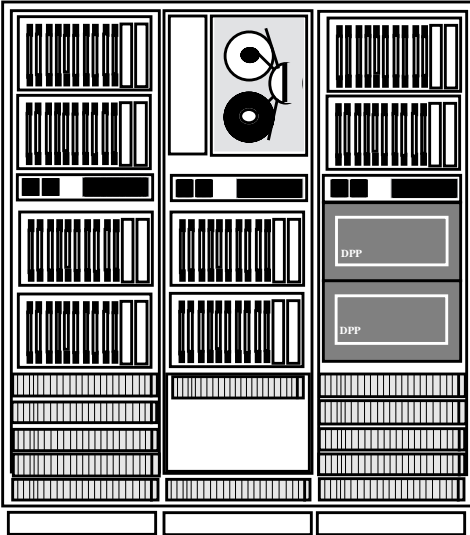


DMS-100 Family

Distributed Processing Peripheral Product Guide

DPP001 and up Standard 02.01 April 1997



DMS-100 Family

Distributed Processing Peripheral (DPP)

Product Guide

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- First standard issue.

Standard Issue 2.01 April 1997

- DPP Hardware section is updated with information regarding the 3 1/2" 1-Gigabyte and 2-Gigabytes disk drives.
- DPP cabinet dimension illustration in DPP Hardware section is corrected to show front view of entire chassis.
- Auxiliary circuit assembly locations illustration in DPP Hardware section is revised to more accurately portray the rear of the cabinet.
- Finding DPP Information section is corrected to list the complete set of publications that are related to the DPP.
- A List of terms section is added to the document.
- Minor corrections and clarifications are made in each section.

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About this document

When to use this document

This document gives a general description of the Distributed Processing Peripheral (DPP).

How to check the version and issue of this document

The version and issue of the document are indicated by numbers, for example, 01.01.

The first two digits indicate the version. The version number increases each time the document is updated to support a new feature release. For example, the first release of the document is 01.01. In the *next* feature release cycle, the first release of the same document is 02.01.

The second two digits indicate the issue. The issue number increases each time the document is revised but rereleased in the *same* feature release cycle. For example, the second release of the document in the same feature release cycle is 01.02.

This document is written for all DMS-100 Family offices. More than one version of this document may exist. To determine whether you have the latest version of this document and how documentation for your product is organized, check the release information in *North American DMS-100 Northern Telecom Publications Cancellation Index*, 297-1001-001.

References in this document

The following documents are referred to in this document:

- *Distributed Processing Peripheral (DPP) Administration Guide*, 297-1001-331.
- *Common Customer Data Schema*, 297-1001-451.
- *Distributed Processing Peripheral (DPP) Hardware Component Replacement Guide*, 297-1001-539.
- *Distributed Processing Peripheral (DPP) Quick Reference Guide*, 297-1001-544.
- *Distributed Processing Peripheral (DPP) Maintenance Procedures Guide*, 297-1001-545.
- *Distributed Processing Peripheral (DPP) Commands and Messages Guide*, 297-1001-547.

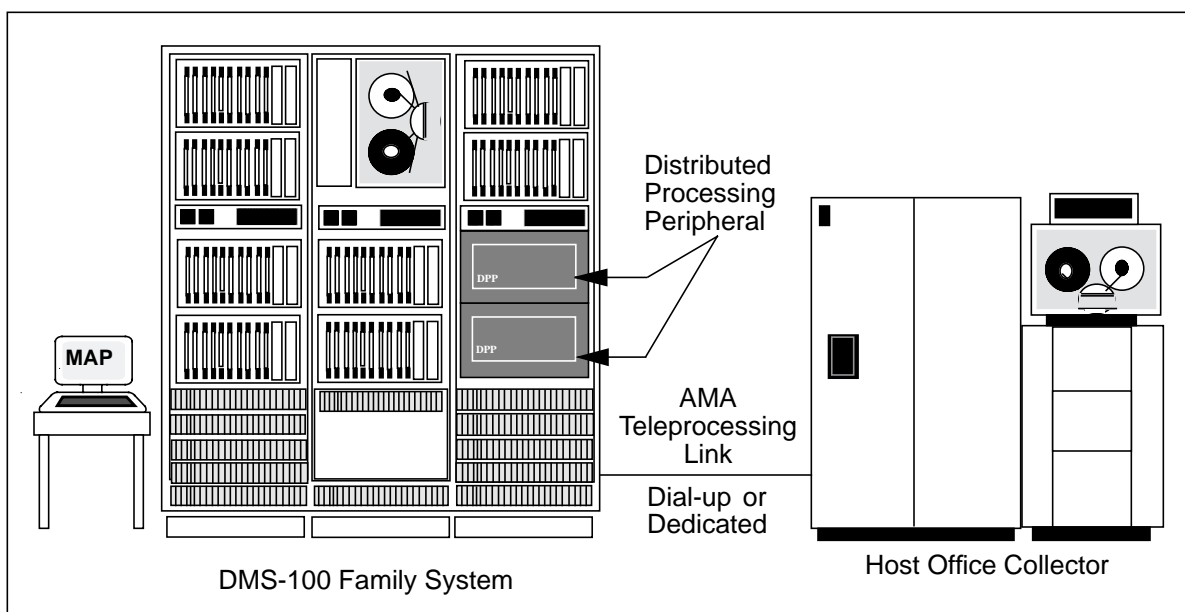
Understanding DPP

This chapter provides an introduction to the Distributed Processing Peripheral (DPP).

DPP in the DMS network

The DPP is a subassembly, mounted in the Input/Output Equipment (IOE) or Cabinetized IOE (CIOE) frame, with interfaces through four ports between the DMS Input/Output Controller (IOC) interface cards and the DPP interface cards. Two of the ports provide for the transmission of Automatic Message Accounting (AMA) data from the DIRP AMA subsystem to the DPP for recording and storage. The other two ports are for user human-machine terminal administration and maintenance communications to the DPP through the DMS, using the DMS MAP. In addition, there are DPP interface links to the operating company's Host Office Collector (HOC) computer processing system, a DPP interface port for an Emergency Administration Terminal (EAT), and a DPP interface jack for a rover terminal.

Figure 1-1
DPP in the DMS network

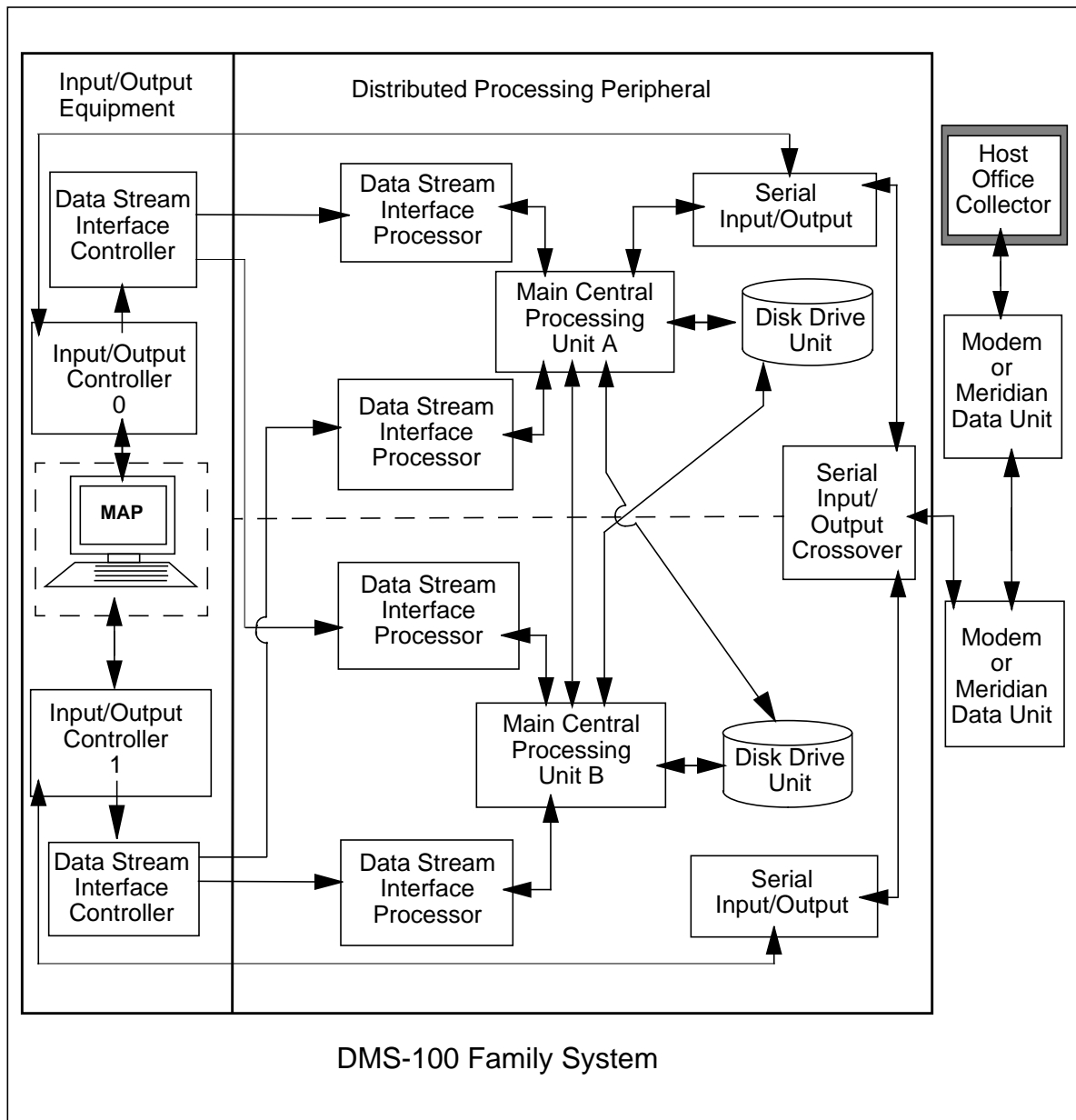


DPP System Architecture

The architecture of the DPP is fully redundant (see Figure 1-2). Two functionally identical units linked by crossover circuits ensure that no critical AMA data is lost. Under normal operation, the active DPP unit writes identical copies of data to each of the hard-disk drive units. The inactive DPP unit, which remains in a warm-standby mode, becomes active if an error condition is reported on the active unit or if the active side initiates a processor switch. Internal diagnostics continually monitor the system's status.

IOC cards provide the interface between the DPP and the rest of the DMS-100 system. Redundant links, through separate IOCs, exchange AMA data (Data Stream Interface [DSI] port) and non-AMA data (maintenance port). Non-AMA data includes log messages, MAP commands, and DPP program data. If one link fails, the second link automatically assumes the load previously carried by the failed link.

Figure 1-2
DPP System Architecture



DPP Hardware

The following subsections describe the various hardware components for the DPP:

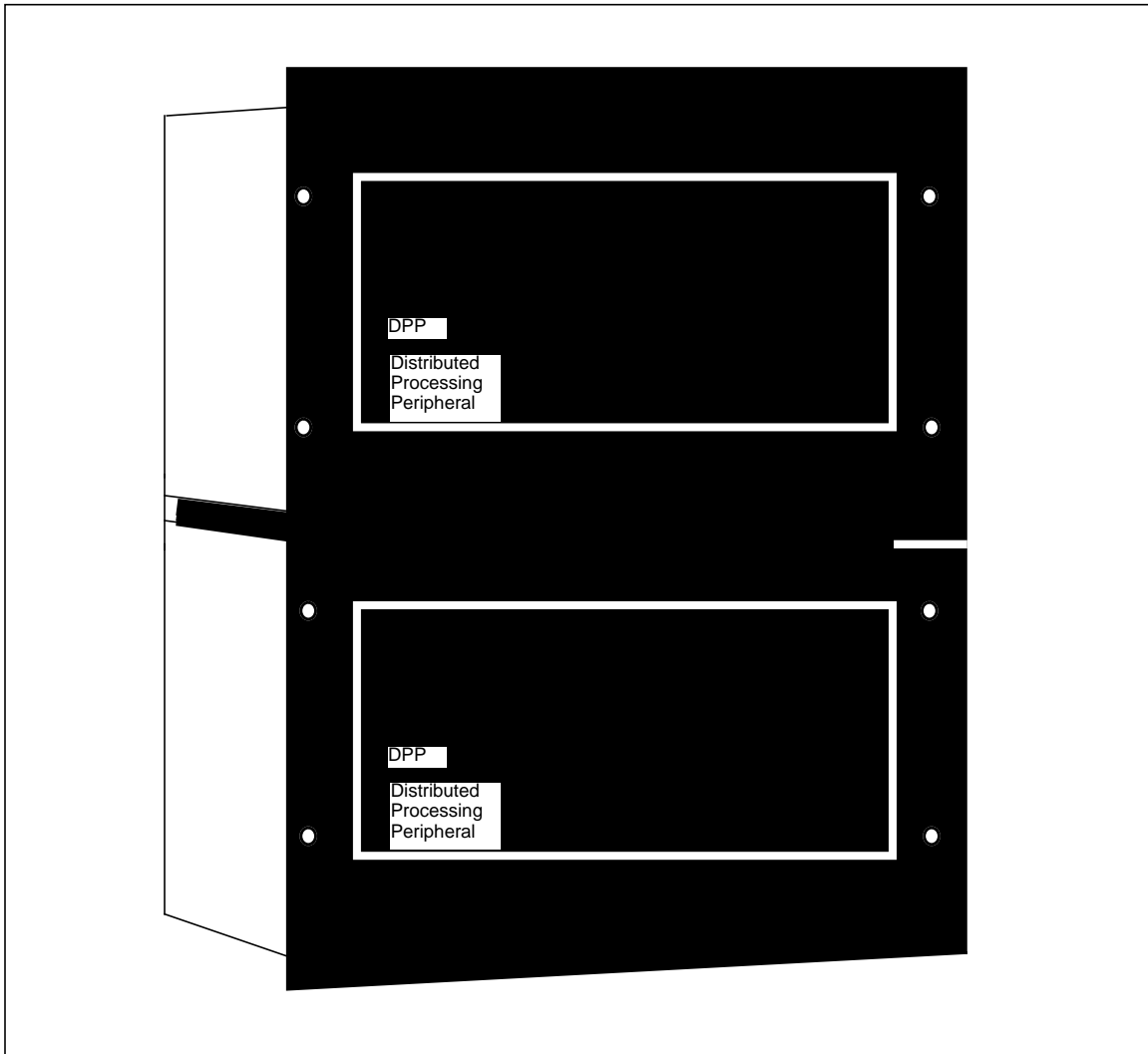
- System description
- Component description
- Disk drive description
- Switch and Status Panel description
- Equipment list.

System description

Chassis organization

The DPP consists of two processor units physically connected together. Figure 2-1 provides a view of the general appearance of the DPP. The two processor units are electronically linked through crossover capability, which enables either unit to communicate with either of the disk drives. This feature safeguards against the loss of billing data in the event of a circuit fault. The two units are functionally identical, each with a power supply and disk drive. During normal operation, only one of the units is doing the work, with the other unit in a warm standby mode. All data is written to both disk drives. Only one of the disk drives is accessed for read operations. In the event of a system malfunction, operation is automatically switched to the warm standby unit.

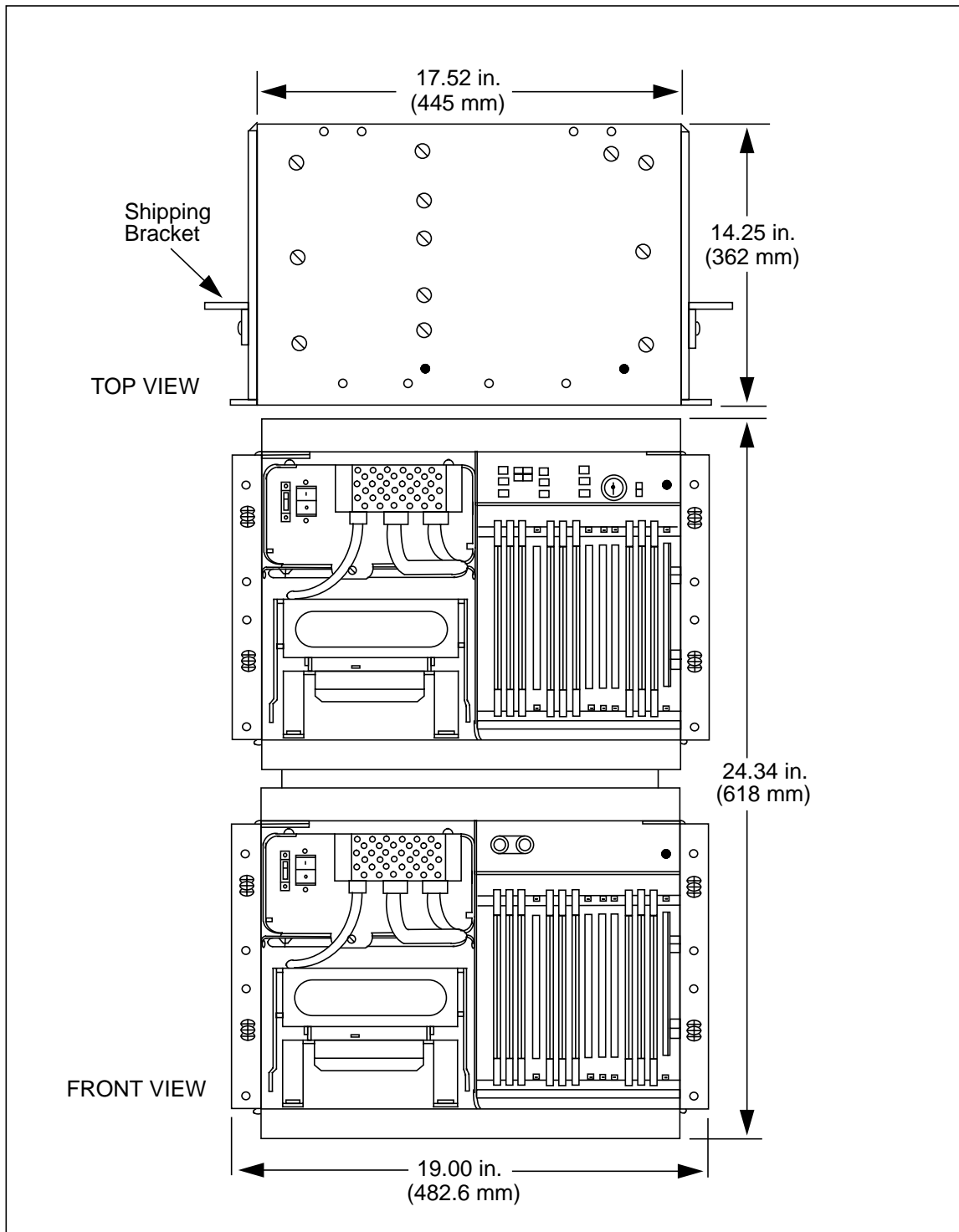
Figure 2-1
Distributed Processing Peripheral



Each DPP cabinet is approximately 24 inches (618 mm) high by 19 inches (483 mm) wide by 14 inches (362 mm) deep. Each unit, power supply, and disk drive is housed in a separate chassis. Each DPP cabinet is constructed of aluminum to both decrease unit weight and to protect against Electromagnetic Interference (EMI) effects.

The external dimensions of a DPP cabinet are provided in Figure 2-2.

Figure 2-2
DPP cabinet dimensions



External connections to the DMS-100 are made through bulkhead connectors, terminal blocks, and ground studs provided on the sides of the cabinet as shown in Figures 2-3, 2-4, and 2-5. The bulkhead connectors are located as follows, when viewing the DPP unit from the rear:

- Left Side: Data and Peripheral Interface connectors.
- Right Side: Power, Ground, and Alarm Interface connectors.

Figure 2-3 illustrates the Data and Peripheral Interface connectors for a Turbo DPP system. Turbo DPP systems are equipped to be polled by the HOC at a maximum baud rate of 56K bits per second.

Figure 2-4 illustrates the Data and Peripheral Interface connectors for a Non-Turbo DPP system. Non-Turbo DPP systems are equipped to be polled by the HOC at a maximum baud rate of 9600 bits per second.

Each of two cabinet back panels is secured to the unit with eight screws. One ventilation screen is mounted on each of these panels for the purpose of providing an air intake for the three ventilation fans mounted inside the chassis. The back panels may be removed for inspection, installation, or troubleshooting, but should be in place during testing and normal operation.

Both chassis in the DPP cabinet contain a front cover made of aluminum and secured to the front edges of the chassis with four screws. The cover mounted to the top cabinet contains an EMI window, which allows an operator to view the various switch and status panel controls located on the front of the cabinet.

Figure 2-3
Data and Peripheral Interface connectors - Turbo DPPs

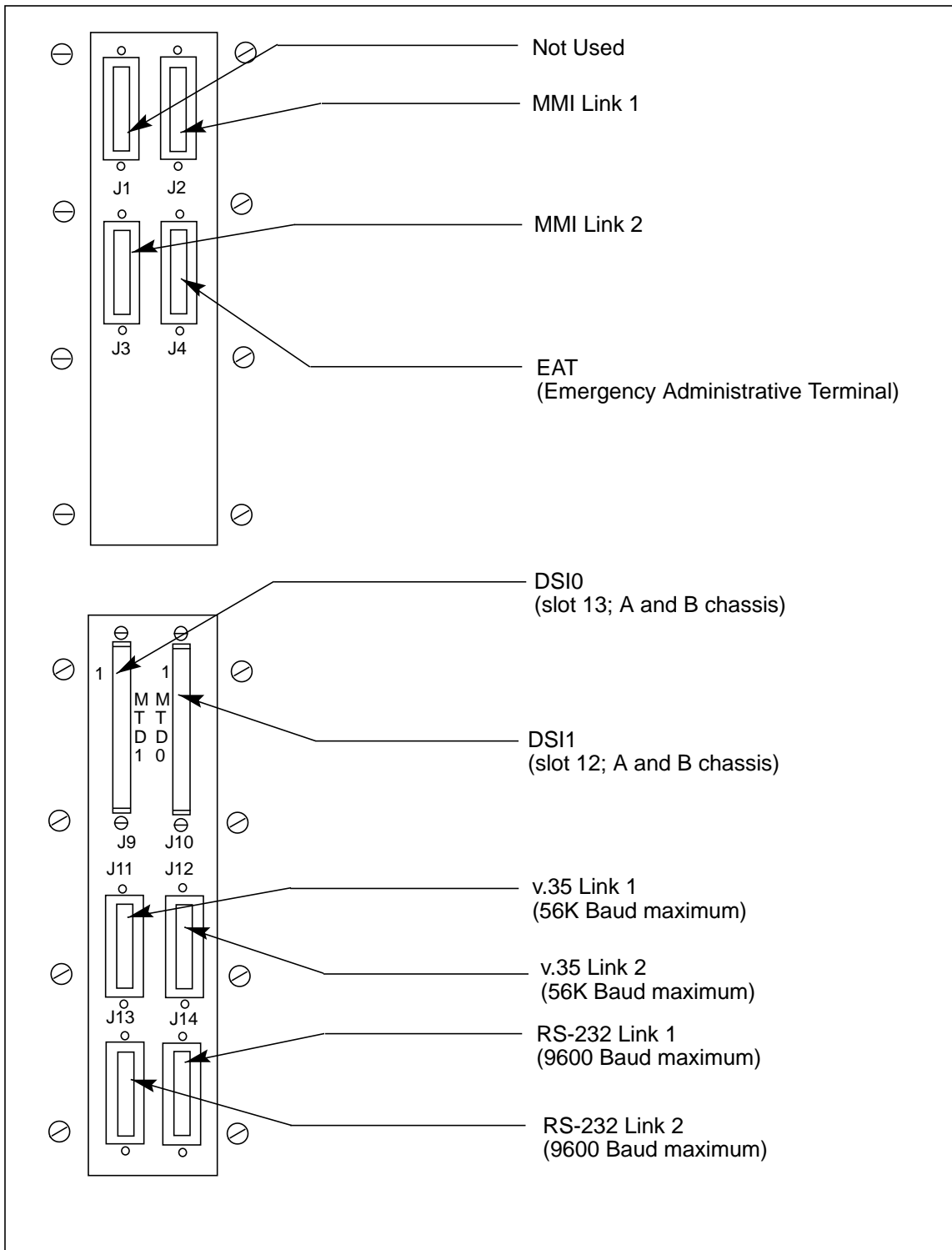


Figure 2-4
Data and Peripheral Interface connectors - Non-Turbo DPPs

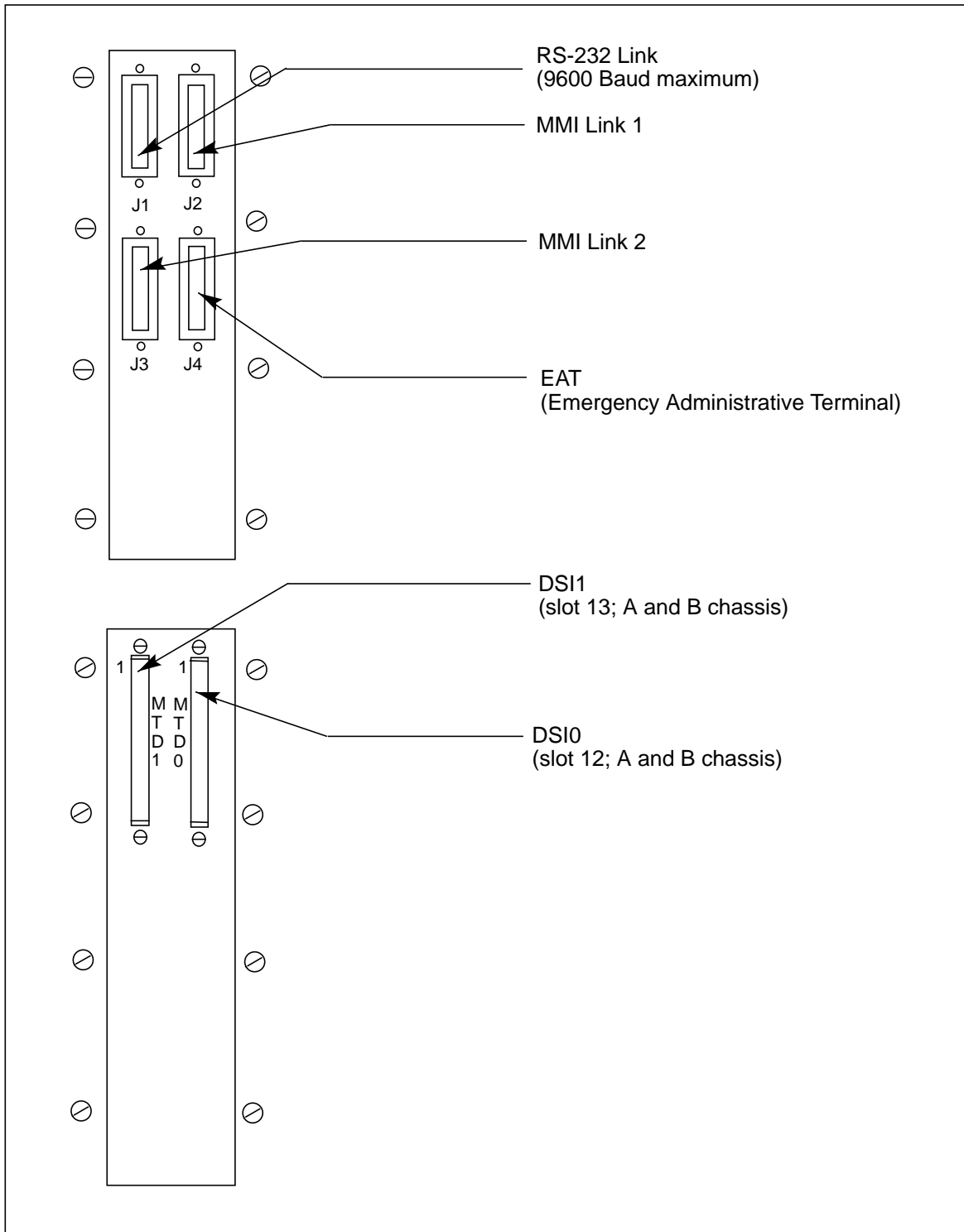
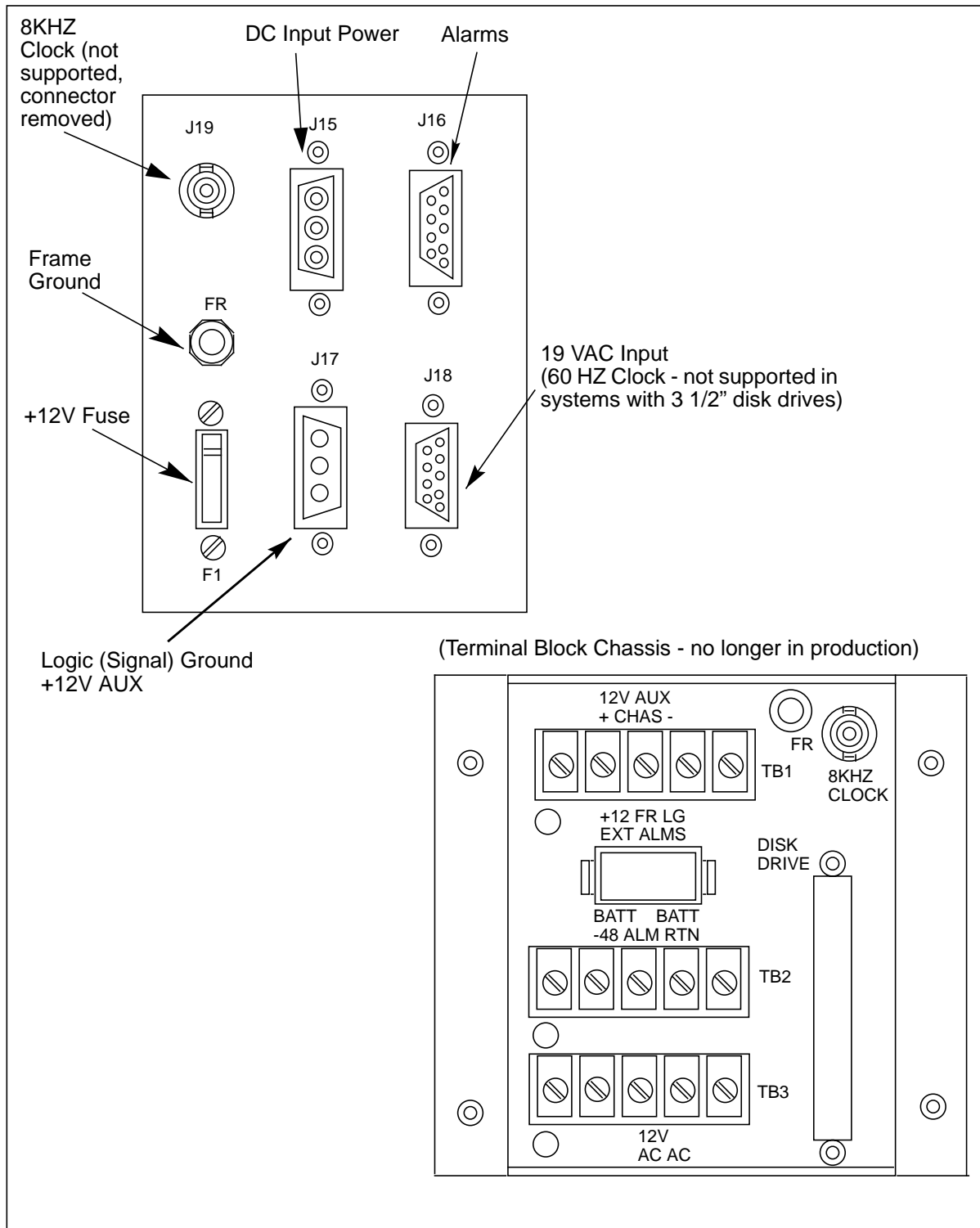
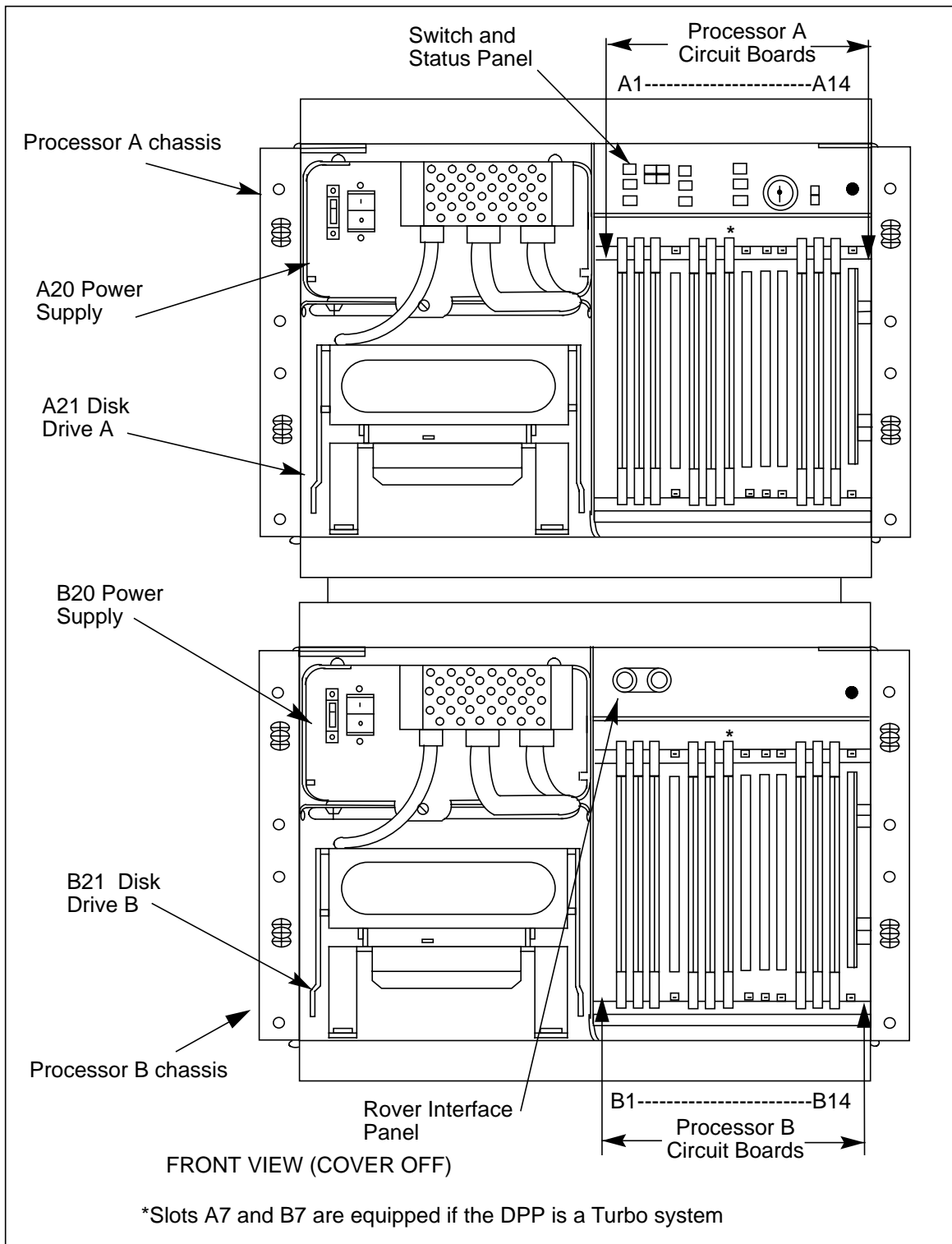


Figure 2-5
Power, Ground and Alarm Interface connectors



The DPP employs two complete processing units, one identified as the A chassis, the other as the B chassis. The A chassis is physically located above the B chassis two units being connected together as shown in Figure 2-6. The A chassis assembly contains the A processor and provides the switch and status panel for the system. The B chassis assembly contains the B processor and the Rover Interface Panel.

Figure 2-6
DPP cabinet subassemblies



Connector and pin identification

J Connectors: These connectors, located on certain subassemblies, are identified by the letter J, followed by up to three digits. For example, both the A and B chassis have J connectors on the pin side of the backplane; numbers increasing from right to left. AJ2 is located on the backplane of the A chassis.

J numbered connectors are also located on certain Printed Circuit Assemblies (PCAs) and are described by first identifying the chassis number, the number of the PCA, and finally the number of the connector. For example, B13 J1 is located in the B chassis on the assembly occupying the 13th slot from the left, viewing the chassis from the front. J numbers on PCAs are clearly marked.

J numbered connectors are located on certain assemblies, such as the disk drives. Locations of these J connectors are illustrated in the Figures of the specific subassembly.

Pin Number Identification: Pin numbers of a given connector are identified by up to three digits following the designation of the connector. For example, A13 J1 P34 designates the 34th pin of the connector located thirteen slots from the left in the card rack of the A chassis, viewed from the front.

In many cases, locating a pin requires first locating the position of Pin 1. Manufacturers use a variety of means to locate Pin 1; a dot (.), a printed number 1, or a triangle are most common. Ribbon cables with multi-colored conductors use a brown wire on the cable and a triangle on the connector to indicate Pin 1. Many connectors have even-numbered pins on one side, odd-numbered pins on the other. Some connectors, such as the DB-25 types used in the DPP, number pins consecutively left to right, top to bottom, returning to the left of the next row when the end of the upper row has been reached.

Component description

A typical DPP, showing the physical arrangement of the assemblies in the cabinet, is shown in Figure 2-6.

DPP central processor unit

Both Central Processor Units (CPUs) can control the DPP and are electronically linked to allow either processor to assume control should the other fail. A disk crossover capability is also provided so that either CPU can communicate with either disk drive. This crossover capability safeguards against the loss of data if there is a malfunction in either processor. If the system were to malfunction, the standby processor automatically takes control.

Circuit assembly racks

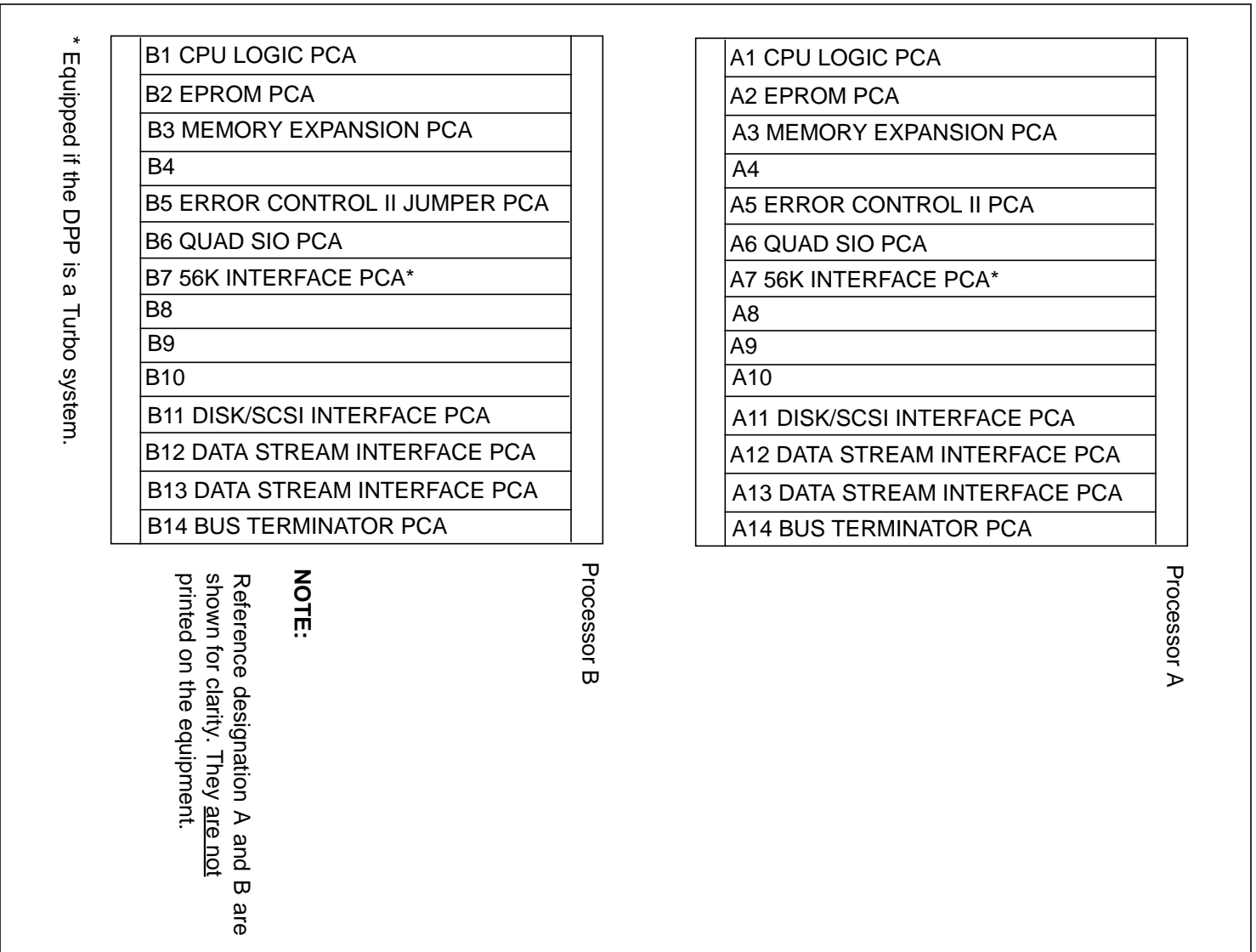
Typical subassembly and circuit assembly locations are shown in Figure 2-7. The illustration shows that two PCA racks (A and B) are used. PCAs are designated A1 through A14 in the A (upper) chassis; B1 through B14 in the B (lower) chassis. The A and B prefix designations are not marked on the equipment. Figure 2-7 provides the PCA identifiers and locations.

A backplane circuit assembly comprises the rear of the card rack. The backplane circuit assembly provides the sockets for the installation and interconnection of the PCAs. Sockets are numbered, from left to right, 1 to 14 in each chassis. The backplane circuit assembly provides the interconnections between the plug-in PCAs and the other circuit assemblies and subassemblies in each DPP chassis.

All DPP equipment employs a standard complement of circuit assemblies to provide basic system operation. The following PCAs are rack-mounted in DPP systems:

- two - CPU Logic PCAs
- two - EPROM PCAs
- two - Memory Expansion PCAs
- one - Error Control II PCA (A chassis)
- one - Error Control II Jumper PCA (B chassis)
- two - Quad Serial Input/Output (SIO) PCAs
- two - 56K Interface PCAs (Turbo DPPs only)
- two - Disk Interface (Non-Turbo DPPs) or SCSI Interface PCAs (Turbo DPPs)
- four - Data Stream Interface (DSI) PCAs
- two - Bus Terminator PCAs.

Figure 2-7
Printed Circuit Assembly Identifiers and Locations

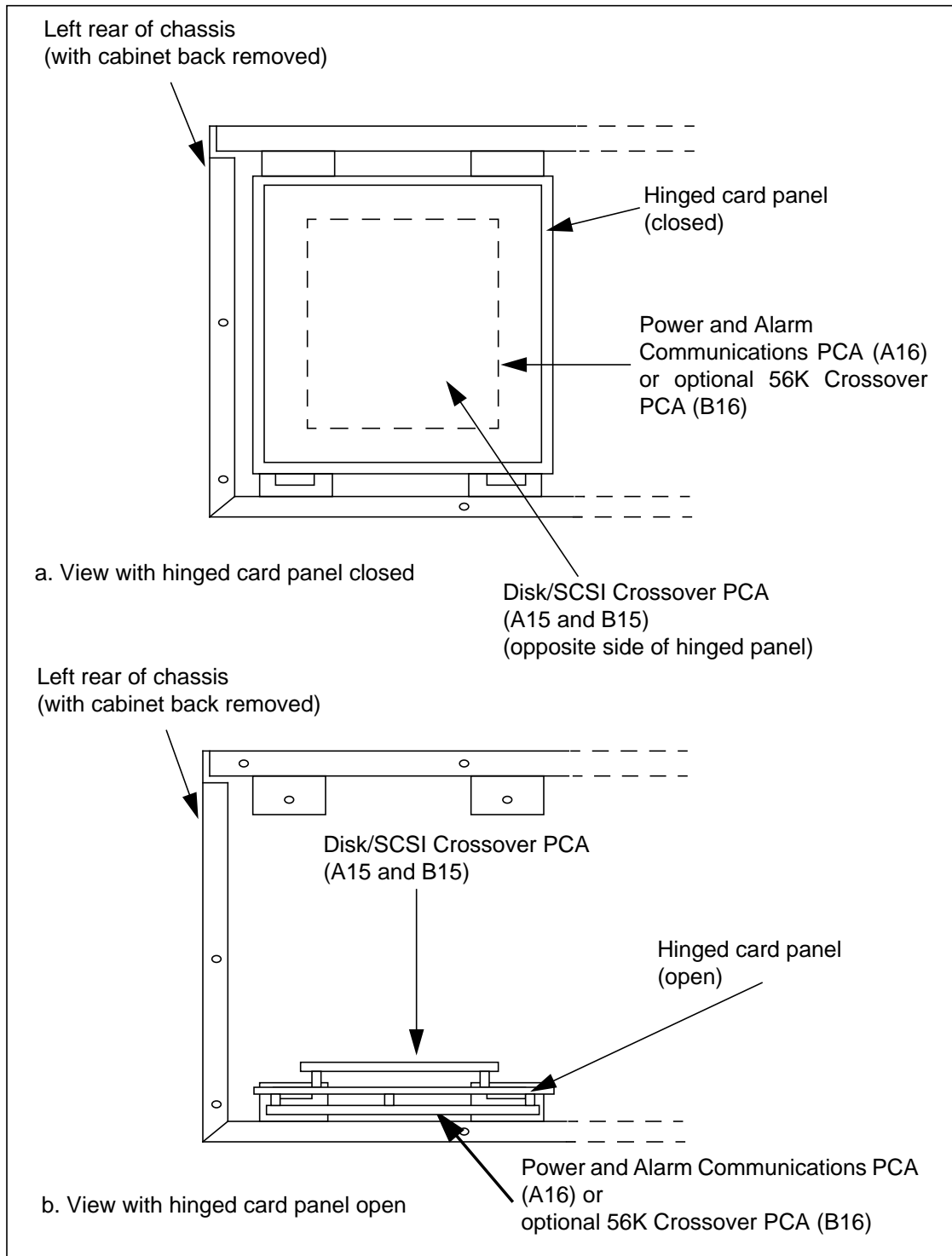


Other circuit assembly locations

Circuit assemblies are used in locations other than the card racks as described in the following paragraphs.

There are PCAs located at the rear of the cabinet, on a hinged panel, as shown in Figure 2-8. The PCAs used at these locations are the Power and Alarm Communication (P/A Comm) PCA and the Disk Crossover PCAs. For Turbo DPP systems, there is a SCSI Crossover PCA used in place of the Disk Crossover PCA in the A chassis and a 56K Crossover added to the B chassis.

Figure 2-8
Auxiliary circuit assembly locations



The Disk Controller PCA is found on Non-Turbo DPP systems with 72- and 140-MB disk drives. The ribbon cables connecting the Disk Controller PCA to the disk drive unit are factory installed. DPP systems with 380- and 760 MB and 1- and 2-Gigabyte disk drives have integrated disk controllers.

The Fan Filter PCA is located on the bottom rear of both the A and B chassis, near the Fan Assembly. There is also one Fan Assembly located behind the Rover Interface Panel.

Disk Drives

Disk drive system description

The DPP employs two hard (fixed) disk drives (5 1/4" or 3 1/2"), located in the lower left corner of each processor chassis, when viewed from the front of the unit. The two disk drives are mounted on brackets, as illustrated in Figure 2-9.

The DPP's main programs for system operation are resident on disk. The programs are automatically retrieved from disk and loaded to the Extended Memory (DRAM) PCA and the optional 56K Interface upon power-up. Refer to Figure 2-10 for an illustration of the various disk drive assemblies. Programs are retained on disk as archives in case the processor(s) require a reboot. The DPP system can be downloaded with new programs from the DMS-100.

Figure 2-9
Disk drive mounting details (3 1/2" disk drives shown)

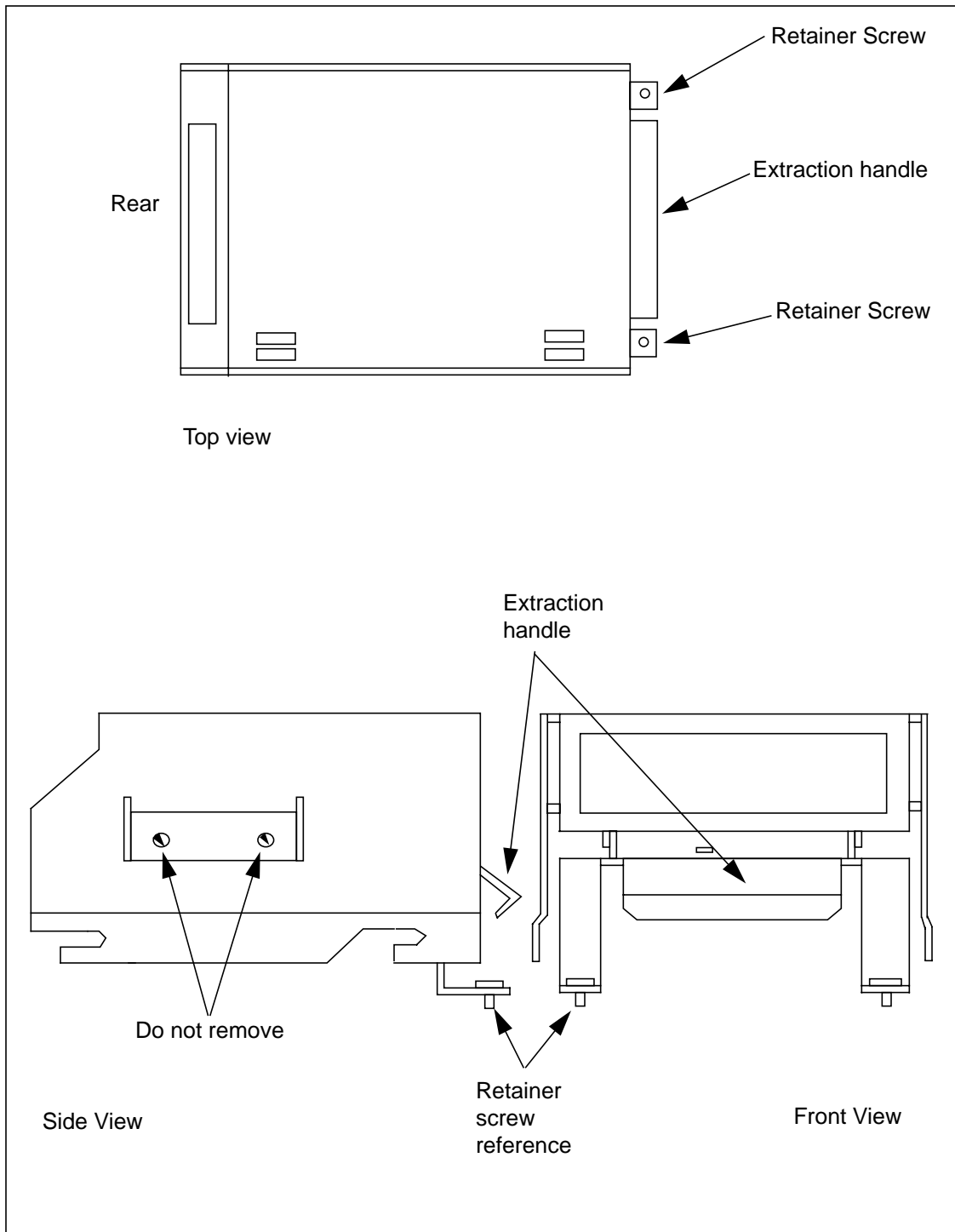
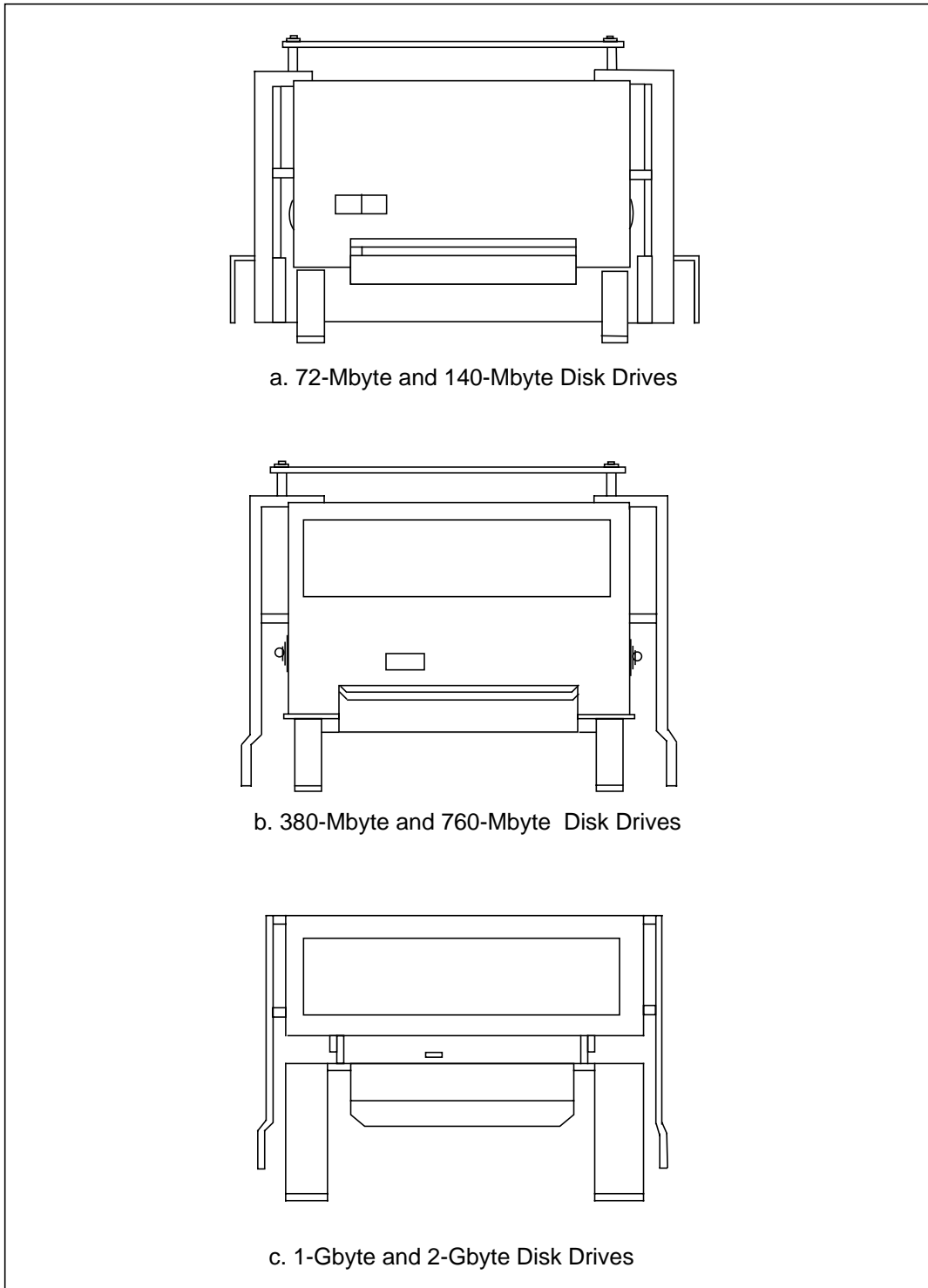


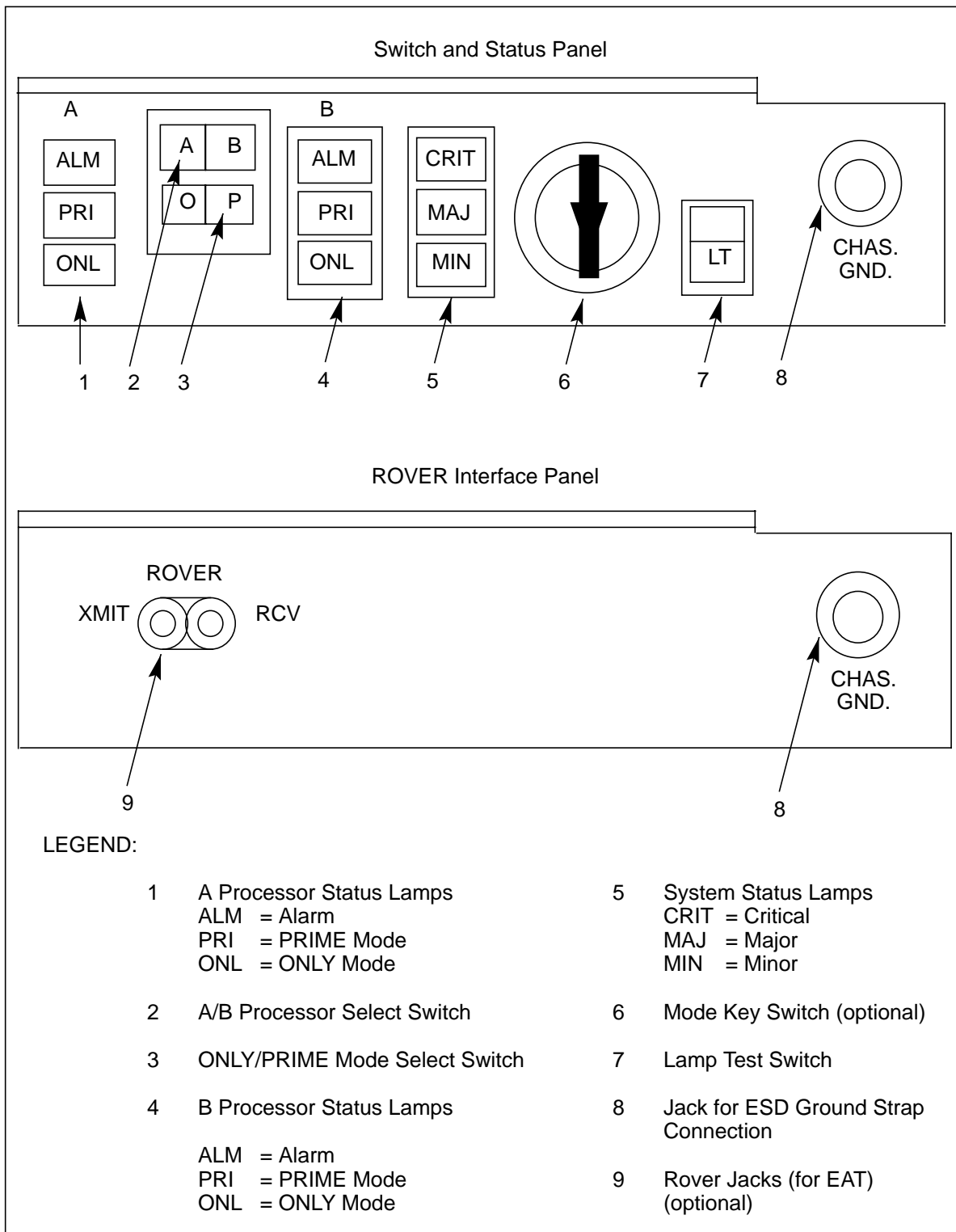
Figure 2-10
DPP disk drive assemblies (front view)



Switch and status panel/rover interface panel

This DPP option uses the upper Switch and Status Panel (A chassis) and the Rover Interface Panel (B chassis), which provide status information and manual controls, and Rover terminal interface. The Switch and Status Panel is built directly into the upper right portion of the A chassis. The Rover Interface Panel is built into the upper right portion of the B chassis, as illustrated in Figure 2-11. There are four different DPP configurations available on the interface panel - Switch/Rover, Switch/No Rover, No Switch/Rover, and No Switch/No Rover.

Figure 2-11
DPP Switch and status panel



The Switch and Status Panel provides switches for changing the operating condition of the A and B processors, alarm status indicators, and a banana jack connection to frame ground. The Rover Interface Panel provides a direct connection for the Rover maintenance terminal and a banana jack connection to frame ground. The banana jack connections on the Switch and Status Panel and Rover Interface Panel provide a means for attaching ground straps used for Electrostatic Discharge (ESD) protection.

Switch and status panel indicators

The system provides lamps on the Switch and Status Panel for quickly ascertaining overall system operational conditions. Table 2-1 provides the color scheme and mnemonic identifier of the status and alarm lamps.

Table 2-1 Alarm lamp color scheme and identifiers		
Mnemonic	Color	Function
ALM	Red	Alarm (Active)
PRI	Green	PRIME Unit (status)
ONL	Yellow	ONLY Unit (status)
CRIT	Red	Critical Alarm
MAJ	Red	Major Alarm
MIN	Yellow	Minor Alarm

The following paragraphs provide a brief description of the status and alarm lamps listed in Table 2-1.

ALM (Alarm)

Red indicator lamp (ALM) indicates that an alarm is in active status. When this lamp is active with other indicator lamps (CRIT, MAJ, or MIN), it is used to determine particular operational status (level of alarm).

PRI (Primary)

Green status lamps (PRI) indicate which unit is in control of the system. In the PRIMARY state, the active unit is in operational control of the system and the other unit is in a standby, or ready state. The standby unit is capable of performing the same functions as the PRIMARY unit, is error free, and is available to take control of the system in the event of malfunction in the PRIMARY unit.

ONL (Only)

Yellow status lamp (ONL) indicates which processor has sole, non-transferable operational control of the system. The other unit is not available for system functions in the event of a malfunction in the ONLY unit. Non-availability of a unit could be due to a fault in a unit or normal maintenance activity on a unit. In this operating condition, both the PRI and ONL status lamps are lit for the active processor. The ONLY condition must be manually initiated at the mode key switch and rocker switch.

CRIT (Critical)

Red indicator lamp (CRIT) when lit, indicates that the system may no longer be capable of performing its design function of data collection, storage, retrieval, and forwarding. The situation requires immediate corrective action so that the performance of the system may return to its design function. Critical alarms are normally configured to reflect conditions where the probability of data loss is very high.

MAJ (Major)

Red indicator lamp (MAJ) alarm lamp, when lit, indicates that the system is in danger of loss of operational capability. A fault, or faults, condition exists, which, if not corrected, may result in loss of functional capability. Major alarms are normally configured such that if corrective action is not taken immediately, there is a high probability of subsequent faults resulting in loss of data.

MIN (Minor)

Yellow indicator lamps (MIN) alarm lamp, when lit, indicates that one processor unit (A or B) has developed a fault condition; there has been no degradation of system performance as relates to overall design capability. This situation does not require immediate attention, though delay could lead to worsening of the situation.

Other indicators

The system contains no audible alarm devices. However, relay contacts are provided for the routing of alarm signals to the office alarm system.

List of equipment assemblies and subassemblies

Table 2-2 lists the assemblies and subassemblies used in the DPP system. The list provides reference designations, abbreviated names, full names, part numbers, and usage notes, where applicable.

Table 2-2 List of assemblies and subassemblies		
Reference designator	ABBR name	Full name - part number - usage notes
N/A	DPP	Distributed Processing Peripheral (System) (1) NT8X48AA Manufacture Discontinued (MD) - 72 Mbyte 5 1/4" disk drive systems - non-UL chassis (2) NT8X48AB (MD) - 140 Mbyte 5 1/4" disk drive systems - non-UL chassis (3) NT8X48BA (MD) - 5 1/4" disk drive systems - non-UL chassis (4) NT8X48AD (MD) - 5 1/4" disk drive system - UL chassis (5) NT8X48BB - 3 1/2" disk drive system - non-UL chassis (field upgrade only, not available from factory) (6) NT8X48BD - 3 1/2" disk drive system - UL chassis
0	DPP0	Distributed Processing Peripheral (Unit) (1) NT6M01AB (MD) - 5 1/4" disk drive unit - non-UL chassis (2) NT8M05AB (MD) - 5 1/4" disk drive unit - UL chassis (3) NT8M05BB - 3 1/2" disk drive unit - UL chassis
A		A Processor (Upper) Chassis - N/A
A1	CPU	Central Processor Unit Logic w/DMA PCA - NT6M62BA
(Sheet 1 of 16)		

Table 2-2**List of assemblies and subassemblies**

Reference designator	ABBR name	Full name - part number - usage notes
A2	EPROM	<p>Erasable, Programmable, Read-Only Memory PCA</p> <p>(1) NT6M63BF (MD) a. not compatible with 56K polling b. use with 72- or 140-Mbyte 5 1/4" disk drives</p> <p>(2) NT6M63CF (MD) a. not compatible with 56K polling b. use with 72- or 140-Mbyte 5 1/4" disk drives</p> <p>(3) NT6M63CH (MD) a. not compatible with 56K polling b. use with 72-, 140-, or 380-Mbyte 5 1/4" disk drives</p> <p>(4) NT6M63CJ a. compatible with 56K polling b. use with 380- or 760-Mbyte 5 1/4" disk drives</p> <p>(5) NT6M63CL a. not compatible with 56K polling b. use with 72-, 140-, or 380-Mbyte 5 1/4" disk drives</p> <p>(6) NT6M63FE a. compatible with 56K polling b. use with 380- or 760-Mbyte 5 1/4" disk drives c. required for 1-Gbyte or 2-Gbyte 3 1/2" disk drives</p>
A3	DRAM	Memory Expansion PCA - NT6M64AA
A5	ERC	Error Control II PCA - NT6M65AA
(Sheet 2 of 16)		

Table 2-2 List of assemblies and subassemblies		
Reference designator	ABBR name	Full name - part number - usage notes
A6	QUAD SIO	Quad Serial Input/Output PCA (1) NT6M60AA (MD) - use for analog networks only (2) NT6M60BA - use for analog and digital networks
A7	56K INTF	56K Interface PCA (1) NT6M94AA a. use with 380-Mbyte 5 1/4" disk drives when 56K polling is used b. use with 760-Mbyte 5 1/4" and 1- and 2-Gbyte 3 1/2" disk drives c. required for 56K polling (2) NT6M94BA a. use with 380-Mbyte 5 1/4" disk drives when 56K/compression polling is used b. use with 760-Mbyte 5 1/4" and 1- and 2-Gbyte 3 1/2" disk drives c. may be used for 56K polling d. required for compression polling
A11	DISK INTF	Disk Interface PCA - not compatible with 56K/compression polling (1) NT6M66AC (MD) - use with 72- or 140-Mbyte 5 1/4" disk drives (2) NT6M66AH - use with 380-Mbyte 5 1/4" disk drives (3) NT6M66AL - use with 72- and 140-Mbyte 5 1/4" disk drives
(Sheet 3 of 16)		

Table 2-2 List of assemblies and subassemblies		
Reference designator	ABBR name	Full name - part number - usage notes
A11	SCSI INTF	SCSI Interface PCA - required for 56K/compression polling (1) NT6M66BA - use with 380- and 760-Mbyte 5 1/4" disk drives (2) NT6M66BD - this PCA is no longer supported (3) NT6M66CA - use with 1- and 2-GByte 3 1/2" disk drives
A12	DSI	Data Stream Interface PCA (1) NT6M70AA (MD) (2) NT6M70CF (MD) (3) NT6M70AC
A13	DSI	Data Stream Interface PCA (1) NT6M70AA (MD) (2) NT6M70CF (MD) (3) NT6M70AC
A14	BUS TERM	Bus Terminator PCA - NT6M68AA
(Sheet 4 of 16)		

Table 2-2 List of assemblies and subassemblies		
Reference designator	ABBR name	Full name - part number - usage notes
A15	DISK XOVR	Disk II Crossover PCA - not compatible with 56K/compression polling; located on inner portion of hinged panel at rear of upper chassis (1) NT6M72AC (MD) - use with 72- and 140-Mbyte 5 1/4" disk drives (2) NT6M72AD (MD) - use with 72- and 140-Mbyte 5 1/4" disk drives (3) NT6M72AE - use with 72-, 140- and 380-Mbyte 5 1/4" disk drives
A15	SCSI XOVR	SCSI Crossover PCA - located on inner portion of hinged panel at rear of upper chassis (1) NT6M93AA a. use with 760-Mbyte 5 1/4" disk drives b. use with 380-Mbyte 5 1/4" disk drives when 56K/compression polling is used (2) NT6M93BA - use with 1- or 2-Gbyte 3 1/2" disk drives
A16	P/A COMM	Power and Alarm Communications PCA - located on the outer portion of hinged panel at rear of upper chassis (1) NT6M84AA (MD) - use for analog networks only (2) NT6M84BA - use for analog and digital networks
(Sheet 5 of 16)		

Table 2-2**List of assemblies and subassemblies**

Reference designator	ABBR name	Full name - part number - usage notes
A17	4-CHAN	<p>Four Channel Communication PCA - NT6M85AA</p> <p>a. Releases 01 and 02 PCA - use for analog networks only</p> <p>b. Release 03 PCA or later - use for analog and digital networks</p> <p>c. located on the upper connector panel on the left side of the chassis (viewed from the rear)</p>
A18	FAN	<p>a. Fan Mounting Bracket Assembly - NT6M55DA</p> <p>b. Fan, 48 V dc - A0287304</p> <p>c. Fan Filter PCA - NT6M56AB (MD) or NT6M56AD at location A18A1</p> <p>d. Fan Foam Filter - A0379820</p>
A19		<p>Switch and Status Panel</p> <p>(1) NT6M59AA - with key switch</p> <p>(2) NT6M59AB - without key switch</p>
A20		Power Supply Assembly - NT6M71AB
(Sheet 6 of 16)		

Table 2-2 List of assemblies and subassemblies		
Reference designator	ABBR name	Full name - part number - usage notes
A21	DISK	<p>Disk Drive Assembly</p> <p>(1) NT6M72AA</p> <p>a. 5 1/4" disk drive with a 72-Mbyte capacity</p> <p>b. includes disk controller PCA 680-9143 at location A21A1</p> <p>c. use NT6M66AC or NT6M66AL Disk Interface PCA and NT6M72AC, NT6M72AD, or NT6M72AE Disk II Crossover PCA</p> <p>d. use NT6M63BF, NT6M63CF, NT6M63CH, or NT6M63CL EPROM PCA</p> <p>(2) NT6M72BA</p> <p>a. 5 1/4" disk drive with a 140-Mbbyte capacity</p> <p>b. includes disk controller PCA 680-9143 at location A21A1</p> <p>c. use NT6M66AC or NT6M66AL Disk Interface PCA and NT6M72AC, NT6M72AD, or NT6M72AE Disk II Crossover PCA</p> <p>d. use NT6M63BF, NT6M63CF, NT6M63CH, or NT6M63CL EPROM PCA</p> <p>(3) NT6M72DA</p> <p>a. 5 1/4" disk drive with a 380-Mbyte capacity</p> <p>b. use in a DPP system that does not have the 56K polling feature</p> <p>c. use NT6M66AH Disk Interface PCA and NT6M72AE Disk II Crossover PCA; do not use option jumper on the B disk at position B21</p> <p>d. use NT6M63CH or NT6M63CL EPROM PCA</p> <p>e. disk must be reformatted and restrapped if user desires to implement 56K polling in this DPP system (PEC changes to NT6M72DD and related PCAs must be changed)</p>
(Sheet 7 of 16)		

Table 2-2**List of assemblies and subassemblies**

Reference designator	ABBR name	Full name - part number - usage notes
A21	DISK	<p>Disk Drive Assembly (continued)</p> <p>(4) NT6M72DD</p> <p>a. 5 1/4" disk drive with a 380-Mbyte capacity</p> <p>b. use in a DPP system that has the 56K polling feature</p> <p>c. use NT6M66BA SCSI Interface PCA and NT6M93AA SCSI Crossover PCA; use option jumper to identify the B disk at position B21</p> <p>d. use with NT6M63CJ or NT6M63FE EPROM PCA, NT6M94AA or NT6M94BA 56K Interface PCA, 56K Crossover and 56K Connector for 56K polling</p> <p>(5) NT6M72EA</p> <p>a. 5 1/4" disk drive with a 760-Mbyte capacity</p> <p>b. use NT6M66BA SCSI Interface PCA and NT6M93AA SCSI Crossover PCA; use option jumper to identify the B disk at position B21</p> <p>c. use with NT6M63CJ or NT6M63FE EPROM PCA</p> <p>d. use with NT6M94AA or NT6M94BA 56K Interface PCA, 56K Crossover and 56K Connector for 56K polling</p> <p>(6) NT6M72FA - this disk drive unit is no longer supported</p> <p>(7) NT6M72GA</p> <p>a. 3 1/2" disk drive with a 1-Gbyte capacity</p> <p>b. use NT6M66CA SCSI Interface PCA and NT6M93BA SCSI Crossover PCA; user option jumper to identify the B disk at position B21</p> <p>c. use with NT6M63FE EPROM PCA</p> <p>d. use with NT6M94AA or NT6M94BA 56K Interface PCA, 56K Crossover and 56K Connector for 56K polling</p>

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Table 2-2 List of assemblies and subassemblies		
Reference designator	ABBR name	Full name - part number - usage notes
	DISK	Disk Drive Assembly (continued) (8) NT6M72HA a. 3 1/2" disk drive with a 2-Gbyte capacity b. use NT6M66CA SCSI Interface PCA and NT6M93BA SCSI Crossover PCA; user option jumper to identify the B disk at position B21 c. use with NT6M63FE EPROM PCA d. use with NT6M94AA or NT6M94BA 56K Interface PCA, 56K Crossover and 56K Connector for 56K polling
B		B Processor (Lower) Chassis - N/A
B1	CPU	Central Processor Unit Logic w/DMA PCA - NT6M62BA
B2	EPROM	Erasable, Programmable, Read-Only Memory PCA (1) NT6M63BF (MD) a. not compatible with 56K polling b. use with 72- or 140-Mbyte 5 1/4" disk drives (2) NT6M63CF (MD) a. not compatible with 56K polling b. use with 72- or 140-Mbyte 5 1/4" disk drives (3) NT6M63CH (MD) a. not compatible with 56K polling b. use with 72-, 140-, or 380-Mbyte 5 1/4" disk drives
(Sheet 9 of 16)		

Table 2-2 List of assemblies and subassemblies		
Reference designator	ABBR name	Full name - part number - usage notes
B2	EPROM	Erasable, Programmable, Read-Only Memory PCA (continued) (4) NT6M63CJ a. compatible with 56K polling b. use with 380-Mbyte or 760-Mbyte 5 1/4" disk drives (5) NT6M63CL a. not compatible with 56K polling b. use with 72-, 140-, or 380-Mbyte 5 1/4" disk drives (6) NT6M63FE a. compatible with 56K polling b. use with 380-Mbyte or 760-Mbyte 5 1/4" disk drives c. required for 1-Gbyte or 2-Gbyte 3 1/2" disk drives
B3	DRAM	Memory Expansion PCA - NT6M64AA
B5	ERCJ	Error Control II Jumper PCA - NTM609AB
B6	QUAD SIO	Quad Serial Input/Output PCA (1) NT6M60AA (MD) - use for analog networks only (2) NT6M60BA - use for analog and digital networks
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Table 2-2 List of assemblies and subassemblies		
Reference designator	ABBR name	Full name - part number - usage notes
B7	56K INTF	56K Interface PCA (1) NT6M94AA a. use with 380-Mbyte 5 1/4" disk drives when 56K polling is used b. use with 760-Mbyte 5 1/4" and 1- and 2-Gbyte 3 1/2" disk drives c. required for 56K polling (2) NT6M94BA a. use with 380-Mbyte 5 1/4" disk drives when 56K/compression polling is used b. use with 760-Mbyte 5 1/4" and 1- and 2-Gbyte 3 1/2" disk drives c. may be used for 56K polling d. required for compression polling
B11	DISK INTF	Disk Interface PCA - not compatible with 56K/compression polling (1) NT6M66AC (MD) - use with 72- or 140-Mbyte 5 1/4" disk drives (2) NT6M66AH - use with 380-Mbyte 5 1/4" disk drives (3) NT6M66AL - use with 72- and 140-Mbyte 5 1/4" disk drives
B11	SCSI INTF	SCSI Interface PCA - required for 56K/compression polling (1) NT6M66BA - use with 380- and 760-Mbyte 5 1/4" disk drives (2) NT6M66BD - this PCA is no longer supported (3) NT6M66CA - use with 1- and 2-GByte 3 1/2" disk drives
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Table 2-2**List of assemblies and subassemblies**

Reference designator	ABBR name	Full name - part number - usage notes
B12	DSI	Data Stream Interface PCA (1) NT6M70AA (MD) (2) NT6M70CF (MD) (3) NT6M70AC
B13	DSI	Data Stream Interface PCA (1) NT6M70AA (MD) (2) NT6M70CF (MD) (3) NT6M70AC
B14	BUS TERM	Bus Terminator PCA - NT6M68AA
B15	DISK XOVR	Disk II Crossover PCA - not compatible with 56K/compression polling; located on inner portion of hinged panel at rear of upper chassis (1) NT6M72AC (MD) - use with 72- and 140-Mbyte 5 1/4" disk drives (2) NT6M72AD (MD) - use with 72- and 140-Mbyte 5 1/4" disk drives (3) NT6M72AE - use with 72-, 140- and 380-Mbyte 5 1/4" disk drives
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Table 2-2 List of assemblies and subassemblies		
Reference designator	ABBR name	Full name - part number - usage notes
B15	SCSI XOVR	SCSI Crossover PCA - located on inner portion of hinged panel at rear of upper chassis (1) NT6M93AA a. use with 760-Mbyte 5 1/4" disk drives b. use with 380-Mbyte 5 1/4" disk drives when 56K/compression polling is used (2) NT6M93BA - use with 1- or 2-Gbyte 3 1/2" disk drives
B16	56K XOVR	56K Crossover PCA - NT6M48AA a. required for 56K polling b. located on outer portion of lower hinged panel at rear of chassis
B18	FAN	a. Fan Mounting Bracket Assembly - NT6M55DA b. Fan, 48 V dc - A0287304 c. Fan Filter PCA - NT6M56AB (MD) or NT6M56AD at location B18A1 d. Fan Foam Filter - A0379820
B19		Interface Panel - each type has a Fan Assembly (inner chassis; behind the panel) - NT6M56AA at location B19A (1) NT6M59BB - Rover Interface Panel (2) NT8M59BB - Blank Interface Panel
B20		Power Supply Assembly - NT6M71AB
(Sheet 13 of 16)		

Table 2-2**List of assemblies and subassemblies**

Reference designator	ABBR name	Full name - part number - usage notes
B21	DISK	<p data-bbox="548 428 794 459">Disk Drive Assembly</p> <p data-bbox="548 495 732 527">(1) NT6M72AA</p> <p data-bbox="548 527 1065 558">a. 5 1/4" disk drive with a 72-Mbyte capacity</p> <p data-bbox="548 594 1243 625">b. includes disk controller PCA 680-9143 at location A21A1</p> <p data-bbox="548 661 1370 724">c. use NT6M66AC or NT6M66AL Disk Interface PCA and NT6M72AC, NT6M72AD, or NT6M72AE Disk II Crossover PCA</p> <p data-bbox="548 760 1360 823">d. use NT6M63BF, NT6M63CF, NT6M63CH, or NT6M63CL EPROM PCA</p> <p data-bbox="548 858 732 890">(2) NT6M72BA</p> <p data-bbox="548 890 1081 921">a. 5 1/4" disk drive with a 140-Mbyte capacity</p> <p data-bbox="548 957 1243 989">b. includes disk controller PCA 680-9143 at location A21A1</p> <p data-bbox="548 1024 1370 1087">c. use NT6M66AC or NT6M66AL Disk Interface PCA and NT6M72AC, NT6M72AD, or NT6M72AE Disk II Crossover PCA</p> <p data-bbox="548 1123 1360 1186">d. use NT6M63BF, NT6M63CF, NT6M63CH, or NT6M63CL EPROM PCA</p> <p data-bbox="548 1222 732 1253">(3) NT6M72DA</p> <p data-bbox="548 1253 1081 1285">a. 5 1/4" disk drive with a 380-Mbyte capacity</p> <p data-bbox="548 1320 1325 1352">b. use in a DPP system that does not have the 56K polling feature</p> <p data-bbox="548 1388 1344 1482">c. use NT6M66AH Disk Interface PCA and NT6M72AE Disk II Crossover PCA; do not use option jumper to identify the B disk at position B21</p> <p data-bbox="548 1518 1110 1549">d. use NT6M63CH or NT6M63CL EPROM PCA</p> <p data-bbox="548 1585 1279 1671">e. disk must be reformatted and restrapped if user desires to implement 56K polling in this DPP system (PEC changes to NT6M72DD and related PCAs must be changed)</p>

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**Table 2-2
List of assemblies and subassemblies**

Reference designator	ABBR name	Full name - part number - usage notes
B21	DISK	<p>Disk Drive Assembly (continued)</p> <p>(4) NT6M72DD</p> <ul style="list-style-type: none"> a. 5 1/4" disk drive with a 380-Mbyte capacity b. use in a DPP system that has the 56K polling feature c. use NT6M66BA SCSI Interface PCA and NT6M93AA SCSI Crossover PCA; use option jumper on the B disk at position B21 d. use with NT6M63CJ or NT6M63FE EPROM PCA, NT6M94AA or NT6M94BA 56K Interface PCA, 56K Crossover and 56K Connector for 56K polling <p>(5) NT6M72EA</p> <ul style="list-style-type: none"> a. 5 1/4" disk drive with a 760-Mbyte capacity b. use NT6M66BA SCSI Interface PCA and NT6M93AA SCSI Crossover PCA; use option jumper to identify the B disk at position B21 c. use with NT6M63CJ or NT6M63FE EPROM PCA d. use with NT6M94AA or NT6M94BA 56K Interface PCA, 56K Crossover and 56K Connector for 56K polling <p>(6) NT6M72FA - this disk drive is no longer supported</p> <p>(7) NT6M72GA</p> <ul style="list-style-type: none"> a. 3 1/2" disk drive with a 1-Gbyte capacity b. use NT6M66CA SCSI Interface PCA and NT6M93BA SCSI Crossover PCA; user option jumper to identify the B disk at position B21 c. use with NT6M63FE EPROM PCA d. use with NT6M94AA or NT6M94BA 56K Interface PCA, 56K Crossover and 56K Connector for 56K polling

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Table 2-2**List of assemblies and subassemblies**

Reference designator	ABBR name	Full name - part number - usage notes
B21	DISK	<p>Disk Drive Assembly (continued)</p> <p>(8) NT6M72HA</p> <p>a. 3 1/2" disk drive with a 2-Gbyte capacity</p> <p>b. use NT6M66CA SCSI Interface PCA and NT6M93BA SCSI Crossover PCA; user option jumper to identify the B disk at position B21</p> <p>c. use with NT6M63FE EPROM PCA</p> <p>d. use with NT6M94AA or NT6M94BA 56K Interface PCA, 56K Crossover and 56K Connector for 56K polling</p>
B26		<p>56K Connector - NT6M54AL</p> <p>a. 56K Connector Panel; includes 56K connector PCA, NT6M49AA</p> <p>b. required for 56K polling or compression</p> <p>c. Turbo DPP systems, located on the lower connector panel on the left side of the chassis, as viewed from the rear</p>
DPP1		Interface Box - NT6M98AA
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DPP Software

System description - software

Overview

The DPP is an intelligent peripheral of the DMS-100, capable of making decisions without guidance from the DMS-100 CC. The DPP activities are controlled by software resident in the DPP. The internal architecture of the DPP is closely related to the task structure of the software modules. The software is divided into two fundamental areas:

- Monitor routines
- Application routines.

Monitor routines are stored in firmware to provide allocation of physical resources and a center for process structuring. Download instructions and communication support programs are also located in the monitor routines.

Application routines are higher level software modules that are identified closely with system objectives such as specific report generation or AMA record processing.

The DPP architecture makes use of a distributed processing scheme (that is, a group of microprocessors working together) to increase system throughput by accomplishing tasks in parallel. The Disk/SCSI interface and DSI circuits have dedicated microprocessors which execute routines specifically tailored to their activities. The main DPP processor is freed of these tasks and can handle other system tasks rapidly with a minimum number of interruptions.

Monitor routines

System instructions that must be present for the DPP to operate are referred to as the monitor routines. One of the modules that make up the monitor is referred to as the boot program. A boot program contains the necessary features required for initial start up of the basic DPP; for example, disk operation and memory allocation. The boot program is stored in EPROM, and is available upon power up. Monitor routines are classified into groups based on their effect on the DPP.

The basic boot programs search the disk for the larger programs, such as the application routines, and cause them to download to the DPP RAM. If good program/data cannot be found on disk, the boot program requests a program load from the DMS-100 through the DMS-100 to DPP human-machine interface links. The boot program is stored in EPROM to ensure that it is always available to the DPP microprocessors.

System start-up and scheduler

Once the additional programs are loaded, there are a number of other features used by the system. The DPP operating system includes several code modules that both supervise and offer services to various application processes. This structure is distinguished by its separation of function, combined with a strong intercoupling of function modules. The DPP start-up and scheduler consists of six modules:

- Process Scheduler
- Clock Services
- System Calls
- Memory Manager
- General Purpose Functions
- Human-machine interface functions.

Once the additional programs are loaded, there are a number of other features used by the system. Scheduler routines control the activities of the microprocessor and the clock circuits. Memory management modules assign RAM areas to incoming data, temporary storage, vector tables, device status, and other data structures, as required. File system routines direct the flow of data to and from the disk. Error control functions, log and alarm messages, command responses, and emergency access modules are part of the system monitor.

System utility routines allow access to the memory, permitting examination of the Disk/SCSI interface, and processor files. The DMS-100 displays the contents of these areas at the MAP for viewing by the craftsperson. The utility routines also allow user programming to facilitate selection of features. For example, menu choices, AMA or status report requests, or maintenance and test procedures. Communications with the DMS-100 go through the MAP application software to reach the lower monitor routines.

Application routines

System instructions that are related to data handling or DPP features are referred to as application routines. Software modules falling under the application classification are generally higher level programs since more complicated decisions and data manipulations are encountered here than are

required at the monitor level. Applications routines work directly with AMA data, reports, files, and formatting. Because applications are basically stand alone programs, they function independently with little or no intercommunication.

The AMA application programs direct the processing of the call record data received from the DMS-100. AMA applications modules control the flow of data from the interface to the disk, and from the disk to the HOC when the stored records are polled. Other modules group the data into blocks and perform the necessary protocol conversions to ensure that information is uniform for transmittal to the regional accounting office. If the call records sent to the DPP are not completely structured, applications modules are provided to convert the raw data to the required format before processing any further.

Other application routines manage events that must be scheduled on a regular basis. Call record report generation and DPP processor switchovers are two examples of the events directed by these application modules.

Command and response application routines permit user intervention with system variables. Disk parameters, site data, and DPP user file maintenance are all made possible through these command and response routines. The command modules are used to recognize keyboard inputs from the MAP terminal which are passed through the DMS-100 to the DPP. Response modules return prompt or comment statements back through the system to the MAP to provide replies to system queries. The commands are response application routines to allow a user friendly man-machine interface operation by providing the translation between the DPP code and the English language.

One section of the application is dedicated to defining error messages associated with the DPP. A fault in the DPP is analyzed by the alarm application routines and classified according to its severity. Fault messages are then generated from this information and sent to the DMS-100 for display on the MAP terminal.

Interface routines

The DSI circuits employ a microprocessor to control the data handling activities. This microprocessor requires its own programs to direct its local operations and to interpret instructions from the DPP microprocessor. The DSI application routines are subdivided into communication, Magnetic Tape Device (MTD) emulation, and data transfer module groups. The data is moved using Direct Memory Access (DMA) to read and write to RAM. The communications modules allow the DPP to respond to system commands without having to reprogram the DMS-100. The communications package controls the link between the DMS-100 and the DSI.

The DSI provides an active interface by emulating the MTD functions and providing two-way communication between the DPP and DMS-100.

Disk routines

The Disk Interface PCA has its own microprocessor and software routines. Read, write, and retry (error recovery) instructions are resident in the disk interface circuitry. Disk initialization, buffer management, directory management, and file management modules are part of the disk programs. There is also a communications package and an input/output handler program included in the disk routines.

Downloading software to the DPP

When a situation arises where the DPP requires a download of software, it is normally accomplished directly from the DMS-100, requiring no intervention from the customer. There are two possible DPP conditions that require the downloading of new software. They are as follows:

- The development of upgraded software to replace the existing DPP program. This could range from a debugged version of the same program to an entirely different program with updated features.
- An attempt to recover from a disk failure, in which the DPP is unable to retrieve program software from either disk drive.

DPP Communication

DPP-to-HOC communication

Overview

The HOC, located at a central collection point, uses a prearranged polling schedule for contacting the DPP and requesting transmission of data. Polling schedules are a function of the expected traffic at the various DPP sites. Data retrieval is accomplished in accordance with Bellcore X.25 (BX.25) level 3 protocol specifications.

Establishing a polling link

The process by which a HOC polls call record blocks from a DPP requires a series of communication signals to pass between the two devices. The first step to establish a link is to set up machine/ machine security parameters and consists of assigning a specific identity to the DPP and the device(s) authorized to access it. Once security data has been established, the DPP can be accessed only by an authorized device.

The first level of security consists of an exchange of security passwords between DPP and HOC. The HOC initiates this level of security by sending DPP a unique ten digit numeric sequence known as the collector password. This password communicates the identity of the outside device to the DPP. The default password supplied the HOC is 0320 215801. When DPP receives this password, it responds by sending a unique ten digit numeric password, revealing its identity to the outside device and establishing the set of conditions necessary for information transmission. The default password for DPP is 0380 312967.

Call record transfer (polling)

After security has been established, call record transfer occurs via the following process:

- 1 The HOC sends a file poll command requesting a billing data file beginning with a particular sequence number. Unless there are less than one hundred primary blocks, one hundred primary blocks are sent in response to a primary file poll request. The active AMA version is automatically closed upon receipt of a request for polling; if there are less than 200 blocks (50 blocks for Non-Turbo DPP systems) in the active version, it is not (closed) polled. The active AMA version can be manually closed via keyboard input to allow polling.
- 2 DPP sends a message confirm and checks the file poll command. If the starting block sequence number is that of the next primary block, the DPP sends the data requested. If the starting block sequence number is unavailable or a mismatch, the DPP sends the message FILE REJECT with the reason: file unavailable but another file is available to be transmitted.
- 3 The HOC sends a message confirm for every five messages, with each message containing one billing block.
- 4 The DPP sends billing blocks until it either exhausts the number for which it was asked or runs out of blocks. Unless there are less than one hundred blocks on disk, one hundred primary blocks are sent. The session message header of the message containing the last block has an end of file indication. The file header preceding the first block contains the actual size of the file.
- 5 The HOC checks the number of blocks sent as one complete file, the file sequence number, and sends a file confirm message after verifying that the file size is correct.
- 6 The DPP sends a message confirm after receiving the file confirm message. Subsequently, all blocks in the transmitted file are marked secondary on the DPP.
- 7 The HOC checks for space in its input buffer and more data in the DPP disk file. If the HOC continues polling, revert to Step 4, and repeat the procedure. If the HOC buffer is full, it opens another input buffer, reverts to Step 1, and repeats the procedure. If no other input buffers are available, the HOC sends a session disconnect message to the DPP, terminating the session.
- 8 The DPP waits for the next file poll command. Then, it reverts to Step 2, and repeats the procedure.
- 9 If the DPP has no more data to send, the HOC sends a session disconnect message to the DPP.
- 10 If the session disconnect message is received, the DPP subsequently sends its own session disconnect message to the HOC.
- 11 The HOC releases the dialed connection.

Polling link adjustment

The DPP contains a feature that enables the user to perform maintenance-related functions on the data polling link. For actual maintenance conditions to be performed in response to a failed data link, refer to the *DPP Maintenance Procedures Guide*. The feature is activated by a system command, detailed as follows:

- enter LINIT to initialize a specified Data Link
- enter LNKDSC to disconnect a specified data link.

Note: For more detail on polling link adjustment commands and their resultant system messages, refer to the *DPP Administration Guide*.

Link layer

Link initialization and polling procedure

- 1 The HOC polls the DPP through a specific port at the DPP. Dedicated Data links (dial-up links) are used. The maximum polling frequency is one poll per hour, although on-demand manual polling from a HOC terminal is allowed at any time, depending on the capabilities of the HOC equipment.
- 2 The following paragraphs provide the steps required to establish a communication path, initialize a link, and poll the DPP. The steps described are presented for example purposes. Information required to define the process for a particular installation requires access to the detailed records and other parameters for that installation.
- 3 The HOC must establish a physical transmission to the DPP. This is accomplished by having an automatic calling unit, or similar device, at the HOC dial the DPP over a normal telephone line, or by having a dedicated facility. For dial-up connection, the DPP, in conjunction with a modem and a single number dialer, or direct connect service feature, dials the HOC back, establishing a secure two-way communication path.
- 4 The HOC maintains a three minute timer that is started when it initiates the dialing sequence. If the DPP does not respond within the allotted time, two additional retries are made. If the two additional retries are also unsuccessful, the HOC reschedules the polling session for that DPP.
- 5 The DPP and HOC BX.25 level 2 protocols implement the first I frame password exchange security procedure after link set-up command/response exchange.

Note: This step is not required for dedicated links.

- 6 The HOC initiates restart Request/Restart confirm exchange on Logical Channel 0, thus establishing BX.25 level 3.
- 7 The HOC sends a Session Connect message containing the HOC Session Layer Password to the DPP. This message contains the DPP password, which the HOC must verify before proceeding.

- 8 After the password exchange, the HOC initiates polling of the DPP for billing records.
- 9 After the transfer of billing records is complete, or if no HOC input buffer is available, or if a maximum polling volume is reached, the HOC ends the session by sending a Session Disconnect message to the DPP. In the case of dial-up links, the dialed connection is terminated.

Finding DPP Information

Administration

The manual, *DPP Administration Guide (297-1001-331)*, describes how to perform the administrative tasks associated with a DPP. These tasks include:

- accepting a newly installed DPP
- maintaining the DPP load file
- maintaining the DPP spare parts stock
- setting the DPP clock
- changing the DPP security passwords
- planning DPP emergency procedures.

This document also contains descriptions of the various commands available on the DPP system.

Maintenance

Table 5-1 lists the four manuals that discuss maintenance for the DPP system.

Table 5-1 Maintenance documents	
Document	Title
297-1001-539	DPP Hardware Component Replacement Guide
297-1001-544	DPP Quick Reference Guide
297-1001-545	DPP Commands and Messages Guide
297-1001-547	DPP Maintenance Procedures Guide

Commands and Messages

This manual describes the command set for the various DPP systems. The error messages are also listed. The message listings also identify related maintenance procedures in the *DPP Maintenance Procedures Guide*.

Hardware Component Replacement

This manual gives a general description and replacement procedure for each hardware component, including circuit packs, power supplies and disk drives. It also describes option settings and provides an illustration for each circuit pack.

Maintenance Procedures

This manual provides procedures to resolve problems indicated by error messages (listed in the *DPP Commands and Messages Guide*). It also includes procedures for routine maintenance.

Quick Reference

This manual contains brief descriptions of the set of DPP commands and a set of frequently used maintenance procedures.

Translations

The manual, *Common Customer Data Schema*, contains all information on the five DPP translation tables (Table DPP, DIRPOOL, DIRPSYS, MTD, and TERMDEV).

Documentation key

Table 5-2 lists the DPP specific and related NTPs in numerical order.

Table 5-2 Documentation key	
Document	Title
297-1001-331	DPP Administration Guide
297-1001-451	Common Customer Data Schema
297-1001-539	DPP Hardware Component Replacement Guide
297-1001-544	DPP Quick Reference Guide
297-1001-545	DPP Commands and Messages Guide
297-1001-547	DPP Maintenance Procedures Guide

List of terms

AC

Alternating Current

AMA

Automatic Message Accounting

An automatic recording system that documents all of the necessary billing data of subscriber-dialed toll calls.

BELLCORE

Bell Communications Research

A group responsible for coordinating Bell Operating Company projects and setting requirements for telephone office equipment.

BX.25

Bellcore X.25

A Bellcore defined version of the X.25 communications protocol.

CIOE

Cabinetized Input/Output Equipment

CPU

Central Processing Unit

DC

Direct Current

DMA

Direct Memory Access

DPP

Distributed Processing Peripheral

A peripheral device of the DMS-100 that functions as an AMA data collector and an AMA transmitter in the AMATPS of the DMS-100. The DPP collects AMA data from the DIRP, formats the data, stores the data on its own internal disk and transmits the data to a data collection center when polled by the collection center. The DPP performs the AMA Transmitter (AMAT) functions independently of the DMS-100, thereby off-loading the AMAT functions from the DMS-100 Central Control Complex (CC)

DRAM

Dynamic Random Access Memory

A Random Access Memory system that employs transistor capacitor storage cells. The logic state is stored in the capacitor and buffered by the transistor. The capacitive charge is only held for a short duration and must be refreshed at a periodic rate to maintain its programmed state.

DSI

Data Stream Interface

A circuit of the DPP that accepts AMA data from the DMS-100 Magnetic Tape Drives (MTDs). The DSI emulates an MTD on DMS-100 MTD Ports, duplicating all of the communications signals normally exchanged between the DMS-100 and an MTD.

EAT

Emergency Administration Terminal

EMI

Electromagnetic Interference

EPROM

Erasable Programmable Read Only Memory

A read-only memory in which stored data can be erased by ultraviolet light and reprogrammed.

ESD

Electrostatic Discharge

HOC

Host Office Collector

An AMA data collection center that polls Central Offices (COs) in its region on a prescheduled basis and compiles the collected data onto a magnetic tape. The tape is used by the Revenue Account Office for computing customer billing.

IOC

Input/Output Controller

IOE

Input/Output Equipment

MAP

Maintenance and Administrative Position

A group of components that provide a human-machine interface between OTC personnel and the DMS-100 Family. A MAP consists of Visual Display Unit, voice communications module, testing facilities and MAP furniture.

MD

Manufacture Discontinued

Indicates a product that is no longer in production, but is currently in use in the field.

MTD

Magnetic Tape Device

NTP

Northern Telecom Practices

PCA

Printed Circuit Assembly

PEC

Product Equipment Code

RAM

Random Access Memory

SCSI

Small Computer System Interface

SIO

Serial Input/Output

Circuitry in the DPP that passes data from the DPP to external devices. The DPP employs four such circuits in its Quad SIO PCA that provides communications paths between the DPP and DMS-100/DPP maintenance interface, the DPP Emergency Administrative Terminal (EAT), and the remote polling center link.

DMS-100 Family
**Distributed Processing
Peripheral**
Product Guide

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