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LSICVM01 Kit

Quick Installation Guide

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For a comprehensive list of changes to this document, see the Revision History.

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LSICVM01 Kit Quick Installation Guide

Thank you for purchasing the Avago Technologies CacheVault™ Module 01 (LSICVM01) Kit. Before you install the LSICVM01 kit, please take a few minutes to read this guide. This guide describes the CacheVault Module Kit LSICVM01, which contains a MegaRAID® CacheVault Flash Module 02 (CVFM02), a MegaRAID CacheVault Power Module 02 (CVPM02), a clip, and a cable, and explains how to install these components.

The CVFM02 module is a USB flash module that provides cache offload capability to protect cached data in case of host power loss or server failure. The remote CVPM02 module is a super-capacitor pack that provides the power to off-load cached data from the DRAM to the nonvolatile FLASH memory on the CVFM02 module if a power failure or outage occurs. Cached data is restored from the CVFM module to DRAM the next time the RAID controller is powered. Cached data can then be written to the storage devices.

To install the kit, you attach the CVFM02 module directly to a RAID controller, insert the CVPM02 module into the clip on a BBU-BRACKET-05 remote mount board (sold separately), and then connect the CVFM02 module by cable to the remote CVPM02 module. Next, install the RAID controller and the remote mount board in PCI Express® (PCIe®) slots in the system.

The following MegaRAID SAS RAID controllers support the LSICVM01 kit:

- MegaRAID SAS 9266-4i
- MegaRAID SAS 9266-8i
- MegaRAID SAS 9271-4i
- MegaRAID SAS 9271-8i
- MegaRAID SAS 9271-8iCC

> **NOTE** This guide documents installation of the CacheVault modules using the MegaRAID SAS 9266-8i RAID controller in Installing the LSICVM01 Kit on page 5. You can install the CacheVault modules the same way on the MegaRAID SAS 9266-4i, 9271-4i, 9271-8i, and 9271-8iCC RAID controllers.

For more information about topics covered in this guide, refer to the documents on the *MegaRAID Universal Software Suite* CD.

- *Cache Backup Products for MegaRAID SAS+SATA RAID Controllers User Guide*
- *MegaRAID SAS 9266-4i and SAS 9266-8i RAID Controllers Quick Installation Guide*
- *MegaRAID SAS 9271-4i and SAS 9271-8i RAID Controllers Quick Installation Guide*
- *MegaRAID SAS 9271-8iCC RAID Controller Quick Installation Guide*
- 6Gb/s MegaRAID SAS RAID Controllers User Guide
- *MegaRAID SAS Software User Guide*
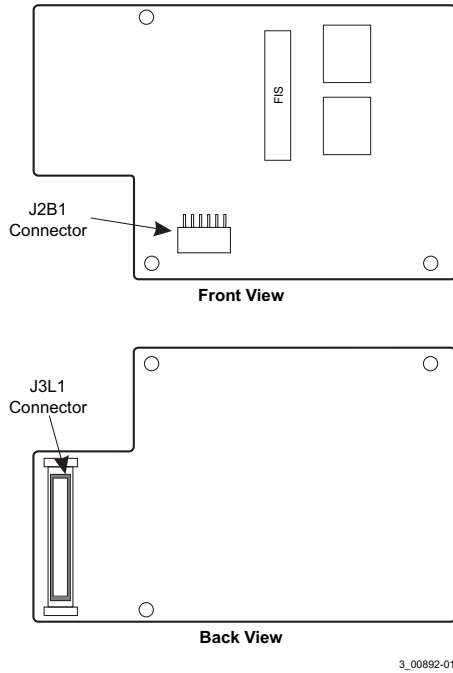- *MegaRAID SAS Device Driver Installation User Guide*
- Software license agreement

> **NOTE** Record the serial number of your CVFM02 module and CVPM02 module in a safe location in case you need to contact LSI Corporation.

1 CVFM02 Module

The following figure shows the front side and the back side of the CVFM02 module. The front side is the side that you can see when the module is installed on a RAID controller.
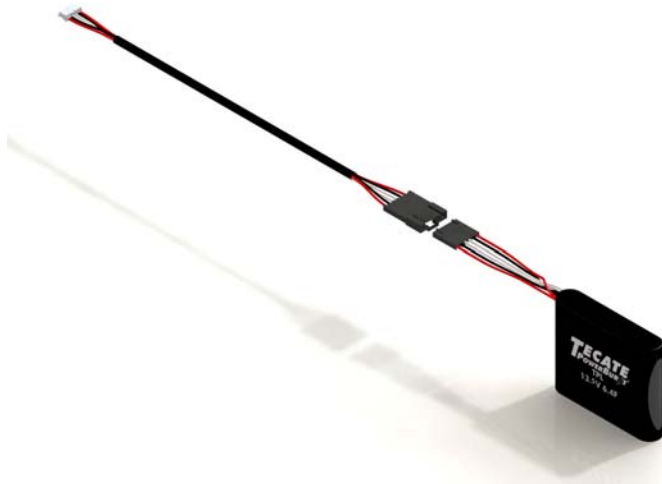
Figure 1 Front Side and Back Side of the CVFM02 Module

2 CVPM02 Module

The following figure shows the CVPM02 module and the cable that connects the module to a CVFM02 module installed on a RAID controller.

Figure 2 CVPM02 Module and Cable

3   Installing the LSICVM01 Kit

This section describes how to install the CVFM02 module and the CVPM02 module, connect the modules, and then insert the RAID controller and the remote mount board into PCIe slots on the motherboard.

When you remove the CacheVault modules from their antistatic bags, inspect them for damage. Unpack the modules in a static-free environment. If a module appears to be damaged, or if the *MegaRAID Universal Software Suite* CD is missing, contact your place of purchase.

ATTENTION	Back up your data before you change your system configuration, or you could lose data.
CAUTION	Electrostatic discharge (ESD) can damage the CVFM02 module and the MegaRAID controller. Make sure that you install the CVFM02 module at an ESD-safe workstation that meets the requirements of EIA-625 – "Requirements For Handling Electrostatic Discharge Sensitive Devices." When you install the CVFM02 module, follow the ESD-recommended practices in the latest revision of IPC-A-610.

Perform the following tasks to attach the CVFM02 module directly to your RAID controller and then by cable to the CVPM02 module on a remote mount board.

NOTE	This section documents installation of the CacheVault modules using the MegaRAID SAS 9266-8i RAID controller. You can install the CacheVault modules the same way on the MegaRAID SAS 9266-4i, 9271-4i, 9271-8i, and 9271-8iCC RAID controllers.

1. Remove the RAID controller from the computer. See Removing the RAID Controller from the Computer on page 5.
2. Attach the CVFM02 module directly to the RAID controller. See Attaching a CVFM02 Module Directly to a MegaRAID Controller on page 6.
3. Install the clip on the remote mount board. See Installing the Clip on the Remote Mount Board on page 7.
4. Attach the CVPM02 module to the clip. See Attaching the CVPM02 Module to the Clip on page 8.
5. Connect the CVFM02 module to the remote CVPM02 module. See Connecting the CVFM02 Module to the Remote CVPM02 Module on page 9.
6. Reinstall the RAID controller on the motherboard. See Reinstalling the RAID Controller on the Motherboard on page 10.
7. Install the remote mount board on the motherboard. See Installing the Remote Mount Board in the System on page 11.

3.1   Removing the RAID Controller from the Computer

Follow these steps to remove the RAID controller from the computer.

1. Turn off the power, and unplug the power cords.
2. Ground yourself, and make sure that the system is grounded.
3. Remove the cover from the computer, according to the instructions in the system user's manual, to permit access to the controller.
4. Unplug all cables from the controller, remove the screw that attaches the bracket to the computer chassis, and carefully remove the controller from the slot.
5. With the front side up, place the RAID controller on a flat, clean, static-free surface.

3.2   Attaching a CVFM02 Module Directly to a MegaRAID Controller

Perform the following tasks to attach the CVFM02 module directly to the MegaRAID SAS 9266-8i RAID controller.
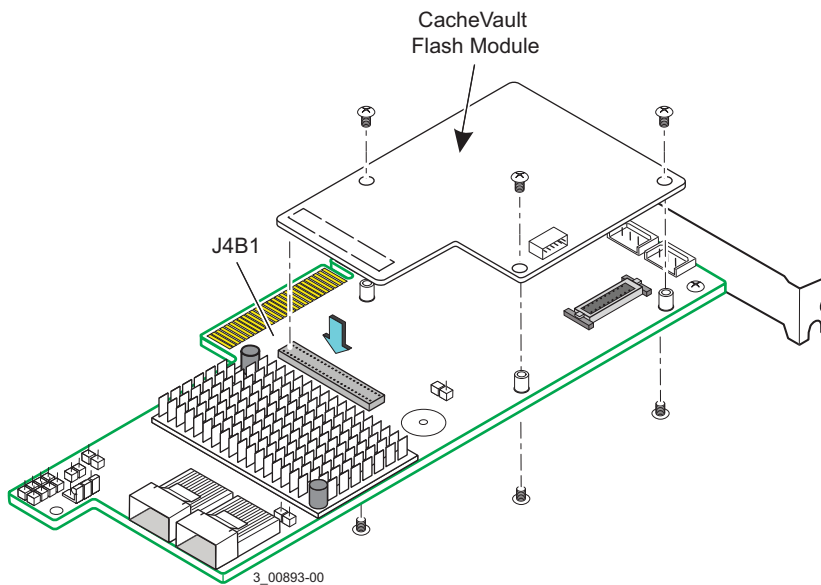
1. Ground yourself, and make sure that the system is grounded.
2. Remove the CVFM02 module from the package.
3. Place the CVFM02 module top-side-up on a flat, clean, static-free surface.
4. Mount the three standoffs on the front side of the controller by screwing in three screws from the back side of the controller, as shown in the following figure.

    The standoffs are threaded at both ends, and the screws thread from the back side of the controller into the board-to-board standoffs.

    > **NOTE**   Center the screwdriver carefully to avoid stripping the screw heads. Do not overtighten the screws.

5. Hold the CVFM02 module so that the top side is facing up, and the J3L1 connector on the CVFM02 module lines up with the J4B1 connector on the RAID controller, as shown in the following figure.

Figure 3 Installing the CVFM02 Module on the MegaRAID SAS 9266-8i RAID Controller

6. Carefully press the CVFM02 module onto the RAID controller so that the two connectors are firmly joined.
7. Secure the CVFM02 module to the RAID controller by screwing in the three screws from the front side of the controller.
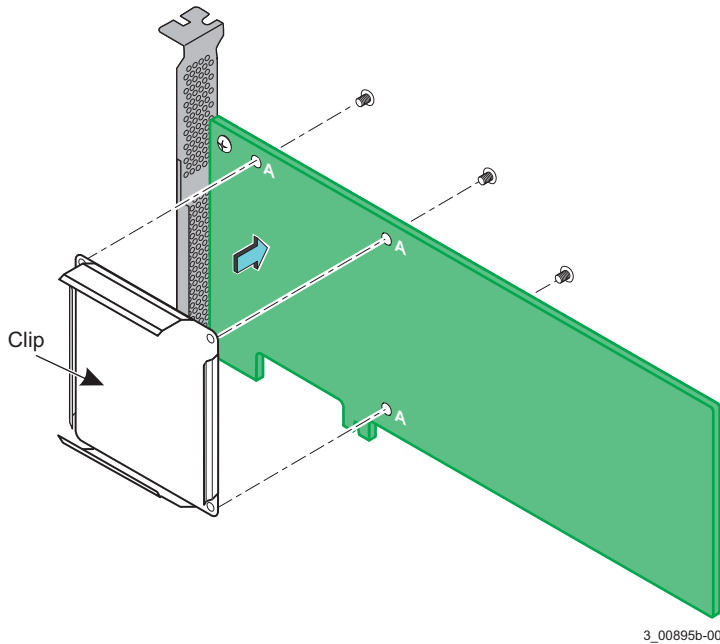
    The standoffs are threaded at both ends, and the screws thread from the top side of the CVFM02 module into the board-to-board standoffs.

3.3   Installing the Clip on the Remote Mount Board

Follow these steps to attach the clip to a BBU-BRACKET-05 remote mount board.

1. Make sure the remote mount board is on a flat, clean, static-free surface. Ground yourself, and make sure that the system is grounded.
2. Remove the clip and the remote mount board module from the package.
3. Place the clip and the remote mount board module front-side-up on a flat, clean, static-free surface.
4. Hold the clip so the screw holes on the clip line up with the screw holes on the remote mount board, as shown in the following figure.

Figure 4 Installing the Clip on the Remote Mount Board

3_00895b-00

5. Secure the clip to three screw holes with the screws and the nuts.

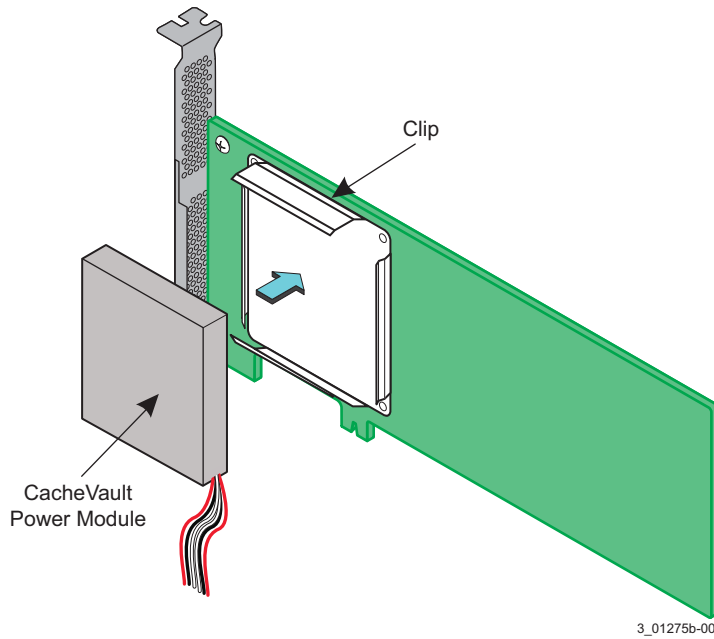   The screws thread through the front of the clip and the remote mount board.

    NOTE   Center the screwdriver carefully to avoid stripping the screw heads. Do not overtighten the screws.

3.4 Attaching the CVPM02 Module to the Clip

Follow these steps to attach the CVPM02 module to the clip on the remote mount board.

1. Make sure the remote mount board is on a flat, clean, static-free surface. Ground yourself, and make sure that the system is grounded.
2. Remove the CVPM02 module from the package.
3. Press the CVPM02 module into the clip on the remote mount board until the module clicks firmly into place, as shown in the following figure.

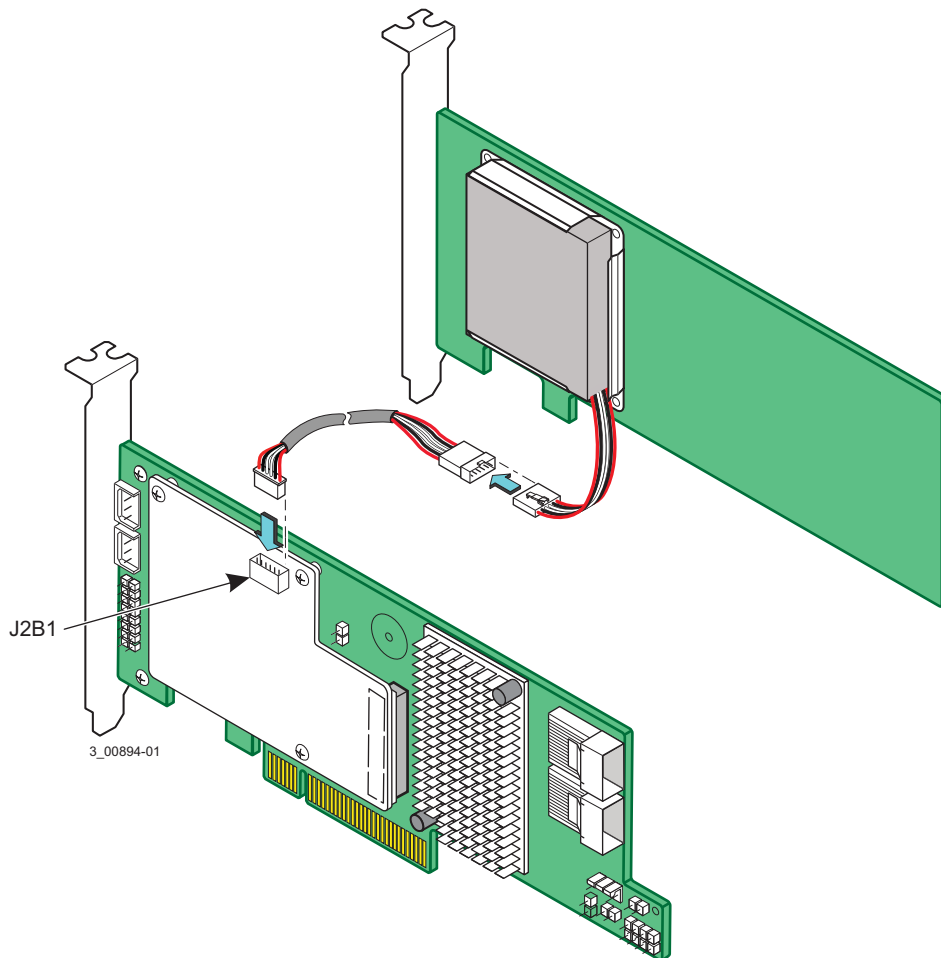**Figure 5 Connecting the CVPM02 Module to the Clip on the Remote Mount Board**

3.5 Connecting the CVFM02 Module to the Remote CVPM02 Module

Follow these steps to connect the CVFM02 module by cable to the remote CVPM02 module on the remote mount board.

1. Make sure the remote mount board is on a flat, clean, static-free surface. Ground yourself, and make sure that the system is grounded.

2. Remove the cable that is included in the LSICVM01 kit box.

3. Insert the smaller of the two 6-pin cable connectors on the cable into the 6-pin J2B1 cable connector on the CVFM02 module, as shown in the following figure.

4. Insert the larger of the two 6-pin cable connectors on the other end of the cable into the 6-pin cable connector on the remote CVPM02 module, and align the cable connectors to make sure that they are connected correctly.

Figure 6 Connecting the CVFM02 Module by Cable to the CVPM02 Module

J2B1

3_00894-01

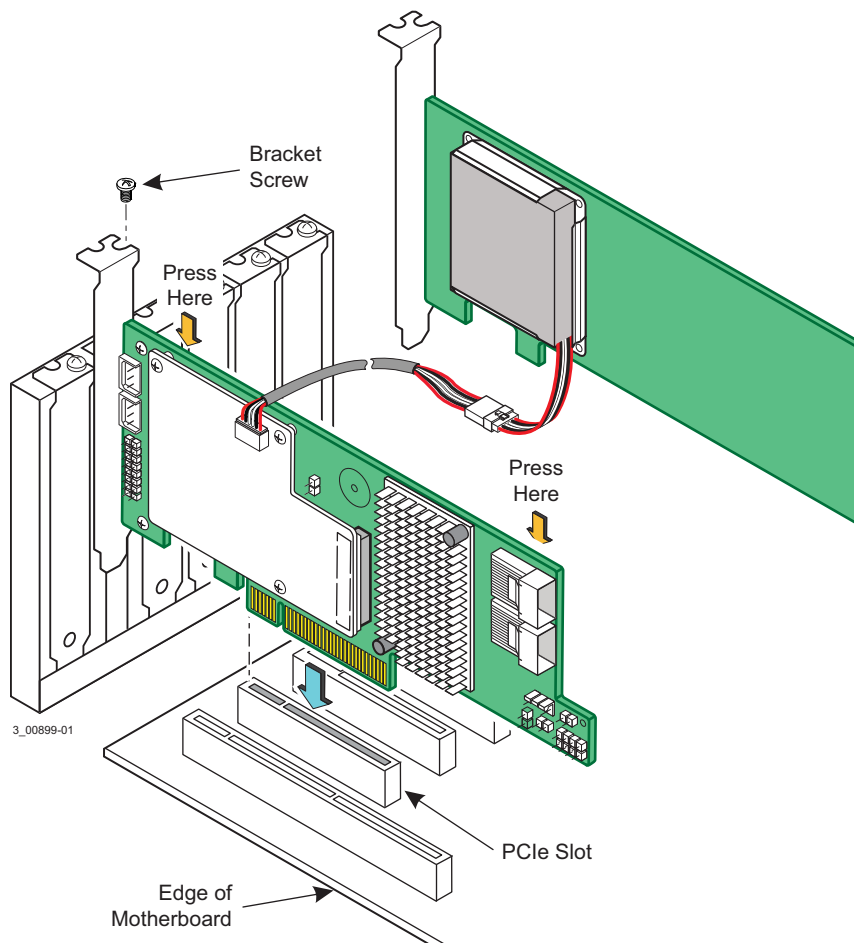## 3.6   Reinstalling the RAID Controller on the Motherboard

Follow these steps to reinstall the RAID controller on the motherboard.

1. With the power to the chassis still turned off, and the power cords unplugged, make sure that the chassis is grounded and has no AC power.

2. Install the RAID controller in a PCIe slot on the motherboard, as shown in the following figure.

> **NOTE**   Some PCIe slots support only PCIe graphics cards; a RAID controller installed in one of these slots will not function. Refer to your computer documentation for information about the PCIe slot.

3. Press down gently, but firmly, to seat the card correctly in the slot.

4. Secure the controller to the computer chassis with the bracket screw.

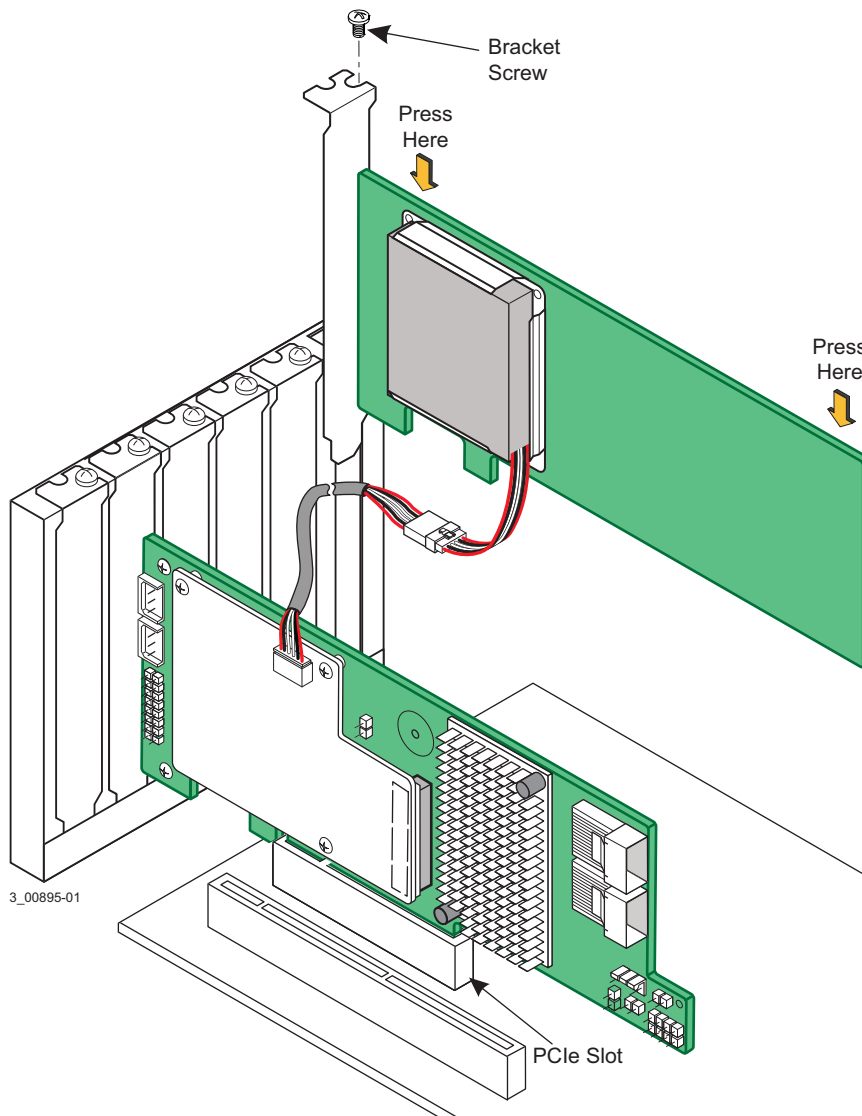**Figure 7 Reinstalling the MegaRAID Controller**

3.7   Installing the Remote Mount Board in the System

Follow these steps to install the remote mount board in the computer.

1. With the power to the chassis still turned off, and the power cords unplugged, make sure that the chassis is grounded and has no AC power.
2. Insert the remote mount board in a PCIe slot on the motherboard, as shown in the following figure.
3. Press down gently, but firmly, to seat the board correctly in the slot.
4. Secure the remote mount board to the computer chassis with the bracket screw.

Figure 8 Installing the Remote Mount Board

5. Reinstall the computer cover, and reattach the power cords.

6. Turn on the power to the computer.

Refer to the *MegaRAID SAS Software User Guide* for information about running the RAID configuration utility and installing the software drivers.

4   Technical Support

For assistance in installing, configuring, or running the CVFM02 module or the CVPM02 module, contact an Avago Technical Support representative. Click the following link to access the LSI Technical Support page for storage and controller support:

http://www.lsi.com/about/contact/pages/support.aspx

This page contains links to the following URLs for support by email, support request, or phone. In addition, you can hover over the *Support* heading on the Technical Support page and click the support option you want.

Email Requests:

http://www.lsi.com/support/email/Pages/megaraid.aspx

Support Requests:

http://www.lsi.com/support/Pages/submitsupportrequest.aspx

Phone Support:

http://www.lsi.com/support/Pages/call-us.aspx

1-800-633-4545 (North America)

00-800-5745-6442 (International)

> **NOTE**   The international toll-free number does not require country-specific access codes.

Documents and Downloads:

You can download the latest documentation and drivers for MegaRAID controllers from http://www.lsi.com/support/Pages/download-search.aspx. Hover over the *Support* heading on the Technical Support page, and then click *Find Support Documents & Downloads by Product* to access this page from another page.

5   Revision History

5.1   55290-00, Rev. A, September 2014

Initial release of the document.