (WP91153 for AC systems and 676B for DC systems).
- Install TN775 Maintenance circuit pack.
- Install TN570 Expansion Interface circuit pack in port slot 1.
- Install TN768 Tone Clock circuit pack.

- Port circuit packs that were removed can be reinstalled in the Expansion Control Cabinet. Port circuit packs that must be upgraded for G3r functionality can be installed at this time. See Table AR for a list of the circuit packs and their replacements.
- One current limiter (CFY1) circuit pack is installed on the Expansion Control Cabinet in cabinet position A.
- The AUX connection previously made to the A position Control Cabinet can also be reused to the new A position Expansion Control Cabinet. Note, however, that the AUX connection will no longer support the INADS link. The terminal connections used previously can also be reused to the new A position Expansion Control Cabinet.

DEFINITY Generic 1 EPN SCC Upgrade to DEFINITY Generic 3r EPN SCC With Duplication

The DEFINITY Generic 1 EPN SCC upgrade to DEFINITY Generic 3r EPN SCC requires the following:

- Remove TN776 Expansion Interface circuit pack (located in port slot 1 of cabinet position A of the Expansion Control Cabinet J58890N). This will not be reused.
- Remove TN776 Expansion Interface circuit pack (located in port slot 2 of cabinet position B of the Port Carrier Cabinet J58890H). This will not be reused.
- Install TN570 Expansion Interface circuit pack in port slot 1 of cabinet position A of the Expansion Control Cabinet J58890N.
- Install TN570 Expansion Interface circuit pack in port slot 2 of cabinet position B of the Expansion Control Cabinet J58890H.
- Port circuit packs that must be upgraded for G3r functionality can be installed at this time. See Table AR for a list of the circuit packs and their replacements.

DEFINITY Generic 1 PPN SCC Upgrade to DEFINITY Generic 3r EPN SCC With Duplication

The DEFINITY Generic 1 PPN SCC upgrade to DEFINITY Generic 3r EPN SCC requires the following:

- Remove all port circuit packs in the cabinet position A Control Cabinet J58890L. These will be reused in the carrier replacement.
- Remove all port circuit packs in the cabinet position B Control Cabinet J58890M. These will be reused in the carrier replacement.
- Remove TN776 Expansion Interface circuit pack (located in port slot 1 of cabinet position A of the Control Cabinet J58890L). This circuit pack will not be reused.
- Remove TN776 Expansion Interface circuit pack (located in port slot 1 of cabinet position B of the Control Cabinet J58890M). This circuit pack will not be reused.
- Remove all other control circuit packs from the cabinet position A Control Cabinet J58890L. These will not be reused except for the TN768 Tone Clock.
- Remove all other control circuit packs from the cabinet position B Control Cabinet J58890M. These will not be reused except for the TN768 Tone Clock.
- Remove power unit (WP91153 for AC systems and 676B for DC systems) from the cabinet position A Expansion Control Cabinet J58890L. This will be reused.
- Remove power unit (WP91153 for AC systems and 676B for DC systems) from the cabinet position B Expansion Control Cabinet J58890M. This will be reused.
- Remove inter-carrier cables from both cabinet position A and B. Only TDM/LAM bus cables (WP-91716, L3) and terminators (AHF110) will be reused.
- Replace Control Cabinet J58890L in cabinet position A with Expansion Control Cabinet J58890N in the cabinet position A.
- Replace Control Cabinet J58890M in cabinet position B with Port Cabinet J58890H.
- Reapply the TDM/LAN bus cables and terminator to cabinet position A Expansion Control Cabinet J58890N.
- Reapply the TDM/LAN bus cables and terminator to cabinet position B Port Cabinet J58890H.
- Install power unit (WP91153 for AC systems and 676B for DC systems) in cabinet position A Expansion Control Cabinet J58890N.
- Install power unit (WP91153 for AC systems and 676B for DC systems) in cabinet position B Port Cabinet J58890H.
- Install TN775 Maintenance circuit pack in Expansion Control Cabinet J58890N.
- Install TN570 Expansion Interface circuit pack in port slot 1 of Expansion Control Cabinet J58890N.
- Install TN768 Tone Clock circuit pack in Expansion Control Cabinet J58890N.

- Port circuit packs that were removed from cabinet position A can be reinstalled in the Expansion Control Cabinet. Port circuit packs that must See Table AR for a list of the circuit packs and their replacements.
- Port circuit packs that were removed from cabinet position B can be reinstalled in the Port Cabinet. Port circuit packs that must be upgraded for G3r functionality can be installed at this time. See Table AR for a list of the circuit packs and their replacements.
- One current limiter (CFY1) circuit pack is installed on the Expansion Control Cabinet in cabinet position A.
- The AUX connection previously made to the A position Control Cabinet can also be reused to the new A position Expansion Control Cabinet. Note, however, that the AUX connection will no longer support the INADS link. The terminal connections used previously can also be reused to the new A position Expansion Control Cabinet.
- The Port Cabinets must be readministered. The first Port Cabinet is administered in the B position.
- Duplication cables H600-204 and Gx are added between the Expansion Control Cabinet and the cabinet position B Port Cabinet, connecting ICCA and ICCB pin fields.
- Install TN570 Expansion Interface circuit pack in port slot 1 of Expansion Control Cabinet J58890N.
- Install TN768 Tone Clock in port slot 1 of the cabinet position B Port Cabinet. Any circuit pack previously installed in this position must be relocated.

Additions to the System

The following additions can be made to an existing system.

Voice Terminal Additions

Voice terminals are added to a system if unused port slots are available. The voice terminals must be physically wired to the cross-connect field and the system. The Manager 1 or G3r-MT terminal is used to administer these voice terminals.

Circuit Pack Additions

Circuit packs are added to provide additional port capacity for voice terminals and features. The universal port slots available with a system allow the installation of port and service circuit packs without a service interruption.

Carrier Additions

A port carrier increases the port slot capacity. The multicarrier cabinet houses up to four port carriers. Adding a port carrier interrupts service.

Cabinet Additions

With a single-carrier cabinet system, cabinet additions provide an increase in port slot capacity. The port cabinets (up to three) are stacked on top of an existing control cabinet. Installing additional cabinets interrupts service.

Expansion Port Network Addition

An Expansion Port Network (EPN) addition increases the line capacity of the system. With a multicarrier cabinet system, the EPN cabinet provides additional port carriers. An Expansion Control Cabinet equipped with a power unit, maintenance circuit pack, and a clock serves as the basic EPN cabinet for a single-carrier cabinet system. Additional port cabinets, up to three, can be stacked on the Expansion Control Cabinet. A fiber cable connects the EPN cabinet to the PPN cabinet. With the Duplication, two fiber cables connect the EPN cabinet to the PPN cabinet.

Software Feature Additions

Software Feature additions allow customers to buy an added software package feature such as Automatic Route Selection (ARS). A special login is required to activate these features that are always resident on the system tape.

REFERENCES

The following is an abbreviated listing of DEFINITY Generic 1 and Generic 3 documents. Included is a brief description of each document in the list.

To order copies of any of these documents, refer to the address on the back of this document's title page. In addition to the following documents, user instruction booklets are also available for all voice terminals that are orderable with the system.

AT&T Telecommunication Electrical Protection **350-060**

Provides practical, functional information and application detail combined with training material for telecommunication engineers in the electrical protection field.

Business Communications Systems Publications Catalog **555-000-010**

Provides a list of publications that support AT&T business communications systems. Also provides a brief description of each publication listed.

DEFINITY Communications System Generic 1 and System 75 and System 85 Terminals and Adjuncts Installation and Test **555-015-104**

Provides the information necessary to perform the tasks of installing and testing the system's common equipment. Includes a description of the necessary tools and equipment.

DEFINITY Communications System Generic 1 and System 75 and System 85 Terminals and Adjuncts Reference **555-015-201**

Provides concise physical and functional descriptions of the peripheral equipment that can be used with DEFINITY 75/85 Communications Systems and System 75 and System 85. It is intended as an aid for both AT&T and customer personnel in selecting appropriate components for these systems and in training and management. Much of the information applies to DEFINITY Communications System Generic 1 and Generic 3 peripherals as well.

DEFINITY Communications System and System 75 and System 85 DS1/DMI/ISDN-PRI Reference **555-025-101**

Provides both a broad and detailed description of the System 75 and System 85 DS1/DMI/ISDN-PRI Interface. Introduces and defines concepts and terminology unique to DS1/DMI/ISDN-PRI. Also includes applications, engineering procedures and considerations, cabling and connection arrangements, administration requirements, restrictions and limitations, etc.

DEFINITY Communications System
Generic 1 and Generic 3 Feature Description **555-230-201**

Provides a technical description of system features and parameters.

DEFINITY Communications System Generic 1 Console Operation **555-200-700**

Provides "how-to-operate" instructions for the attendant console. Serves as a reference when defining the console control keys and Incoming Call Identification requirements.

DEFINITY Communications System Generic 1 and Generic 3
Voice Terminal Operations **555-230-701**

Describes all the voice features and provides the "how-to-operate" instructions for each voice terminal. Serves as a reference when defining user requirements.

DEFINITY Communications System Generic 1 and Generic 3
Automatic Call Distribution (ACD)—Agent Instructions **555-230-722**

Provides information for use by agents after training is completed. The various ACD features are described and the procedures for using them are provided in this document. The information in this document applies to DEFINITY Genetic 1 and Generic 3 systems.

DEFINITY Communications System
Generic 1 and Generic 3 Hospitality Operations **555-230-723**

Contains the procedures for using the system's hospitality services. These services include a group of system-based features that support the lodging industry. Hotels and motels use the features to improve their property management and to provide assistance to their employees and clients.

DEFINITY Communications System Generic 1 and Generic 3
Automatic Call Distribution (ACD)—Supervisor Instructions **555-230-724**

Provides information for use by supervisors after training is completed. The various ACD features are described and the procedures for using them are provided in this document. The information in this document applies only to DEFINITY Generic 1 and Generic 3 systems.

DEFINITY Communications System
Generic 1 and Generic 3 Installation and Test **555-230-104**

Provides the information necessary to perform the tasks of installing and testing the system's common equipment. Includes a description of the necessary tools and equipment.

DEFINITY Communications System Generic 1 and Generic 3i Maintenance **555-204-105**

Provides the information necessary for monitoring, testing, and maintaining the system. It is intended to cover many of the faults and troubles that can occur in the DEFINITY Generic 1 and Generic 3i systems.

DEFINITY Communications System Generic 3r Maintenance **555-230-105**

Provides the information necessary for monitoring, testing, and maintaining the system. It is intended to cover many of the faults and troubles that can occur in the DEFINITY Generic 3r system.

DEFINITY Communications System Generic 1 and Generic 3i Upgrades and Additions **555-204-106**

Provides procedures and information for upgrading or making additions to an operational system after the initial switch installation. The document covers upgrades to Generic 1 from System 75 and to Generic 3i from Generic 1 systems.

DEFINITY Communications System Generic 3r Upgrades and Additions **555-230-106**

Provides procedures and information for upgrading or making additions to an operational system after the initial switch installation. The document covers upgrades to Generic 3r from Generic 3i systems.

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

Provides the information necessary for installing inside wiring.

DEFINITY Communications System Generic 1 and Generic 3 System Description **555-230-200**

Provides a technical description of the system hardware, environmental and space requirements, and parameters. This document also provides a brief description of features and services.

DEFINITY Communications System Generic 3i Implementation **555-230-550**

Provides the procedures and associated forms for collecting system and terminal software information. This information is later used to initialize the system via the Manager I or G3r-MT terminal.

DEFINITY Communications System Generic 3r Implementation **555-230-551**

Provides the procedures and associated forms for collecting system and terminal software information. This information is later used to initialize the system via the Manager I or G3r-MT terminal.

ABBREVIATIONS AND ACRONYMS

AAR	Automatic Alternate Routing
AC	Alternating Current
ACA	Automatic Circuit Assurance
ACD	Automatic Call Distribution
ACU	Automatic Call Unit
ACW	After Call Work
AD	Abbreviated Dialing
ADU	Asynchronous Data Unit
AIM	Asynchronous Interface Module
ALM-ACK	Alarm Acknowledge
AMW	Automatic Message Waiting
AN	Analog
ANI	Automatic Number Identification
AP	Applications Processor
APLT	Advanced Private Line Termination
ARS	Automatic Route Selection
ASAI	Adjunct Switch Application Interface
ASCII	American Standard Code for Information Interchange
ATB	All Trunks Busy
AUDIX	Audio Information Exchange
AVD	Alternate Voice Data
AWG	American Wire Guage
AWT	Average Work Time
BCC	Bearer Capability Class
BCMS	Basic Call Management System
BCS	Business Communications System
BCT	Business Communications Terminal
BDC	Business Communication Systems Design Center
BHCC	Busy Hour Call Completions
BLF	Busy Lamp Field
BOS	Bit Oriented Signaling
BRI	Basic Rate Interface
BTU	British Thermal Unit
CACR	Cancellation of Authorization Code Request
CAG	Call Answer Group
CAMA	Centralized Automatic Message Accounting
CAS	Centralized Attendant Service
CBC	Call-By-Call
CCITT	Consultative Committee for International Telephone and Telegraph
CCMS	Common Channel Message Set
CCS	Hundred Call Seconds
CCSA	Common Control Switching Arrangement
CDM	Channel Division Multiplexing
CDOS	Customer-Dialed and Operator-Serviced

CDR	Call Detail Recording
CDRR	Call Detail Recording and Reporting
CDRU	Call Detail Recording Utility
CEM	Channel Expansion Multiplex
Cl	Clock Input
CMDR	Centralized Message Detail Recorder
CMS	Call Management System
CO	Central Office
COR	Class of Restriction
COS	Class of Service
CPE	Customer Premises Equipment
CPN/BN	Calling Party Number/Billing Number
CPS	Characters Per Second
CPTR	Call Progress Tone Receiver
CRC	Cyclical Redundancy Checking
CSA	Canadian Safety Association
CSD	Customer Service Document
CSM	Centralized System Management
CSS	Center Stage Switch
CSU	Channel Service Unit
DC	Direct Current
DCE	Data Communications Equipment
DCP	Digital Communications Protocol
DCS	Distributed Communications System
DDC	Direct Department Calling
DDD	Direct Distance Dialing
DID	Direct Inward Dialing
DIOD	Direct Inward/Outward Dialing
DLC	Data Line Circuit
DLDM	Data Line Data Module
DMI	Digital Multiplexed Interface
DND	Do Not Disturb
DNIS	Dialed Number Identification Service
DOD	Direct Outward Dialing
DOSS	Delivery Operations Support System
DS1	Data Services Level 1
DS1	Digital Service Interface
DSU	Data Service Unit
DTDM	Digital Terminal Data Module
DTE	Data Terminal Equipment
DTGS	Direct Trunk Group Select
DTMF	Dual Tone Multifrequency
DXS	Direct Extension Selection
E&M	Ear and Mouth (Receive and Transmit)
EBCDIC	Extended Binary Coded Decimal Interexchange Code
El	Expansion Interface
EIA	Electronic Industries Association
EMI	Electro-Magnetic Interference

EPN	Expansion Port Network
EPROM	Erasable Programmable Read Only Memory
EPSCS	Enhanced Private Switched Communications Services
ESF	Extended Superframe Format
ETN	Electronic Tandem Network
FAC	Feature Access Code
FAS	Facility Associated Signaling
FCC	Federal Communications Commission
FIC	Facility Interface Codes
FNPA	Foreign Numbering Plan Area Code
FRL	Facility Restriction Level
FSAC	Field Support Administration Center
FX	Foreign Exchange
GPTR	General Purpose Tone Receiver
GRS	Generalized Route Selection
HNPA	Home Numbering Plan Area Code
IAS	Inter-PBX Attendant Service
IC	Inter-Cabinet
ICC	Inter-Carrier Cable
ICI	Incoming Call Identifier
ICM	Inbound Call Management
IDDD	International Direct Distance Dialing
IDI	Isolating Data Interface
IE	Information Element
INADS	Initialization and Administration System
INS	ISDN Network Service
INWATS	Inward Wide Area Telephone Service
ISDN	Integrated Services Digital Network
ISDN-BRI	Integrated Services Digital Network-Basic Rate Interface
ISDN-PRI	Integrated Services Digital Network-Primary Rate Interface
ISN	Information Systems Network
ITAC	International Technical Assistance Center
ITP	Installation Test Procedure
IXC	Inter-Exchange Carrier Code
KBPS	Kilobits Per Second
LAN	Local Area Network
LDN	Listed Directory Number
LED	Light-Emitting Diode
LSU	Local Storage Units
LWC	Leave Word Calling
M-Bus	Memory Bus
MA-UUI	Message Associated User-to-User Signaling
MBPS	Megabits Per Second

MCC	Multicarrier Cabinet
MCS	Message Center Service
MDM	Modular Data Module
MDR	Message Detail Record
MET	Multibutton Electronic Telephone
MIS	Management Information System
MISCID	Miscellaneous Identification
MMS	Material Management Services
MOS	Message Oriented Signaling
MS	Message Server
MSA	Message Service Adjunct
MPDM	Modular Processor Data Module
MTDM	Modular Trunk Data Module
MTP	Maintenance Tape Processor
MTT	Multi-Tasking Terminal
MWL	Message Waiting Lamp
NAU	Network Access Unit
NCOSS	Network Control Operations Support Center
NCSO	National Customer Support Organization
NFAS	Non-Facility Associated Signaling
NID	Network Inward Dialing
NPA	Numbering Plan Area Code
NPE	Network Processing Element
NQC	Number of Queued Calls
NSE	Night Service Extension
NSU	Network Sharing Unit
NXX	Public Network Office Code
OCM	Outbound Call Management
OPS	Off-Premises Station
OQT	Oldest Queued Time
OSHA	Occupational Safety and Health Act
OSS	Operations Support System
PBX	Private Branch Exchange
PC	Personal Computer
PCOL	Personal Central Office Line
PCOLG	Personal Central Office Line Group
PCM	Pulse Code Modulated
PCS	Permanent Switched Calls
PDM	Processor Data Module
PDS	Premises Distribution System
PE	Processing Element
PEC	Price Element Code
PGN	Partitioned Group Number

PIB	Processor Interface Board
PL	Private Line
PMS	Property Management System
PN	Port Network
PNA	Private Networking Automatic Alternate Routing
PPN	Processor Port Network
PRI	Primary Rate Interface
PSC	Premises Service Consultant
PSDN	Packet Switch Public Data Network
PT	Personal Terminal
RAM	Random Access Memory
RCL	Restricted Call List
RHNPA	Remote Home Numbering Plan Area Code
RLT	Release Link Trunk
RNX	Private Network Office Code
ROM	Read Only Memory
RPN	Routing Plan Number
SAKI	Sanity and Control Interface
SCC	Single Carrier Cabinet
SCI	Switch Communications Interface
SCO	System Control Office
SDDN	Software Defined Data Network
SDN	Software Defined Network
SID	Station Identification Number
SIT	Special Information Tones
SMDR	Station Message Detail Recording
SPE	Switch Processing Element
SPID	Service Profile Identifier
SSI	Standard Serial Interface
STARLAN	Star-based Local Area Network
ST3	Stratum 3 Clock Board
TAAS	Trunk Answer From Any Station
TAC	Trunk Access Code
TC	Technical Consultant
TCM	Traveling Class Mark
TDM	Trunk Data Module
TEG	Terminating Extension Groups
TOD	Time of Day
TOP	Task Oriented Protocol
TSC	Technical Service Center
TTR	Touch-Tone Receiver
TTTN	Tandem Tie Trunk Network
TTY	Teletypewriter

UAP	Usage Allocation plan
UCD	Uniform Call Distribution
UCL	Unrestricted Call List
UDP	Uniform Dial Plan
UPS	Uninterruptible Power Supply
VDN	Vector Directory Number
VM	Voltmeter
WATS	Wide Area Telecommunications Service
WGS	WorkGroup System

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