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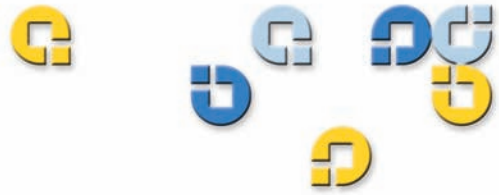

Component Replacement Guide Component Replacement Guide Component Replacement Guide

2U Rackmount

2U Rackmount

81-81720-01 A01

2U Rackmount Component Replacement Guide, 81-81720-01, Rev A, December 2006, Made in USA.

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Preface

Purpose and Scope

This document describes how to remove and replace tape drives and components in the 2U Rackmount.

Audience

This guide serves customers, engineers, and technicians who will be replacing the above components.

Document Organization

This guide includes the following chapters:

- Chapter 1, General Procedures describes general procedures you need to follow to replace any components in the 2U Rackmount.
- Chapter 2, Tape Drive describes how to replace a tape drive.
- Chapter 3, Fans describes how to determine which fan module has failed and how to replace a fan module.
- Chapter 4, Power Supply describes how to replace the power supply.
- Chapter 5, Front Bezel tells how the front bezel becomes damaged and describes how to replace it.
- Chapter 6, PCBA tells how to replace the PCBA.
- Chapter 7, SCSI Cable Assembly describes how to replace a SCSI cable assembly.

- Chapter 8, Rear-Panel CAT 6 Cable Connector Plate describes how to replace the CAT 6 cable connector plate in units that use an SDLT 600A tape drive.
- Chapter 9, Ethernet Cable describes how to replace an Ethernet cable in units that use an SDLT 600A tape drive.
- Chapter 10, LED Cable Assembly describes how to replace an LED cable assembly.
- Appendix A, SCSI ID and Connections describes how to change the SCSI ID on the 2U Rackmount and how to connect the tape drives as a single device and as a daisy chain.
- Appendix B, Troubleshooting describes how to troubleshoot basic 2U Rackmount issues.

Notational Conventions

This manual uses the following conventions:

Note: Notes emphasize important information related to the main topic.

Tech Tip: Tech Tips provide technical information which may be helpful in performing the procedure.

Caution: Cautions indicate potential hazards to equipment and are included to prevent damage to equipment.

Warning: Warnings indicate potential hazards to personal safety and are included to prevent injury.

This manual uses the following:

- Right side — Refers to the right side as you face the component being described.
- Left side — Refers to the left side as you face the component being described.

Related Documents

Refer to the publications in this section for further information:

Document No.	Document Title	Document Description
81-81235-xx	*2U Rackmount Quick Start Guide*	Describes how to set up a 2U Rackmount in an equipment rack, and how to install tape drives into the 2U Rackmount.
81-81209-xx	*2U Rackmount Rail Installation Guide*	Describes how to install rails onto the 2U Rackmount and how to mount the rail slides in the equipment cabinet.
81-81234-xx	*2U Rackmount Read This First Card*	An important notice about using the **Power** button.

Refer to the appropriate product manuals for information about your tape drive and cartridges.

SCSI-2 Specification

The SCSI-2 communications specification is the proposed American National Standard for information systems, dated March 9, 1990. Copies may be obtained from:

Global Engineering Documents
15 Inverness Way, East
Englewood, CO 80112
(800) 854-7179 or (303) 397-2740

Contacts

Quantum company contacts are listed below.

Quantum Corporate Headquarters

To order documentation on the 2U Rackmount or other products contact:

Quantum Corporation
P.O. Box 57100
Irvine, CA 92619-7100
(949) 856-7800
(800) 284-5101

Technical Publications

To comment on existing documentation send e-mail to:

doc-comments@quantum.com

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More information about this product is available on the Service and Support website at www.quantum.com/support. The Service and Support Website contains a collection of information, including answers to frequently asked questions (FAQs). You can also access software, firmware, and drivers through this site.

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Chapter 1

General Procedures

To perform any part replacement in the 2U Rackmount, you must know how to perform the following procedures that are part of all other procedures:

- Disconnecting and Connecting Power
- Sliding the 2U Rackmount Into and Out Of the Equipment Rack
- Sliding the 2U Rackmount Into and Out Of the Equipment Rack

This chapter describes how to perform these tasks.

Disconnecting and Connecting Power

2U Rackmount components may pose an electric shock hazard.

Warning: **Electric Shock Hazard.**
Voltage or current sufficient to cause shock, burn, or death may be present. To reduce exposure to electric shock, follow these precautions:

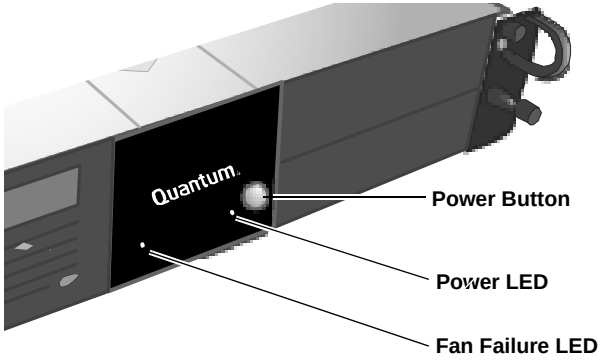
- **Disconnect power from the 2U Rackmount before performing any service.**
- **Do not disassemble the power supply.**
- **Replace the power supply unit as a whole.**

Disconnecting Power

To disconnect power to the 2U Rackmount, follow these steps:

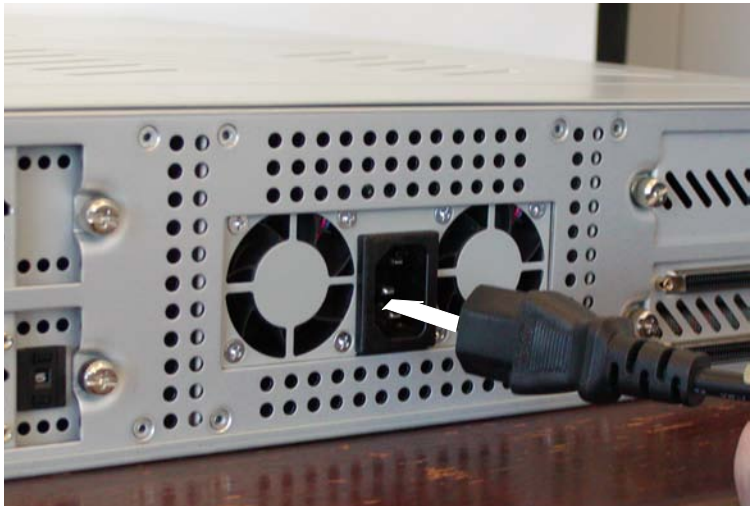
1. Turn off power to the 2U Rackmount by pressing and holding the power button on the front panel for three seconds (see figure 1).

Figure 1 Power Button Location on Front Panel



2. Disconnect the 2U Rackmount power cable at the rear panel (see figure 2).

Figure 2 Power Cable at Rear Panel



Connecting Power

At the end of any service procedure, you must re-connect power to the 2U Rackmount. Follow these steps:

1. Connect the 2U Rackmount power cable at the rear panel (see figure 2).
2. Turn on power to the 2U Rackmount by pressing and holding the power button on the front panel for one second (see figure 1).

   The power LED, unit fans, and power supply fans turn on.

> **Note:** An illuminated fan failure LED (the left LED on the front panel) indicates a fan failure (see figure 1). If you have a fan failure, see chapter 3, Fans.

Sliding the 2U Rackmount Into and Out Of the Equipment Rack

You cannot replace any part in the 2U Rackmount while it is still in the equipment rack. To make the 2U Rackmount available, slide it out of the equipment rack into the service position.

Caution: To avoid damaging the front bezel, do not grasp the front bezel when moving the 2U Rackmount; instead, use the handles on either side of the unit to move it.

Sliding the 2U Rackmount Out of the Equipment Rack

To slide the 2U Rackmount out of the equipment rack:

1. Loosen the thumbscrews that secure the 2U Rackmount to the equipment rack.
2. Gripping the 2U Rackmount handles, pull outward until the 2U Rackmount stops. This is the service position. Make sure that the lock in the slide engages.

   When the 2U Rackmount stops sliding, it should be far enough from the equipment rack to allow easy access to the 2U Rackmount rear panel.

Sliding the 2U Rackmount Into the Equipment Rack

An extended unit poses a safety hazard. When you have completed service on the 2U Rackmount, follow these steps to return it to the equipment rack:

1. Press the lock in the slide to disengage it, and then push the 2U Rackmount toward the equipment rack until the 2U Rackmount touches the equipment rack.
2. Engage and tighten the thumbscrews that secure the 2U Rackmount to the equipment rack.

Removing and Replacing the 2U Rackmount Cover

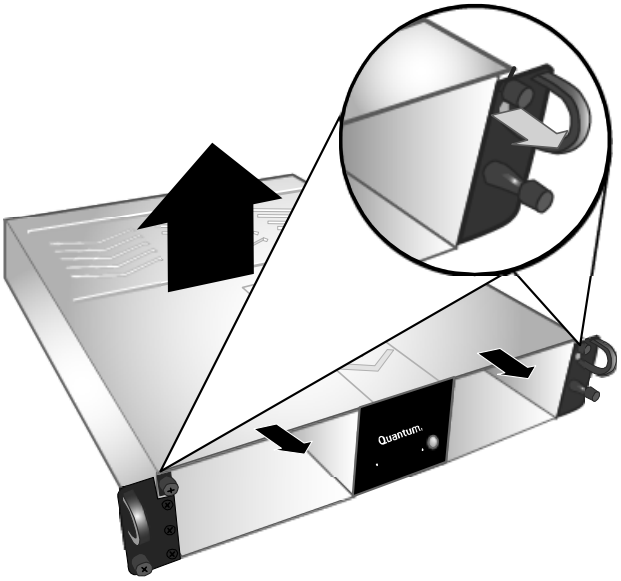
Before you can access any 2U Rackmount components, you must remove the 2U Rackmount cover. Before you complete any service procedure, you must replace the 2U Rackmount cover.

Removing the Cover

To remove the cover:

1. Loosen the two captive thumbscrews that secure the top cover (see figure 3).

Figure 3 Thumbscrews that Secure the Unit Cover



2. Slide the cover forward, then upward, to remove it. Set the cover aside for re-use.

Replacing the Cover

To replace the cover:

1. Slide the top cover into place.
2. Tighten the top cover thumbscrews to secure the 2U Rackmount cover (see figure 3).

Chapter 2

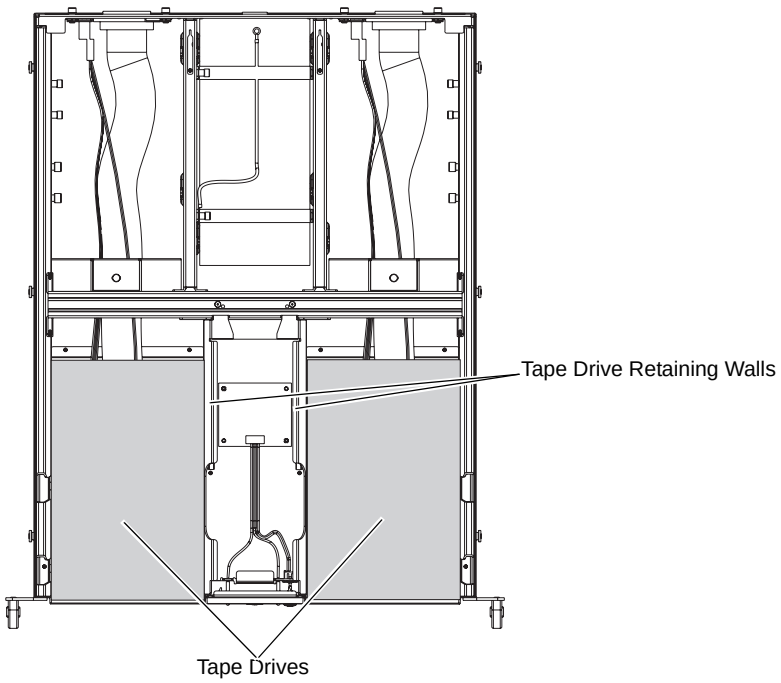
Tape Drive

You may want to upgrade one or both tape drives in the 2U Rackmount, or you may need to replace a tape drive in the unit. This chapter describes how to perform the following tasks:

- Removing a Tape Drive
- Installing a Tape Drive

Figure 4 shows the tape drive locations in the 2U Rackmount. It also shows the location of other 2U Rackmount components mentioned in the procedure.

Figure 4 Tape Drives and Tape Drive Retaining Walls



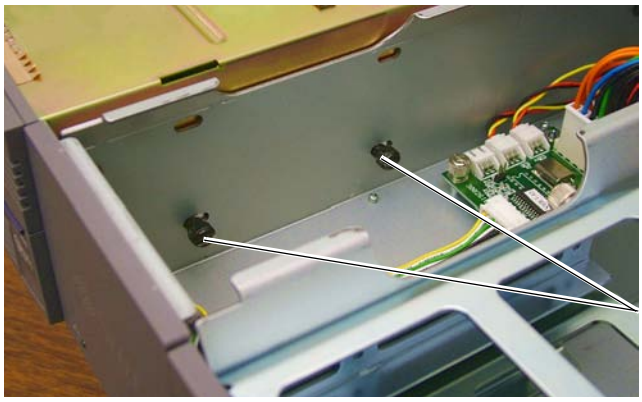
Removing a Tape Drive

To remove a tape drive from the 2U Rackmount:

1. Turn off the host computer and all peripheral devices.
2. Turn off and disconnect power to the 2U Rackmount (see Disconnecting Power on page 2.
3. Slide the 2U Rackmount out of the equipment rack and into the service position (see Sliding the 2U Rackmount Out of the Equipment Rack on page 4).
4. Remove the 2U Rackmount cover (see Removing the Cover on page 5).

5 Remove the two thumbscrews securing the tape drive to the tape drive retaining wall (see figure 4). Set the two thumbscrews aside for re-use when installing a replacement tape drive.

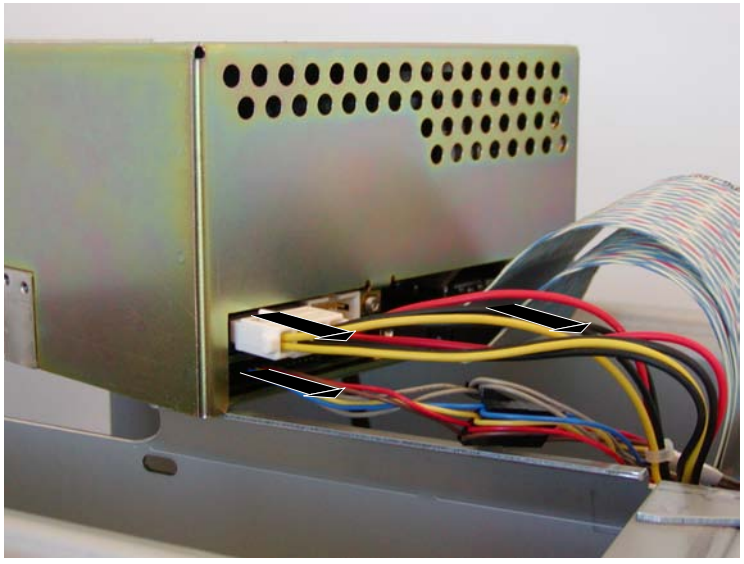
Figure 5 Thumbscrews Securing the Tape Drive to the 2U Rackmount



6 Pull the tape drive forward slightly, and then lift the tape drive out of the 2U Rackmount. Place the tape drive on the top of the 2U Rackmount.

7 Disconnect the all the cables from the rear panel of the tape drive. Figure 6 shows examples; your tape drive may have these cables in slightly different locations. See the following figures for specific cable locations for each drive type:

- DLT-S4, see figure 9
- SDLT 600, see figure 10
- SDLT 600A, see figure 11
- LTO-3, see figure 12
- SDLT 320, see figure 13



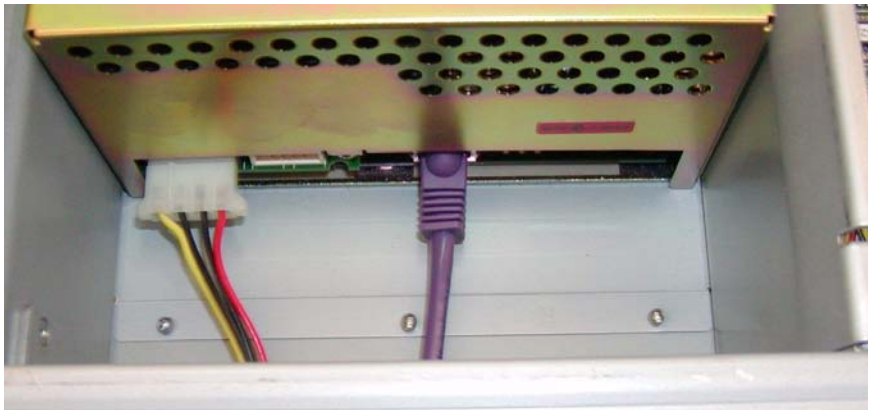


Figure 6 Tape Drive Cables: Top Picture Shows SCSI Tape Drives; Bottom Picture Shows GigE Tape Drives (SDLT 600A)

8 Remove the two thumbscrews from the side of the tape drive that was closest to the outside of the 2U Rackmount (see figure 7 and figure 8). Set the two thumbscrews aside for re-use when installing a replacement tape drive.

> **Note:** These two thumbscrews are used as standoffs. They do not attach the drive to the chassis.

Installing a Tape Drive

Caution: To ensure proper tape drive operation, make sure its SCSI ID is unique (see Setting the SCSI ID on page 72).

To install a tape drive into the 2U Rackmount:

1. Turn off the host computer and all peripheral devices.
2. Turn off and disconnect power to the 2U Rackmount (see Disconnecting Power on page 2.
3. Slide the 2U Rackmount out of the equipment rack and into the service position (see Sliding the 2U Rackmount Out of the Equipment Rack on page 4).
4. Remove the 2U Rackmount cover (see Removing the Cover on page 5).
5. Install two thumbscrews into the side of the tape drive that will be located next to the outer wall of the 2U Rackmount (see figure 7 and figure 8). Hand-tighten the thumbscrews.

   Note: Extra thumbscrews are stored inside the 2U Rackmount (see figure 7 for location). Use the type appropriate for your unit: SDLT 320 tape drives use 6-32 (silver) thumbscrews; all other tape drives use M3 (black) thumbscrews.

Figure 7 General Thumbscrew Locations

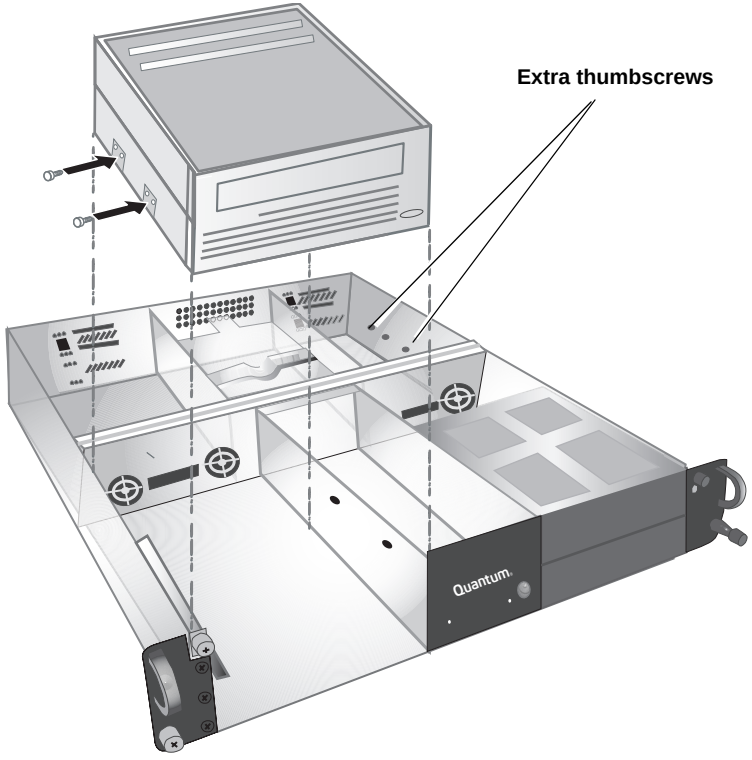
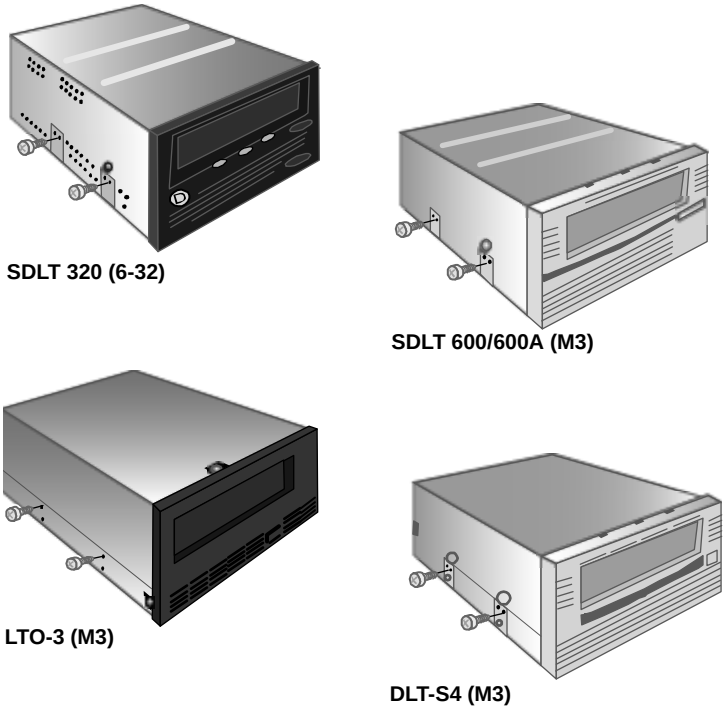


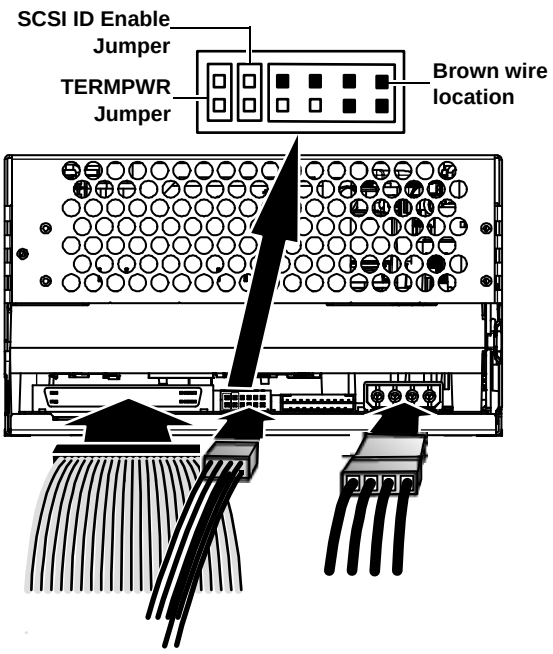
Figure 8 Specific Thumbscrew Locations Types



6 Place the tape drive on the top of the 2U Rackmount unit. Connect the tape drive power and interface cables to the tape drive rear panel. Follow the specific instructions for making these connections for each drive type as illustrated in the following figures:

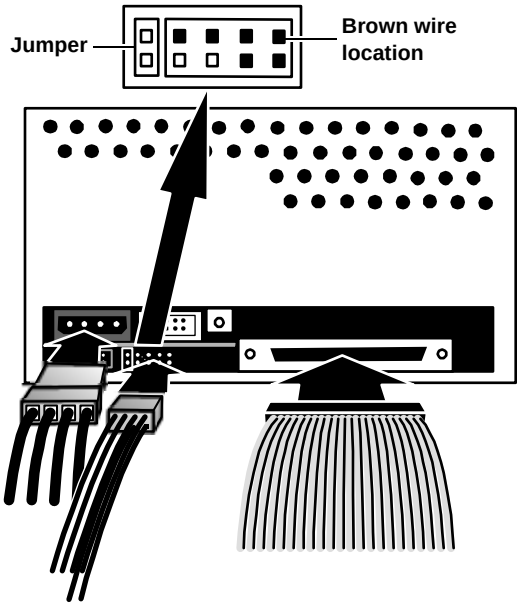
- DLT-S4, see figure 9
- SDLT 600, see figure 10
- SDLT 600A, see figure 11
- LTO-3, see figure 12
- SDLT 320, see figure 13

Figure 9 DLT-S4 Cable Connections



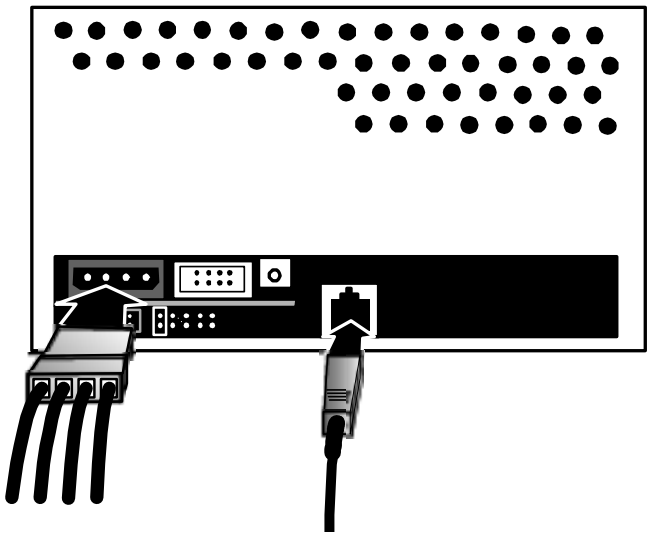
DLT-S4: Remove all jumpers from the SCSI ID pins on the back of the tape drive. Place the TERMPWR jumper on the two left-most SCSI ID pins. Place the SCSI ID Enable jumper on the two pins just to the right of the TERMPWR jumper. Attach the unlabeled 8-pin SCSI ID cable with six multi-colored wires to the eight right-most pins on the tape drive. Ensure that the brown wire is connected to the upper right pin.

Figure 10 SDLT 600 Cable Connections



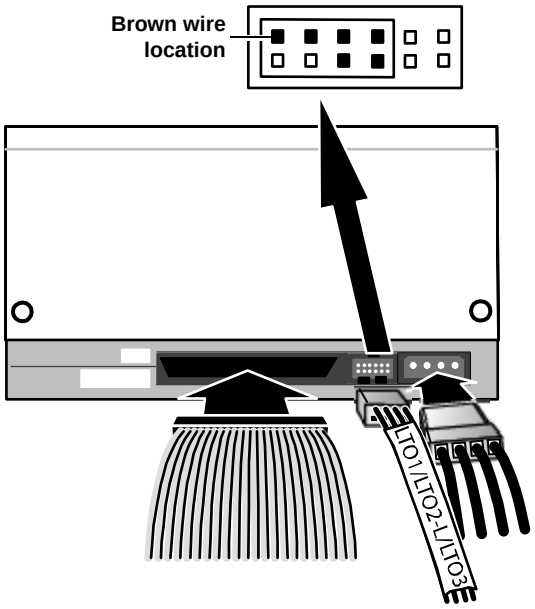
SDLT 600: Remove all jumpers from the SCSI ID pins on the back of the tape drive. Place a jumper on the two left-most SCSI ID pins. Attach the unlabeled 8-pin SCSI ID cable with six multi-colored wires to the eight right-most pins on the tape drive. Ensure that the brown wire is connected to the upper right pin.

Figure 11 SDLT 600A Cable Connections



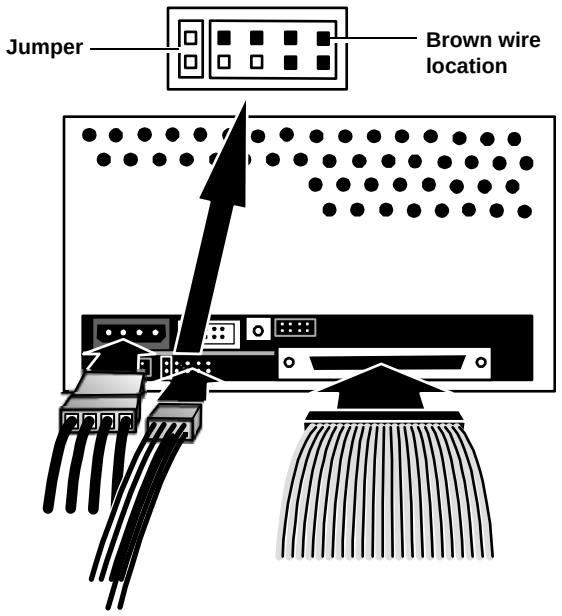
SDLT 600A: Connect the Ethernet cable into the Gigabit Ethernet (GigE) connector on the back of the tape drive.

Figure 12 LTO-3 Cable Connections



LTO-3: Remove all jumpers from the SCSI ID pins on the back of the tape drive. Connect the SCSI ID cable labeled "LTO1/LTO2-L/LTO3" so that the brown wire is connected to the upper left pin.

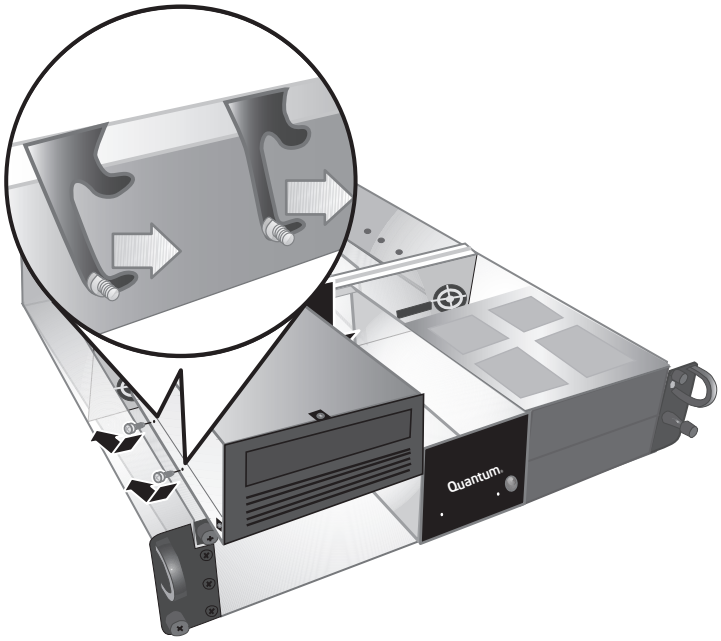
Figure 13 SDLT 320 Cable Connections



SDLT 320: Remove all jumpers from the SCSI ID pins on the back of the tape drive. Place a jumper on the two left-most SCSI ID pins. Attach the unlabeled 8-pin SCSI ID cable with six multi-colored wires to the eight right-most pins on the tape drive. Ensure that the brown wire is connected to the upper right pin.

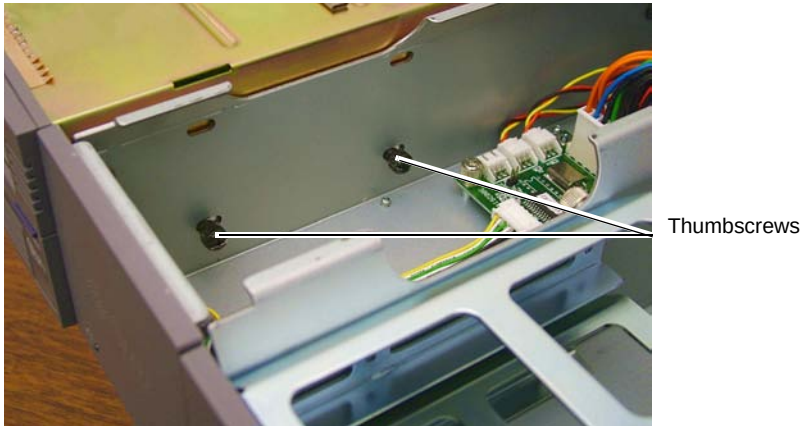
7 Lower the tape drive into the slot in the 2U Rackmount, sliding the thumbscrews into the openings in the outer wall of the 2U Rackmount (see figure 14). Slide the tape drive all the way into the 2U Rackmount until it stops.

Figure 14 Sliding the Tape Drive Into the 2U Rackmount



8 Secure the tape drive to the 2U Rackmount by installing two thumbscrews through the bottom set of mounting holes in the inner wall of the 2U Rackmount and into the tape drive (see figure 15). Use the correct thumbscrew type (indicated in figure 8). Hand-tighten the thumbscrews.

Figure 15 Thumbscrews Securing Tape Drive to Unit



9 Replace the 2U Rackmount cover (see Replacing the Cover on page 5).

10 Slide the 2U Rackmount back into the equipment rack and secure it to the rack (see Sliding the 2U Rackmount Into the Equipment Rack on page 4).

11 Connect the 2U Rackmount power cable at the rear panel (see Connecting Power on page 3).

12 Turn on power to the 2U Rackmount by pressing and holding the power button on the front panel for one second.

13 Turn on any peripheral devices you turned off earlier.

14 Turn on the host computer.

Chapter 3

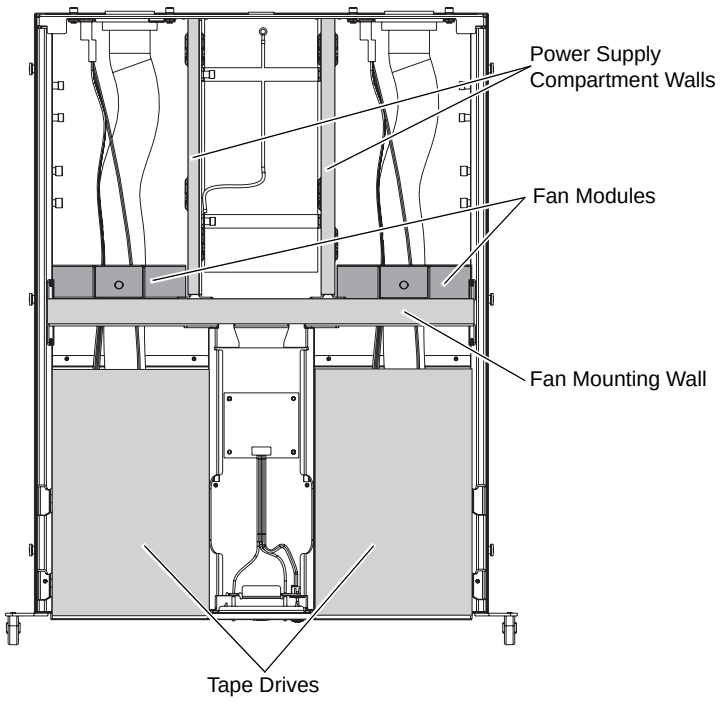
Fans

This chapter describes how to perform the folliwing tasks:

- Determining Which Fans Have Failed
- Removing a Failed Fan Module
- Installing a Fan Module

Figure 16 shows the fan module locations in the unit. It also shows the location of other unit components mentioned in the procedure.

Figure 16 Fan Modules and Adjacent Walls



Determining Which Fans Have Failed

The fans in the 2U Rackmount unit are actually two-fan modules. When the fan failure LED on the front panel turns on, one or both of the fan modules in the 2U Rackmount has failed. However, the LED does not indicate *which* fan module has failed, or if both fan modules have failed.

To determine which fan module has failed, follow these steps:

1. Turn off the host computer and all peripheral devices.
2. Turn off and disconnect power to the 2U Rackmount (see Disconnecting Power on page 2

3. Slide the 2U Rackmount out of the equipment rack and into the service position (see Sliding the 2U Rackmount Out of the Equipment Rack on page 4).
4. Remove the 2U Rackmount top cover (see Removing the Cover on page 5).
5. Reconnect the 2U Rackmount power cable at the rear panel.
6. Turn on power to the 2U Rackmount.
7. Place your hand immediately behind each fan module.

   If there is no air flow, the fan module has failed and should be replaced.

Removing a Failed Fan Module

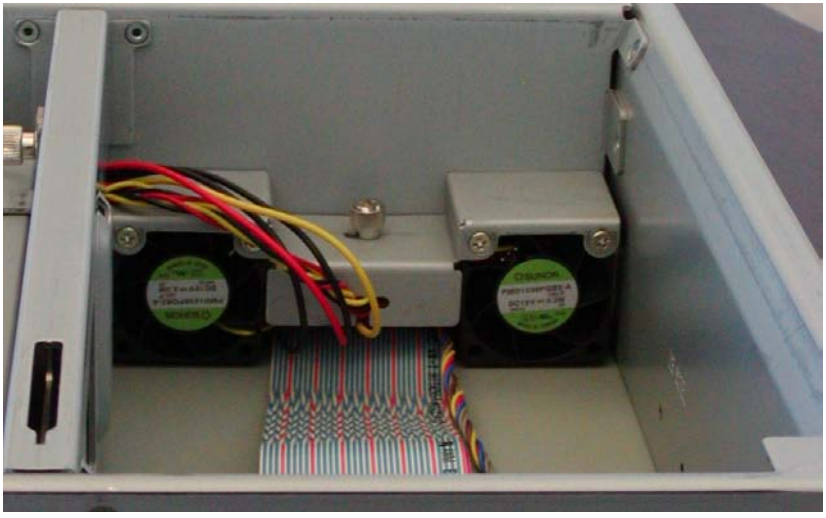
To remove a fan module from the 2U Rackmount unit, follow these steps:

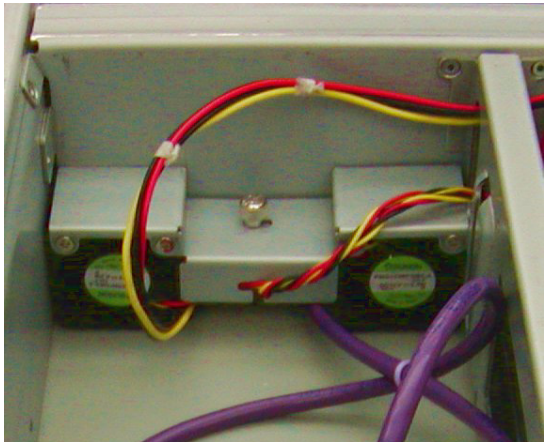
1. Turn off and disconnect power to the 2U Rackmount (see Disconnecting Power on page 2
2. Slide the 2U Rackmount out of the equipment rack and into the service position (see Sliding the 2U Rackmount Out of the Equipment Rack on page 4).
3. Remove the 2U Rackmount top cover (see Removing the Cover on page 5).

4 Remove the thumbscrew securing the fan module to the unit (see figure 17). Set the thumbscrew aside for re-use.

> **Note:** If you have an SDLT 600A, the SCSI cable shown in many of the following pictures will not be present. Instead, there will be an Ethernet cable.

Figure 17 Fan Module Thumbscrew





Above: SCSI drives.

Left: Ethernet drives.

5 Disconnect the tape drive power cable assembly from the rear panel of the tape drive that sits in front of the failed fan module.

6 Move the tape drive power cable assembly out of the way as follows:

a Gently lift the fan module upward just a little.

b While holding the fan module up, pull the tape drive power cable assembly through a slot in the fan mounting wall and under the fan module (see figure 18).

> **Note:** Be sure to align the power cable connector so that it passes through the slot easily.

> **Caution:** The fan mounting flange is sharp. To avoid personal injury or damaging the power cable assembly or connector, apply only light pressure when pulling the cable through the fan mounting wall.

Figure 18 Tape Drive Power Cable Assembly under Fan Module

c Allow the fan module to return to its original position.

d Pull the tape drive power cable assembly through the opening in the power supply compartment wall (the opening is near the fan mounting wall) (see figure 19).

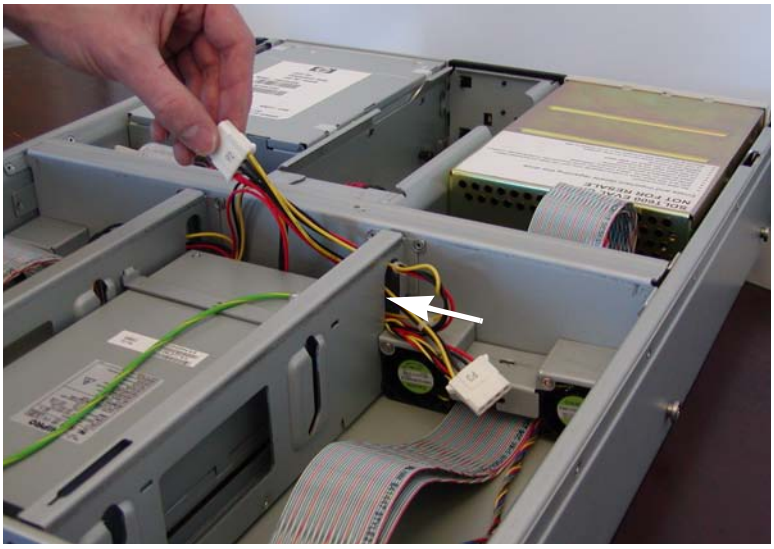


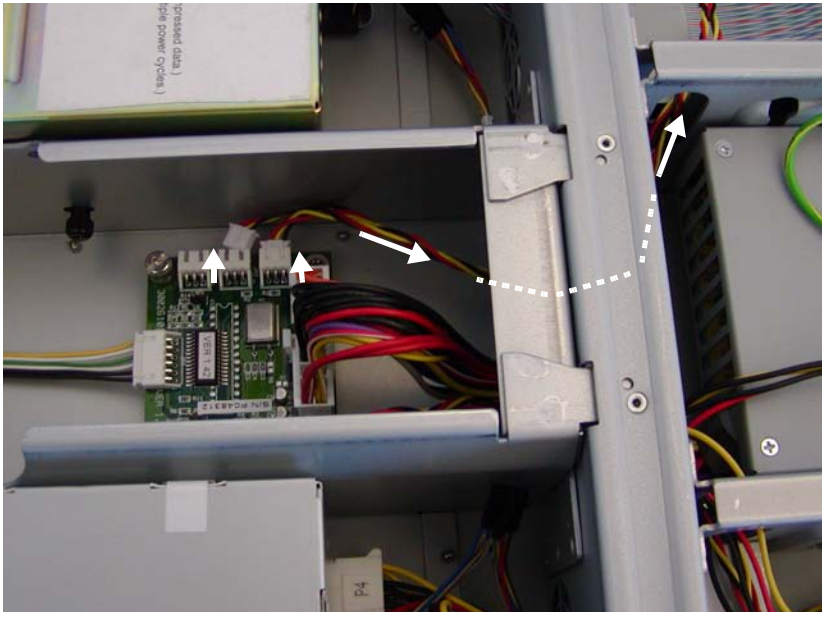
Figure 19 Tape Drive Power Cable Assembly to Power Supply Compartment

e Lay the tape drive power cable assembly on top of the power supply.

7 Disconnect the fan module cabling from the PCBA (see figure 20).

8 Pull the fan module cabling (front to back) through the fan mounting wall and through the power supply retaining wall (see figure 20). Lay the cable in the open area behind the fan module.

Figure 20 Disconnecting the Fan Module Cabling from the PCBA



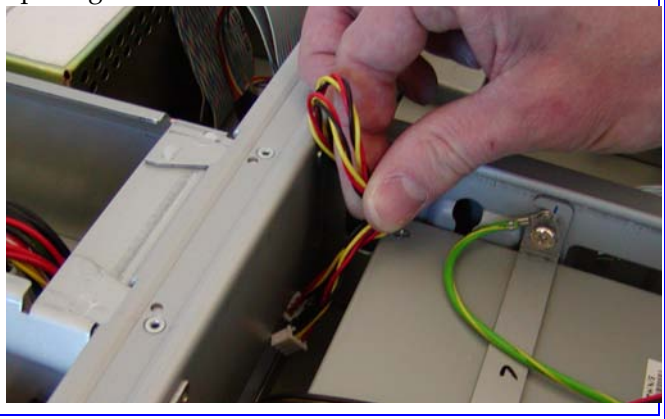
9 Lift the fan module vertically out of the 2U Rackmount.

Installing a Fan Module

To install a fan module in the 2U Rackmount unit, follow these steps:

1. Lower the fan module vertically into the 2U Rackmount.
2. Push the fan module cabling through the power supply retaining wall and (back to front) through the fan mounting wall.

Tech Tip: Before pushing the fan module cabling through the fan mounting wall, bend the cable about 90°, 4 to 5 cm (1.5 to 2 inches) above the fan module connectors, and then align the connectors in the fan mounting wall opening.



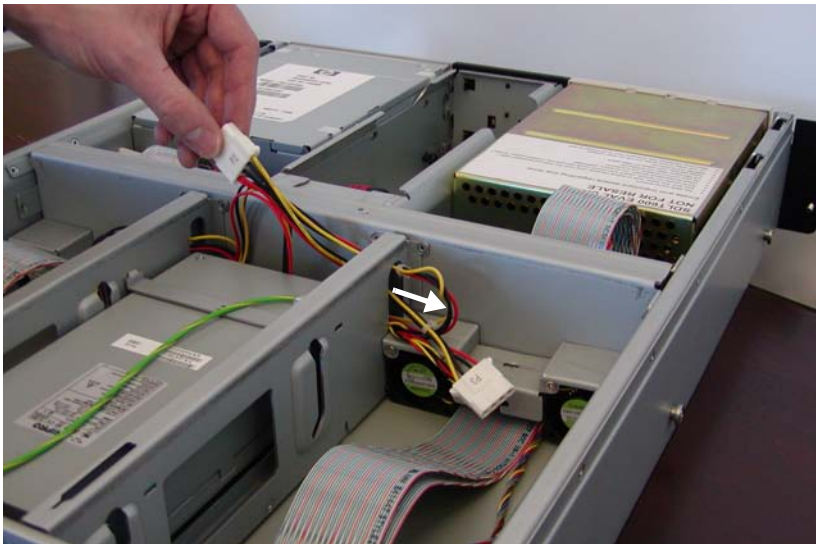
3. Connect the fan module cabling to the connectors on the PCBA.

Note: There are six connectors on the PCBA — choose any two on each side per fan module.

4 Move the tape drive power cable assembly from the power supply compartment to the tape drive rear panel as follows:

a Gently pull the tape drive power cable assembly through the opening in the power supply compartment wall (see figure 21).

Figure 21 Tape Drive Power Cable Assembly from Power Supply Compartment

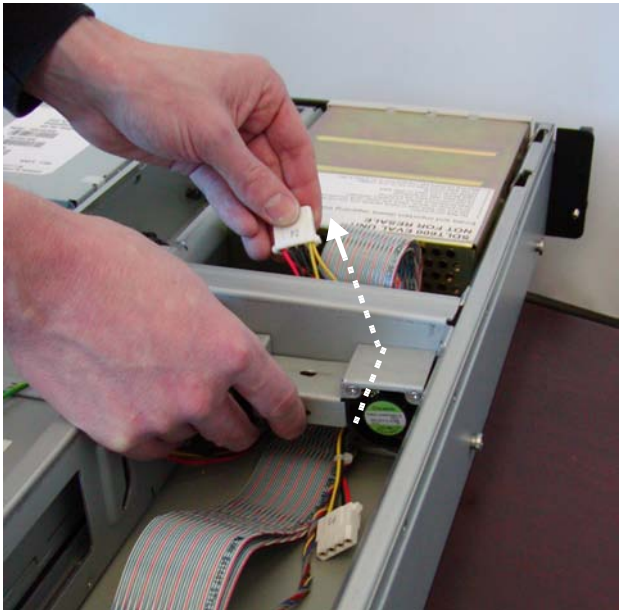


b Gently lift the fan module upward just a little.

c While holding the fan module up, pull the tape drive power cable assembly under the fan module and through the slot in the fan mounting wall (see figure 22).

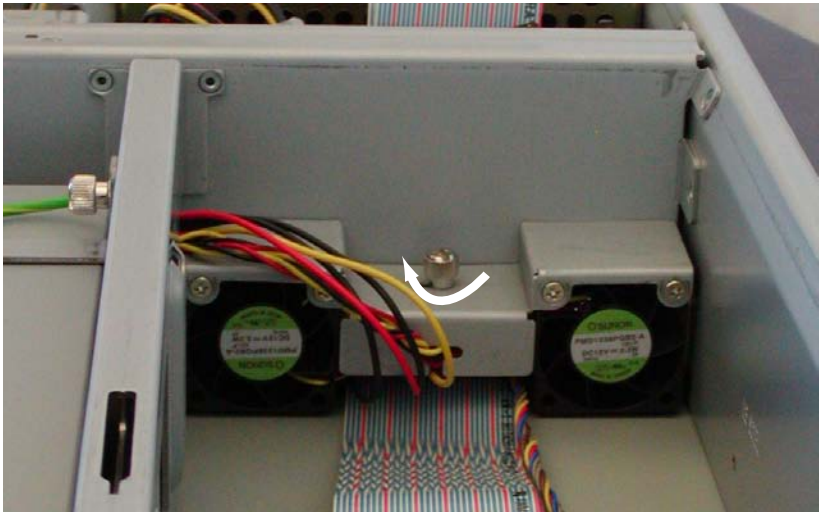
> **Note:** Be sure to align the power cable connector so that it passes through the slot easily.

Figure 22 Tape Drive Power Cable Assembly under Fan Module



5 Seat the fan module in the unit, and then install the thumbscrew securing the fan module to the unit.

Figure 23 Fan Module Thumbscrew



6. Connect the tape drive power cable assembly to the rear panel of the tape drive.
7. Replace the 2U Rackmount cover (see Replacing the Cover on page 5).
8. Slide the unit back into the equipment rack and secure it to the rack (see Sliding the 2U Rackmount Into the Equipment Rack on page 4).
9. Connect the unit power cable at the rear panel (see Connecting Power on page 3).
10. Turn on power to the unit by pressing and holding the power button on the front panel for one second.
11. Turn on any peripheral devices you turned off earlier.
12. Turn on the host computer.

Chapter 4

Power Supply

The 2U Rackmount unit contains a single power supply that connects to both tape drives in the unit, supplying them with power. If the unit power supply fails, neither tape drive operates. You must replace the power supply. This chapter describes how to perform these tasks:

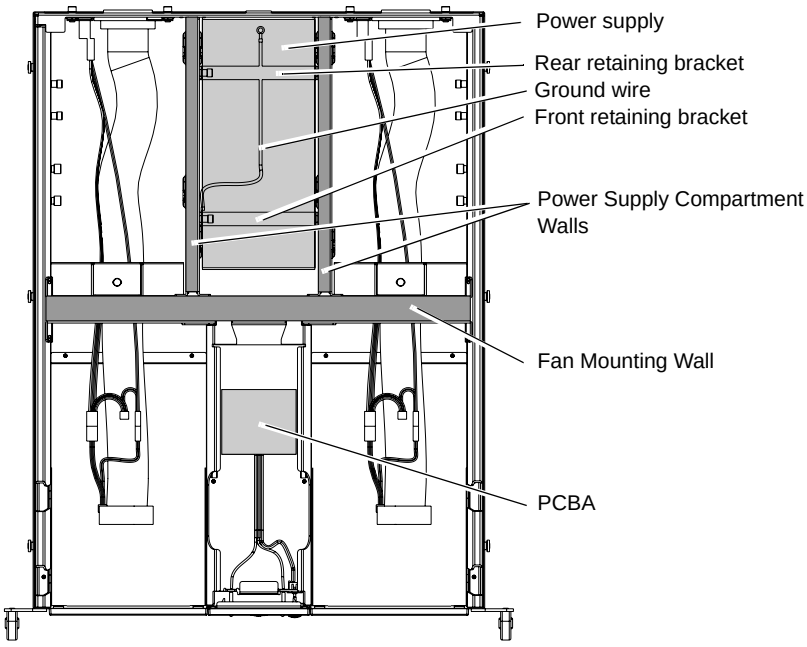
- Removing a Power Supply
- Installing a Power Supply

Warning: **Electric Shock Hazard.**
Voltage or current sufficient to cause shock, burn, or death may be present on the power supply. To reduce exposure to electric shock:

- **Disconnect power from the 2U Rackmount before performing any service.**
- **Do not disassemble the power supply.**
- **Replace the power supply unit as a whole.**

Figure 24 shows the power supply location in the unit. It also shows the location of other unit components mentioned in the procedure.

Figure 24 Power Supply and Adjacent Walls



Removing a Power Supply

To remove a power supply from the 2U Rackmount:

1. Turn off the host computer and all peripheral devices.
2. Turn off and disconnect power to the 2U Rackmount (see Disconnecting Power on page 2.
3. Slide the 2U Rackmount out of the equipment rack and into the service position (see Sliding the 2U Rackmount Out of the Equipment Rack on page 4).
4. Remove the 2U Rackmount cover (see Removing the Cover on page 5).
5. Remove the thumbscrew securing the fan module to the unit. Set the thumbscrew aside for re-use.

6 Disconnect the tape drive power cable assembly from the rear panel of all tape drives installed in the 2U Rackmount as follows:

a Gently lift the fan module upward just a little.

b While holding the fan module up, pull the tape drive power cable assembly through a slot in the fan mounting wall and under the fan module (see figure 25).

> **Note:** Be sure to align the power cable connector so that it passes through the slot easily.

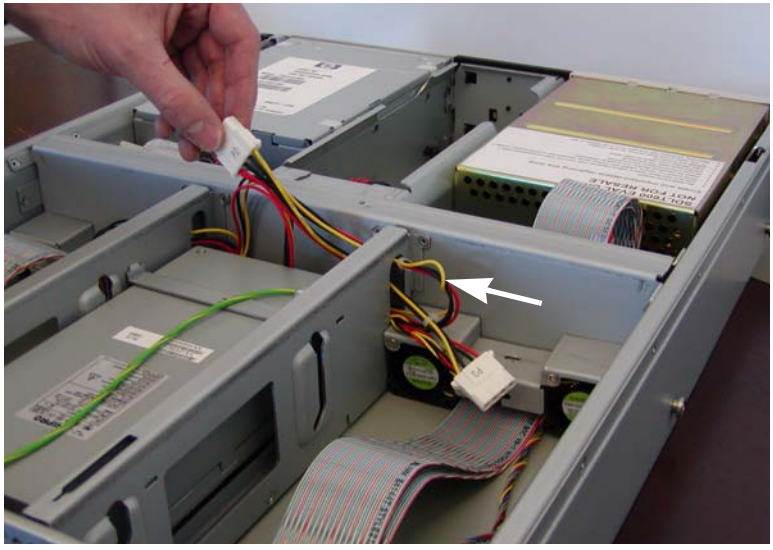
> **Caution:** The fan mounting flange is sharp. To avoid personal injury or damaging the power cable assembly or connector, apply only light pressure when pulling the cable through the fan mounting wall.

Figure 25 Tape Drive Power Cable Assembly under Fan Module

c Allow the fan module to return to its original position.

d Pull the tape drive power cable assembly through the opening in the power supply compartment wall (the opening is near the fan mounting wall (see figure 26).

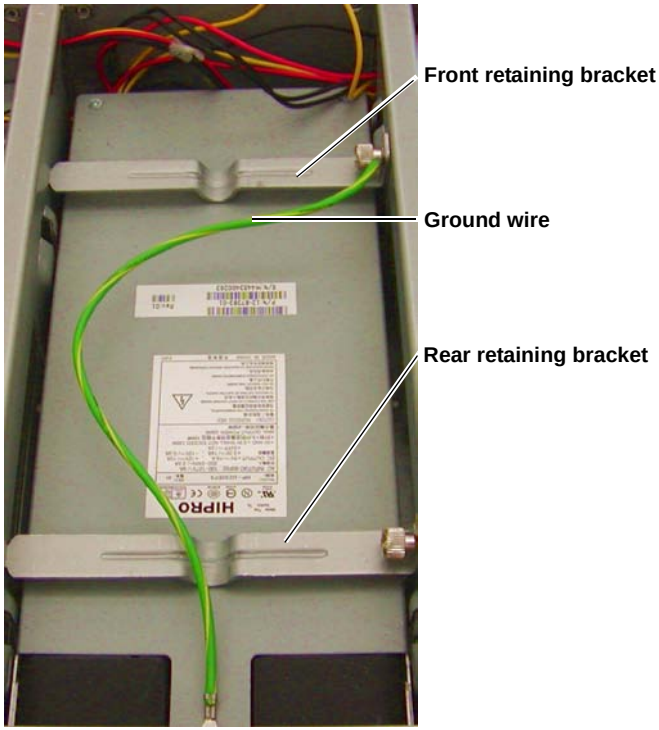
Figure 26 Tape Drive Power Cable Assembly to Power Supply Compartment



e Lay the tape drive power cable assembly on top of the power supply.

7 Remove the thumbscrews from the two power supply retaining brackets, and then remove the retaining brackets. Lay the ground wire toward the rear of the unit (see figure 27). Set the thumbscrews and retaining brackets aside for re-use.

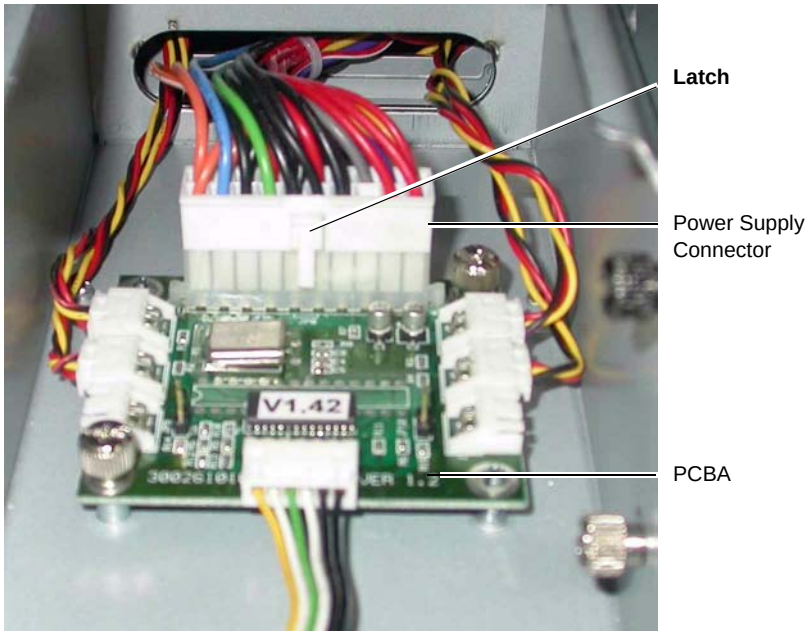
Figure 27 Power Supply Retaining Brackets and Ground Wire



8 Depress the latch on the power supply connector and disconnect the power supply connector from the PCBA (see figure 28). You may need to wiggle the connector slightly from side to side to loosen it.

> **Caution:** Do not pull on the wires when removing the cable.

Figure 28 Power Supply Connector in PCBA



9 Push the power supply slightly forward, and then lift it upward.

10 Pull the PCBA power cable assembly through the fan mounting wall from the PCBA, and then remove the power supply from the unit.

> **Note:** Be sure to align the power cable connector so that it passes through the slot easily.

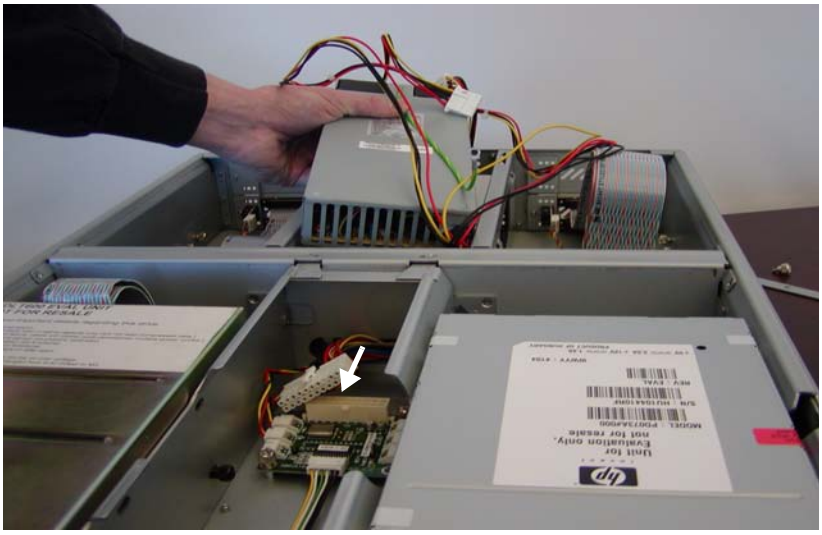
> **Caution:** The fan mounting flange is sharp. To avoid personal injury or damaging the power cable assembly or connector, apply only light pressure when pulling the cable through the fan mounting wall.

Installing a Power Supply

To install a power supply in the 2U Rackmount unit:

1. Holding the power supply above the power supply compartment, pull the PCBA power cable assembly through the fan mounting wall from the power supply to the PCBA (see figure 29).

Figure 29 Power Supply Above Unit



2. Lower the power supply into its compartment, and then push the power supply toward the rear of the unit until it clicks into place.
3. Install the power supply retaining brackets, securing each retaining bracket with a thumbscrew. Be sure to attach the ground wire to the front retaining bracket (see figure 27).
4. Connect the PCBA power cable assembly to the PCBA.
5. Thread the tape drive power cable assemblies under the fan modules to the tape drives as follows:
   a. Pull the tape drive power cable assembly through the opening in the power supply compartment wall.
   b. Gently lift the fan module upward just a little.

c While holding the fan module up, pull the tape drive power cable assembly under the fan module and through the slot in the fan mounting wall.

> **Note:** Be sure to align the power cable connector so that it passes through the slot easily.

> **Caution:** The fan mounting flange is sharp. To avoid personal injury or damaging the power cable assembly or connector, apply only light pressure when pulling the cable through the fan mounting wall.

6 Seat the fan module in the unit, and then install the thumbscrew securing the fan module to the unit.

7 Connect the tape drive power cable assembly to the rear panel of the tape drive.

8 Replace the 2U Rackmount cover (see Replacing the Cover on page 5).

9 Slide the 2U Rackmount back into the equipment rack and secure it to the rack (see Sliding the 2U Rackmount Into the Equipment Rack on page 4).

10 Connect the 2U Rackmount power cable at the rear panel (see Connecting Power on page 3).

11 Turn on power to the unit by pressing and holding the power button on the front panel for one second.

12 Turn on any peripheral devices you turned off earlier.

13 Turn on the host computer.

Chapter 5

Front Bezel

The front bezel is a flat panel that resides in the front center of the 2U Rackmount. It has openings for the power button, the power indicator LED, and the fan failure LED.

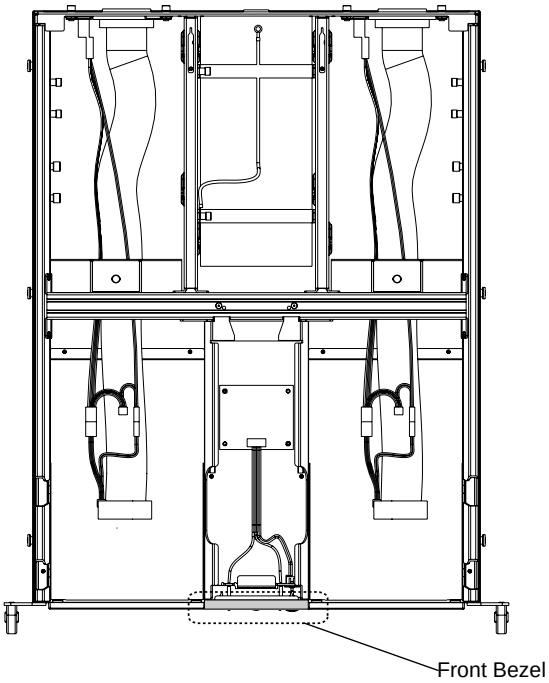
This chapter describes how to replace the front bezel by performing the following tasks:

- Removing the Front Bezel
- Installing the Front Bezel

Figure 30 shows the bezel location.

Caution: To avoid damaging the front bezel, do not grasp the front bezel when moving the 2U Rackmount; instead, use the handles on either side of the unit to move it.

Figure 30 Bezel Location



Removing the Front Bezel

To remove the front bezel:

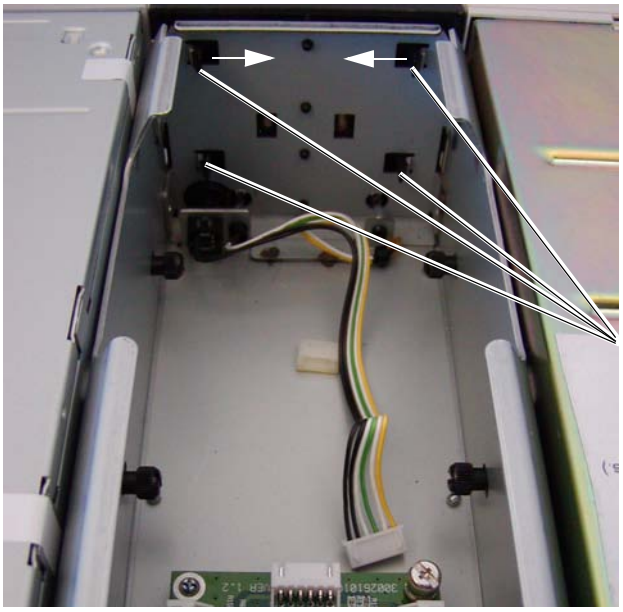
1. Turn off and disconnect power to the 2U Rackmount (see Disconnecting Power on page 2.
2. Slide the 2U Rackmount out of the equipment rack and into the service position (see Sliding the 2U Rackmount Out of the Equipment Rack on page 4).
3. Remove the 2U Rackmount cover (see Removing the Cover on page 5).

4 Release the top edge of the bezel from the chassis as follows:

a With one hand grip the front bezel top and bottom edges.

b With the other hand, release the two top tabs that hold the bezel to the chassis by applying light pressure toward the center of the bezel (see figure 31).

Figure 31 Bezel Tabs, Direction of Motion



c While applying pressure to the tabs pull gently on the bezel top edge to move it away from the chassis.

5 Release the bottom edge of the bezel by repeating step 4 for the bottom tabs and edge.

Installing the Front Bezel

To install the front bezel:

1. Position the bezel so that the LED light pipes, power button, and tabs align with the openings in the chassis.
2. Push the bezel into the chassis until it clicks in place.
3. Replace the 2U Rackmount cover (see Replacing the Cover on page 5).
4. Slide the 2U Rackmount back into the equipment rack and secure it to the rack (see Sliding the 2U Rackmount Into the Equipment Rack on page 4).
5. Connect the 2U Rackmount power cable at the rear panel (see Connecting Power on page 3).
6. Turn on power to the 2U Rackmount by pressing and holding the power button on the front panel for one second.

Chapter 6

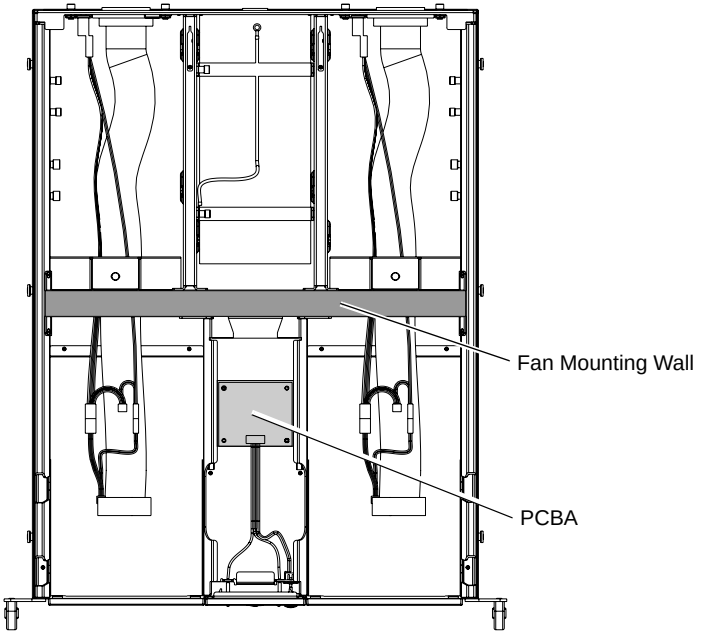
PCBA

The PCBA is a printed circuit board that resides in the compartment between the two tape drives. This chapter describes how to perform the following tasks:

- Removing the PCBA
- Installing a PCBA

Figure 32 shows the location of the PCBA in the unit. It also shows the location of other unit components mentioned in the procedure.

Figure 32 PCBA and Fan Mounting Wall



Removing the PCBA

To remove the PCBA, follow these steps:

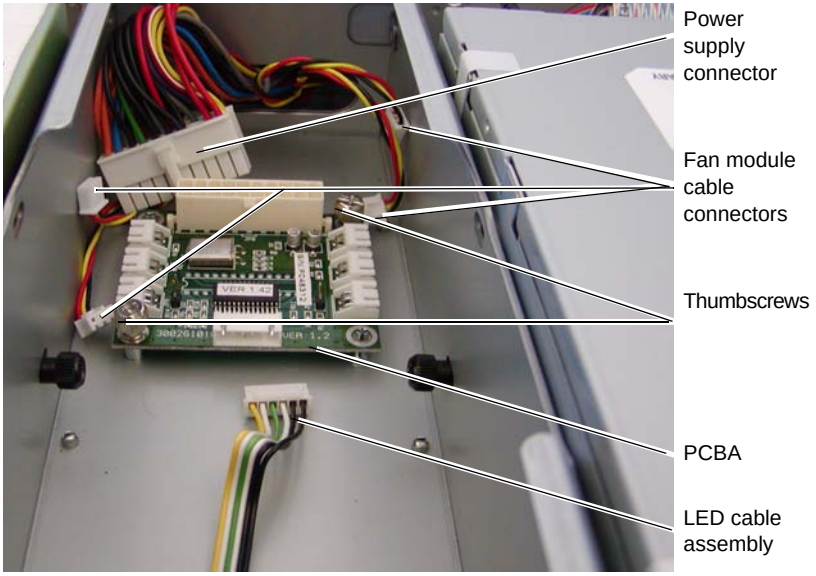
1. Turn off the host computer and all peripheral devices.
2. Turn off and disconnect power to the 2U Rackmount (see Disconnecting Power on page 2.
3. Slide the 2U Rackmount out of the equipment rack and into the service position (see Sliding the 2U Rackmount Out of the Equipment Rack on page 4).
4. Remove the 2U Rackmount cover (see Removing the Cover on page 5).
5. Depress the latch on the power supply connector and disconnect the power supply connector from the PCBA (see figure 33). You may need to wiggle the connector slightly from side to side to loosen it.

6 Disconnect the four fan module cable connectors (two per side).

7 Disconnect the LED cable assembly.

> **Caution:** Do not pull on the wires when removing the cables in steps 5 through 6.

Figure 33 PCBA with Cables Disconnected



8 Remove the two thumbscrews that secure the PCBA to the 2U Rackmount. Set the thumbscrews aside for re-use.

9 Lift the PCBA out of the unit.

Installing a PCBA

Caution: The PCBA is an ESD-sensitive device. Take proper ESD precautions when handling the PCBA.

To install a PCBA (see figure 33 for component locations):

1. Connect the following cables to the PCBA:
   - LED power cable
   - Four fan module cable connectors (two per side).

   Note: It is easier to connect these cables before attaching the PCBA to the unit.
2. Seat the PCBA in the 2U Rackmount, and then install the two thumbscrews to secure the PCBA to the 2U Rackmount.
3. Connect the PCBA power cable assembly.
4. Replace the 2U Rackmount cover (see Replacing the Cover on page 5).
5. Slide the 2U Rackmount back into the equipment rack and secure it to the rack (see Sliding the 2U Rackmount Into the Equipment Rack on page 4).
6. Connect the 2U Rackmount power cable at the rear panel (see Connecting Power on page 3).
7. Turn on power to the 2U Rackmount by pressing and holding the power button on the front panel for one second.
8. Turn on any peripheral devices you turned off earlier.
9. Turn on the host computer.

Chapter 7

SCSI Cable Assembly

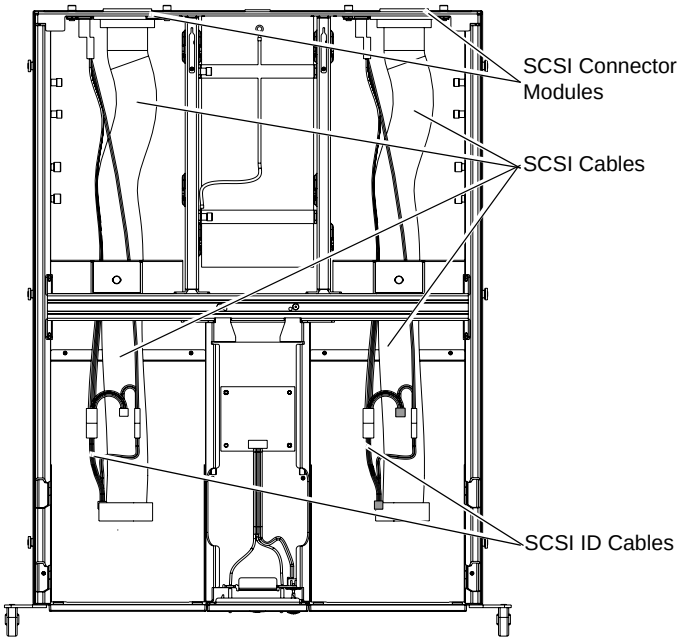
The SCSI cable assembly includes the SCSI cable and connector, the SCSI ID cable and connectors, and the SCSI connector module at the rear of the unit.

This chapter describes how to perform the following tasks:

- Removing a SCSI Cable Assembly
- Installing a SCSI Cable Assembly

Figure 34 shows the location of the SCSI cable assembly in the unit. It also shows other unit components affected by this procedure.

Figure 34 SCSI Cable Assembly



Removing a SCSI Cable Assembly

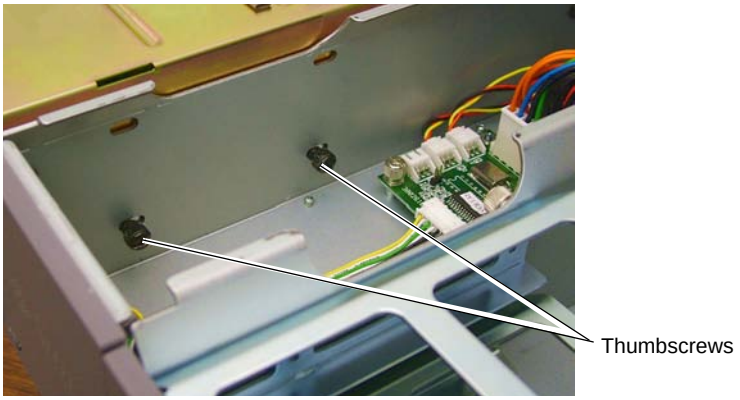
To remove a SCSI cable assembly from the 2U Rackmount:

1. Turn off the host computer and all peripheral devices.
2. Turn off and disconnect power to the 2U Rackmount (see Disconnecting Power on page 2.
3. Slide the 2U Rackmount out of the equipment rack and into the service position (see Sliding the 2U Rackmount Out of the Equipment Rack on page 4).
4. Remove the 2U Rackmount cover (see Removing the Cover on page 5).

5 Remove the tape drive as follows:

a Remove the two thumbscrews securing the tape drive to the tape drive retaining wall (see figure 35). Set the thumbscrews aside for re-use when installing a replacement tape drive.

Figure 35 Thumbscrews Securing Tape Drive to Unit



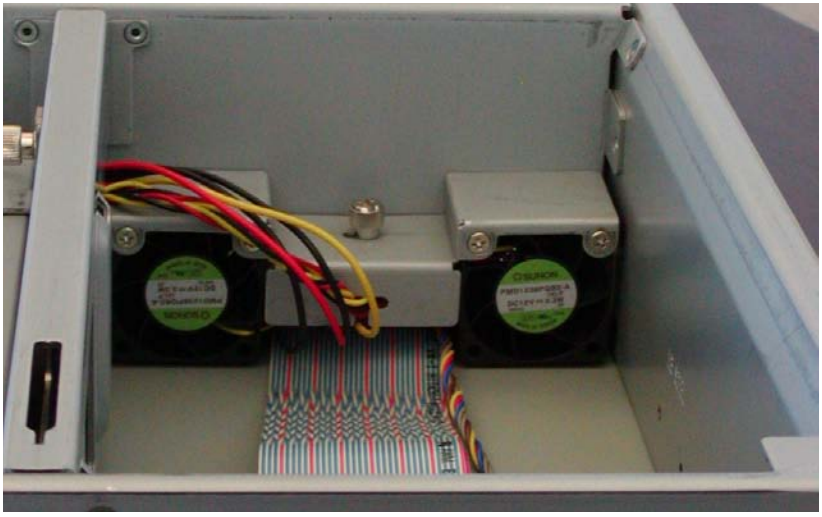
b Pull the tape drive forward slightly, and then lift the tape drive out of the unit. Lay the tape drive on the top of the unit.

c Disconnect the SCSI cable and the SCSI ID cable from the rear panel of the tape drive. For specific pictures of cable locations, see the following:

- DLT-S4, see figure 9 on page 13
- SDLT 600, see figure 10 on page 14
- SDLT 600A, see figure 11 on page 15
- LTO-3, see figure 12 on page 16
- SDLT 320, see figure 13 on page 17

6 Remove the thumbscrew securing the fan module to the unit (see figure 36). Set the thumbscrew aside for re-use.

Figure 36 Fan Module Thumbscrew



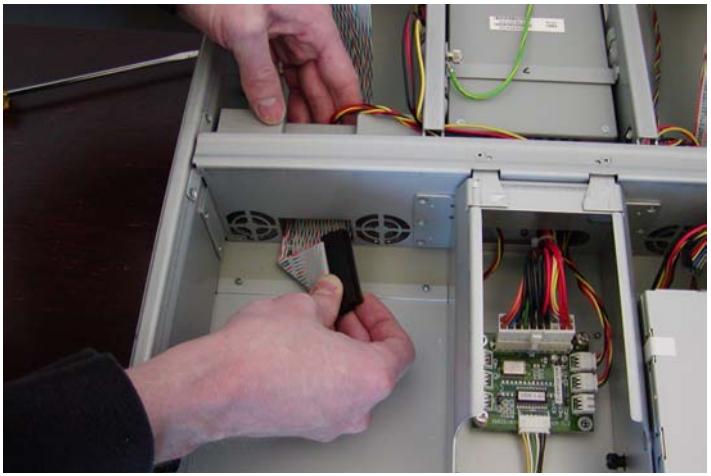
7 Gently lift the fan module upward just a little.

8 Pull the SCSI cable and the SCSI ID cable, and the tape drive power cable assembly through the fan mounting wall opening.

Tech Tip: The SCSI cable connector is too wide to fit directly through the opening in the fan mounting wall. Fold the SCSI cable so that the connector is 90° to the cable (see figure 37). Carefully slide the SCSI cable and connector so that the connector fits sideways through the opening.

Caution: The fan mounting flange is sharp. To avoid personal injury or damaging the power cable assembly or connector, apply only light pressure when pulling the cable through the fan mounting wall.

Figure 37 Folded SCSI Cable



9 Remove the two thumbscrews that secure the SCSI connector module to the rear of the unit (see figure 38). Set the thumbscrews aside for re-use.

Figure 38 SCSI Connector Module

10 Remove the SCSI cable assembly from the unit.

Installing a SCSI Cable Assembly

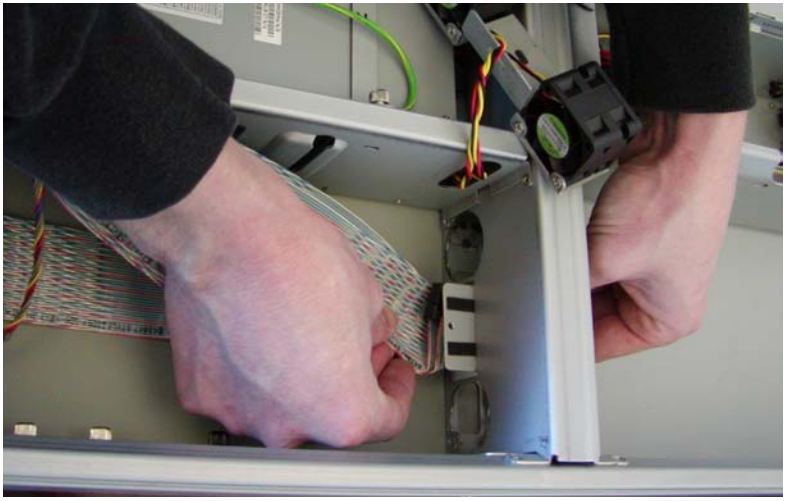
To install a SCSI cable assembly in the 2U Rackmount unit:

1. Make sure the 2U Rackmount, the host computer, all peripheral devices are turned off.
2. Position the SCSI connector module at the rear of the unit, and then install two thumbscrews to secure the module to the unit (see figure 38).
3. Gently lift the fan module upward just a little.
4. Pull the SCSI cable through the fan mounting wall opening (see figure 39).

Tech Tip: The SCSI cable connector is too wide to fit directly through the opening in the fan mounting wall. Fold the SCSI cable so that the connector is 90° to the cable (see figure 37). Carefully slide the SCSI cable and connector so that the connector fits sideways through the opening.

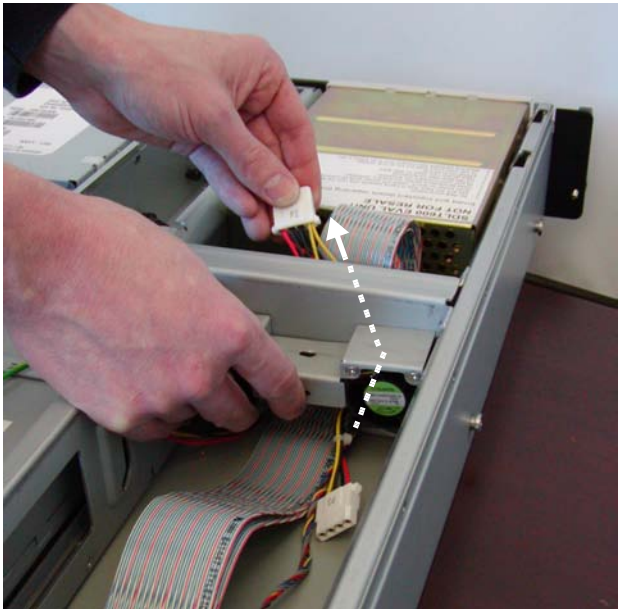
Caution: The fan mounting flange is sharp. To avoid personal injury or damaging the power cable assembly or connector, apply only light pressure when pulling the cable through the fan mounting wall.

Figure 39 SCSI Cable Under Fan Mounting Flange



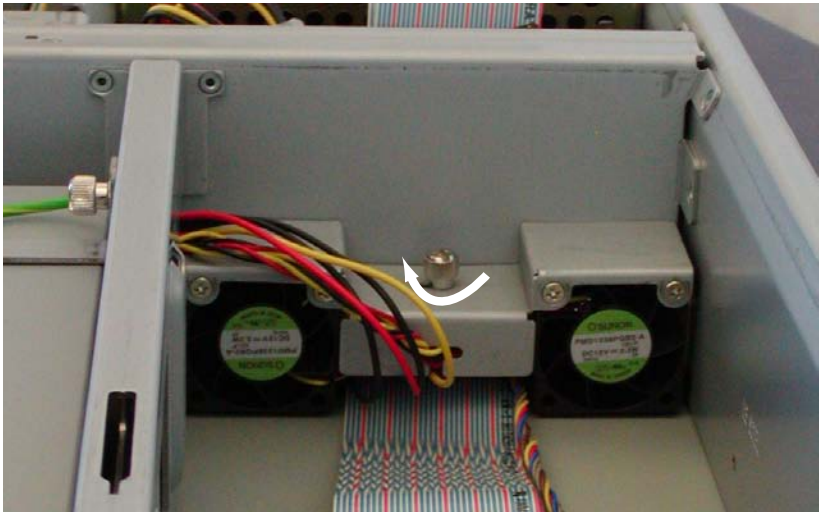
5 Pull the SCSI ID cable through the fan mounting wall (see figure 40).

Figure 40 Tape Drive Power and SCSI ID Cables Under Fan Module



6 Seat the fan module in the unit, and then install the thumbscrew securing the fan module to the unit (see figure 41).

Figure 41 Fan Module Thumbscrew



7 Install the tape drive per instructions in Installing a Tape Drive on page 10.

8 Replace the 2U Rackmount cover (see Replacing the Cover on page 5).

9 Slide the 2U Rackmount back into the equipment rack and secure it to the rack (see Sliding the 2U Rackmount Into the Equipment Rack on page 4).

10 Connect the 2U Rackmount power cable at the rear panel (see Connecting Power on page 3).

11 Turn on power to the 2U Rackmount by pressing and holding the power button on the front panel for one second.

12 Turn on any peripheral devices you turned off earlier.

13 Turn on the host computer.

Chapter 8

Rear-Panel CAT 6 Cable Connector Plate

The rear-panel CAT 6 cable connector plate is located on the back wall of the 2U Rackmount. There is one CAT 6 cable connector plate for each SDLT 600A tape drive installed. The CAT 6 cable connector plate contains two Gigabit Ethernet (GigE) connectors, one on the inside and one on the outside. The GigE connector on the inside connects to the Ethernet cable attached to the tape drive. The GigE connector on the outside connects the tape drive to the host or router.

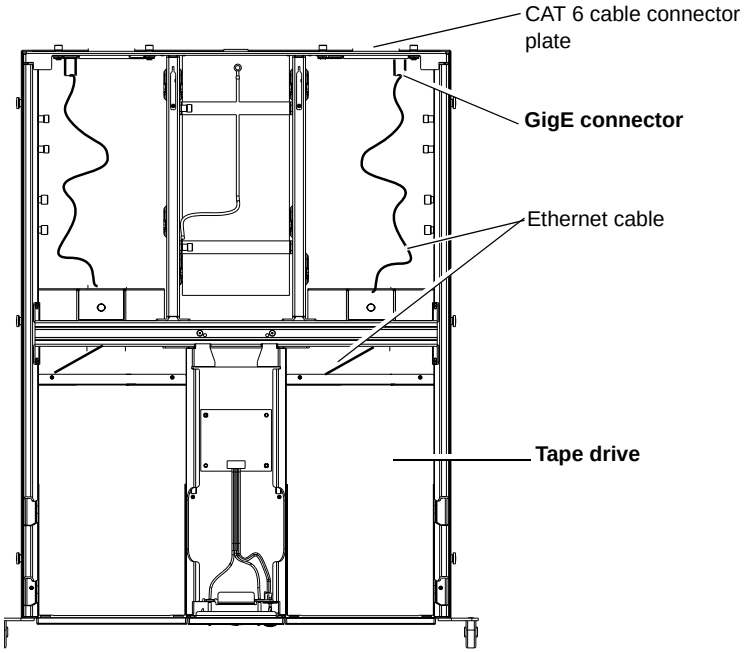
This chapter describes how to perform the following tasks:

- Removing a CAT 6 Cable Connector Plate
- Installing a CAT 6 Cable Connector Plate

This chapter assumes that you are replacing only the CAT 6 cable connector plate. If you are also installing an Ethernet cable or a tape drive, see chapter 2, Tape Drive and chapter 9, Ethernet Cable for further instructions.

Figure 42 shows the location of the SCSI cable assembly in the unit. It also shows other unit components affected by this procedure.

Figure 42 CAT 6 Cable Connector and Related Components

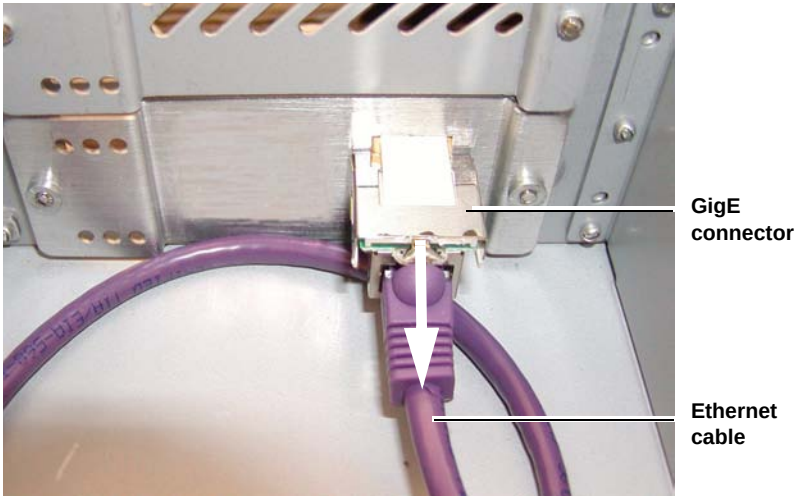


Removing a CAT 6 Cable Connector Plate

To remove an Ethernet cable assembly from the 2U Rackmount:

1. Turn off the host computer and all peripheral devices.
2. Turn off and disconnect power to the 2U Rackmount (see Disconnecting Power on page 2).
3. Slide the 2U Rackmount out of the equipment rack and into the service position (see Sliding the 2U Rackmount Out of the Equipment Rack on page 4).
4. Remove the 2U Rackmount cover (see Removing the Cover on page 5).
5. Disconnect the Ethernet cable from the GigE connector of the CAT 6 cable connector on the inside of the 2U Rackmount (see figure 43).

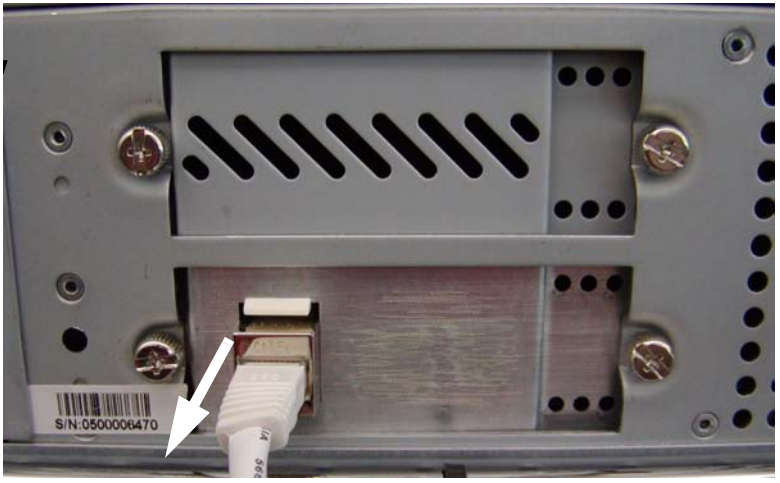
Figure 43 Disconnecting the Ethernet Cable Inside the 2U Rackmount



6 Disconnect the Ethernet cable from the GigE connector of the CAT 6 cable connector plate on the outside of the 2U Rackmount (see figure 44).

7 Remove the two thumbscrews that secure the CAT 6 cable connector plate to the 2U Rackmount (see figure 44). Set the thumbscrews aside for re-use.

Figure 44 CAT 6 Cable Connector Plate With Thumbscrews on Outside of 2U Rackmount



8 Remove the CAT 6 cable connector plate from the unit.

Installing a CAT 6 Cable Connector Plate

To install a CAT 6 connector plate in the 2U Rackmount:

1. Make sure the 2U Rackmount, the host computer, and all peripheral devices are turned off.
2. Position the CAT 6 cable connector plate at the rear of the 2U Rackmount. Install two thumbscrews to secure it in place (see figure 45).

Figure 45 CAT 6 Cable Connector Plate on Outside of 2U Rackmount

3 Connect the Ethernet cable on the inside of the 2U Rackmount (which is connected to the tape drive) to the GigE connector on the CAT 6 cable connector plate (see figure 46).

Figure 46 Connecting the Ethernet cable to the CAT 6 Cable Connector Plate Inside the 2U Rackmount

4 Connect one end of an Ethernet cable to the CAT 6 cable connector plate on the outside of the 2U Rackmount (see figure 47). Connect the other end of the Ethernet cable to the host computer or router.

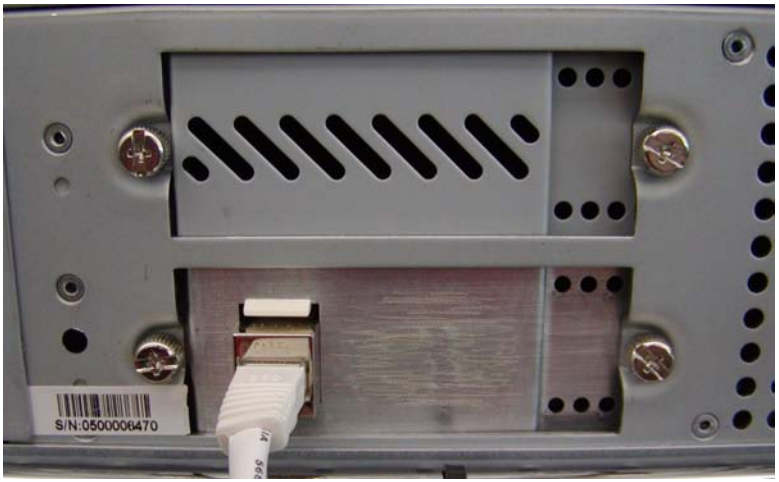


Figure 47 Ethernet Cable Connected to CAT 6 Cable Connector Plate Outside the 2U Rackmount

5. Replace the 2U Rackmount cover (see Replacing the Cover on page 5).
6. Slide the 2U Rackmount back into the equipment rack and secure it to the rack (see Sliding the 2U Rackmount Into the Equipment Rack on page 4).
7. Connect the 2U Rackmount power cable at the rear panel (see Connecting Power on page 3).
8. Turn on power to the 2U Rackmount by pressing and holding the power button on the front panel for one second.
9. Turn on any peripheral devices you turned off earlier.
10. Turn on the host computer.

Chapter 9

Ethernet Cable

The Ethernet cable connects the tape drive to the CAT 6 Cable connector plate located on the back panel of the 2U Rackmount.

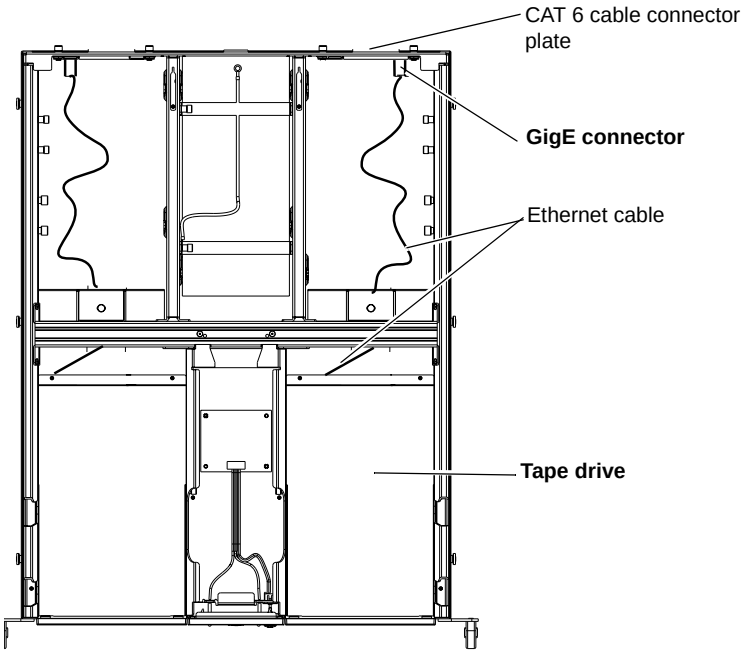
This chapter describes how to perform the following tasks:

- Removing an Ethernet Cable
- Installing an Ethernet Cable

This chapter assumes that you are replacing only the Ethernet cable. If you are also installing a CAT 6 cable connector plate or a tape drive, see chapter 2, Tape Drive and chapter 8, Rear-Panel CAT 6 Cable Connector Plate for further instructions.

Figure 48 shows the location of the Ethernet cable in the unit. It also shows other unit components affected by this procedure.

Figure 48 Ethernet Cable and Related Components



Removing an Ethernet Cable

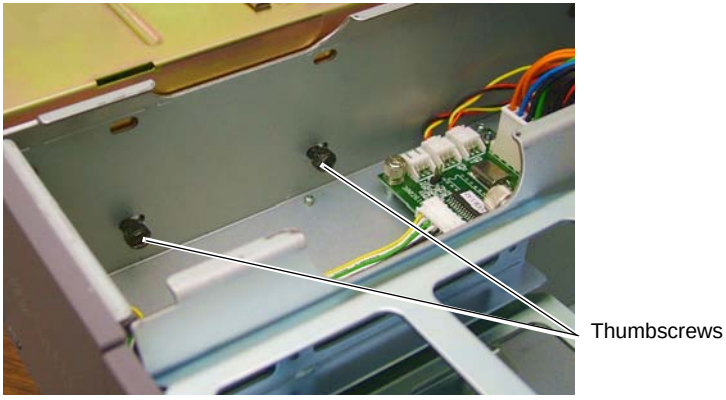
To remove an Ethernet cable from the 2U Rackmount:

1. Turn off the host computer and all peripheral devices.
2. Turn off and disconnect power to the 2U Rackmount (see Disconnecting Power on page 2).
3. Slide the 2U Rackmount out of the equipment rack and into the service position (see Sliding the 2U Rackmount Out of the Equipment Rack on page 4).
4. Remove the 2U Rackmount cover (see Removing the Cover on page 5).

5 At this point, you may be able to reach in and disconnect the Ethernet cable from the rear panel of the tape drive (see figure 50). If you can do this, skip the rest of this step and proceed to step 6. If you do not have enough room to reach in, then you must first remove the tape drive, as follows:

a Remove the two thumbscrews securing the tape drive to the tape drive retaining wall (see figure 49). Set the thumbscrews aside for re-use when installing a replacement tape drive.

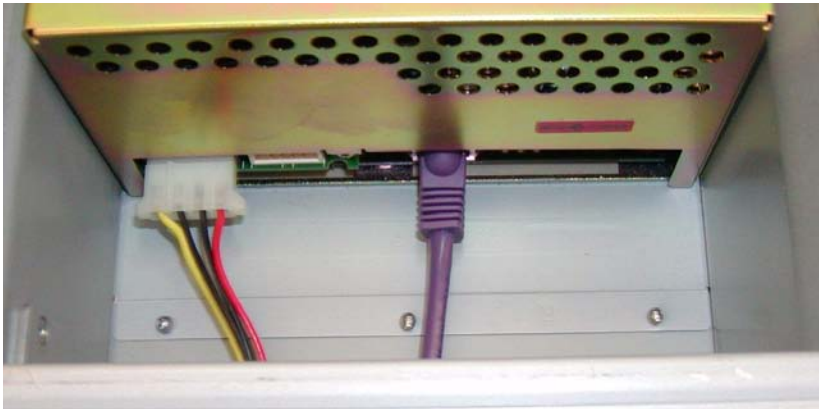
Figure 49 Thumbscrews Securing Tape Drive to Unit



b Pull the tape drive forward slightly, and then lift the tape drive out of the unit. Lay the tape drive on the top of the unit.

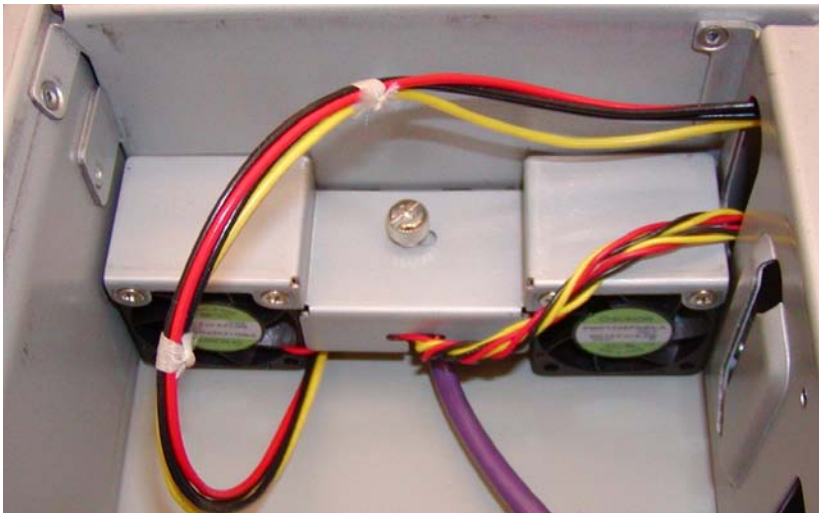
c Disconnect the Ethernet cable from the rear panel of the tape drive (see figure 50).

Figure 50 Tape Drive Cable Connections



6 Remove the thumbscrew securing the fan module to the unit (see figure 51). Set the thumbscrew aside for re-use.

Figure 51 Fan Module Thumbscrew



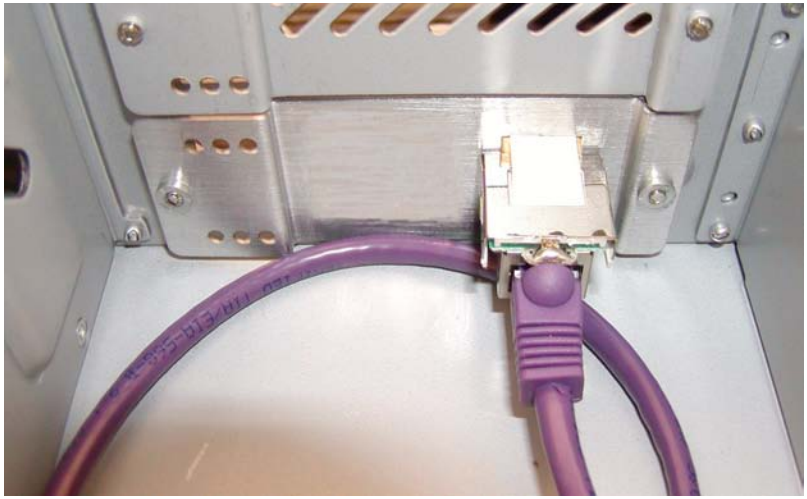
7 Gently lift the fan module upward just a little.

8 Pull the Ethernet cable through the fan mounting wall opening.

Caution: The fan mounting flange is sharp. To avoid personal injury or damaging the power cable assembly or connector, apply only light pressure when pulling the cable through the fan mounting wall.

9 Disconnect the Ethernet cable from the CAT 6 cable connector plate on the inside of the 2U Rackmount (see figure 52) and remove the Ethernet cable.

Figure 52 Ethernet Cable in Ethernet Connector Assembly on Inside of 2U Rackmount



Installing an Ethernet Cable

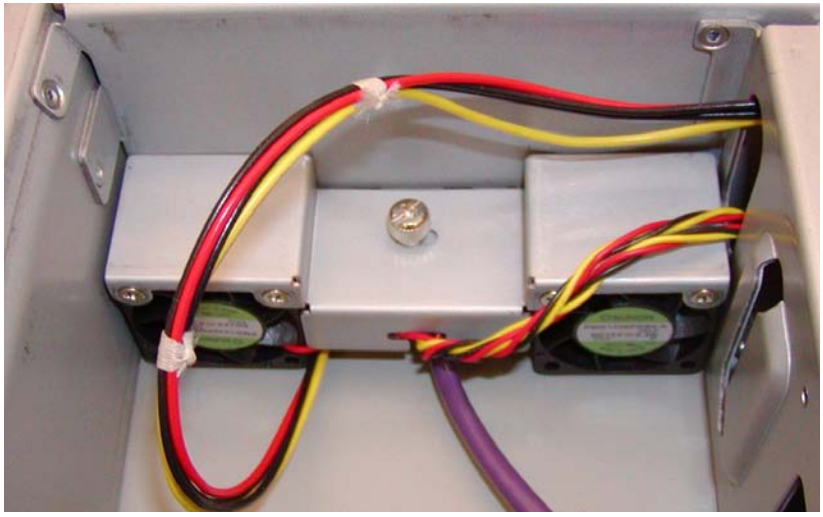
To install an Ethernet cable assembly in the 2U Rackmount unit:

1. Make sure the 2U Rackmount, the host computer, and all peripheral devices are turned off.
2. Gently lift the fan module upward just a little.
3. Push the Ethernet cable through the fan mounting wall opening into the tape drive compartment (see figure 53).

   Caution: The fan mounting flange is sharp. To avoid personal injury or damaging the power cable assembly or connector, apply only light pressure when pulling the cable through the fan mounting wall.

4. Connect the Ethernet cable to the rear panel of the tape drive.
5. If you removed the tape drive earlier, re-install the tape drive and thumbscrews into the 2U Rackmount.
6. Seat the fan module, and then reinstall the thumbscrew securing the fan module to the unit (see figure 53).

Figure 53 Ethernet Cable Through Fan Mounting Wall; Fan Module Thumbscrew



7 Install the tape drive per instructions in Installing a Tape Drive on page 10.

8 Replace the 2U Rackmount cover (see Replacing the Cover on page 5).

9 Slide the 2U Rackmount back into the equipment rack and secure it to the rack (see Sliding the 2U Rackmount Into the Equipment Rack on page 4).

10 Connect the 2U Rackmount power cable at the rear panel (see Connecting Power on page 3).

11 Turn on power to the 2U Rackmount by pressing and holding the power button on the front panel for one second.

12 Turn on any peripheral devices you turned off earlier.

13 Turn on the host computer.

Chapter 10

LED Cable Assembly

The LED cable assembly includes the following components:

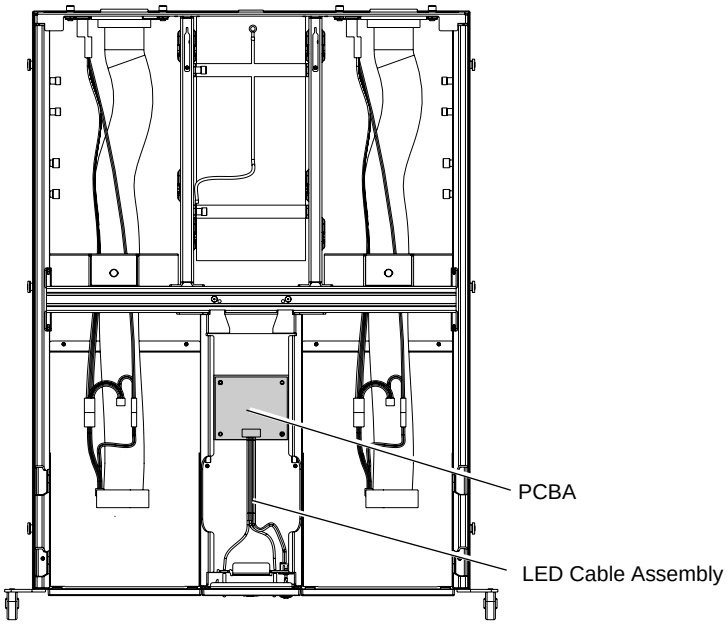
- LED cable
- LED cable assembly connector (connects to the PCBA)
- Two LEDs
- Power switch
- Power switch cable

This chapter describes how to replace the LED cable assembly in the 2U Rackmount unit by performing the following tasks:

- Removing the LED Cable Assembly
- Installing an LED Cable Assembly

Figure 54 shows the location of the LED cable assembly and PCBA in the unit.

Figure 54 LED Cable Assembly and PCBA



Removing the LED Cable Assembly

To remove the LED cable assembly:

1. Turn off the host computer and all peripheral devices.
2. Turn off and disconnect power to the 2U Rackmount (see Disconnecting Power on page 2.
3. Slide the 2U Rackmount out of the equipment rack and into the service position (see Sliding the 2U Rackmount Out of the Equipment Rack on page 4).
4. Remove the 2U Rackmount cover (see Removing the Cover on page 5).
5. Disconnect the LED cable assembly from the PCBA (see figure 55).
6. Remove the power LED and the fan failure LED as follows (see figure 55):

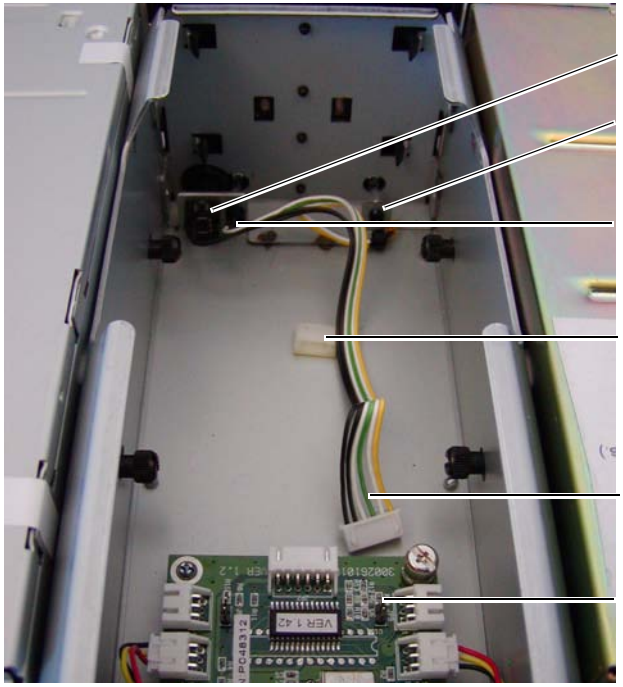
a Grasp the collar that secures the LED to its mounting bracket.

b Wiggle the collar slightly and pull it toward the PCBA to release it from the mounting. It helps to slide your fingernail in between the collar and the sheet metal to help loosen it.

c Slide the released collar along the LED cable toward the PCBA connector to keep it from falling off the cable when you remove the LED from its mounting. Save the collars for re-use when installing a new cable.

d Pull gently on the LED wires to remove the LED from the mounting.

Figure 55 LED Cable Assembly Connections to Mounting Brackets

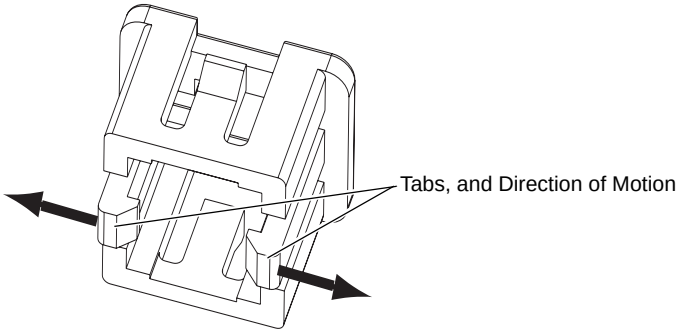


7 Remove the power switch as follows (see figure 55 and figure 56):

A plastic bracket mounts the power switch to the unit. The bracket has two tabs that hold the switch in place. The tabs push outward from the bracket to release the switch. See figure 56.

> **Caution:** The tabs on the power switch mounting bracket are fragile. To avoid breaking the tabs when releasing the power switch, use *gentle* pressure to press them to the release position.

Figure 56 Power Switch Mounting Bracket



a While pulling gently on the power switch wire, use a flat screwdriver blade to release the tab nearest the wire.

b Pull gently on the wire to pull one side of the power switch out of the bracket.

> **Note:** The switch moves very little until you release it completely. At this point, move the switch only enough to prevent the tab from returning to its locked position.

c While continuing to pull gently on the power switch wire, use a flat screwdriver blade to release the other tab.

d When you have released the second tab, gently pull the switch out of the bracket.

8 Flip open the top of the surface-mounted cable clamp that secures the cable wires to the floor of the 2U Rackmount and remove the LED cable assembly from the unit.

Installing an LED Cable Assembly

To install an LED cable assembly in the 2U Rackmount unit:

1. Position the power switch at the mounting bracket so that the switch wires are at the lower right corner as viewed from the back of the unit.
2. Gently push the switch into the bracket until the switch snaps into place.
3. Install the power and fan failure LEDs as follows:

   Note: Install the LED attached to green and white wires (the power LED) into the mounting nearest the power switch.

   a. Gently push the LED into the socket in the mounting.
   b. Position the collar on the LED and socket.
   c. Gently push the collar onto the bracket.
4. Connect the LED cable assembly to the PCBA.
5. Secure the LED cable assembly wires in the surface-mounted cable clamp and snap the clamp shut.
6. Replace the 2U Rackmount cover (see Replacing the Cover on page 5).
7. Slide the 2U Rackmount back into the equipment rack and secure it to the rack (see Sliding the 2U Rackmount Into the Equipment Rack on page 4).
8. Connect the 2U Rackmount power cable at the rear panel (see Connecting Power on page 3).
9. Turn on power to the 2U Rackmount by pressing and holding the power button on the front panel for one second.
10. Turn on any peripheral devices you turned off earlier.
11. Turn on the host computer.

Appendix A

SCSI ID and Connections

This section describes how to perform the following SCSI tasks:

- Setting the SCSI ID
- Making a Single SCSI Connection
- Making SCSI Connections in a Daisy Chain

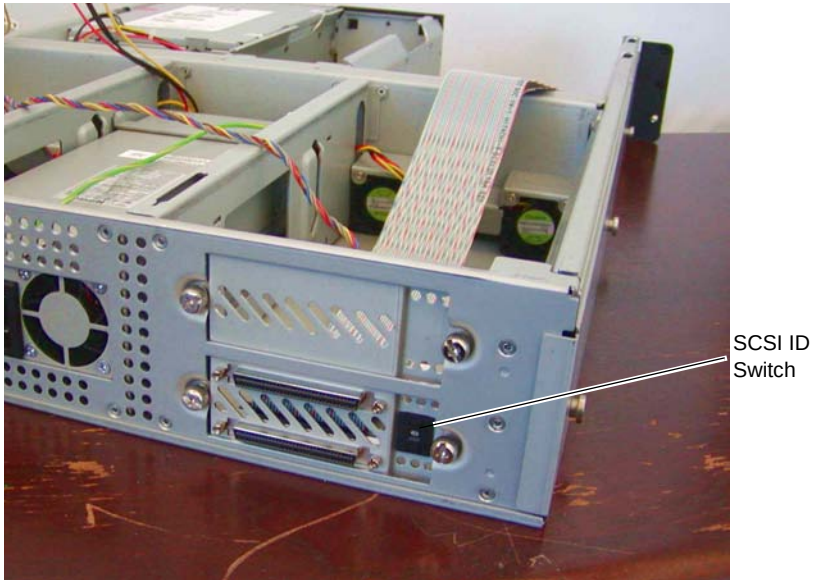
Setting the SCSI ID

Each device connected to a SCSI bus must have a unique SCSI ID number. For a unit with one tape drive installed, the factory preset SCSI ID is 5. For a unit with two tape drives installed, the factory preset SCSI ID for one tape drive is 5, and the SCSI ID for the other tape drive is 6.

You can change the SCSI ID using the push-button switch on the back of the unit (see figure 57). Use the point of a pencil or pen to press the buttons above or below the number display to increase or decrease the ID number.

Note: Do not use a SCSI ID of 7. This setting is typically reserved for the SCSI controller.

Figure 57 SCSI ID Switch on Back of Unit



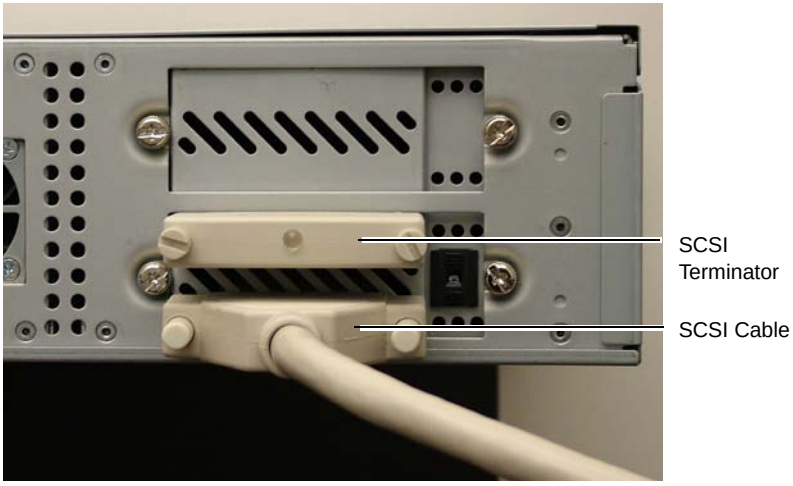
Making a Single SCSI Connection

If you are using only one tape drive in the unit, follow these steps:

1. Ensure that all SCSI devices have unique SCSI IDs.
2. Turn off the host computer and all peripheral devices.
3. Turn off and disconnect power to the 2U Rackmount (see Disconnecting Power on page 2.
4. Slide the 2U Rackmount out of the equipment rack and into the service position (see Sliding the 2U Rackmount Out of the Equipment Rack on page 4).
5. Connect a terminator to the upper SCSI connector on the back of the unit (see figure 58).

> **Note:** You must terminate the SCSI bus. The SCSI controller terminates one end, while a terminator on the unit terminates the other end.

Figure 58 Connecting SCSI as a Single Unit



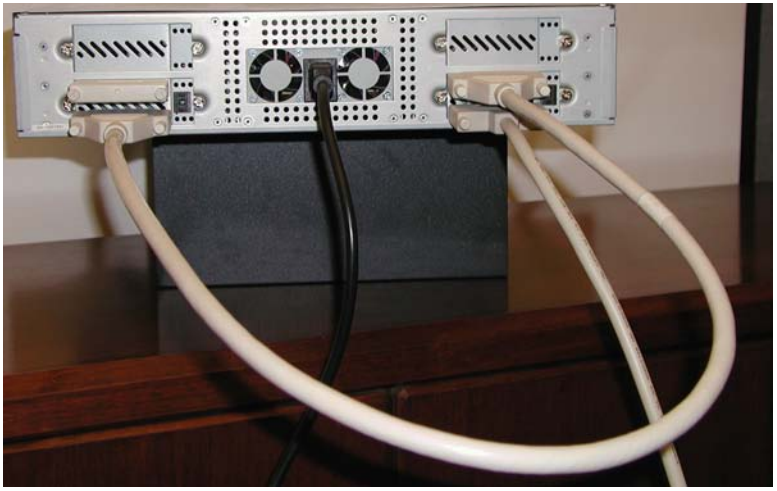
6. Connect one end of the SCSI cable to the lower connector on the back of the unit.
7. Connect the other end of the SCSI cable to the SCSI connector on the host computer.
8. Turn on power to the 2U Rackmount by pressing and holding the power button on the front panel for one second.
9. Turn on any peripheral devices you turned off earlier.
10. Turn on the host computer.

Making SCSI Connections in a Daisy Chain

If you are using two tape drives in the unit, you can connect each one separately or you can link the two SCSI connectors on the unit in a daisy chain. If you use a daisy chain, follow these steps:

1. Ensure that all SCSI devices have unique SCSI IDs.
2. Turn off the host computer and all peripheral devices.
3. Connect the SCSI cable from the host computer to the lower SCSI connector on the back of the unit (see figure 59).

Figure 59 Connecting SCSI in a Daisy Chain



4 Continue the SCSI chain using the upper SCSI connector.

5 If the tape drive is the last device in the chain, connect a terminator to the upper SCSI connector.

> **Note:** You must terminate the SCSI bus. The SCSI controller terminates one end, while a terminator on the last device in the chain terminates the other end.

6 Slide the 2U Rackmount back into the equipment rack and secure it to the rack (see Sliding the 2U Rackmount Into the Equipment Rack on page 4).

7 Connect the 2U Rackmount power cable at the rear panel (see Connecting Power on page 3).

8 Turn on power to the 2U Rackmount by pressing and holding the power button on the front panel for one second.

9 Turn on any peripheral devices you turned off earlier.

10 Turn on the host computer.

Appendix B

Troubleshooting

This troubleshooting section does not provide *every possible* failure scenario; it only provides the most probable scenarios. Likewise, this section does not present every possible solution for a given failure. If you encounter a failure and the solutions in this section do not fix the failure, contact technical support.

The following table lists failure symptoms, possible causes, and possible actions you can take to determine the exact problem and fix it.

Symptom	Possible Causes	Action
Tape drive does not turn on when unit is on.	• Tape drive power cable assembly not connected to tape drive rear panel	Reconnect the tape drive power cable assembly to the rear of the tape drive.
	• Tape drive failure	Refer to the product manual for the tape drive for troubleshooting and service procedures.

Symptom	Possible Causes	Action
Fan failure LED turns on	Fan module failure (one or both)	• Determine which fan module has failed (see Determining Which Fans Have Failed on page 21). • Replace the fan module (see Removing a Failed Fan Module on page 22 and Installing a Fan Module on page 27).
Power LED does not turn on when you press the Power button	• No power at electric outlet	Check the power outlet to ensure that power is present.
	• Unit power cord disconnected at rear panel	Ensure that you have connected the unit power cable at the unit's rear panel.
	• Power LED burned out	Check for signs that the unit has turned on: • Tape drive LEDs turn on • Fans turn on – listen for fan sounds If unit is on, and Power LED is not on, replace the LED cable assembly.
	• Power supply failure	• Check power supply operation by placing your hand immediately behind the power supply fans. If you feel no air flow, the power supply has failed. • Replace the power supply (see Power Supply on page 31).
	• Connector for PCBA power cable not seated correctly	Reconnect the connector for the PCBA power cable to the PCBA.
	• LED cable assembly disconnected	Reconnect the LED cable assembly to the PCBA.