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HP E3249B System Disk and DAT Module Installation Guide

Part Number E3249-90001

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In This Book

This book provides the installation and service information for the HP E3249B System Disk and DAT module.

Chapter 1, "Installing the HP E3249B," provides step-by-step instructions for installing the module in a VXI mainframe and instructions on storing and transporting.

Chapter 2, "Replacing Assemblies," provides ordering information, lists the replaceable parts, and provides step-by-step instructions for disassembling the module.

Chapter 3, "Hardware Descriptions," provides a general description and a front-panel description of the module.

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Installing the HP E3249B

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Installing the HP E3249B

This chapter contains instructions for installing the HPC E3249B System Disk and DAT Module. This chapter also includes instructions for transporting and storing the module.

To inspect the HP E3249B

The HP E3249B System Disk and DAT Module was carefully inspected both mechanically and electrically before shipment. It should be free of marks or scratches, and it should meet its published specifications upon receipt.

If the module was damaged in transit, do the following:

- Save all packing materials.
- File a claim with the carrier.
- Call your Hewlett-Packard sales and service office.

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What you get with the HP E3249B

The following items are included with your HP E3249B:

Hardware:

- HP E3249B System Disk and DAT Module – C-size, 2-slot VXI module
- One blank DDS-format tape cartridge; HP part number E1562-19401
- One cleaning cartridge; HP part number 9164-0341
- One SCSI cable; HP C2955A
- One SCSI terminator; HP C2904A

Documentation:

- HP E3249B Installation Guide (this book)

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To install the HP E3249B

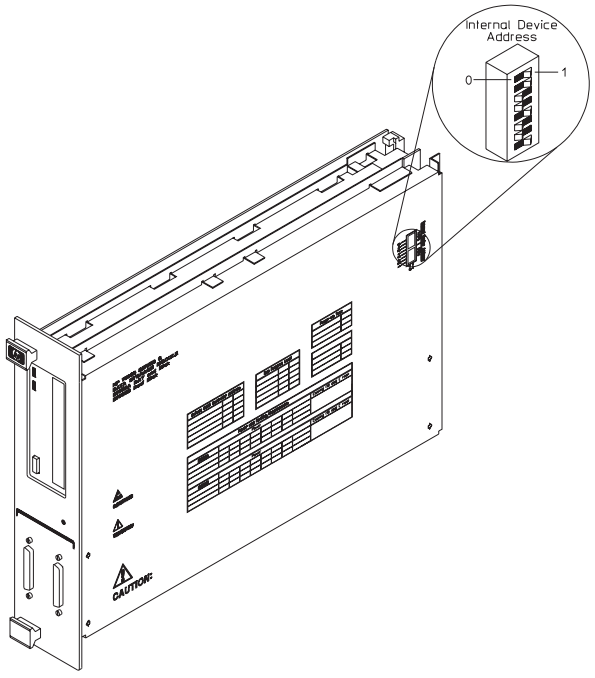
Caution To protect circuits from static discharge, observe anti-static techniques whenever handling the HP E3249B module.

1 Set up your VXI mainframe. See the installation guide for your mainframe.

2 Using a small screwdriver or similar tool, set the SCSI address for the module's DAT (digital audio tape) and disk.

Each SCSI device on the SCSI bus must have a unique SCSI address. These addresses should also be the addresses that the system software expects. The factory default settings are 0011 (3) for the DAT (labeled TAPE) and 0110 (6) for the disk. The HP E3249B module's SCSI address DIP switches are accessible through the side panel, as shown below.

Note If you are using multiple HP E3249B modules or other SCSI devices, you will need to be sure that no two SCSI devices share the same SCSI bus address. To determine which SCSI device addresses are currently in use, see the documentaion for your VXI system controller.



3 Select two slots in the VXI mainframe for the HP E3249B module.

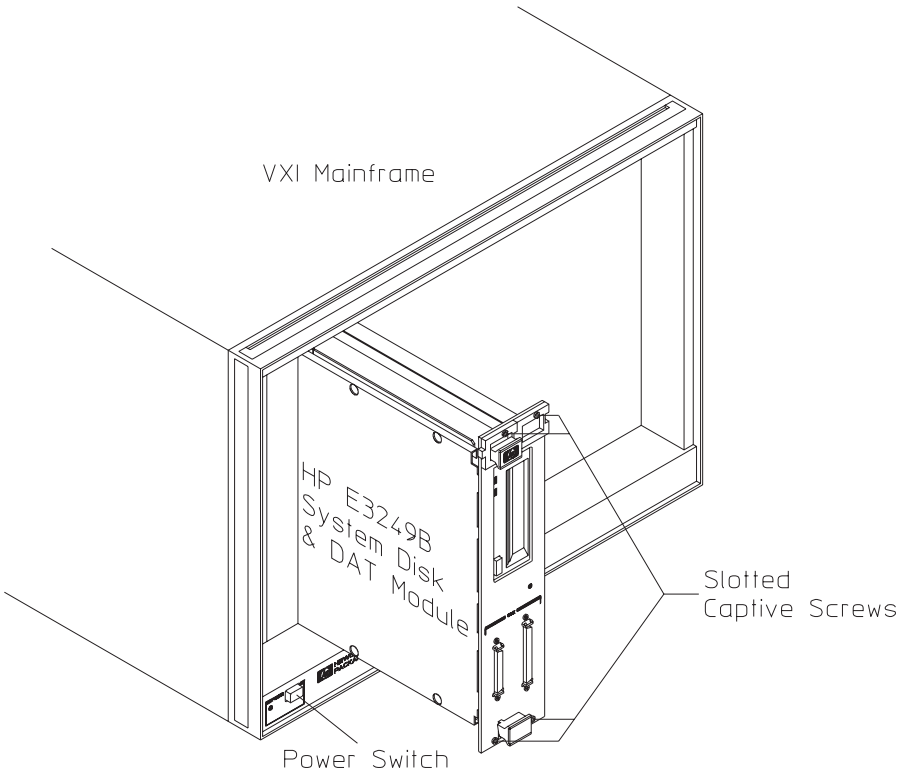
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4 Set the mainframe's power switch to standby (⏻).

5 Place the module's card edges (top and bottom) into the module guides in the slot.

6 Slide the module into the mainframe until the module connects firmly with the backplane connectors. Make sure the module slides in straight.

7 Attach the module's front panel to the mainframe chassis using the module's captive mounting screws.



8 Connect the **In** SCSI connector to the VXI system controller using the supplied SCSI cable.

9 Connect the **Out** SCSI connector to other SCSI devices or terminate using the supplied SCSI terminator.

Note To configure the system disk and backup DAT drive, see the documentation for your VXI system controller.

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To Install a Tape Cartridge in the DAT Drive

Caution

By default, the drive is configured to detect DDS Media Recognition System tape cartridges. If you load a cartridge which is not DDS Media Recognition System (such as an audio "DAT" cartridge), the cartridge will be treated as write-protected; you will only be able to read it, not write to it.

If you insert any cartridge at an angle, it can jam in the DAT drive. Insert the cartridge squarely into the drive to prevent jamming.

1. With the mainframe's power switch turned on, insert the cartridge squarely into the cartridge slot.
2. Gently push the cartridge into the slot until the autoloading mechanism takes the cartridge and loads it into the drive.

   If the cartridge does not load correctly, the drive will eject the cartridge after about 10 seconds. If a cartridge jams, cycle the mainframe's power.

The DAT drive has two status lights: Tape and Clean. The following table shows the status lights in various normal states and explains what each state means.

Tape Status Light	Clean Status Light	Explanation
OFF	OFF	Drive power is off, self-test passed with no cartridge loaded, or no cartridge loaded and no activity with host.
Green flashing	Green flashing	Loading or unloading a write-enabled cartridge.
Yellow flashing	Green flashing	Loading or unloading a write-protected cartridge.
Yellow flashing	Yellow flashing	Self-test in progress.
Green	Green	Write-enabled cartridge loaded and drive on-line.
Yellow	Green	Write-protected cartridge loaded and drive on-line.
Green	Green flashing	Write-enabled cartridge loaded and activity with host.
Yellow	Green flashing	Write-protected cartridge loaded and activity with host.
OFF	Green flashing	No cartridge loaded and activity with host.
Green	OFF	Write-enabled cartridge loaded and drive off-line.
Yellow	OFF	Write-protected cartridge loaded and drive off-line.

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The following table shows the status lights in various fault states and explains what each state means.

Tape Status Light	Clean Status Light	Explanation
Green or Yellow	Green/Yellow flashing	The tape head is dirty or the cartridge has reached the end of its useful life. Use the supplied cleaning cartridge to clean the tape head. If cleaning the tape head did not correct the problem, the cartridge may be defective.
Yellow	Yellow	The drive detected humidity above a safe operating level.
Yellow flashing	Yellow	The internal diagnostics detected a hardware failure.

To Remove a Tape Cartridge

A cartridge can be removed either in response to a SCSI LOAD/UNLOAD command or by pressing the Unload button.

For either of these methods the drive performs an Unload sequence. In this, the tape is rewound to BOP for Partition 0 and, if the tape is write-enabled, the copy of the Tape log is written back to tape. The tape is then rewound to BOM, unthreaded from the mechanism, and ejected.

If the host has previously sent a PREVENT MEDIA REMOVAL command, operation of the Unload button is disabled; pressing the button has no effect, and does not initiate an Unload sequence. The Unload button returns to normal operation following receipt of an ENABLE MEDIA REMOVAL command or a SCSI reset.

Forcing the Ejection of a Tape Cartridge

Caution

Only force an eject as a last resort to recover a cartridge. Never use it as a quick way of ejecting the cartridge. You may lose data if you force an eject. The tape may also end up invalidly formatted, because EOD may not have been written.

If you press the Unload button when the drive is busy, it may be a long time before the drive will respond to the request, because it will finish the task on which it is engaged first. This ensures that the task is terminated in a controlled manner and no data is lost. However, there may be occasions when you need to unload a cartridge urgently, even at the risk of losing data. To do this, you must force an eject. There are two ways of doing this:

- Press the Unload button three times within a 5-minute period (or press the Unload button twice in the 5 minutes following a SCSI UNLOAD command).
- Hold the Unload button down for at least 5 seconds.

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Following either of these actions, the drive waits until 35 seconds have passed from the time of the first press, to give the normal eject procedure a chance to be followed. Once this period of grace has elapsed, the tape is immediately unthreaded and the cartridge is ejected, regardless of what operation the drive was performing. The drive is then reset as though the power had been cycled.

Because the force eject may interrupt any operation, it is possible that the drive will not write EOD before the cartridge is ejected. This will cause loss of data, and result in a cartridge with an invalid format.

Note

A forced eject overrides any SCSI Prevent Media Removal which may be in effect, and can abort any SCSI operations which may be in progress on the drive.

Head Cleaning

The tape heads should be cleaned regularly using the guidelines in the following table. Tape heads should also be cleaned if the Clean /Attention LED flashes amber.

Number of DDS cartridges used each day	1 or fewer	2-3	4 or more
Cleaning interval	weekly	twice weekly	daily

Clean the heads using a Cleaning Cartridge, HP 92283K, as follows:

1 Insert the Cleaning Cartridge into the drive. The drive automatically takes the cartridge, loads it, and cleans the heads.

2 After about 30 seconds, the drive ejects the Cleaning Cartridge.

   If the cartridge is ejected after only about 14 seconds, this means the cartridge has reached the end of its useful life, and no cleaning has occurred. The Cleaning Needed signal should still be displayed. If this happens, discard the cartridge, and repeat the cleaning operation with a new Cleaning Cartridge.

3 Take the cartridge out of the drive, and write the date on the label on the cartridge. This provides a record of how many times the Cleaning Cartridge has been used. You need to know this, because a Cleaning Cartridge has a life of typically 25 cleaning cycles.

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To store the module

Store the module in a clean, dry, and static free environment.

For other requirements, see storage and transport restrictions in the *HP E3249B Technical Specifications*.

To transport the module

- **Package the module using the orginal factory packaging or packaging identical to the factory packaging.**
  Containers and materials identical to those used in factory packaging are available through Hewlett-Packard offices.
- **If returning the module to Hewlett-Packard for service, attach a tag describing the following:**
  - Type of service required
  - Return address
  - Model number
- **Full serial number**
  In any correspondence, refer to the module by model number and full serial number.
- **Mark the container FRAGILE to ensure careful handling.**
- **If necessary to package the module in a container other than original packaging, observe the following (use of other packaging is not recommended):**
  - Wrap the module in heavy paper or anti-static plastic.
  - Protect the front panel with cardboard.
  - Use a double-wall carton made of at least 350-pound test material.
  - Cushion the module to prevent damage.

Caution

Do not use styrene pellets in any shape as packing material for the module. The pellets do not adequately cushion the module and do not prevent the module from shifting in the carton. In addition, the pellets create static electricity that can damage electronic components.

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Replacing Assemblies

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Replaceable Parts

Replacement parts are listed in the following tables:

- Assemblies
- Cables
- Front Panel

Ordering Information

To order a part listed in one of the tables, quote the Hewlett-Packard part number (HP Part Number), the check digit (CD), indicate the quantity required, and address the order to the nearest Hewlett-Packard sales and service office (see the inside back cover of this guide). The check digit verifies that an order has been transmitted correctly, ensuring accurate and timely processing of the order. The first time a part is listed in the table, the quantity column (Qty) lists the total quantity of the part used in the module. For the corresponding name and address of the manufacturers' codes shown in the tables, see "Code Numbers."

Caution

The module is static sensitive. Use the appropriate precautions when removing, handling, and installing to avoid unnecessary damage.

Direct Mail Order System

Within the U.S.A., Hewlett-Packard can supply parts through a direct mail order system. Advantages of the Direct Mail Order System are:

- Direct ordering and shipment from the HP Parts Center.
- No maximum or minimum on any mail order. There is a minimum order for parts ordered through a local HP sales and service office when the orders require billing and invoicing.
- Transportation charges are prepaid. A small handling charge is added to each order.
- No invoicing. A check or money order must accompany each order.
- Mail order forms and specific ordering information are available through your local Hewlett-Packard sales and service office. See the inside back cover of this guide for a list of Hewlett-Packard sales and service office locations and addresses.

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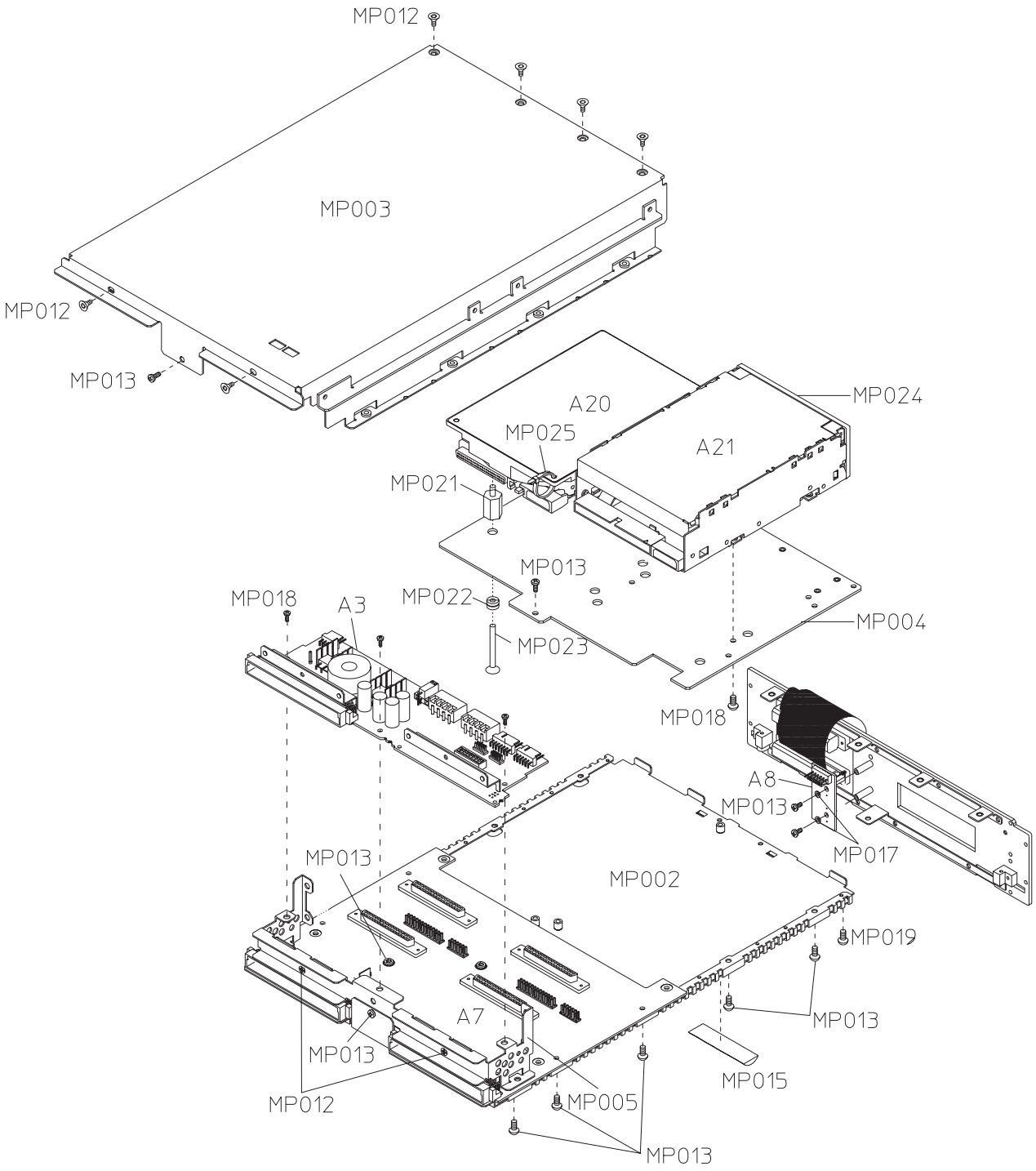
Code Numbers

The following table provides the name and location for the manufacturers' code numbers (Mfr Code) listed in the replaceable parts tables.

Mfr No.	Mfr Name	Location
00779	AMP Inc.	Harrisburg, PA U.S.A.
03934	E-A-R Corporation	Indianapolis, IN U.S.A.
28480	Hewlett-Packard Company	Palo Alto, CA U.S.A.
30817	Instrument Specialties Co. Inc.	Placentia, CA U.S.A.
83486	Elco Industries Inc.	Rockford, IL U.S.A.
10035	Seagate Technologies	Fort Collins, CO U.S.A.

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Assemblies

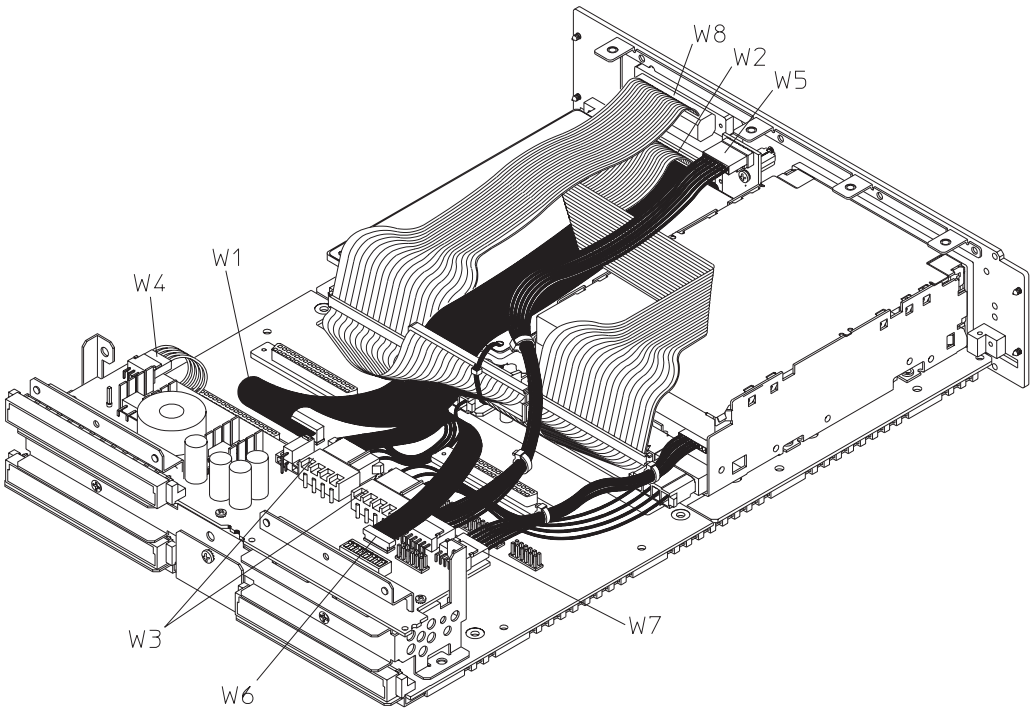


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Ref Des	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
A3	E1562-66503	0	1	PC-ASSY DISC POWER SUPPLY	28480	E1562-66503
A7	E1562-66507	4	1	PC-ASSY MAIN BD	28480	E1562-66507
A8	E3249-66508	9	1	PC-ASSY LED	28480	E3249-66508
A020	0950-3041	0	1	DR-D 4GBYTE SE 3	28480	0950-3041
A021	0950-2658	3	1	DR-DAT, 4GB, 3.5'' EXCHANGE	28480	0950-2658
MP002	E1562-00602	2	1	SHTF; MODULE BASE & PLTG	28480	E1562-00602
MP003	E3249-00602	6	1	SHTF-VXI MODULE	28480	E1562-00602
MP004	E1562-00105	0	1	SHTF; MNTG PLATE	28480	E1562-00105
MP005	E1499-04101	6	1	SHTF; COVER REAR	28480	E1499-04101
MP012	0515-1946	8	8	SCR-MCH M3.0 6MM	28480	0515-1946
MP013	0515-0372	2	20	SCR-MCH M3.0 8MM	28480	0515-0372
MP015	8160-0686	6	1	STMP FNGRS-RFI STRP BECU	30817	786-185
MP017	3050-1161	6	2	WASHER-SHLDR NO. 4	28480	3050-1161
MP018	0515-0430	3	7	SCR-MCH 6-32 POZI	28480	0515-0430
MP019	0515-0368	6	2	SCR-MCH M2.5 X 0.45	28480	0515-0368
MP021	0380-1752	7	4	STANDOFF	28480	262901
MP022	0400-0353	6	4	GROMMET ROUND 0.155-IN-ID	03934	G-410-1
MP023	2360-0815	8	4	SCREW-MACHINE 6-32	28480	2360-0815
MP024	C1503-90600	3	1	MOLD; BEZEL, DAT, 3.5'', PARCHMENT	28480	C1503-60109
MP025	1400-0249	0	1	TIE-CBL .06-.62R	28480	1400-0249

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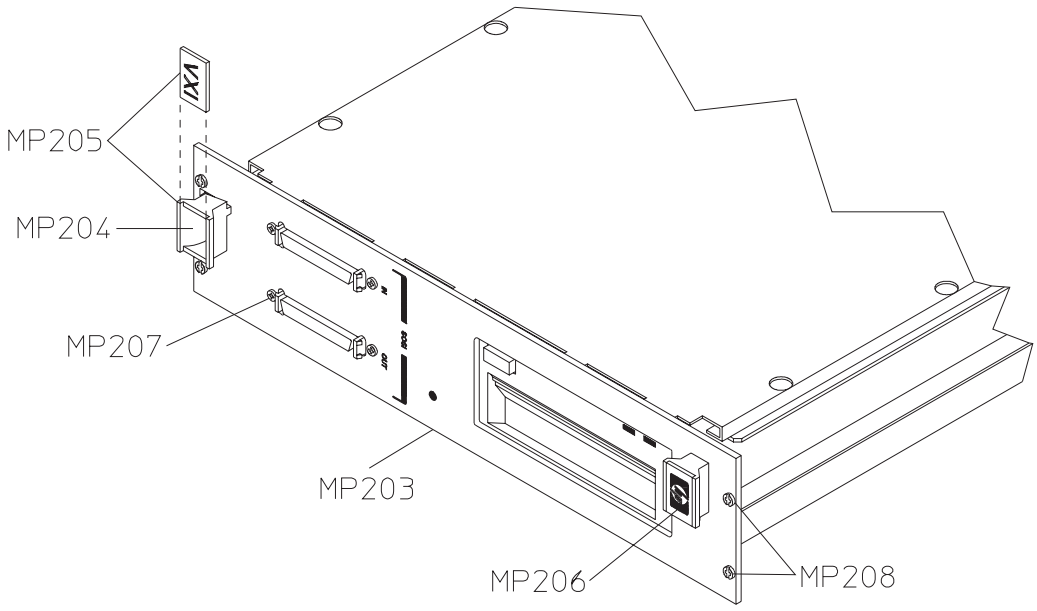
Cables



Ref Des	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
W1	E3249-61603	3	1	CBL-ASM RBN DISK	28480	E3249-61601
W2	E1562-61602	0	1	CBL-DAT	28480	E1562-61602
W3	E1562-61603	1	2	CBL-DISK POWER	28480	E1562-61603
W4	E1562-61604	2	1	CBL-AUX	28480	E1562-61604
W5	E1562-61605	3	1	CBL-CTRL BRD TO LED BRD	28480	E1562-61605
W6	E1562-61606	4	1	CBL-DISK ADDRESS	28480	E1562-61606
W7	E1562-61607	5	1	CBL-DAT ADDRESS	28480	E1562-61607
W8	E3249-61602	4	1	CBL-SCSI SCSI SINGLE	28480	E3249-61602

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Front Panel

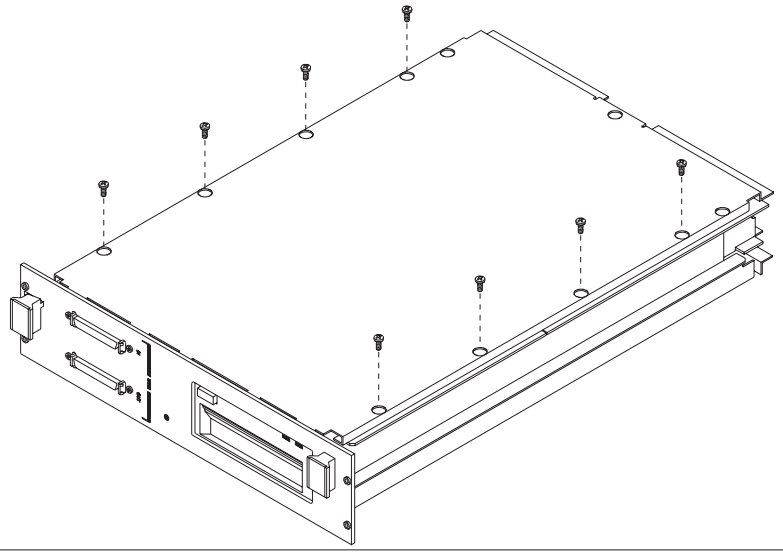


Ref Des	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
MP203	E3249-00202	2	1	PNL-FRT "E3249B"	28480	E3249-00202
MP204	0515-1375	7	2	SCR-MCH M2.5 6MM	83486	343-300-02506
MP205	E1400-84105	1	1	MOLD KIT-BTTM EXTR HDL "VXI"	28480	E1400-84105
MP206	E1400-84106	2	1	MOLD KIT-TOP EXTR HDL "HP"	28480	E1400-84106
MP207	1252-6155	4	4	SCR-JACK 2-56-X2-56 THRDW/SHL	00779	786585-2
MP208	0515-1968	4	4	SCR-MCH M2.511MMLG PHSPS SST	28480	0515-1968

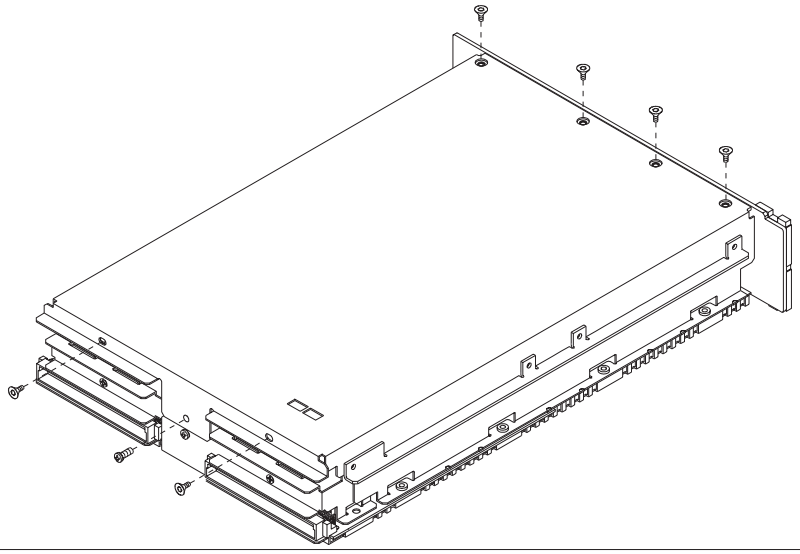
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To remove the top cover

1 Using a T-10 torx driver, remove the four screws along each side of the bottom cover.



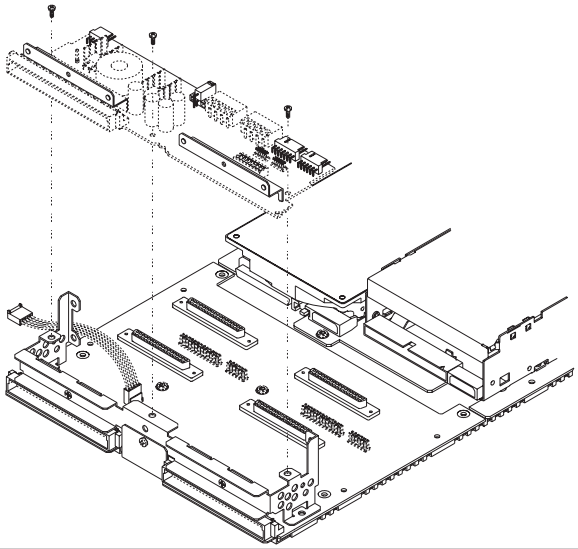
2 Using a T-10 torx driver, remove the five screws that attach the A7 Main assembly to the bottom cover.



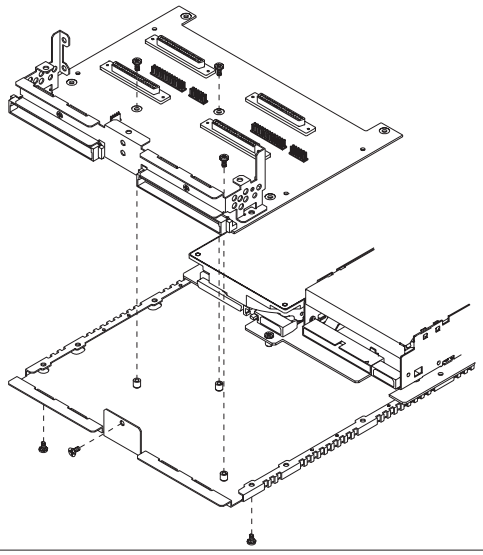
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To remove the printed circuit assemblies

1 Remove the top cover. Disconnect all cables from the printed circuit boards. Using a T-10 torx driver, remove the three screws and remove the A3 Power Supply assembly.

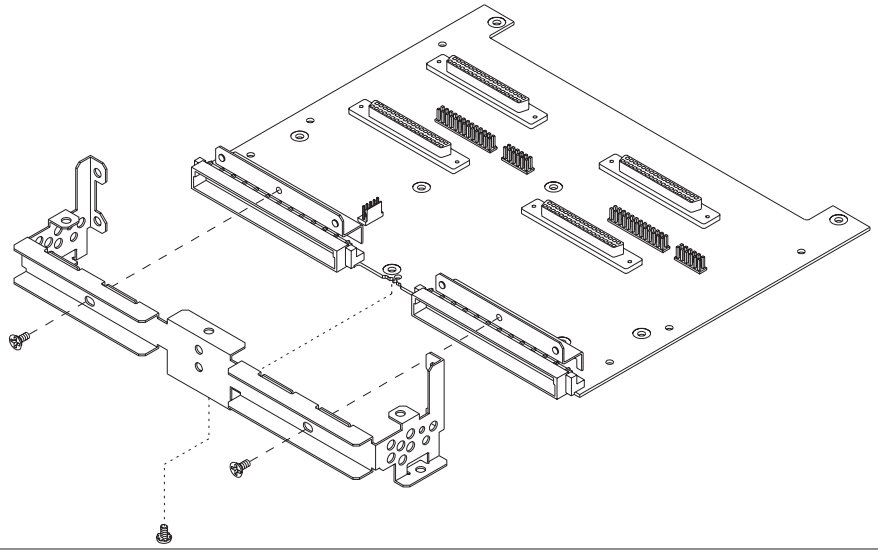


2 Using a T-10 torx driver, remove the five screws that attach the A7 Main assembly to the bottom cover.



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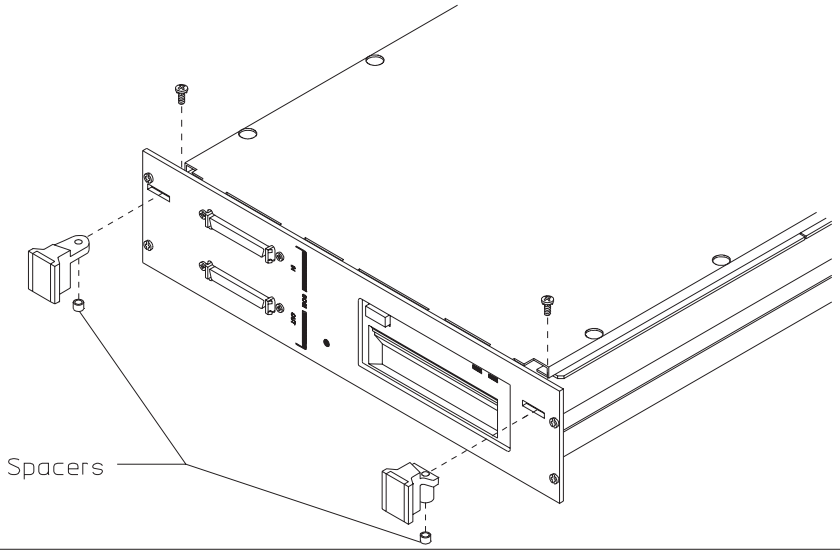
3 Using a T-10 torx driver, remove the three screws from the rear cover of the A7 assembly. Remove the rear cover from the A7 assembly.



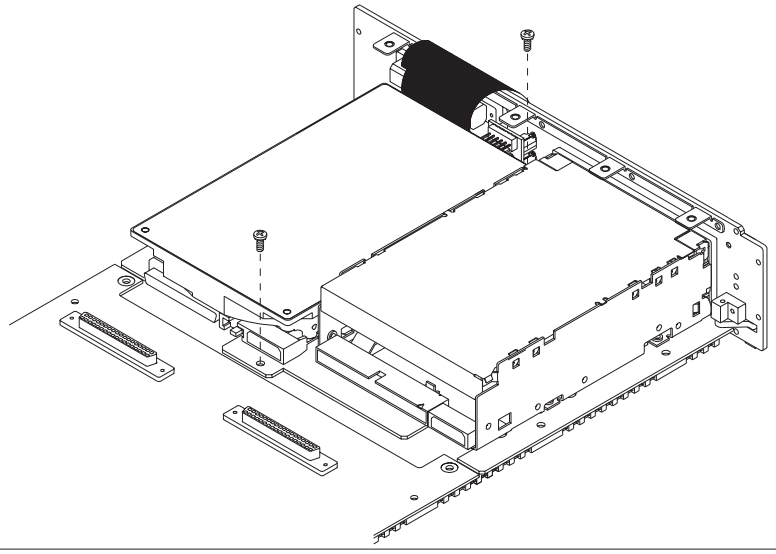
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To remove the Disk and DAT assemblies

1 Remove the top cover. Using a T-8 torx driver, remove the two screws that attach the handles to the assembly. Pull out the handles; make sure not to lose the two spacers.

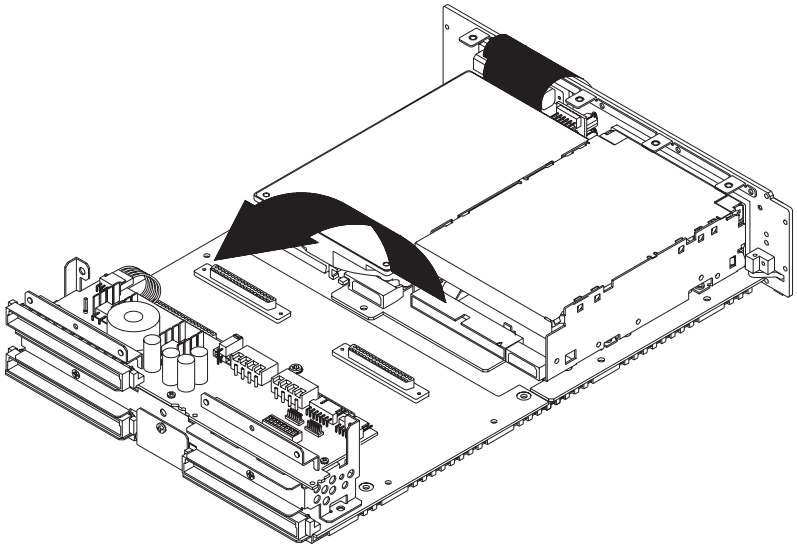


2 Disconnect cables to the Disk and DAT assemblies. Move out of the way. Remove the two mounting plate screws using a T-10 torx driver.

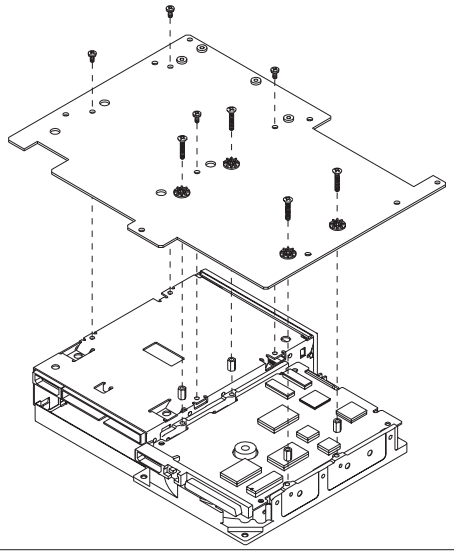


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3 From the back of the assembly lift up and back to remove.



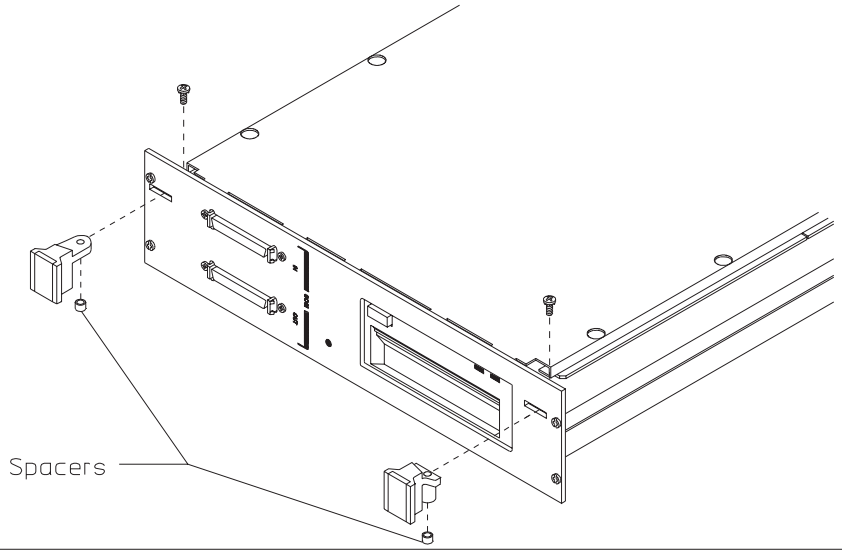
4 Turn the assembly over and remove the screws that hold the Disk and DAT assemblies to the mounting plate. Use a T-10 torx driver for the DAT and a #2 pozidrive for the disk. Be careful not to lose the spacers that are used with the disk.



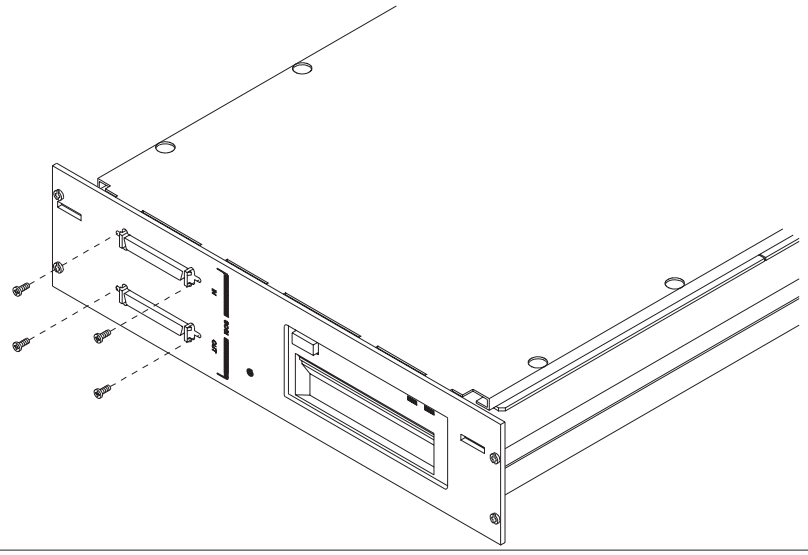
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To remove the front panel

1 Remove the top cover. Using a T-8 torx driver, remove the two screws that attach the handles to the assembly. Pull out the handles; make sure not to lose the two spacers.

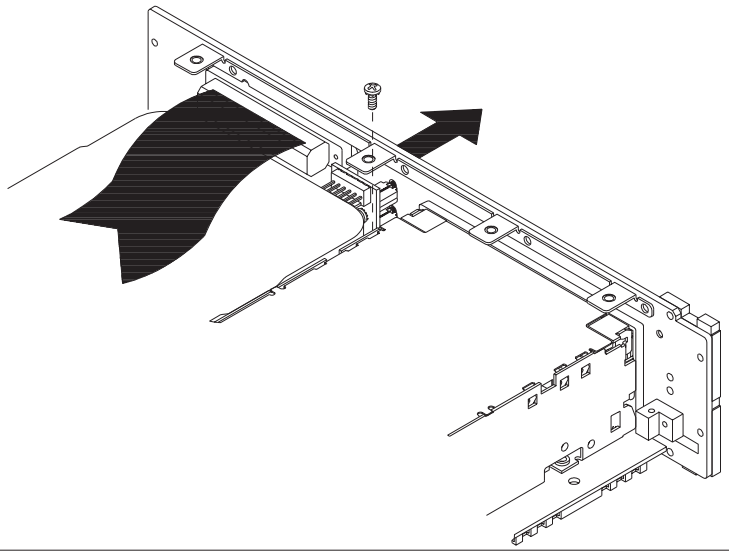


2 Using a thin flat blade screwdriver, remove the screws that attach the connectors to the front panel . Be careful to avoid scratching the front panel.

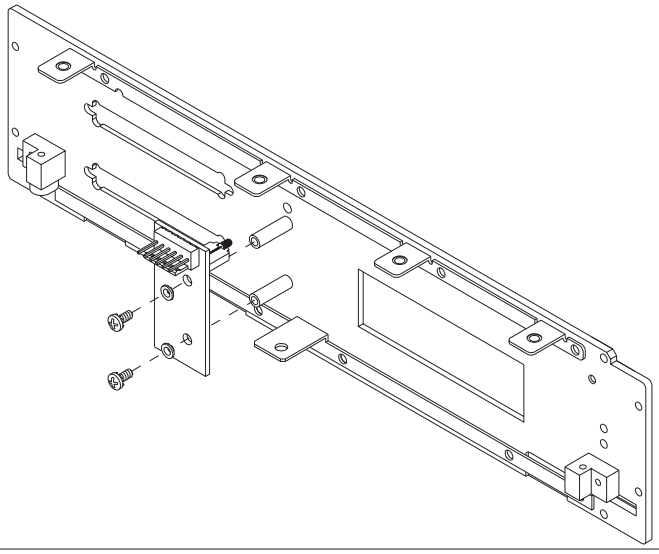


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3 Remove the screw that attaches the front panel to the bottom cover using a T-10 torx driver. Lift the lower part of the front panel off of the tabs on the bottom cover and slide away from the module.

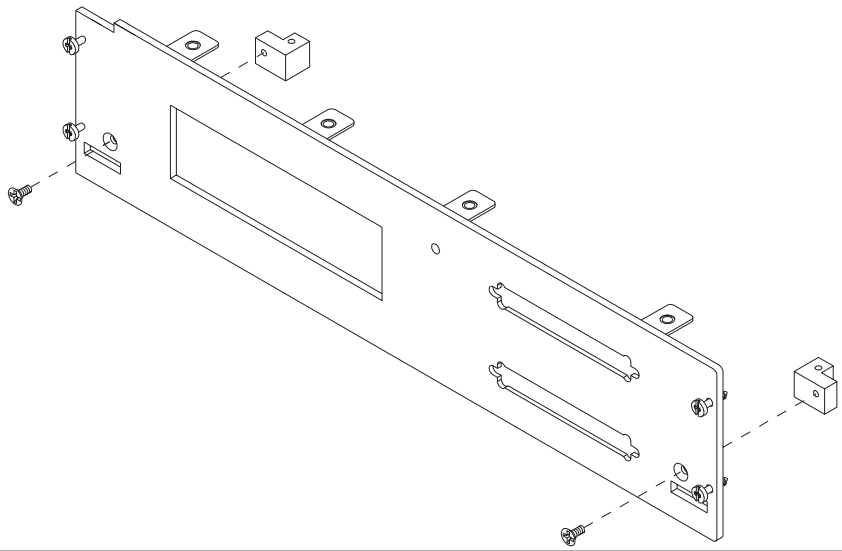


4 To remove the LED assembly from the front panel, remove the two screws. Use a T-10 torx driver.



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5 To replace the front panel with another that does not have its own side brackets, remove the brackets from the old front panel using a T-8 torx driver. Because alignment is critical, be sure to note the positioning of the brackets.



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3

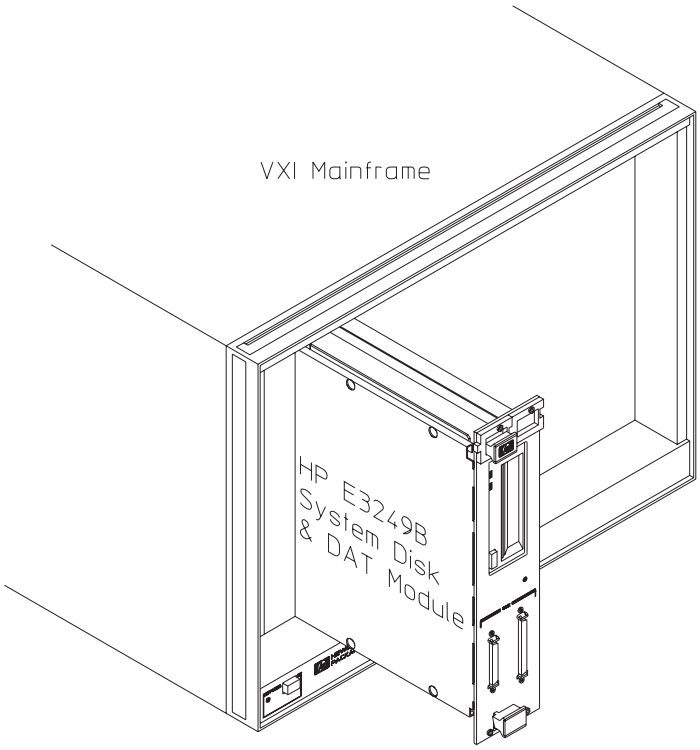
Hardware Description

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General Description

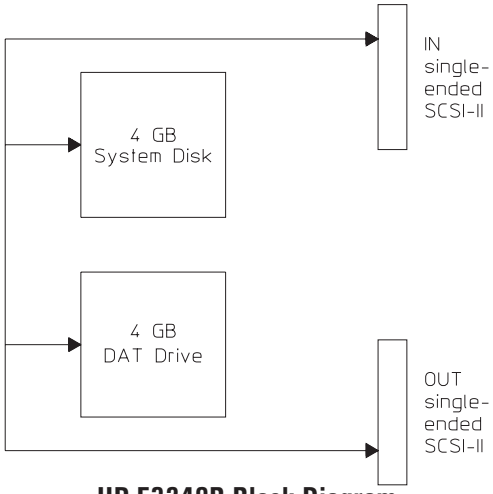
The HP E3249B System Disk and DAT Module is a two slot, C-size, VXI module providing a 4 Gbyte system disk and a 4 Gbyte (8 Gbyte typical with data compression) DAT (digital audio tape) drive.

A single-ended SCSI connector on the front panel provides the connection to the VXI system controller via a short external cable. Connection to other SCSI devices is achieved via the second SCSI connector. The HP E3249B's SCSI interface is not connected to the VXI backplane, which ensures that the SCSI interface traffic will not interrupt or be interrupted by traffic on the VXI backplane.



HP E3249B System Disk and DAT Module

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HP E3249B Block Diagram

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Front-panel Description

Status Lights

- Disk — lights when the disk is in use.
- Tape and Clean — indicate the status of the DAT drive (see "To Install a Tape Cartridge in the DAT Drive" in chapter 1).

SCSI connectors

The HP E3249B has two single-ended SCSI connectors that can transfer 10 MBytes of data per second. The **In** connecter provides the connection to the VXI system controller via a short external cable (HP C2955A). The **Out** connecter provides the connection to other SCSI devices.

DAT drive

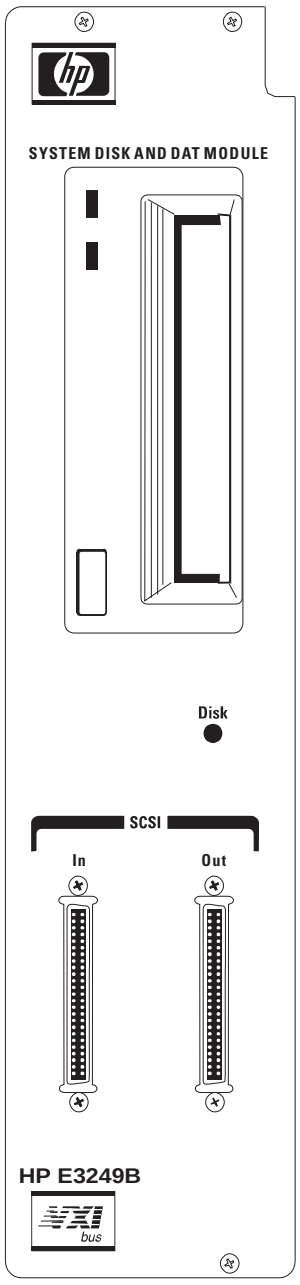
The built-in DAT drive on the upper part of the front panel is a sequential-access, streaming tape device that stores data on DDS-format (digital data storage-format) tape cartridges.

Caution

By default, the drive is configured to detect DDS Media Recognition System tape cartridges. If you load a cartridge which is not DDS Media Recognition System (such as an audio "DAT" cartridge), the cartridge will be treated as write-protected; you will only be able to read it, not write to it.

If you insert any cartridge at an angle, it can jam in the DAT drive. Insert the cartridge squarely into the drive to prevent jamming.

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Front Panel - HP E3249B

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Declaration of Conformity

According to ISO/IEC Guide 22 and EN 45014

Manufacturer's name:	Hewlett-Packard Company
Manufacturer's address:	Lake Stevens Instrument Division 8600 Soper Hill Road Everett, Washington 98205-1298

declares, that the product

Product Name:	System Disk and DAT Module
Model Number:	HP E3249A/B

conforms to the following specifications:

Safety:	IEC 1010-1:1990 + A1/EN61010:1993
EMC:	CISPR 11: 1990/EN55011 (1991), Group1, Class A IEC 801-2: 1991/EN50082-1 (1992): 4 kV CD, 8 kV AD IEC 801-3: 1984/EN50082-1 (1992): 3 V/m IEC 801-4: 1988/EN50082-1 (1992): 1 kV

Supplementary Information:

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC.

Everett, Washington - Dec. 19, 1995

Cathy Thran

Cathy Thran, Quality Manager

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Need Assistance?

If you need assistance, contact your nearest Hewlett-Packard Service Office listed in the HP Catalog, or contact your nearest regional office listed at the back of this book. If you are contacting Hewlett-Packard about a problem with your HP E3249B System Disk and DAT Module, please provide the following information:

- ❑ Model number:
- ❑ Serial number:
- ❑ Date the problem was first encountered:
- ❑ Circumstances in which the problem was encountered:
- ❑ Can you reproduce the problem?
- ❑ What effect does this problem have on you?

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About this edition

February 1997: Second Edition. In this edition the Installation Guide was changed to reflect the changes from HP E3249A to HP E3249B. The 2.1 Gbyte hard disk was replaced by a 4.29 Gbyte hard drive.

October 1995: First Edition.

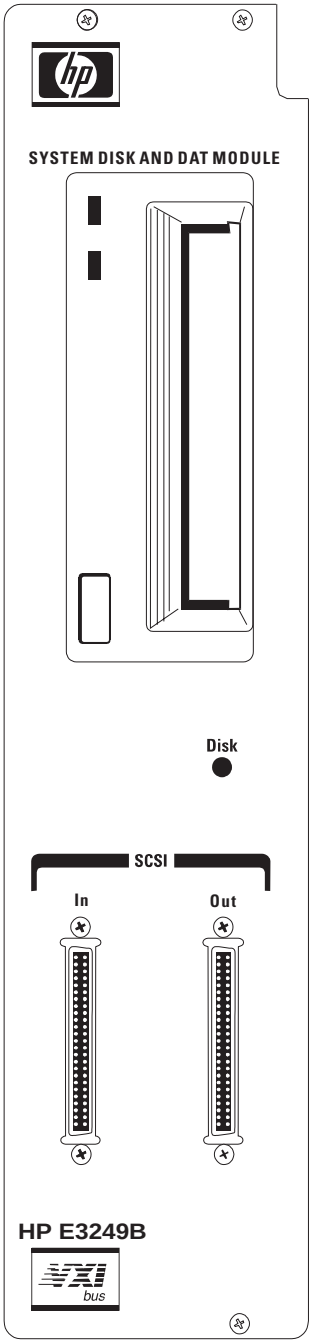
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HP E3249B

Technical Specifications

HP E3249B SCSI System Disk with DAT Drive

Rev. January 1997



- SCSI compatible system disk with DAT tape
- 4 Gbyte hard disk
- 1,000,000 - hour projected MTBF hard disk
- 4 Gbyte DDS2 (“DAT”) tape drive (8 Gbyte typical with data compression)
- Packaged in 2-slot VXI module

System Disk with DAT Backup

The HP E3249B SCSI module is the mass storage module you need when a larger system disk is needed while still maintaining the transportability of a VXI module. It is also the module you need when frequent data or system backups requires a built-in DAT drive. This module is a two slot VXI module providing a 4 Gbyte system disk and a 4 Gbyte (8 Gbytes typical with data compression) DAT drive.

The single ended SCSI connectors on the front panel provide the connection to the host computer via a short external cable. Connection to other SCSI devices is achieved via the second SCSI connector.

There is no connection of the SCSI interface to the VXI backplane providing assurance that SCSI interface traffic won’t interupt or be interupted by traffic on the VXI backplane.

Ordering Information

SCSI Disk/DAT Module
HP E3249B: Includes hard drive, terminator and SCSI cable, DAT drive and one 120-meter tape cartridge.

Options

Option W01	Convert 3 year return to HP to 1 year on-site warranty.
Option 010	Danish HP-UX 10.2 Instant Ignition
Option 011	Dutch HP-UX 10.2 Instant Ignition
Option 012	English HP-UX 10.2 Instant Ignition
Option 013	Finnish HP-UX 10.2 Instant Ignition
Option 014	French HP-UX 10.2 Instant Ignition
Option 015	German HP-UX 10.2 Instant Ignition
Option 016	Italian HP-UX 10.2 Instant Ignition
Option 017	Japanese HP-UX 10.2 Instant Ignition
Option 018	Korean HP-UX 10.2 Instant Ignition
Option 019	Norwegian HP-UX 10.2 Instant Ignition
Option 020	Simplified Chinese HP-UX 10.2 Instant Ignition
Option 021	Spanish HP-UX 10.2 Instant Ignition
Option 022	Swedish HP-UX 10.2 Instant Ignition
Option 023	Traditional Chinese HP-UX 10.2 Instant Ignition
Option 030	Configure for 300 MB swap space
Option 031	Configure for 500 MB swap space

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Hard Drive	
Formatted capacity	4.29 Gbytes
Average read seek	8.5 ms
Average write seek	9.5 ms
Track to track seek	< 4 ms
Head switch time	< 1 ms
Data transfer rate	
Synchronous	up to 20 Mbytes/s
Asynchronous	up to 6 Mbytes/s
SCSI interface	SCSI-3 (also known as Ultra-SCSI or Fast-20 SCSI) (compatible with SCSI-1 and SCSI-2)

DAT Drive	
Capacity (120 meter DDS-2 tape)	
Non-compressed	4.0 Gbytes
Compressed	8.0 Gbytes
Transfer rate	
Sustained non-compressed	510 Kbytes/s
Sustained compressed	1.0 Mbytes/s
Burst asychronous	3.0 Mbytes/s (Max)
Average search speed	< 40 second for any file on 120 meter tape
SCSI interface	Fast SCSI-2

Specifications describe warranted performance.

Benchmarks provide useful information indicative of performance of product in typicaloperational scenarios. The actual performancein a given application will depend on the actual hardware and software used.

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General Specifications

EMI/RFI standards	CISPR 11, Group 1, Class A	
VXI power requirement	**dc**	**dynamic current**
+5 V	2.4 A	0.55 A
– 5.2 V	0.00 A	0.00 A
– 2 V	0.00 A	0.00 A
+12 V	0.00 A	0.00 A
– 12 V	0.00 A	0.00 A
+24 V	0.6 A	0.4 A
– 24 V	0.00 A	0.00 A
+5 V Standby	0.00 A	0.00 A
VXI cooling requirement (10°C rise)	3.3 liter/second, 0.13 mm H_2O	
Orientation (with DDS tape drive in operation)	Mainframe should be oriented with front panel vertical.	
Acoustics (when measured in HP E1401A mainframe)	LpA < 70 dB, operator position, normal position, per ISO 7779 LpA < 70 dB, am Arbeitsplatz, normaler Betrieb, nach DIN 45635 T. 19	
Weight		
Net	3.9 kg (8.6 lbs)	
Shipping	7.1 kg (15.7 lbs)	
Dimensions	Dual slot, C-size VXI module	

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Environmental

Operating restrictions

Ambient temperature	5° to 40°C †
Humidity, non-condensing	20 - 80% RH non-condensing (max wet bulb temperature = 26°C)
Maximum altitude	2300 meters (7,500 feet)

Operating vibration

Frequency	Slope	Power Spectral Density
5 - 350 Hz	0 dB/octave	0.0002 g^2/Hz
350 - 500 Hz	– 6 dB/octave	. . .
500 Hz	NA	0.0001 g^2/Hz

Storage and transport restrictions

Ambient temperature	– 40° to 65°C
Humidity, non-condensing	20% RH, 90% RH at 65°C
Maximum altitude	4600 meters (15,000 feet)

Performance Benchmarks

Backup (with compression and industry standard Digital Data Storage (DDS) format)	2 Gbytes in just over 30 minutes

† For operation outside this range, consult HP.

For more information on Hewlett-Packard Test & Measurement products, applications or services please call your local Hewlett-Packard sales offices. A current listing is available via Web through Access HP at http://www.hp.com. If you do not have access to the internet please contact one of the HP centers listed below and they will direct you to your nearest HP representative.

United States:

Hewlett-Packard Company
Test and Measurement Call Center
P.O. Box 4026
Englewood, CO 80155-4026

Canada:

Hewlett-Packard Canada Ltd.
5150 Spectrum Way
Mississauga, Ontario
L4W 5G1
(905) 206 4725

Europe:

Hewlett-Packard
European Marketing Centre
P.O. Box 999
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The Netherlands
(31-20) 547-9900

Japan:

Hewlett-Packard Japan Ltd.
Measurement Assistance Center
9-1, Takakura-Cho, Hachioji-Shi,
Tokyo 192, Japan
Tel: (81-426) 56-7832
Fax: (81-426) 56-7840

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Fax: (852) 2506-9285

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