

MegaRAID[®] SATA 300-8ELP RAID Controller

LSI LOGIC[®]

Quick Installation Guide



Thank you for purchasing the MegaRAID[®] SATA (Serial ATA) 300-8ELP (PCI Express low-profile) RAID Controller. Please take a few minutes to read this quick installation guide before you install the 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.

Note: The MegaRAID SATA 300-8ELP RAID Controller supports SATA I and SATA II.

You can use the intelligent Battery Backup Unit 01 (LSIiBBU01) with the SATA 300-8ELP. For more information about this battery, refer to the *MegaRAID Battery Backup Unit User's Guide* on the *MegaRAID Universal Software Suite* CD.

MegaRAID SATA 300-8ELP RAID Controller INSTALLATION



CAUTION

Back up your data before you change your system configuration. Otherwise, you might lose data.

Step 1 **Unpack the MegaRAID SATA 300-8ELP RAID Controller**

Unpack the controller in a static-free environment. Remove it from the antistatic bag and inspect it for damage.

If the controller appears to be damaged, or if the *MegaRAID Universal Software Suite* CD is missing, contact LSI Logic or your MegaRAID OEM support representative.

The CD contains utility programs, device drivers for various operating systems, and the following documentation:

- *MegaRAID SATA 300 Storage Adapters User's Guide*
- *MegaRAID Configuration Software User's Guide*
- *MegaRAID Device Driver Installation User's Guide*
- Software license agreement

Step 2

Prepare the Computer

Turn off the computer and unplug the power cord(s) from the back of the power supply. Remove the cover from the computer.



CAUTION

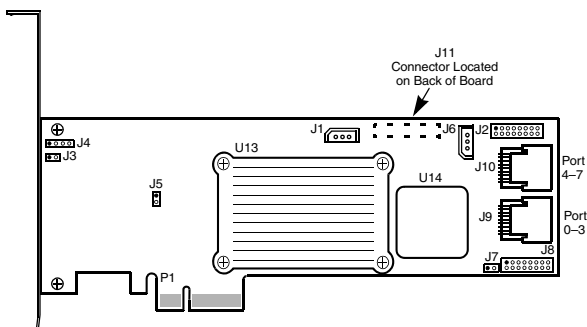
Before you install the controller, make sure that the computer is disconnected from the power and from any networks.

Step 3

Review the Jumpers and Connectors

Figure 1 shows the location of the jumpers and the connectors on the SATA 300-8ELP. The jumpers are set at the factory, and you usually do not need to change them.

Figure 1 MegaRAID SATA 300-8ELP RAID Controller Card Layout



Note: J11, the battery backup connector, is located on the back side of the SATA 300-8ELP.



Table 1 describes the jumpers and the connectors on the SATA 300-8ELP.

Table 1 Jumpers and Connectors

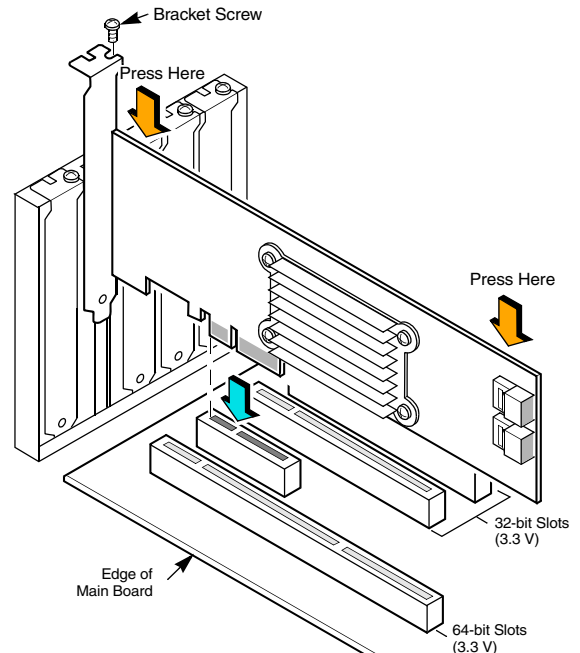
Jumper/Connector	Description	Type
J1	IPMI-style I ² C Debug header	3-pin connector. Used for diagnostic purposes.
J2	Individual Activity LED header for all 8 ports	16-pin (8x2) jumper. Provides LED interface individually to eight SATA ports. The LED indicates activity on particular ports.
J3	Debugger	2-pin jumper. Used for diagnostic purposes.
J4	Serial header for debug use	4-pin jumper. Used for diagnostic purposes. The serial port is not RS232 voltage level compliant.
J5	Mode Select	2-pin connector. Reserved for LSI use.
J6	IPMI-style SMBus (System Management) /I ² C header	3-pin connector. Provides support for enclosure management.
J7	Cache Write Pending LED	2-pin connector. Connector for enclosure LED. Provides a signal that indicates when the on-board cache contains data and a write from the cache to the hard drives is pending. Optional.
J8	LED Drive Fault Connector Interface	16-pin (8x2) jumper. Provides LED interface individually to eight SATA ports. The LED indicates a drive fault on particular ports.
J9	SATA 300-8ELP Ports	Ports 0–3. The ports connect the cables from the adapter to the SATA physical drives.
J10	SATA 300-8ELP Ports	Ports 4–7. The ports connect the cables from the adapter to the SATA physical drives or to a port multiplier.
J11	Battery Backup Connector (located on the back side of the RAID controller)	20-pin connector. Provides interface to the remote battery pack.

Step 4 Install the MegaRAID SATA 300-8ELP RAID Controller

Insert the MegaRAID SATA 300-8ELP RAID Controller in a PCI-E slot on the mainboard, as shown in Figure 2. Press down gently but firmly to seat the card properly in the slot. Secure the controller to the computer chassis with the bracket screw.

Refer to your mainboard guide for information about the PCI-E slot.

Figure 2 Installing the MegaRAID SATA 300-8ELP RAID Controller



Step 5 Configure and Install the SATA Devices in the Host Computer Case

Refer to the documentation for the SATA devices for any pre-installation configuration requirements.

Step 6 Connect the MegaRAID SATA 300-8ELP RAID Controller to the SATA Devices

Use SATA cables to connect the SATA 300-8ELP to the SATA devices. Refer to Figure 1 to view connector locations on the controller.

Step 7 Turn on the Power to the Computer

Replace the computer cover and reconnect the power cord(s). Turn on the power to the computer. During boot, a MegaRAID BIOS message displays.

The firmware takes several seconds to initialize. During this time the adapter scans the ports.

Step 8 Run the Configuration Utility

Run the MegaRAID BIOS Configuration Utility to configure the physical arrays and the logical drives. When the message *Press <Ctrl><M> for BIOS Configuration Utility* appears on the screen, immediately press CTRL+M to run the utility.

Note: Refer to the *MegaRAID Configuration Software User's Guide* on the *MegaRAID Universal Software Suite* CD for detailed steps on configuring physical arrays and logical drives.

Step 9 Install the Operating System Driver

The SATA 300-8ELP can operate under various operating systems. To operate under these operating systems, you must install the software drivers.

The *MegaRAID Universal Software Suite* CD includes the drivers for the supported operating systems, along with documentation. You can view the supported operating systems and download the latest drivers for RAID adapters on the LSI Logic web site at:

<http://www.lsillogic.com/cm/DownloadSearch.do>

Access the download center and follow the steps to download the driver.

Refer to the *MegaRAID Device Driver Installation User's Guide* on the *MegaRAID Universal Software Suite* CD for details on installing the driver. Be sure to use the latest Service Packs provided by the operating system manufacturer and to review the *readme* file that accompanies the driver.

SUPPORTED RAID LEVELS

The SATA 300-8ELP supports disk arrays using the following RAID levels:

- **RAID 0 (Data striping):** Data is striped across all disks in the array, enabling very fast data throughput. There is no data redundancy. All data is lost if any disk fails.
- **RAID 1 (Disk mirroring):** Data is written simultaneously to two disks, providing complete data redundancy if one disk fails. The maximum array capacity is equal to the available size of the smaller of the two hard drives.
- **RAID 5 (Disk striping with distributed parity):** Data is striped across all disks in the array. Part of the capacity of each disk stores parity information that reconstructs data if a disk fails. Provides good data throughput for applications with high read request rates.
- **RAID 10 (RAID 1 and RAID 0 in spanned arrays):** Uses mirrored pairs of disks to provide complete data redundancy. Provides high data throughput rates.
- **RAID 50 (RAID 5 and RAID 0 in spanned arrays):** Uses both parity and disk striping across multiple disks to provide complete data redundancy. Provides high data throughput rates.

TECHNICAL SUPPORT

For assistance in installing, configuring, or running the MegaRAID SATA 300-8ELP RAID Controller, contact LSI Logic Technical Support:

E-mail:

support@lsil.com

eurosupport@lsil.com (Europe)

Phone Support:

1-800-633-4545 (North America)

+44 1344 413 441 (Europe)

Web Site:

<http://www.lsillogic.com/support/>



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Find a list of LSI Logic Corporation's U.S. distributors, international distributors, sales offices, and design resource centers on the LSI Logic web site at:

<http://www.lsillogic.com/contacts/index.html>

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