AcceleRAID™
Quick Installation Guide

AcceleRAID 150
AcceleRAID 200
AcceleRAID 250
PCI to Ultra2 SCSI
RAID Controllers

P/N: 775030-02
08P4082

AcceleRAID™
Quick Installation Guide

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Part Number 775030-02
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Greetings

Thank you for purchasing a Mylex AcceleRAID™ 150, 200, or 250 controller. This manual describes the installation of the Mylex AcceleRAID controllers. Requests for technical information about this and other Mylex Corporation products should be made to your Mylex authorized reseller or Mylex sales representative.

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Regulatory Information

The AcceleRAID 150, 200, and 250 comply with the following regulatory agencies:

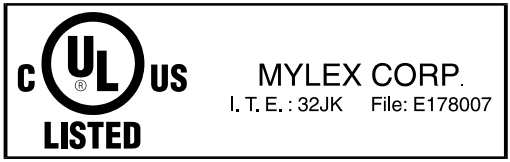
Federal Communications Commission

The FCC information statements are in Appendix E of the AcceleRAID 150 Installation Guide and Appendix D of the AcceleRAID 200 and 250 Installation Guide.

Community of Europe

The CE information statements are in Appendix E of the AcceleRAID 150 Installation Guide and Appendix D of the AcceleRAID 200 and 250 Installation Guide.

Underwriters Laboratories



WARNING

This controller is furnished with a nonvolatile RAM (NVRAM) chip that uses a sealed lithium battery/crystal module. Replace the module only with the same or equivalent type recommended by the manufacturer. Dispose of the used battery/ crystal module according to the manufacturer's instructions. Never incinerate a battery as it could explode and cause serious injury.

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Hardware Installation

Hardware Installation

Introduction

The AcceleRAID 150, AcceleRAID 200, and AcceleRAID 250 are versatile Ultra2 SCSI, LVD RAID controllers. There are many possible hardware configurations. This quick installation guide assumes that the user is familiar with controller, disk drive, and RAID terminology.

Types of Installations

There are two types of installations:

- Standard Installation
- SCSI Interrupt Steering Logic (SISL) Installation

Standard Installation

In a standard installation, the AcceleRAID 150 or the AcceleRAID 250 functions as a single-channel, standard PCI to Ultra2 SCSI, LVD RAID controller. In a standard installation, the AcceleRAID 150 or 250 can be installed into any system board with an available PCI (2.1 compliant) slot.

SCSI Interrupt Steering Logic (SISL) Installation

In a SISL installation, the AcceleRAID 200 adds RAID functionality to a system board that has one or more embedded SCSI channels. The AcceleRAID 150 or 250 adds an Ultra2 SCSI, LVD RAID channel as well as RAID functionality to a system board that has one or more embedded SCSI channels. For a SISL implementation, the AcceleRAID controllers must be plugged into a special, pre-wired PCI slot in a system board that is specially designed for this type of installation. Check with the manufacturer of your system board to find out if it has embedded SCSI channels that can be controlled by a PCI to SCSI RAID controller with SCSI Interrupt Steering Logic (a requirement for the AcceleRAID 200).

Performing a Standard Installation

(AcceleRAID 150 and AcceleRAID 250 only)

⚠ *Caution*

If an operating system or existing data resides on SCSI disk drives already installed on the system, a full backup should be performed on these drives prior to this installation.

1. Be sure power is turned off and the system is not plugged into an electrical outlet.

STOP WARNING

To avoid electrical shock, do not attempt to perform this hardware installation with power on. Disconnect the system from the electrical wall outlet.

2. If JP10 on the AcceleRAID 150 or 250 is installed, remove it, as shown in Figure 1 and in Figure 2.

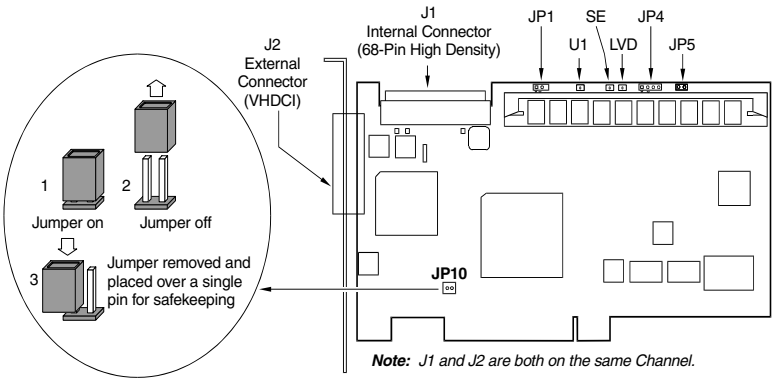

Figure 1. AcceleRAID 150 with Component Locations

Table 1. AcceleRAID 150 Jumpers and LEDs

Jumpers	Description
JP1	Header for SCSI activity LED (Pin 1 – active low, Pin 2 – Vcc)
JP4	Mylex use only
JP5	Reserved
JP10	Off for standard – On for SISL

LEDs	Description
U1	On – controller failed startup diags.
LVD	LVD mode on unless SE device detected.
SE	Single-ended device detected

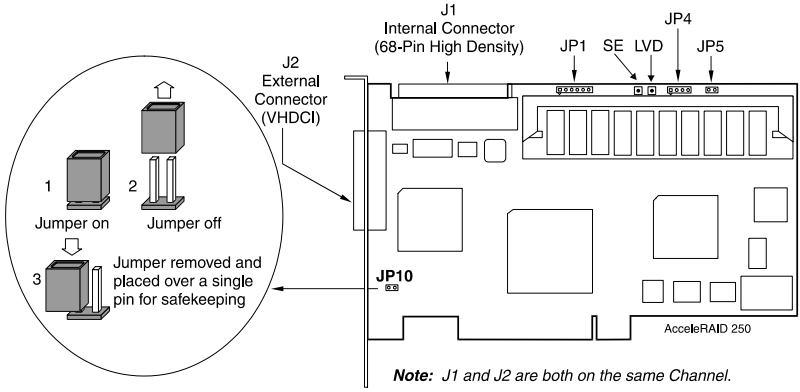

Figure 2. AcceleRAID 250 with Component Locations

Table 2. AcceleRAID 250 Jumpers

Jumpers	Description
JP1	Header for SCSI activity & Cache Dirty LEDs
JP4	Mylex use only
JP5	Reserved
JP10	Off for standard – On for SISL

3. Plug the AcceleRAID 150 or 250 controller into an available PCI slot (see Figure 3).

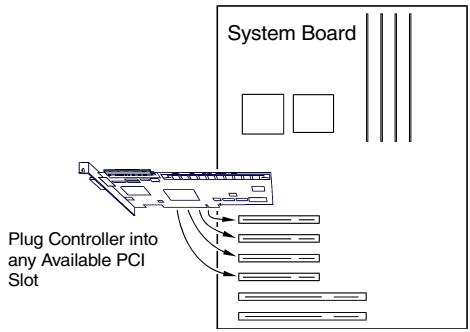

Figure 3. Plugging the AcceleRAID 150 or 250 into a Standard PCI Slot

4. Set the SCSI ID on each internal drive to a unique address between 0 and 15, but do not use address 7 (reserved for the controller). See the documentation that comes with your drives for instructions on how to do this.

   ⚠ ***Caution***

   If internal and external drives are used, be sure that no drive addresses are duplicated. External SCSI cabinets usually automatically assign drive addresses according to where in the cabinet the drives are located.

5. *Disable* termination on all drives connected to the controller. See the documentation that comes with your drives for instructions on how to do this.
6. *Enable* termination power on all drives connected to the controller. See the documentation that comes with your drives for instructions on how to do this.
7. Set the SCSI ID for each external disk drive to a unique address between 0 and 15, but do not use 7 (reserved for the controller). Do not duplicate SCSI IDs used by internal drives designated for the same channel. For information on how to set SCSI IDs, refer to the disk drive documentation.

   If you are using an external SCSI cabinet, please see the ***Caution*** note above.

8. Connect a wide, high-density, 68-pin SCSI ribbon cable to the internal SCSI connector on the AcceleRAID 150 or 250 and connect the other cable connectors to any internal SCSI drives as required (see Figure 4).

9. Connect an active terminator to the end of the SCSI ribbon cable at the end farthest from the controller (see Figure 4).

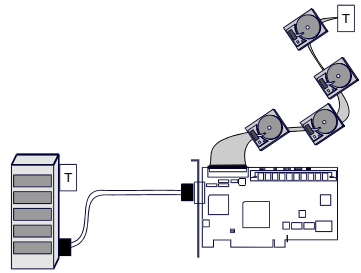

Figure 4. Connecting Internal and External Drives

10. Connect a wide, round, 68-pin Very High Density Connector Interface (VHDCI) cable to the external SCSI connector on the AcceleRAID 150 or 250 and connect the other end of the cable to an external drive cabinet as required (see Figure 4). External drive cabinets usually have termination built into the end of the SCSI bus. Check the documentation that comes with your drive cabinet to be sure this is the case. If not, use an active terminator at the end of the bus. See Figure 5 for an example of a completed, typical installation.

> ☛ **Note**
>
> An AcceleRAID 150 or 250 automatically determines whether or not its own on-board termination is required, and automatically enables or disables on-board termination as necessary.

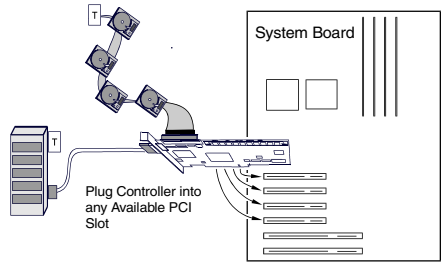

Figure 5. AcceleRAID 150 or 250 in a Typical Standard Installation

The hardware portion for the standard installation is complete.

Please see the section titled “What to Do Next,” at the end of this document.

Performing a SCSI Interrupt Steering Logic (SISL) Installation

⚠ *Caution*

If an operating system or existing data resides on drives connected to the system board's resident SCSI channels, a full backup must be performed on these drives prior to this installation, as these drives will no longer be readable after this installation is performed.

1. Be sure power is turned off and the system is not plugged into an electrical outlet.

   ### STOP WARNING

   To avoid electrical shock, do not attempt to perform this hardware installation with power on. Disconnect the system from the electrical wall outlet.

2. If JP10 on the AcceleRAID 150 or 250 is not installed, install it, as shown in Figure 1 and Figure 2.

   On the AcceleRAID 200, JP10 is permanently installed as shown in Figure 6.

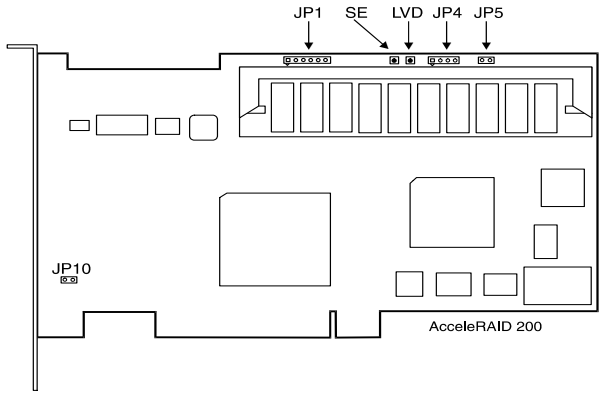

Figure 6. AcceleRAID 200 with Component Locations

Table 3. AcceleRAID 200 Jumpers

Jumpers	Description
JP1	Header for SCSI activity & Cache Dirty LEDs
JP4	Mylex use only
JP5	Not used
JP10	On for SISL – permanently installed

⚠ *Caution*

Before you continue: If the SCSI channels embedded on the system board are controlled by a Symbios Logic® chipset, the Symbios chips must be disabled in the system BIOS before proceeding with RAID configuration, operating system installation or driver installation. This is to allow the AcceleRAID to take over control of the system board's embedded channels without any conflicts.

The Symbios chipset can be disabled by running the CMOS setup routine when powering on your system (see the documentation that is furnished with your system).

3. Plug the AcceleRAID controller into the specially prewired SISL PCI slot. See the documentation provided with your system board to locate this special PCI slot (see Figure 7).

☛ Note

When an AcceleRAID 150 or 250 is plugged into the SISL PCI slot, the channel on the controller automatically assumes the address of Channel 0. The addresses of the channels on the system board are pushed out by one.

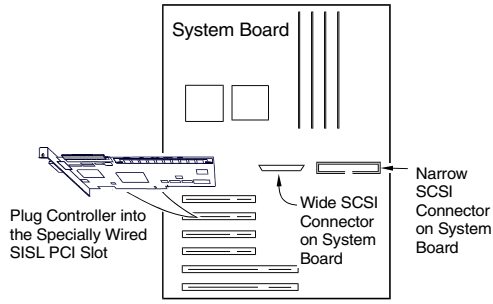

Figure 7. Plugging the AcceleRAID into a Prewired SISL PCI Slot

4. For each channel, set the SCSI ID on each internal drive to a unique address between 0 and 15, but do not use address 7, as it is reserved for the controller. See the documentation that comes with your drives for instructions on how to do this.

   ⚠ ***Caution***

   If internal and external drives are used, be sure that no drive addresses on a given channel are duplicated. External SCSI cabinets usually automatically assign drive addresses according to where in the cabinet the drives are located.

5. *Disable* termination on all disk drives connected to the controller or connected to the system board. See the documentation that comes with your drives for instructions on how to do this.
6. *Enable* termination power on all disk drives connected to the controller or connected to the system board. See the documentation that comes with your drives for instructions on how to do this.
7. Set the SCSI ID for each external disk drive to a unique address between 0 and 15, but do not use 7 (reserved for the controller). Do not duplicate SCSI IDs used by internal drives designated for the same channel. For more information on how to set SCSI IDs, refer to the disk drive documentation.

   If you are using an external SCSI cabinet, please see the ***Caution*** note above.

8. Connect a wide, 68-pin, high-density SCSI ribbon cable to the internal SCSI connector on the AcceleRAID 150 or 250 and connect the other cable connectors to any internal SCSI drives as required (see Figure 8).
9. Connect an active terminator to the end of the SCSI ribbon cable at the end farthest from the controller (see Figure 8).

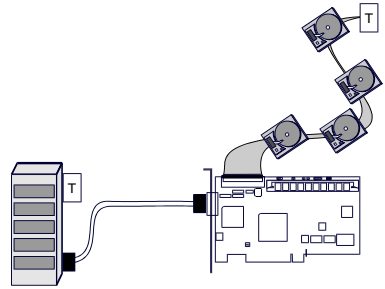

Figure 8. Connecting Internal and External Drives

10. Connect a wide, round, 68-pin VHDCI cable to the external SCSI connector on the AcceleRAID 250 and connect the other end of the cable to an external drive cabinet as required (see Figure 8). External drive cabinets usually have termination built into the end of the SCSI bus.
11. Connect a wide, 68-pin, high-density SCSI ribbon cable to the SCSI connector on the system board and connect the other cable connectors to any internal SCSI drives as required.

> ☛ **Note**
>
> If a narrow SCSI connector is available on the system board, this should be used for non-disk SCSI peripherals, such as tape or CDROM drives which will not be a part of a RAID array.

Refer to the illustrations on the following page to see examples of typical SISL installations for the AcceleRAID 150 and AcceleRAID 250 (Figure 9), and AcceleRAID 200 (Figure 10).

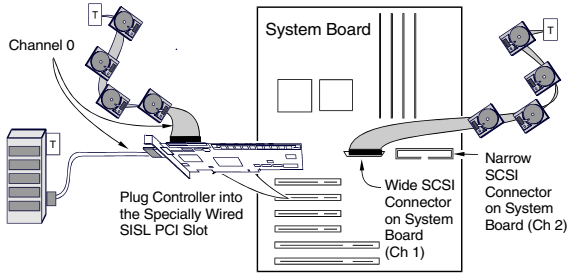

Figure 9. AcceleRAID 150 or 250 in a Typical SISL Installation

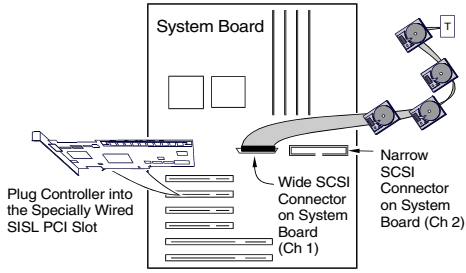

Figure 10. AcceleRAID 200 in a Typical SISL Installation

The hardware portion for the SISL installation is complete.

Please see the following section titled “What to Do Next.”

What to Do Next

1. Use RAID EzAssist to create an automatic or a custom RAID configuration.

   Refer to the *RAID EzAssist Configuration Utility Quick Configuration Guide* or *RAID EzAssist Configuration Utility User Reference Guide.*

2. Install the AcceleRAID 150, 200, or 250 controller drivers appropriate for your server’s network operating system.

   Refer to the *PCI Disk Array Controller Drivers Installation Guide and User Manual.*

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   - ❑ Data Retrieval ❑ Multi-User ❑ Multi-Tasking ❑ Database

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