

DEC 7000 AXP System VAX 7000 Removable Media Installation Guide

Order Number EK-TFRRD-IN.001

This manual is intended for Digital customer service engineers and self-maintenance customers installing removable media in DEC 7000/10000 or VAX 7000/10000 systems.

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Preface

Intended Audience

This manual is written for Digital customer service engineers and self-maintenance customers installing removable media in DEC 7000/10000 or VAX 7000/10000 systems.

Document Structure

This manual uses a structured documentation design. Topics are organized into small sections for efficient on-line and printed reference. Each topic begins with an abstract. You can quickly gain a comprehensive overview by reading only the abstracts. Next is an illustration or example, which also provides quick reference. Last in the structure is descriptive text.

This manual has three chapters, as follows:

- **Chapter 1, Preparation**, gives an overview of the removable media and tells you how to prepare for the installation.
- **Chapter 2, Installation**, gives instructions on how to remove and replace the Tx85 tape drive and RRD42 compact disk drive.
- **Chapter 3, Acceptance and Troubleshooting**, describes the acceptance procedure.

Conventions Used in This Document

Terminology. Unless specified otherwise, the use of "system" refers to either a DEC AXP or VAX system. The DEC AXP systems use the Alpha AXP architecture.

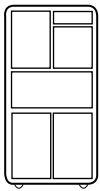
When a discussion applies to only one system, an icon is used to highlight that system. Otherwise, the discussion applies to both systems. Thus, the abstract for a module that applies only to DEC systems would look like this:



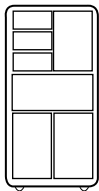
This section shows a sample boot of OpenVMS Alpha AXP from the RRD42 CD drive for DEC 7000 systems. The first step is issuing the show device command to determine the location of the RRD42.

Book titles. In text, if a book is cited without a product name, that book is part of the hardware documentation. It is listed in Table 1 along with its order number.

Icons. The icons shown below are used in illustrations for designating part placement in the system described. A shaded area in the icon shows the location of the component or part being discussed.



Front



Rear

Documentation Titles

Table 1 lists the books in the DEC 7000 and VAX 7000 documentation set. Table 2 lists other documents that you may find useful.

Table 1 DEC 7000/VAX 7000 Documentation

Title	Order Number
Installation Kit	EK-7000B-DK
<i>Site Preparation Guide</i>	EK-7000B-SP
<i>Installation Guide</i>	EK-700EB-IN
Hardware User Information Kit	EK-7001B-DK
<i>Operations Manual</i>	EK-7000B-OP
<i>Basic Troubleshooting</i>	EK-7000B-TS
Service Information Kit—VAX 7000	EK-7002A-DK
<i>Platform Service Manual</i>	EK-7000A-SV
<i>System Service Manual</i>	EK-7002B-SV
<i>Pocket Service Guide</i>	EK-7000A-PG
<i>Advanced Troubleshooting</i>	EK-7001A-TS
Service Information Kit—DEC 7000	EK-7002B-DK
<i>Platform Service Manual</i>	EK-7000A-SV
<i>System Service Manual</i>	EK-7002B-SV
<i>Pocket Service Guide</i>	EK-7700A-PG
<i>Advanced Troubleshooting</i>	EK-7701A-TS

Table 1 DEC 7000/VAX 7000 Documentation (Continued)

Title	Order Number
Reference Manuals	
<i>Console Reference Manual</i>	EK-70C0B-TM
<i>KA7AA CPU Technical Manual</i>	EK-KA7AA-TM
<i>KN7AA CPU Technical Manual</i>	EK-KN7AA-TM
<i>MS7AA Memory Technical Manual</i>	EK-MS7AA-TM
<i>I/O System Technical Manual</i>	EK-70I0A-TM
<i>Platform Technical Manual</i>	EK-7000A-TM
Upgrade Manuals	
<i>KA7AA CPU Installation Card</i>	EK-KA7AA-IN
<i>KN7AA CPU Installation Guide</i>	EK-KN7AA-IN
<i>MS7AA Memory Installation Card</i>	EK-MS7AA-IN
<i>KZMSA Adapter Installation Guide</i>	EK-KXMSX-IN
<i>DWLMA XMI PIU Installation Guide</i>	EK-DWLMA-IN
<i>DWMBB VAXBI PIU Installation Guide</i>	EK-DWMBB-IN
<i>H7237 Battery PIU Installation Guide</i>	EK-H7237-IN
<i>H7263 Power Regulator Installation Card</i>	EK-H7263-IN
<i>BA654 DSSI Disk PIU Installation Guide</i>	EK-BA654-IN
<i>BA655 SCSI Disk and Tape PIU Installation Guide</i>	EK-BA655-IN
<i>Removable Media Installation Guide</i>	EK-TFRRD-IN

Table 2 Related Documents

Title	Order Number
General Site Preparation	
<i>Site Environmental Preparation Guide</i>	EK-CSEPG-MA
System I/O Options	
<i>BA350 Modular Storage Shelf Subsystem Configuration Guide</i>	EK-BA350-CG
<i>BA350 Modular Storage Shelf Subsystem User's Guide</i>	EK-BA350-UG
<i>BA350-LA Modular Storage Shelf User's Guide</i>	EK-350LA-UG
<i>CIXCD Interface User Guide</i>	EK-CIXCD-UG
<i>DEC FDDIcontroller 400 Installation / Problem Solving</i>	EK-DEMFA-IP
<i>DEC LANcontroller 400 Installation Guide</i>	EK-DEMNA-IN
<i>DEC LANcontroller 400 Technical Manual</i>	EK-DEMNA-TM
<i>DSSI VAXcluster Installation and Troubleshooting Manual</i>	EK-410AA-MG
<i>InfoServer 150 Installation and Owner's Guide</i>	EK-INFSV-OM
<i>KDM70 Controller User Guide</i>	EK-KDM70-UG
<i>KFMSA Module Installation and User Manual</i>	EK-KFMSA-IM
<i>KFMSA Module Service Guide</i>	EK-KFMSA-SV
<i>RRD42 Disc Drive Owner's Manual</i>	EK-RRD42-OM
<i>RF Series Integrated Storage Element User Guide</i>	EK-RF72D-UG
<i>Tx85 Series Cartridge Tape Subsystem Owner's Manual</i>	EK-OTF85-OM
<i>TLZ06 Cassette Tape Drive Owner's Manual</i>	EK-TLZ06-OM

Table 2 Related Documents (Continued)

Title	Order Number
Operating System Manuals	
<i>Alpha Architecture Reference Manual</i>	EY-L520E-DP
<i>DEC OSF/1 Guide to System Administration</i>	AA-PJU7A-TE
<i>DECnet for OpenVMS Network Management Utilities</i>	AA-PQYAA-TK
<i>Guide to Installing DEC OSF/1</i>	AA-PS2DA-TE
<i>OpenVMS Alpha Version 1.0 Upgrade and Installation Manual</i>	AA-PQYSA-TE
<i>VMS Upgrade and Installation Supplement: VAX 7000-600 and VAX 10000-600 Series</i>	AA-PRAHA-TE
<i>VMS Network Control Program Manual</i>	AA-LA50A-TE
VMScusters and Networking	
<i>HSC Installation Manual</i>	EK-HSCMN-IN
<i>SC008 Star Coupler User's Guide</i>	EK-SC008-UG
<i>VAX Volume Shadowing Manual</i>	AA-PBTVA-TE
Peripherals	
<i>Installing and Using the VT420 Video Terminal</i>	EK-VT420-UG
<i>LA75 Companion Printer Installation and User Guide</i>	EK-LA75X-UG

Chapter 1

Preparation

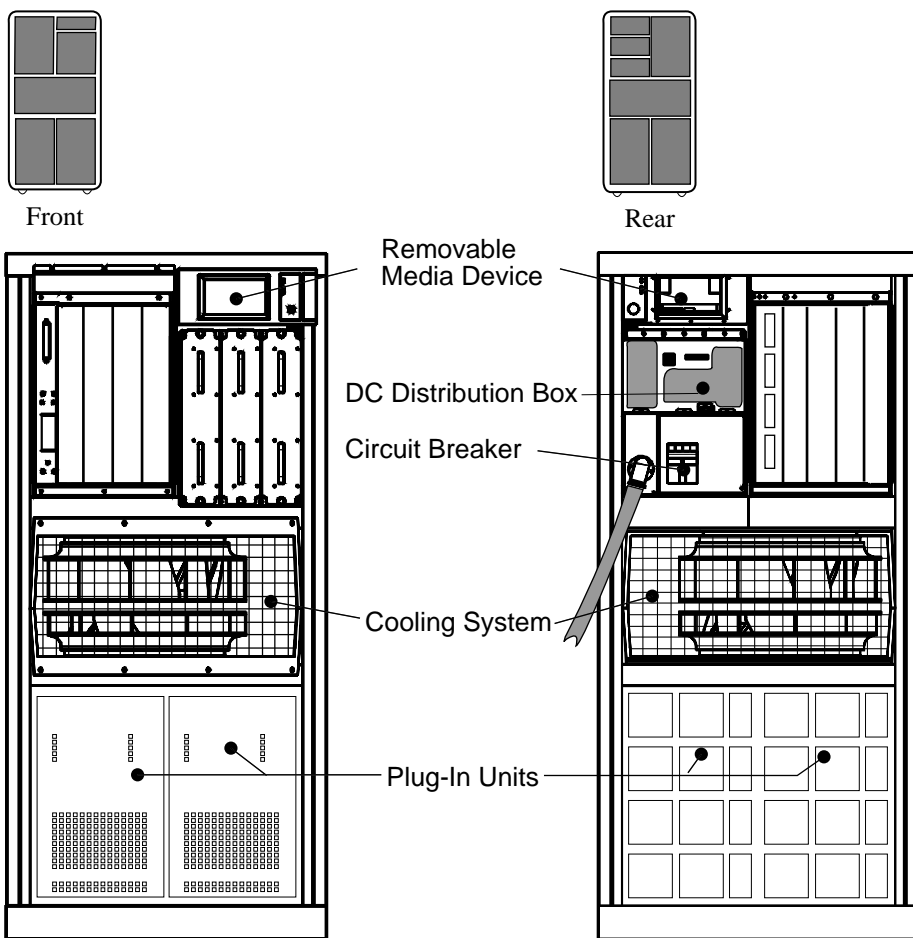
This chapter describes the removable media components and gives preparation guidelines for installing these options in an H9F00- Ax system cabinet or an H9F00- Bx expander cabinet. Chapter 2 describes the installation. Sections in this chapter include:

- Overview
- Kit Contents

1.1 Overview

A removable media device is mounted next to the control panel in the main system cabinet or in the front of the expander cabinet, at the top.

Figure 1-1 Main Cabinet



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About the Removable Media Options

Section 1.2 lists the removable media kit contents.



The RRD42 compact disk drive is used only in DEC 7000/10000 systems using the SCSI protocol. The RRD42 requires that the system have a KZMSA adapter.



The TF85 tape drive is used only in VAX 7000/10000 systems using the DSSI protocol. The TF85 requires that the system have a KFMSA adapter.

For more information:

KFMSA Module Installation and User Manual

KZMSA Adapter Installation Guide

1.2 Kit Contents

Table 1-1 lists the TF85 option components. Table 1-3 lists the RRD42 option components.

Table 1-1 TF85 Option Components

Part Number	Quantity	Description
TF85D- AA	1	In- cabinet tape storage device (see Table 1- 2)
KFMSA- BA	1	XMI to DSSI adapter for VAX systems
CK- KFMSA- LN	1	XMI to DSSI cable kit for VAX systems

Table 1-2 TF85D- AA Kit Contents

Part Number	Quantity	Description
TF85- BA	1	Tape drive — TK85- BX with DSSI controller
70- 28589- 01	1	Removable media assembly, DSSI, LDC, cables
17- 02382- 02	1	BC21Q- 09 9 foot external DSSI cable
90- 09984- 02	4	6- 32 sems screw
EK- TFRRD- IN	1	<i>Removable Media Installation Guide</i>

Table 1-3 RRD42- BA Option Components

Part Number	Quantity	Description
RRD42- AA	1	600MB CD- ROM — CD drive with SCSI controller
70- 30386- 01	1	Removable media assembly, CD- ROM, LDC, cables
17- 03153- 03	1	BC10U- 09 9 foot external SCSI- 2 cable
90- 09984- 20	4	6- 32 M3 sems screws
EK- TFRRD- IN	1	<i>Removable Media Installation Guide</i>

Chapter 2

Installation

This chapter describes the installation of removable media in the system or expander cabinet. It contains the following sections:

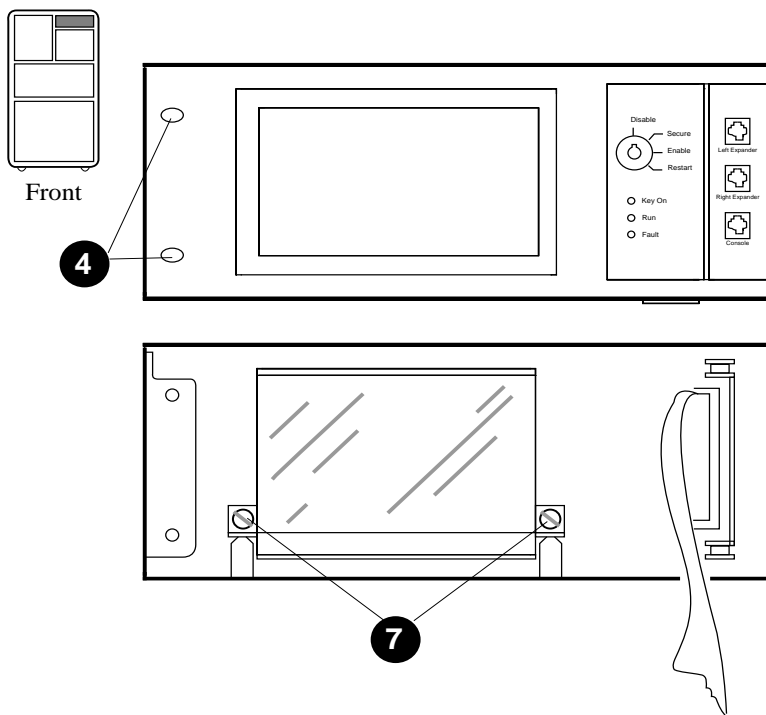
- Installation
- Removal and Replacement

If you are adding removable media to a system, refer to Section 2.1. If you are replacing a system's removable media, refer to Section 2.2.

2.1 Installation

Working from the front of the cabinet, remove the control panel and the filler panel. Slide in the removable media, replace the control panel, and attach the cables.

Figure 2- 1 Control Panel Removal



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Installation

NOTE: Use the antistatic wrist strap from the Electrical Safety Kit to ground yourself to the cabinet before working with cabling and modules.

1. Turn the keyswitch to Disable. Remove the key.
2. Open the rear door of the cabinet and shut the circuit breaker off (see Figure 1- 1) by pushing down the handle.
3. Open the front door of the cabinet. Remove the console terminal cable, if present.
4. Remove the two Phillips screws on the left side of the control panel. See ❹ in Figure 2.1.
5. Swing the panel to the right no more than two inches and remove it from the hinges. If you are installing removable media in an expander cabinet, go to step 7.
6. Disconnect the cable from the circuit board and place the control panel face down on a flat surface.
7. Loosen the two captive Phillips screws at the lower side of the filler panel. See ❺. Remove the filler panel.
8. Slide the removable media box into the cabinet, moving aside any cables in the area. Tighten the two captive screws (slotted) at the lower sides of the removable media box. If you are installing removable media in an expander cabinet, go to step 10.
9. Reconnect the cable to the control panel circuit board.
10. Attach the panel to the hinges, swing it to the left, and install the two Phillips screws that were removed in step 4.

For more information:

Platform Service Manual

Figure 2-2 Installation Preparation

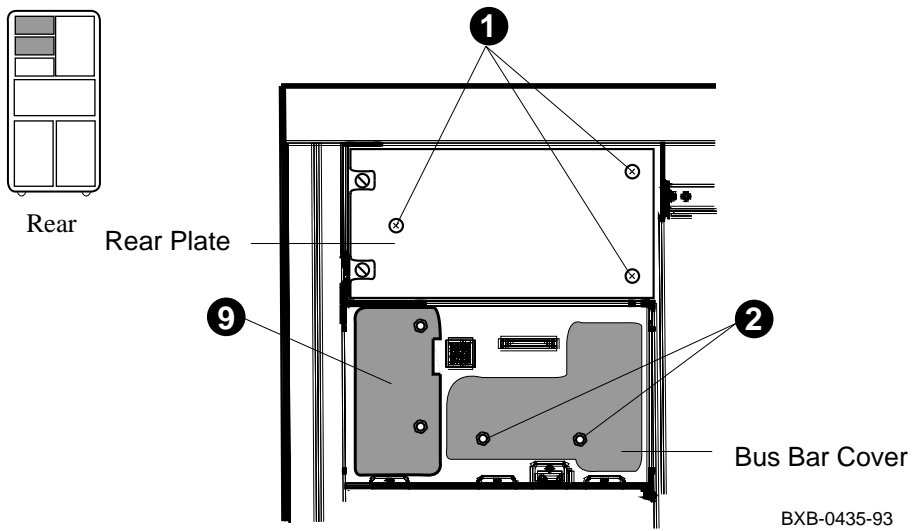
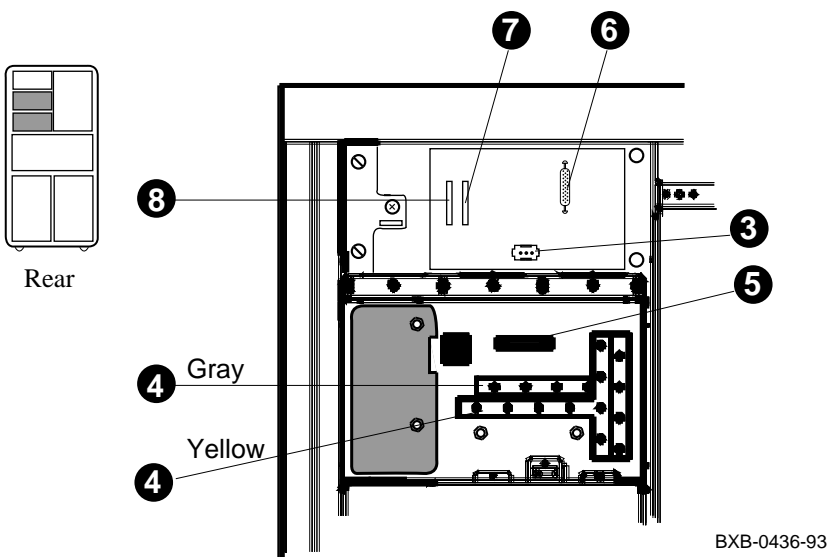


Figure 2-3 Removable Media Cabling



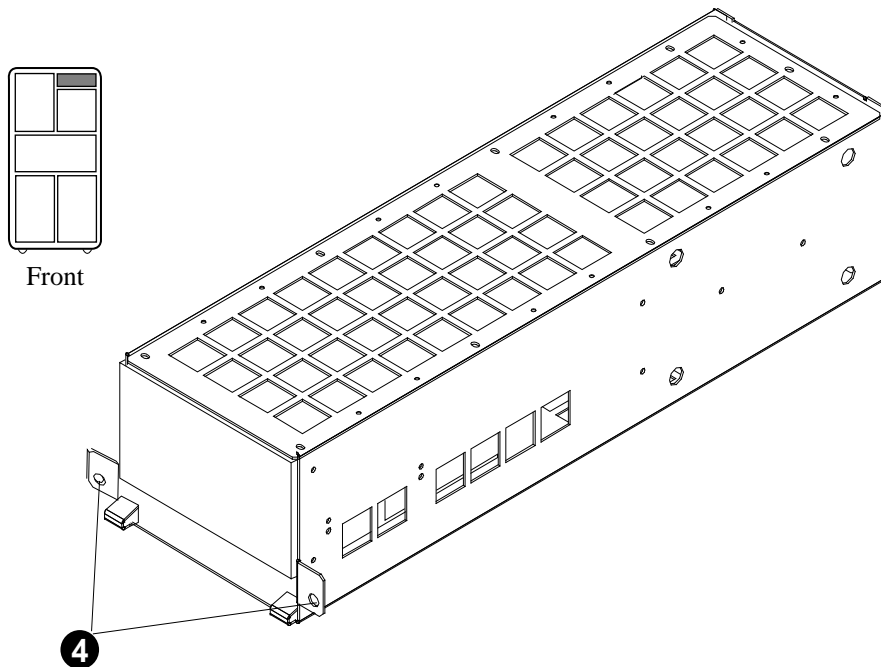
Cabling

1. At the rear of the cabinet, remove the enclosure rear plate (attached with three Phillips screws). See ❶ in Figure 2- 2.
2. Using a nutdriver, remove the two nuts holding the plastic cover on the DC distribution box. See ❷. Remove the cover.
3. Attach the 48VDC yellow and gray power cable (17- 03508- 01) to the MAT- N- LOCK connector at the lower right of the removable media box. See ❸ in Figure 2- 3.
4. Attach the gray end to one of the gray colored terminals of the upper bus bar and the yellow end to one of the yellow colored terminals of the lower bus bar. See ❹.
5. Replace the plastic cover, being careful not to loosen the connector (cable 17- 03124- 01) at ❺.
6. Attach one end of the signal cable (17- 03123- 01) to the 20- pin connector at the upper right of the removable media box. See ❻. Expander cabinets use the pre- installed cable 17- 03442- 01. Attach the other end to connector J3 located toward the front of the CCL module.
7. Place a DSSI (12- 31281- 01) or SCSI terminator (12- 37618- 01) on the right DSSI connector or left SCSI connector of the removable media box. See ❼.
8. Attach the DSSI (BC21Q- 09) or SCSI cable (BC10U- 09) to the unterminated connector of the removable media box. See ❸.
9. Route the cable to the left of the two plastic covers on the DC distribution box (see ❾ in Figure 2- 2), down the left side and along the bottom edge (using clips) of the cooling system housing (see Figure 1- 1), and attach the other end to the XMI bulkhead connector.
10. Replace the plate (removed in step 1) at the rear of the removable media box.

2.2 Removal and Replacement

The removable media device is housed in a box mounted on rails in the cabinet. Slotted captive screws hold the box in the cabinet. Access is from the front of the cabinet.

Figure 2-4 Removable Media Device



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Removal

1. Turn the keyswitch to Disable. Remove the key.
2. Open the rear door of the cabinet and shut the circuit breaker off (see Figure 1- 1) by pushing down the handle. Remove the rear plate (see Section 2.1), and remove the cables from the removable media box.
3. Remove the control panel (see Section 2.1).
4. Loosen the two captive screws (slotted) at the lower sides of the removable media box. See ④ in Figure 2- 4.
5. Slide the removable media box out of the cabinet.

Replacement

- Reverse the steps in the Installation procedure in Section 2.1.

For more information:

Platform Service Manual

Chapter 3

Acceptance and Troubleshooting

This chapter discusses the acceptance procedure and troubleshooting guidelines for the removable media options. Sections include:

- Restore Power and Check Self- Test Results
- Troubleshooting a TF85 Tape Drive
- Troubleshooting an RRD42 Compact Disk Drive

3.1 Restore Power and Check Self-Test Results

Power up the system and check the self- test display.

Example 3- 1 Sample Self- Test Display and Show Commands

Initializing the system... ❶

```

F E D C B A 9 8 7 6 5 4 3 2 1 0 NODE #
      A M . . . . . P TYP
      o + . . . . . + ST1
      . . . . . B BPD
      o + . . . . . + ST2
      . . . . . B BPD
      + + . . . . . + ST3
      . . . . . B BPD

+ . . . . + + . . + . . . . C0 XMI +
. . . . . . . . . . . . . C1
. . . . . . . . . . . . . C2
. . . . . . . . . . . . . C3

      . A0 . . . . . ILV
      . 128 . . . . . 128Mb

```

Firmware Rev = V1.0-1625 SROM Rev = V1.0-0 SYS SN = GAO1234567

>>> show config ❷ # DEC 7000 example

	Name	Type	Rev	Mnemonic
LSB				
0+	KN7AA	(8001)	0000	kn7aa0
7+	MS7AA	(4000)	0000	ms7aa0
8+	IOP	(2000)	0002	iop0
C0 XMI				
5+	KZMSA	(0C36)	003E	kzmsa0 ❸
8+	DWLMA	(102A)	0104	dwlma0
9+	KZMSA	(0C36)	003E	kzmsa1 ❹
E+	DEMNA	(0C03)	060B	demna0

Example 3- 1 Sample Self- Test Display and Show Commands (Continued)

```
>>> show device kzmsa0 ⑤ # DEC AXP example
polling for units on kzmsa0, slot 13, xmi0...
dka0.0.0.13.0          DKA0          RRD42

>>> show device kfmsa0 ⑤ # VAX example
polling for units on kfmsa0, slot 3, xmi0...
dub120.5.0.3.0        $1$DIA120 (SFL2LR)    RF72
dub122.6.0.3.0        $1$DIA122 (SFL2LF)    RF72
muc9.0.1.3.0          $1$MIA9   (V9TF85)     TF85
>>>
```

1. Pull up the handle on the AC power circuit breaker.
2. Close the cabinet doors.
3. Turn the control panel keyswitch to the Enable position; the system will power up and run self- test.

In Example 3- 1:

- ① Self- test runs at power- up.
- ② The user enters a **show config** command.
- ③ The first KZMSA adapter, kzmsa0, passes self- test. Kzmsa0 supports the in- cabinet RRD42 CD drive.
- ④ The second KZMSA adapter, kzmsa1, also passes self- test. This adapter supports the devices in the SCSI PIU.
- ⑤ The user enters a **show device kzmsa0** (DEC AXP) or **kfmsa0** (VAX) command. You can check to see if all the devices associated with the KZMSA or KFMSA adapter are reported by issuing this command.

For more information:

Basic Troubleshooting

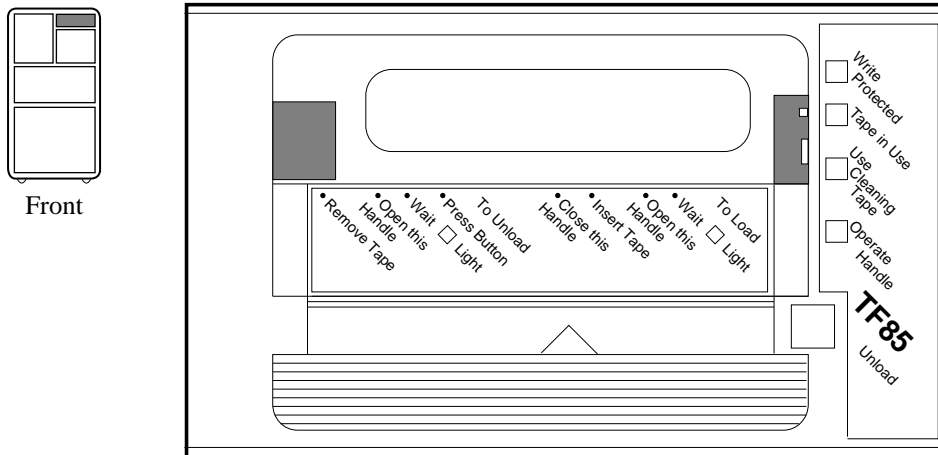
Advanced Troubleshooting

3.2 Troubleshooting a TF85 Tape Drive



Check the controls and indicators on the TF85 tape drive. Table 3- 1 lists the functions of the controls and indicators shown in Figure 3- 1.

Figure 3- 1 TF85 Controls and Indicators



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Table 3- 1 TF85 Light Summary

Light	State	Condition
Write Protected (Orange)	On Off	Tape write protected. Tape write enabled.
Tape in Use (Yellow)	Steady Blinking	Drive ready. Drive in use.
Use Cleaning Tape (Orange)	On Off	Drive needs cleaning. No cleaning needed.
Operate Handle (Green)	On Off Blinking	OK to operate handle. Do not operate handle. Defective cartridge. Pull the handle to the open position and remove cartridge. Try another cartridge.
All four lights	Blinking	Drive fault. Reset by pressing the unload button.

For more information:

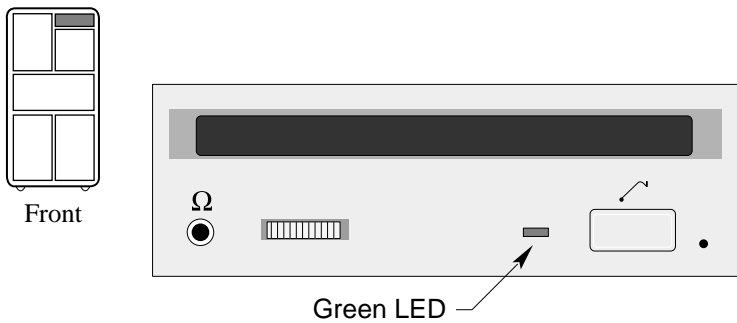
Tx85 Cartridge Tape Subsystem Owner's Manual

3.3 Troubleshooting an RRD42 Compact Disk Drive



Table 3-2 lists the functions of the green LED on the RRD42 compact disk (CD) drive.

Figure 3-2 RRD42 CD Drive Control Panel



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Table 3-2 RRD42 LED Summary

LED	State	Condition
Green (Activity)	Off	No activity
	On	Data is being transferred

For more information:

RRD42 Disc Drive Owner's Manual

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