



Storage. Networking. Accelerated.™

MegaRAID® LSiBBU09 Intelligent Battery Backup Unit

Quick Installation Guide

49760-00, Rev. B
August 2012



49760-00B

Revision History

Version and Date	Description of Changes
49760-00 Rev. B, August 2012	Updated the list of RAID controllers that support the LSIIBBU09 unit.
49760-00 Rev. A, January 2011	Initial release of the document.

LSI, the LSI Design logo, and MegaRAID are registered trademarks of LSI Corporation or its subsidiaries. All other brand and product names may be trademarks of their respective companies.

LSI Corporation reserves the right to make changes to the product(s) or information disclosed herein at any time without notice. LSI Corporation does not assume any responsibility or liability arising out of the application or use of any product or service described herein, except as expressly agreed to in writing by LSI Corporation; nor does the purchase, lease, or use of a product or service from LSI Corporation convey a license under any patent rights, copyrights, trademark rights, or any other of the intellectual property rights of LSI Corporation or of third parties. LSI products are not intended for use in life-support appliances, devices, or systems. Use of any LSI product in such applications without written consent of the appropriate LSI officer is prohibited.

Corporate Headquarters
Milpitas, CA
800-372-2447

Website
www.lsi.com

Document Number: 49760-00, Rev. B
Copyright © 2012 LSI Corporation
All Rights Reserved

MegaRAID® LSIiBBU09 Intelligent Battery Backup Unit

Thank you for purchasing the LSI® MegaRAID® LSIiBBU09 intelligent battery backup unit (iBBU). Before you install and connect the LSIiBBU09 unit, please take a few minutes to read this quick installation guide. This guide explains how to connect the LSIiBBU09 unit to your MegaRAID SAS RAID controller.

If you need more information about any topic covered in this guide, refer to the related documents on your MegaRAID Universal Software Suite CD.

Product Overview

The LSI MegaRAID LSIiBBU09 product is an iBBU based on Lithium ion (LiON) battery cell technology. The LSIiBBU09 unit protects the integrity of the cached data on a MegaRAID RAID controller for up to 48 hours (depending on the derated retention time selected) in case of a complete AC power failure or a brief power outage. You can connect the LSIiBBU09 unit either directly or remotely to your RAID controller, depending on which RAID controller you have.

LSI provides a family of MegaRAID iBBUs for use with its high-performance MegaRAID RAID controllers. The LSI MegaRAID iBBUs provide an inexpensive alternative to using an uninterruptible power supply (UPS) and a second level of fault tolerance when used with a UPS.

Direct Connection

The LSIiBBU09 unit connects directly to the following MegaRAID SAS RAID controllers:

- MegaRAID SAS 9266-4i RAID controller
- MegaRAID SAS 9266-8i RAID controller

See [Attaching a LSIiBBU09 Unit Directly to a MegaRAID SAS 9266 RAID Controller](#) for instructions on how to attach the LSIiBBU09 unit directly to these controllers.

Remote Connection

The LSIiBBU09 unit connects remotely to the following MegaRAID SAS RAID controllers:

- MegaRAID SAS 9265-8i RAID controller
- MegaRAID SAS 9266-4i RAID controller
- MegaRAID SAS 9266-8i RAID controller
- MegaRAID SAS 9285-8e RAID controller

The LSIiBBU09 unit connects remotely by cable to the MegaRAID SAS 9266-4i RAID controller and the MegaRAID SAS 9266-8i RAID controller.

The LSIiBBU09 unit connects remotely to a TMM02® transportable memory module that is attached to the MegaRAID SAS 9265-8i RAID controller and the MegaRAID SAS 9285-8e RAID controller. You have two ways to connect the remote LSIiBBU09 unit by cable to a TMM02 transportable memory module on these two controllers:

- Connect the LSIiBBU09 unit by cable to the TMM02 module on the RAID controller and then mount the LSIiBBU09 unit on the system chassis (see [Connecting a Remote LSIiBBU09 Unit on the System Chassis to a TMM02 Module on a RAID Controller](#) on page 11 for the instructions).

- Connect the LSiIBBU09 unit on a remote mounting board by cable to the TMM02 module on the RAID controller (see [Connecting a LSiIBBU09 Unit on a Remote Mounting Board to a TMM02 Module on a RAID Controller](#) on page 13 for the instructions).

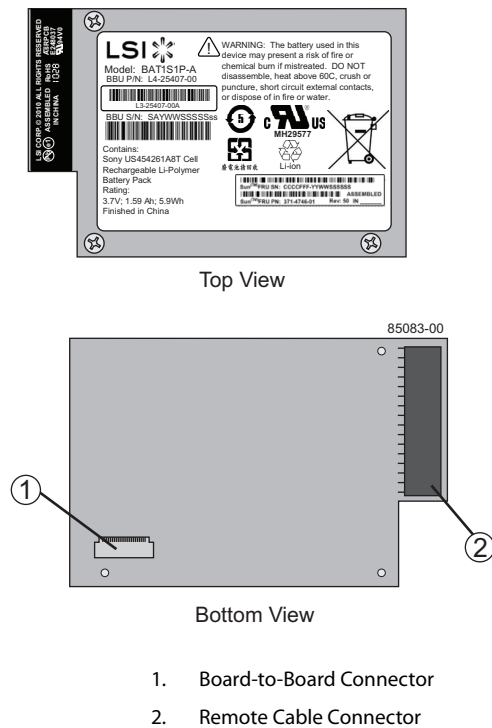


WARNING The battery used in this device might present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100 °C (212 °F) or incinerate. Dispose of used battery correctly. Keep it away from children.

Top View and Bottom View of the LSiIBBU09 Unit

The following figure shows the top view and the bottom view of the LSiIBBU09 unit. The top view is the side that you can see after you install the LSiIBBU09 unit on the system chassis or when the unit is installed on a remote mounting board.

Figure 1 Top View and Bottom View of the LSiIBBU09 Unit



NOTE Record your controller serial number in a safe location in case you need to contact LSI.

Attaching a LSIiBBU09 Unit Directly to a MegaRAID SAS 9266 RAID Controller

This section describes how to connect the MegaRAID LSIiBBU09 unit directly to a MegaRAID SAS 9266-4i RAID controller or a MegaRAID SAS 9266-8i RAID controller.



WARNING The battery used in this device might present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100 °C (212 °F) or incinerate. Dispose of used battery correctly. Keep it away from children.

Perform the following tasks described in this section to attach the LSIiBBU09 unit directly to the MegaRAID SAS 9266 RAID controller.

1. Remove the RAID controller from the computer. See [Removing the RAID Controller from the Computer](#).
2. Attach the LSIiBBU09 unit directly to the RAID controller. See [Attaching the LSIiBBU09 Unit to the RAID Controller](#).
3. Reinstall the RAID controller on the motherboard. See [Reinstalling the RAID Controller on the Motherboard](#) on page 6.



CAUTION Electrostatic discharge (ESD) can damage the LSIiBBU09 unit and the RAID controller. Make sure that you install the LSIiBBU09 unit at an ESD-safe workstation that meets the EIA-625 standard. When you install the LSIiBBU09 unit, follow the ESD-recommended practices in the latest revision of the IPC-A-610 standard.

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. Place the controller on a flat, clean, static-free surface, and continue with the next procedure.

Attaching the LSIiBBU09 Unit to the RAID Controller

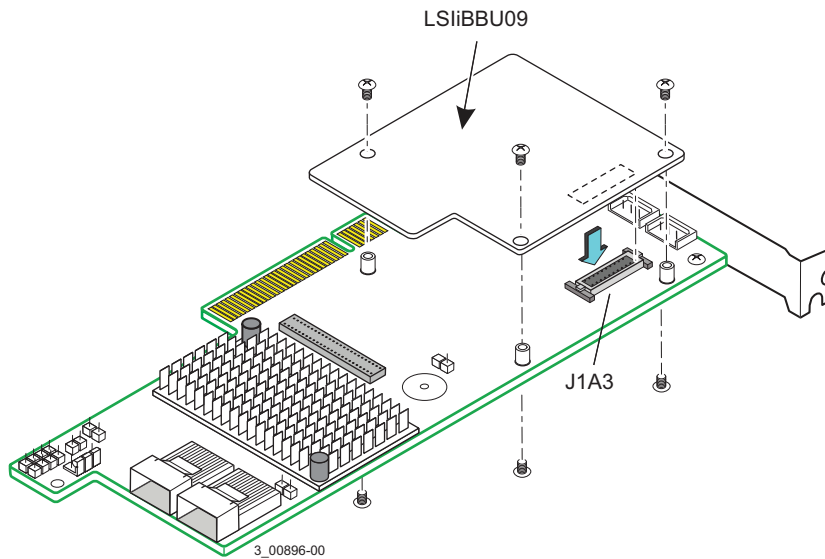
Follow these steps to attach the LSIiBBU09 unit directly to the front of the RAID controller.



WARNING There is danger of an explosion if the battery is incorrectly replaced. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

1. Ground yourself, and make sure that the system is grounded.
2. Remove the LSIiBBU09 unit from the package.
3. Place the LSIiBBU09 unit front-side-up on a flat, clean, static-free surface.
4. Place the RAID controller front-side-up on a flat, clean, static-free surface.
5. Hold the LSIiBBU09 unit so that the top of the battery is facing upward, and the J1 connector lines up with the J1A3 BBU connector on the RAID controller, as the following figure shows.

Figure 2 Attaching the LSiIBBU09 Unit to the RAID Controller



6. Carefully press the LSiIBBU09 unit onto the RAID controller so that the two connectors are firmly joined.
7. Secure the LSiIBBU09 unit to the RAID controller with the screws and the standoffs in the three screw holes.
The standoffs are threaded at both ends, and a screw goes into each end. The screw threads from the back of the controller board into the board-to-board standoffs on the bottom of the LSiIBBU09 unit.
Center the screwdriver carefully to avoid stripping the screw heads. Do not over-tighten the screws.

Reinstalling the RAID Controller on the Motherboard

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

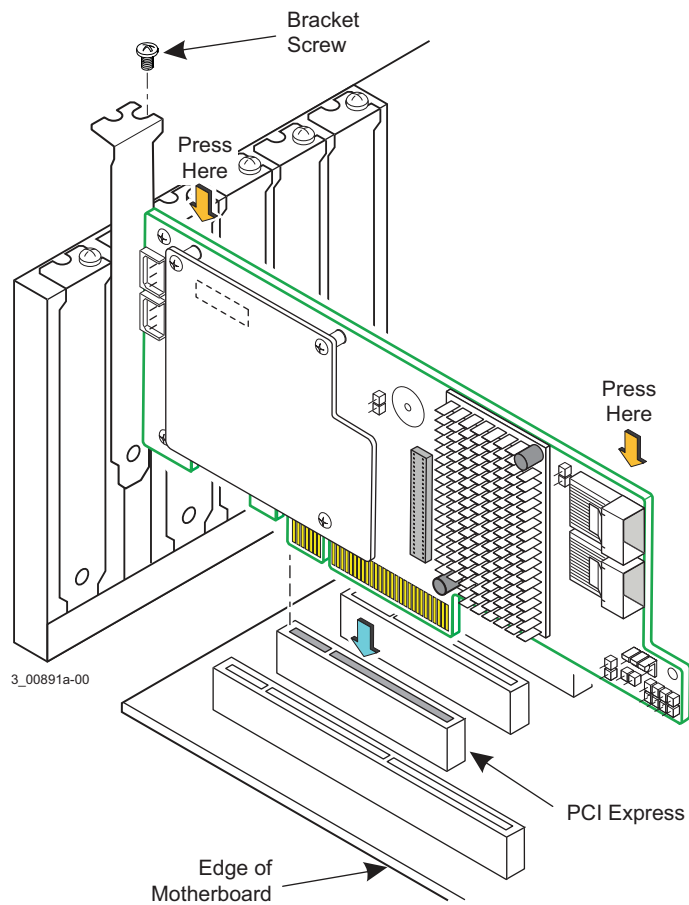
1. Make sure that the power to the chassis is still turned off, the power cords are unplugged, and the chassis is grounded and has no AC power.
2. Install the RAID controller in a PCI Express slot on the motherboard, as the following figure shows.



NOTE Some PCI Express slots support only PCI Express graphics cards. If a RAID controller is installed in one of these slots, the controller will not function. Refer to your computer documentation for information about the PCI Express slot.

3. Press down gently, but firmly, to seat the card correctly in the slot.
4. Secure the controller to the computer chassis.

Figure 3 Reinstalling the RAID Controller



5. Replace the computer cover, and reattach the power cords.
6. Turn on the power to the computer.

Connecting a Remote LSiIBBU09 Unit to a MegaRAID SAS 9266 RAID Controller

The procedures in this section show how to connect a remote LSiIBBU09 unit by cable to your MegaRAID SAS 9266-4i RAID controller or a MegaRAID SAS 9266-8i RAID controller.

To connect a remote LSiIBBU09 unit to your RAID controller, perform the following tasks.

1. Remove the RAID controller from the computer. See [Removing the RAID Controller from the Computer](#) on page 8.
2. Connect the cable between the RAID controller and the remote LSiIBBU09 unit. See [Connecting the Cable Between the RAID Controller and the Remote LSiIBBU09 Unit](#) on page 8.
3. Reinstall the RAID controller in the computer. See [Reinstalling the RAID Controller in the Computer](#) on page 9.

Removing the RAID Controller from the Computer

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

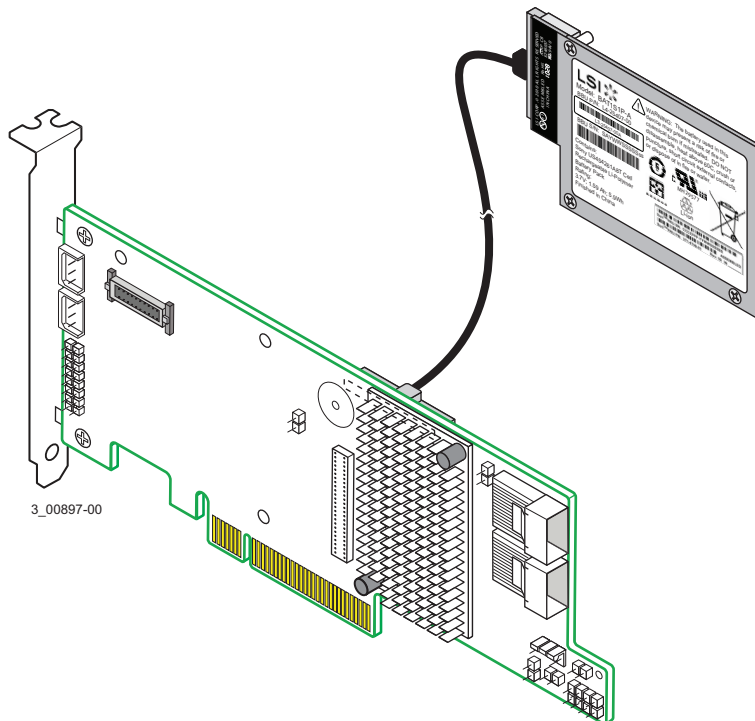
1. Turn off the power, and unplug the power cords.
2. Ground yourself, and make sure that the system is grounded.
3. Remove the cover from the computer, according to the instructions in the system user's manual, to permit access to the controller.
4. Unplug all cables from the controller, remove the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

Connecting the Cable Between the RAID Controller and the Remote LSIiBBU09 Unit

Follow these steps to connect the cable between the RAID controller and the LSIiBBU09 unit.

1. Place the controller on a flat, clean, static-free surface.
2. Ground yourself, and make sure that the system is grounded.
3. Remove the cable included in the Remote Battery Kit (sold separately).
4. Insert one end of the cable into the 20-pin cable connector on the LSIiBBU09 unit and the other end of the cable into the 20-pin J3L1 cable connector on the back of the RAID controller, as the following figure shows.
5. Align the black triangles on the connectors to make sure that the connectors are connected correctly.

Figure 4 Connecting the Remote LSIiBBU09 Unit by Cable to the RAID Controller



Reinstalling the RAID Controller in the Computer

Follow these steps to reinstall the RAID controller in the computer.

1. Mount the LSIiBBU09 unit to the chassis of your computer based on the location and the type of mounting option.



NOTE Because server and workstation chassis vary from vendor to vendor, no standard mounting option exists for the LSIiBBU09 unit that is compatible with the various system configurations. Authorized resellers and chassis manufacturers can customize the location of the battery backup unit to provide the most flexibility within various environments. The BBU-BRACKET-05 remote mount board is an option, because it has holes appropriate for mounting MegaRAID BBU units.

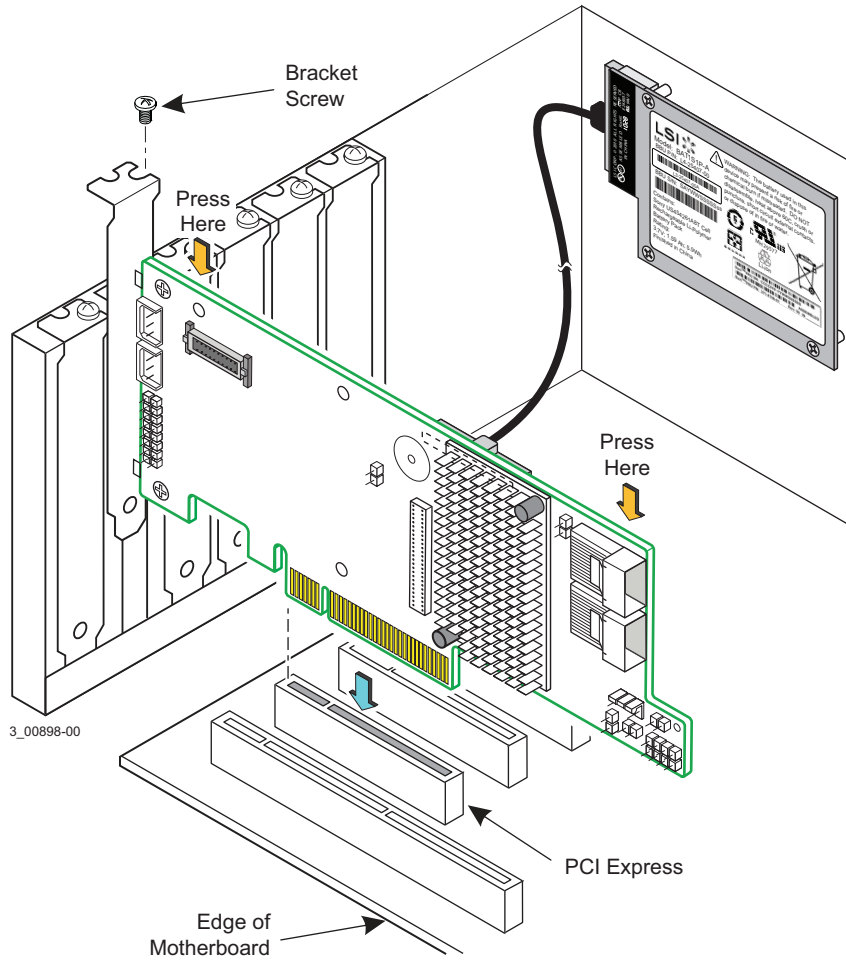
2. Make sure that the power to the chassis is still turned off, the power cords unplugged, and the chassis is grounded and has no AC power.
3. Insert the RAID controller in a PCI Express slot on the motherboard, as the following figure shows.



NOTE Some PCI Express slots support only PCI Express graphics cards. If a RAID controller is installed in one of these slots, the controller will not function. Refer to your computer documentation for information about the PCI Express slot.

4. Press down gently, but firmly, to seat the controller correctly in the slot.
5. Secure the controller to the computer chassis.

Figure 5 Reinstalling the RAID Controller



6. Reinstall the computer cover, and reattach the power cords.
7. 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.

Connecting a Remote LSIiBBU09 Unit on the System Chassis to a TMM02 Module on a RAID Controller

The procedures in this section show how to connect a remote LSIiBBU09 unit on the system chassis to a MegaRAID SAS 9265-8i RAID controller. You can connect the LSIiBBU09 unit to a MegaRAID SAS 9285-8e RAID controller in the same way.

To connect a remote LSIiBBU09 unit to your RAID controller, perform the following tasks in order.

1. Remove the RAID controller from the computer. See [Removing the RAID Controller from the Computer](#).
2. Connect the cable between the TMM module on the RAID controller and the remote LSIiBBU09 unit. See [Connecting the Cable Between the TMM02 Module on the RAID Controller and the Remote LSIiBBU09 Unit](#).
3. Reinstall the RAID controller in the computer. See [Reinstalling the RAID Controller in the Computer](#) on page 12.



NOTE Because server and workstation chassis vary from vendor to vendor, no standard mounting option exists that is compatible with the various system configurations. The LSIiBBU09 battery kit, in combination with the Remote Battery Kit, includes the battery, daughtercard, cable, and screws. This combination enables authorized resellers and chassis manufacturers to customize the location of the remote battery to provide the most flexibility within various environments.

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. Place the controller on a flat, clean, static-free surface, and continue with the next procedure.

Connecting the Cable Between the TMM02 Module on the RAID Controller and the Remote LSIiBBU09 Unit

Follow these steps to connect the cable between the TMM02 module on the RAID controller and the LSIiBBU09 unit.

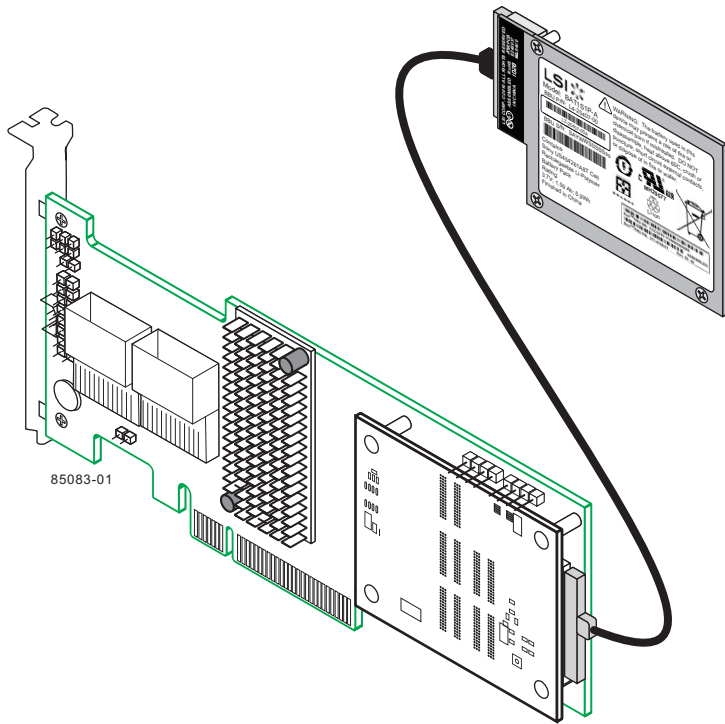
1. Mount the LSIiBBU09 unit to the chassis of your computer based on the location and the type of mounting option.
2. With the controller on a flat, clean, static-free surface, ground yourself, and make sure that the system is grounded.
3. Remove the cable included in the Remote Battery Kit (sold separately).
4. Insert one end of the cable into the 20-pin cable connector on the LSIiBBU09 unit and the other end into the 20-pin J1L1 cable connector on the TMM02 module, as the following figure shows.

Align the black triangles on the connectors to make sure that the connectors are connected correctly.



NOTE The cable connectors are polarized and can be inserted into the cable connectors on the TMM02 module and the LSIiBBU09 unit only if the rails on the cable connectors align with the slots on the other connectors. *Do not* force the cable into the 20-pin connectors. The cable end inserts into the connector with minimal resistance.

Figure 6 Connecting the LSIiBBU09 Unit on the System Chassis to the TMM02 Module on the RAID Controller



Reinstalling the RAID Controller in the Computer

Follow these steps to reinstall the RAID controller in the computer.

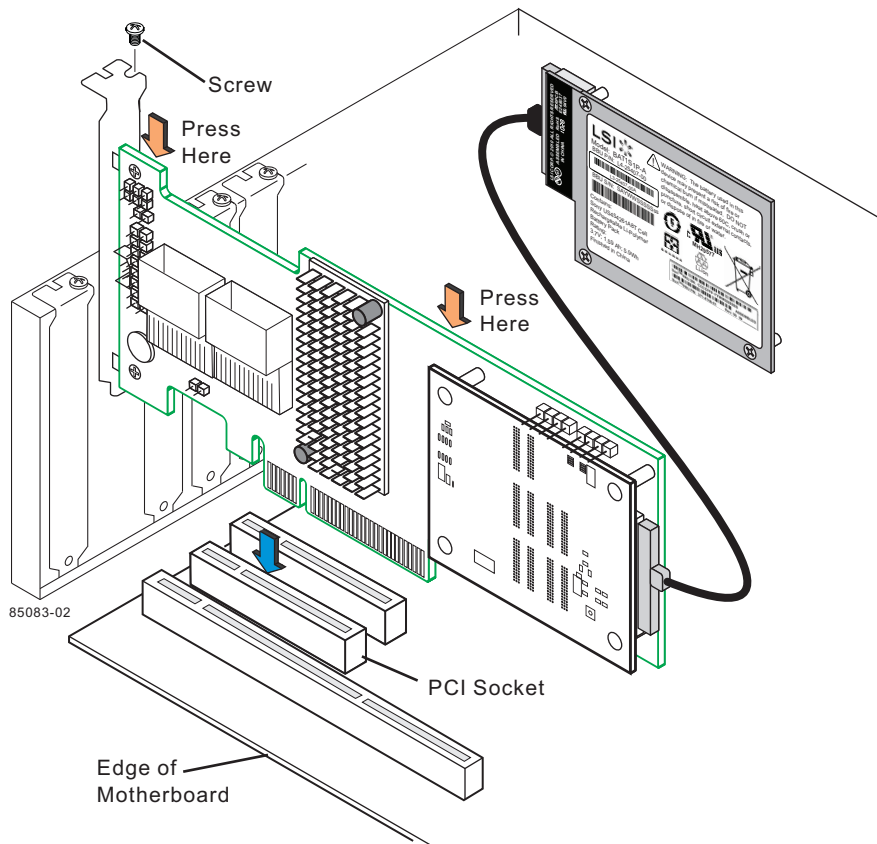
1. With the power to the chassis still turned off and the power cords unplugged, make sure that the chassis is grounded and has no AC power.
2. Insert the RAID controller in a PCI Express slot on the motherboard, as the following figure shows.



NOTE Some PCI Express slots support only PCI Express graphics cards. If a RAID controller is installed in one of these slots, the controller will not function. Refer to your computer documentation for information about the PCI Express slot.

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

Figure 7 Reinstalling the RAID Controller



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

Connecting a LSIiBBU09 Unit on a Remote Mounting Board to a TMM02 Module on a RAID Controller

This section describes how to connect the LSIiBBU09 unit on the remote mounting board to your MegaRAID SAS RAID controller. A cable connects the remote LSIiBBU09 unit on the remote mounting board to the TMM02 module on the RAID controller.

The procedures in this section show how to connect the LSIiBBU09 unit on the remote mounting board to the MegaRAID SAS 9265-8i RAID controller. You can connect the LSIiBBU09 unit on the remote mounting board to the MegaRAID SAS 9285-8e RAID controller in the same way.

To connect a LSIIBBU09 unit on a remote mounting board to your RAID controller, perform the following tasks in order.

1. Remove the RAID controller from the computer. See [Removing the RAID Controller from the Computer](#).
2. Connect the cable between the TMM module on the RAID controller and the remote LSIIBBU09 unit. See [Connecting the Cable Between the TMM02 Module on the RAID Controller and the LSIIBBU09 Unit on the Remote Mounting Board](#).
3. Reinstall the RAID controller in the computer. See [Reinstalling the RAID Controller in the Computer](#) on page 15.
4. Installing the remote mounting board in the computer. See [Installing the Remote Mounting Board in the Computer](#) on page 16.

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. Place the controller on a flat, clean, static-free surface, and continue with the next procedure.

Connecting the Cable Between the TMM02 Module on the RAID Controller and the LSIIBBU09 Unit on the Remote Mounting Board

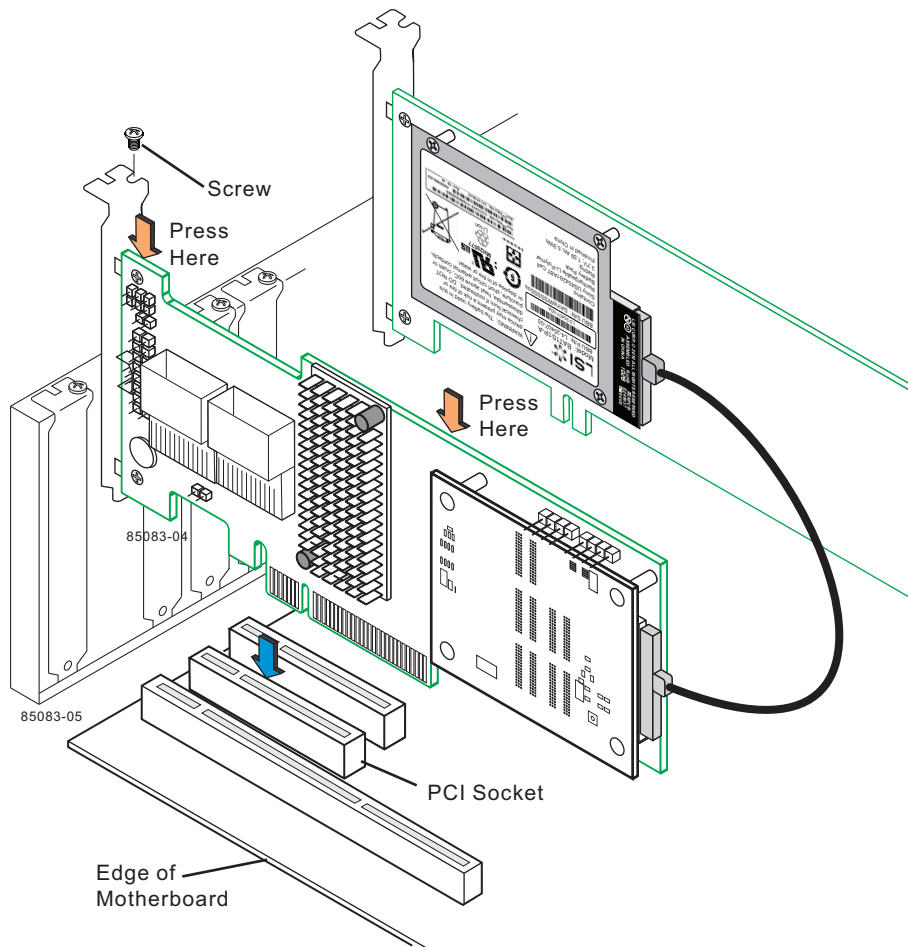
Follow these steps to connect the cable between the TMM02 module on the RAID controller and the LSIIBBU09 unit on the remote mounting board.

1. With the controller on a flat, clean, static-free surface, ground yourself, and make sure that the system is grounded.
2. Remove the cable included in the Remote Battery Kit (sold separately).
3. Insert one end of the cable into the 20-pin cable connector on the LSIIBBU09 unit on the remote mounting board and the other end into the 20-pin J1L1 cable connector on the TMM02 module, as the following figure shows. Align the black triangles on the connectors to make sure that the connectors are connected correctly.



NOTE The cable connectors are polarized and can be inserted into the cable connectors on the TMM02 module and the LSIIBBU09 unit only if the rails on the cable connectors align with the slots on the other connectors. *Do not* force the cable into the 20-pin connectors. The cable end inserts into the connector with minimal resistance.

Figure 9 Reinstalling the RAID Controller



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

Installing the Remote Mounting Board in the Computer

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

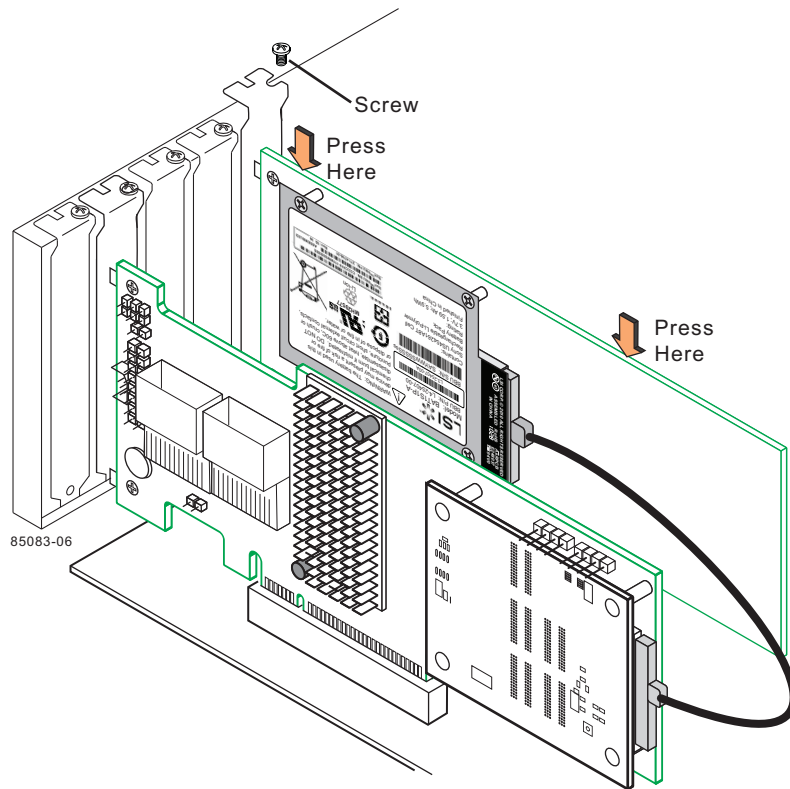
1. With the power to the chassis still turned off, and the power cords unplugged, make sure that the chassis is grounded and has no AC power.
2. Insert the remote mounting board in a PCI Express slot on the motherboard, as the following figure shows.



NOTE Some PCI Express slots support only PCI Express graphics cards. If the remote mounting board is installed in one of these slots, the board will not function. Refer to your computer documentation for information about the PCI Express slot.

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

Figure 10 Installing the Remote Mounting Board



4. Secure the remote mounting board to the computer chassis with the bracket screw.
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.

Technical Support

For assistance in installing, configuring, or running the LSiBBU09 unit, contact your LSI Technical Support representative.



NOTE Record your controller serial number in a safe location in case you need to contact LSI about your RAID controller.

Click the following link to access the LSI Technical Support page for storage and board support:

http://www.lsi.com/support/storage/tech_support/index.html

From this page, you can send an email or call Technical Support, or submit a new support request and view its status.

Support Request:

http://www.lsi.com/support/support_form.html

Telephone Support:

http://www.lsi.com/support/storage/phone_tech_support/index.html



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



Storage. Networking. Accelerated.™