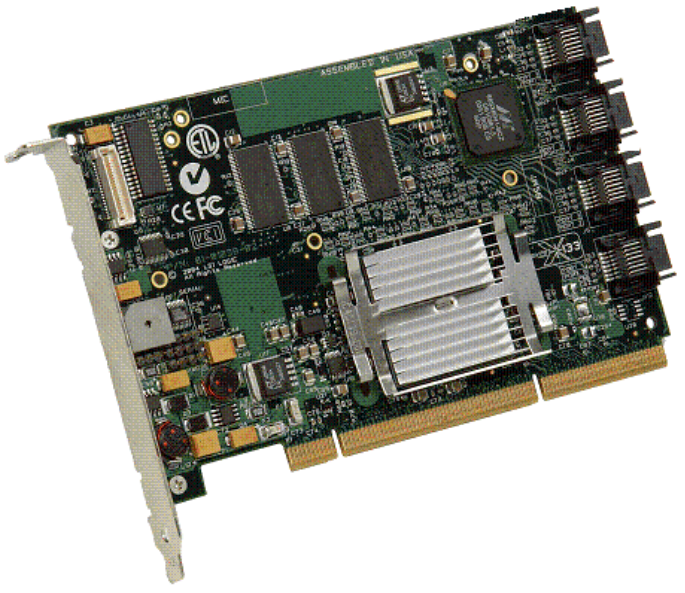
MegaRAID®
SATA 300-8X Controller
Quick Installation Guide



This document describes how to install the MegaRAID SATA 300-8X Controller.

MegaRAID SATA 300-8X CONTROLLER INSTALLATION

CAUTION Make a backup of your data before you change your system configuration. Otherwise, you may lose data.

Follow these steps to install the MegaRAID SATA 300-8X.

Step 1 Unpack the MegaRAID SATA 300-8X

Unpack and install the MegaRAID SATA 300-8X Controller in a static-free environment. Remove the MegaRAID SATA 300-8X from the antistatic bag and inspect it for damage.

If the MegaRAID SATA 300-8X 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 MegaRAID Universal Software Suite CD is packaged with the MegaRAID SATA 300-8X. The CD contains utility programs, device drivers for various operating systems, and the following documentations:

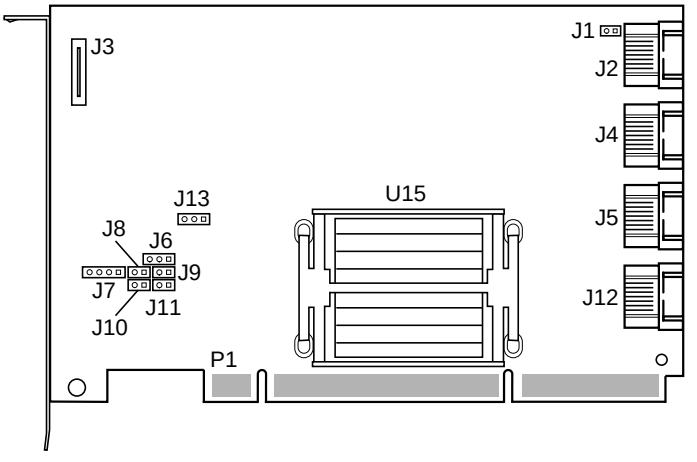
- *MegaRAID SATA 300 PCI-X to Serial ATA Storage Adapter User's Guide*
- *MegaRAID Configuration Software User's Guide*
- *MegaRAID Device Driver Installation User's Guide*
- Software license agreement and warranty registration card

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 chassis. *Make sure the computer is disconnected from the power and from any networks before installing the controller card*.

Step 3 Verify the MegaRAID Controller Jumpers

The following diagram shows the location of the jumpers and connectors on the MegaRAID SATA 300-8X Controller.



Verify that the jumper settings on the MegaRAID SATA 300-8X are correct. The jumpers are set at the factory, and you probably do not need to change them. The following table describes the jumpers and connectors on the RAID controller.

Jumper, Connector	Description	Type
J1	LED SATA Activity Connector	2-pin connector. When lit, it indicates SATA activity on one or more SATA drives.
J2, J4, J5, J12	SATA300-8X Ports	Ports 0–7. Used to attach the cables from the adapter to the SATA hard drives.
J3	BBU Daughter Card Connector	40-pin connector. Connector for an optional backup battery pack.
J6	Serial Port RS232 Interface	3-pin connector. Used for diagnostic purposes.

Jumper, Connector	Description	Type
J7	I^2C Interface	4-pin connector. The I^2C interface is for communication with storage enclosure processor devices.
J8	Write Pending Activity (dirty cache) LED	2-pin connector. When lit, it indicates that the onboard cache memory contains data and that a write from cache to the hard drives is pending.
J9	Serial EEPROM Interface	2-pin jumper. When equipped with a connector from a serial programming device, J9 provides the interface for programming the onboard manufacturing-tracking serial EEPROM.
J10	BIOS Disable	2-pin jumper. Jumpered: BIOS disabled Unjumpered: BIOS enabled. This is the default.
J11	Mode Select	2-pin jumper. Jumpered: Causes CPU core to be held in reset (mode 0) Unjumpered: Normal board operation is open (mode 3). This is the default.
J13	I^2C Interface	3-pin connector. The I^2C interface is for communication with storage enclosure processor devices.

Step 4 Install the MegaRAID SATA 300-8X Controller

Insert the MegaRAID SATA 300-8X Controller in a PCI-X slot, as shown in the following figure. Press down gently but firmly to make sure that the card is properly seated in the slot. Attach the MegaRAID SATA 300-8X to the computer chassis with the bracket screw.

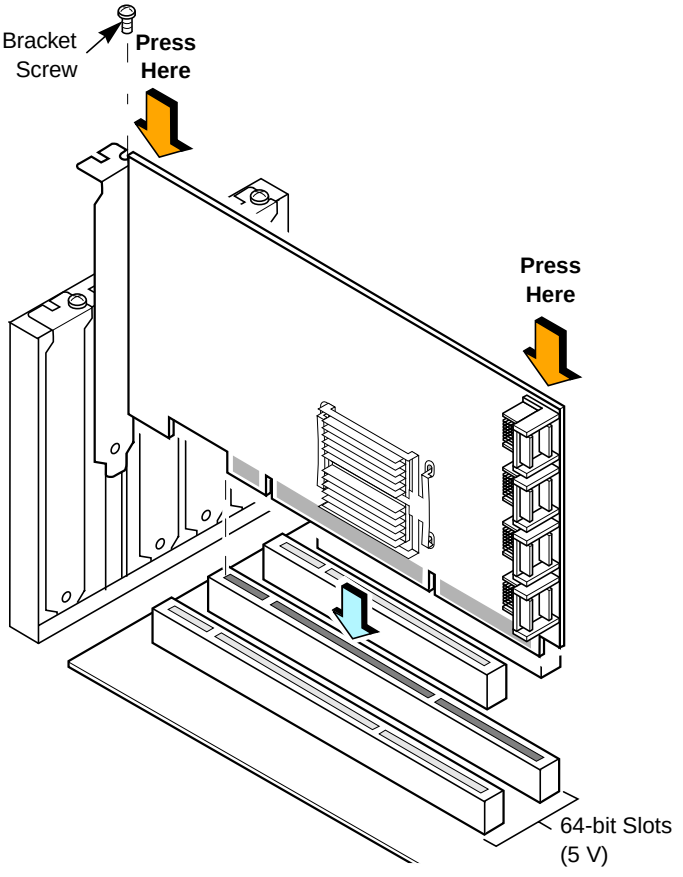
Step 5 Configure and Install the Serial ATA Devices

Configure the Serial ATA devices and install them in the host system computer case.

See the documentation for the Serial ATA devices for any pre-installation configuration requirements.

Step 6 Connect the MegaRAID SATA 300-8X Storage Adapter to the Serial ATA Devices

Connect the Serial ATA cables between the SATA 300-8X storage adapter and the Serial ATA devices. Refer to the board graphic in step 3 to view connector locations on the board.



Step 7 Power-Up the Computer

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

```
LSI MEGARAID BIOS VERSION xxxx [date]
Copyright(c) 2004, LSI Logic Corp.
HA-1 (Bus x Dev y) LSI MegaRAID SATA [300-4x or -8x] PCI-X
Standard FW xxxx DRAM=xxx MB(SDRAM)
```

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

Step 8 Run the MegaRAID BIOS Configuration Utility

When the message "`Press <Ctrl><M>`" appears on the screen, press <Ctrl><M> immediately to run the MegaRAID BIOS Configuration Utility. Refer to the *MegaRAID Configuration Software User's Guide* on the MegaRAID Universal Software Suite CD for detailed steps for configuring physical arrays and logical drives.

Step 9 Install the Operating System Driver

The MegaRAID SATA 300-8X can operate under MS-DOS or any DOS-compatible operating system using the standard AT BIOS INT 13h Hard Disk Drive interface. To operate with other operating systems, you must install software drivers.

The MegaRAID Universal Software Suite CD includes drivers for the supported operating systems. You can view the supported operating systems and download the latest

drivers for RAID adapters on the LSI Logic web site at http://www.lsilogic.com/downloads/selectDownload.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 review the readme file that accompanies the driver.

SUPPORTED RAID LEVELS

The MegaRAID SATA 300-8X Controller 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. (1–8 disk drives)
- **RAID 1 (Disk mirroring):** Data is written simultaneously to two disks, providing complete data redundancy if one disk fails. The array capacity is equal to the size of one hard drive if the two drives are the same size or of the smaller hard drive if the two drives are different sizes. (2 disk 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. (3–8 disk drives)
- **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. (4–8 disk drives)
- **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. (6–8 disk drives)

TECHNICAL SUPPORT

If you need help installing, configuring, or running the MegaRAID SATA 300-8X Controller, contact LSI Logic Technical Support:

Phone: 678-728-1250 or 800-633-4545 #3
Web Site:
http://www.lsilogic.com/downloads/selectDownload.do
E-mail: support@lsil.com

In Europe, you can contact the LSI Logic Technical Support team:

Phone: +44.1344.413.441 (English) or
+49.89.45833.338 (Deutsch)
E-mail: eurosupport@lsil.com

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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.lsilogic.com/contacts/index.html