AcceleRAID 160

Quick Installation Guide

DB11-000021-00 First Edition
08P5510

Electromagnetic Compatibility Notices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and

2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and the receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

Shielded cables for SCSI connection external to the cabinet are used in the compliance testing of this Product. LSI Logic is not responsible for any radio or television interference caused by unauthorized modification of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by LSI Logic. The correction of interferences caused by such unauthorized modification, substitution, or attachment will be the responsibility of the user.

The LSI Logic Mylex AcceleRAID 160 is tested to comply with FCC standards for home or office use.

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

LSI Logic Corporation
North American Headquarters
Milpitas, CA
408.433.8000

Declaration of Conformity

Per FCC Part 2, Section 2.1077(a)

Manufacturer's Name:	LSI Logic Corporation
Manufacturer's Address:	North American Headquarters Milpitas, CA USA

Declares that the product:

Product Name:	AcceleRAID 160 PCI to Ultra 160 SCSI RAID Controller
Model Number(s):	A160-1-16NB
Year of Manufacture:	2000

Conforms to the following Product Specification(s):

FCC:	CFR 47 Part 15, Subpart B, Section 15.107(e) and Section 15.109(g) Class B Digital Device tested per ANSI C63.4–1992 procedures

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CE Declaration of Conformity

Per 89\336\EEC

Responsible Party

Name: LSI Logic Corporation

Address: North American Headquarters
Milpitas, CA
U.S.A.

hereby declares that the product

Trade Name: AcceleRAID 160 PCI to Ultra 160 SCSI RAID Controller
Fab 550167-01 Rev A

Model Number(s): A160-1-16NB

conforms to the following specifications

Standards:

EN 50081-1:1992, Emissions
- EN 55022:1998 Class B ITE radiated and conducted emissions

EN 50024:1998, Immunity
- EN 61000-4-2:1998 Electrostatic Discharge
- EN 61000-4-3:1998 Radiated Immunity
- EN 61000-4-4:1995 Electrical Fast Transients/Burst
- EN 61000-4-5:1995 Surges
- EN 61000-4-6:1996 Conducted Immunity
- EN 61000-4-11:1994 Supply Dips and Variations

CE Community of Europe

CE mark is rated for the AceleRAID 160 as follows:

CISPR 22 Radiated Emission

EN55022, Generic immunity standard for the following:
IEC 801-2 ESD, IEC 801-3 Radiated, and IEC 801-4 EFT/Burst

Warning!

This is a Class B product. In a residential environment this product may cause radio interference, in which case the user may be required to take adequate measures.

Achtung!

Dieses ist ein Gerät der Funkstörgrenzwertklasse B. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen aufreten, in welchen Fällen der Benutzer für entsprechende Gegenmaßnahmen verantwortlich ist.

Avertissement!

Cet appareil est un appareil de Classe B. Dans un environnement résidentiel cet appareil peut provoquer des brouillages radioélectriques. Dans ce cas, il peut être demandé à l'utilisateur de prendre des mésures appropriées.

Underwriters Laboratories Statement and Warning

Proprietary Rights Notice

Document Description

Document DB11-000021-00 First Edition. November 2002
This document describes the LSI Logic Corporation's Mylex AcceleRAID 160 product for Software Kit 5.20 and will remain the official reference source for all revisions/releases of this product until rescinded by an update.

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Contents

Hardware Installation

Introduction 1-1
Performing an Installation 1-1
PCI Hot Plug 1-1
Connectors, LEDs, and Jumpers 1-2
Installing the AcceleRAID 160 into a Standard Chassis 1-5
Installing the AcceleRAID 160 into a 2U Chassis 1-9
What to Do Next 1-13

SOFTWARE LICENSE AND WARRANTY POLICY

Hardware Installation

Introduction

The AcceleRAID 160 is a versatile single channel PCI to Ultra 160 SCSI, Low Voltage Differential (LVD) RAID controller with many possible hardware configurations. This quick installation guide assumes that the user is familiar with controller, disk drive, and RAID terminology.

Performing an Installation

Note

A PCI 2.2 compliant slot is required to operate the AcceleRAID 160 controller. However, a PCI 2.1 compliant slot that supplies 5V power is acceptable.

WARNING

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

PCI Hot Plug

Please refer to Appendix C in the *AcceleRAID 160 PCI to Ultra 160 SCSI RAID Controller Installation Guide* for instructions on how to use the PCI Hot Plug feature.

Connectors, LEDs, and Jumpers

There is one external and one internal connector supported on the AcceleRAID 160 controller. The locations of the SCSI connectors are shown in Figure 1 and Figure 2 and are labeled as CH 0.

There are two types of brackets: Standard PCI bracket (Figure 1) and Low Profile PCI bracket (Figure 2).

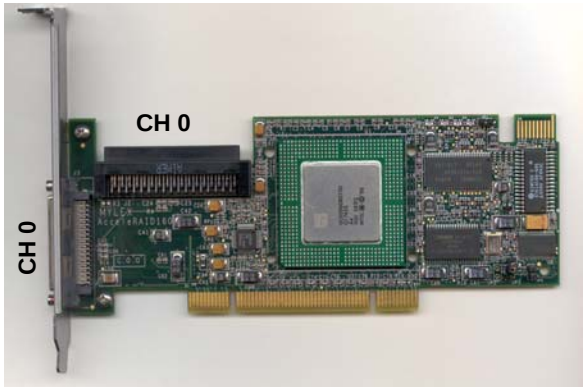

Figure 1. AcceleRAID 160 Controller with Channel 0 Connectors and Standard PCI Bracket

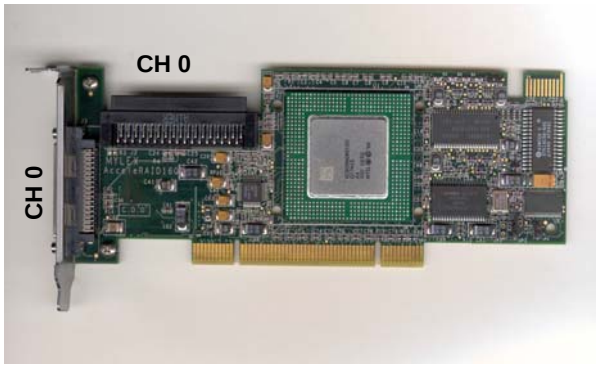

Figure 2. AcceleRAID 160 Controller with Channel 0 Connectors and Low Profile PCI Bracket

The front side of the controller has four LEDs that are illustrated in Figure 3 and described in Table 1.

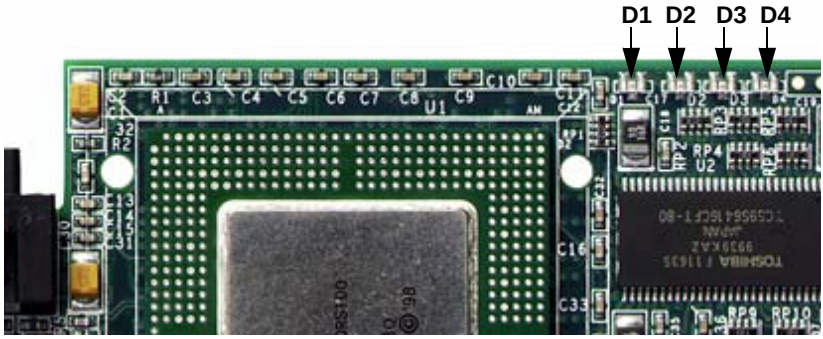

Figure 3. AcceleRAID 160 LEDs (front)

Table 1. LED Descriptions (front)

D1	FAIL (Processor Self Test)
D2	TERM_LED (Terminator Enabled)
D3	S0_LVD Mode
D4	S0_SE (Single Ended) Mode

All the jumpers should normally be set to their default settings. Jumper locations are illustrated in Figure 4 and described in Table 2.

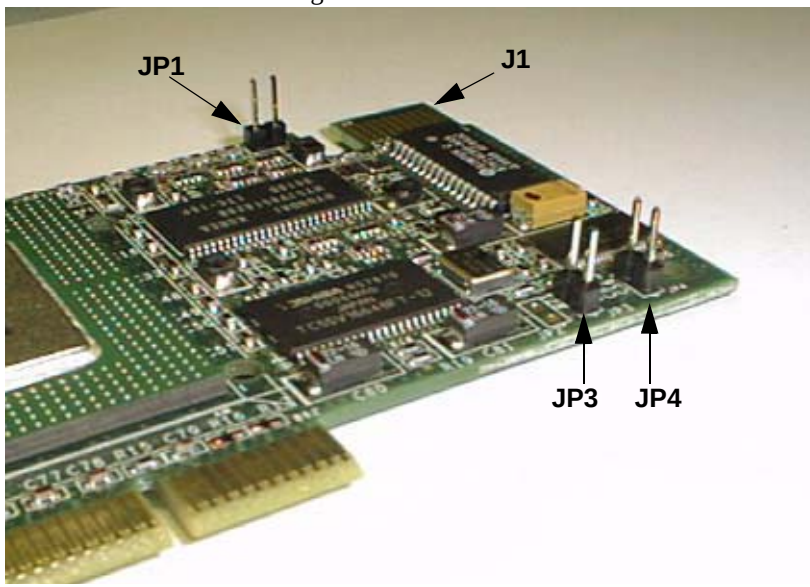

Figure 4. AcceleRAID 160 Jumper Locations

Table 2. AcceleRAID 160 Jumper Descriptions

JP1	SCSI Activities LED Header
JP3	Maintenance Mode
JP4	Cache dirty (monitor cache write back) — LED Header
J1	Debug serial edge connector

If you have any difficulty with the operation or diagnostics of this controller, contact Customer Support to see if any of the above jumpers need to be adjusted.

Installing the AcceleRAID 160 into a Standard Chassis

If your system has a 2U chassis, please go to “Installing the AcceleRAID 160 into a 2U Chassis” on page 9.

> ⚠ ***Caution***
>
> Be sure to wear a ground wrist strap at all times.

> ☛ **Note**
>
> If the controller has the Low Profile Bracket attached, replace it with the Standard PCI bracket for this installation.

1. With the power off, plug the AcceleRAID 160 controller into an available 32-bit PCI slot on the system board (see Figure 5); the 32-bit slot is short.

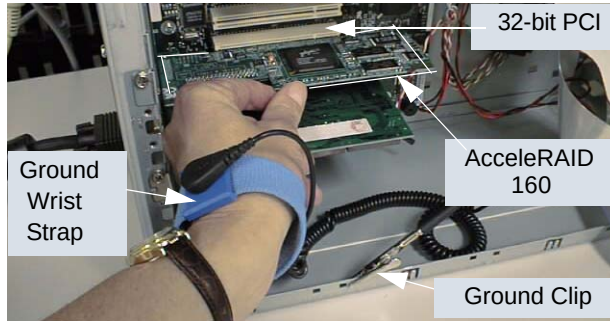

Figure 5. Plugging the AcceleRAID 160 into a PCI Slot

2. 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 set the SCSI ID address.

> ⚠ ***Caution***
>
> If internal and external drives are used, be sure that drive addresses are NOT duplicated. External SCSI cabinets usually automatically assign drive addresses according to the drives’ location in the cabinet.

3. Be sure termination is *disabled* on all SCSI drives connected to the controller. See the documentation that comes with your drives for instructions on how to do this. (Termination must be enabled on the last device, if not using an active terminator.)
4. Be sure that termination power is *enabled* on all SCSI drives connected to the controller. See the documentation that comes with your drives for instructions on how to do this.

Connecting Internal SCSI Devices

5. If you are installing internal SCSI devices to the controller, connect a wide, high-density, 68-pin SCSI ribbon cable to the internal SCSI connector on the AcceleRAID 160 controller and connect the other cable connectors to any SCSI devices as required (see Figure 6). Termination is automatic on the AcceleRAID 160.
6. Connect an active terminator to the last device at the end of the SCSI ribbon cable (see Figure 6).

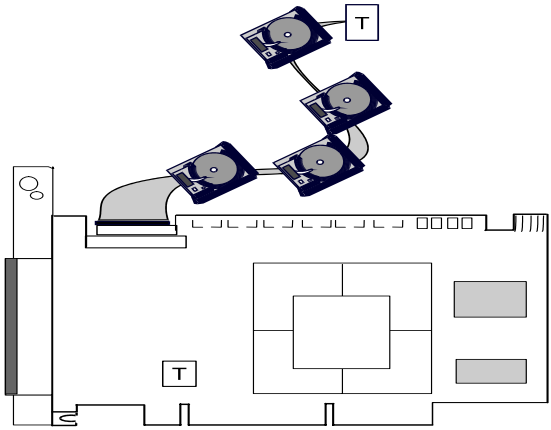

Figure 6. Connecting Internal SCSI Devices

Connecting External SCSI Devices

7. If you are installing external SCSI devices to the controller, individually or in an external drive cabinet, connect a cable, with the 68 pin VHDCI, to the external SCSI connector on the AcceleRAID 160 controller. Connect the other end of the cable connector to other devices or to a SAF-TE external drive cabinet, as required (see Figure 7).
8. 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.

> ☛ **Note**
>
> AcceleRAID 160 termination is enabled by default, but will be automatically disabled if necessary.

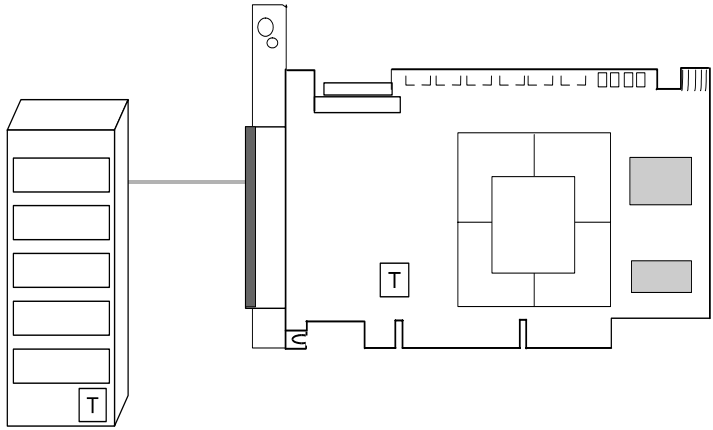

Figure 7. Connecting External SCSI Devices

Connecting Both Internal and External SCSI Devices

A combined installation showing internal and external devices with proper termination is illustrated in Figure 8.

Note

A combined configuration using both internal and external connectors works best with high quality cables. It is recommended that you use an Amphenol® Fast LVD and a Hitachi® twisted pair, flat cable in this unique setup.

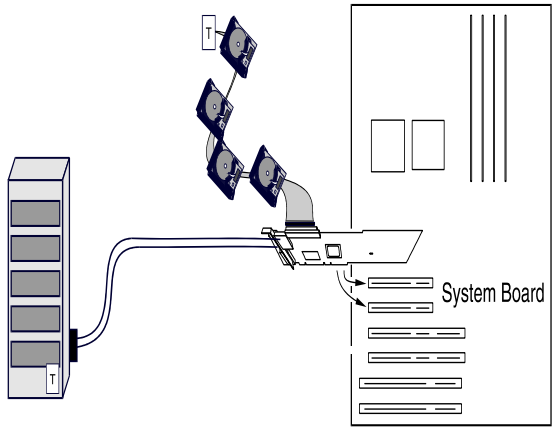

Figure 8. Connecting Both Internal and External SCSI Devices

The hardware portion of the installation is complete.

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

Installing the AcceleRAID 160 into a 2U Chassis

You may need to check the manufacturer's installation instructions for your particular 2U chassis.

> ⚠ ***Caution***
>
> Be sure to wear a ground wrist strap at all times.

> ☛ **Note**
>
> If the controller has the Standard PCI bracket attached, replace it with the Low Profile PCI bracket for this installation.

1. Choose the riser adapter with an available PCI slot. In this case, it is presented on an angle, as shown in Figure 9.
2. Plug (install) the controller board firmly into the 32-bit PCI slot, and snap it into place, as shown in Figure 9.

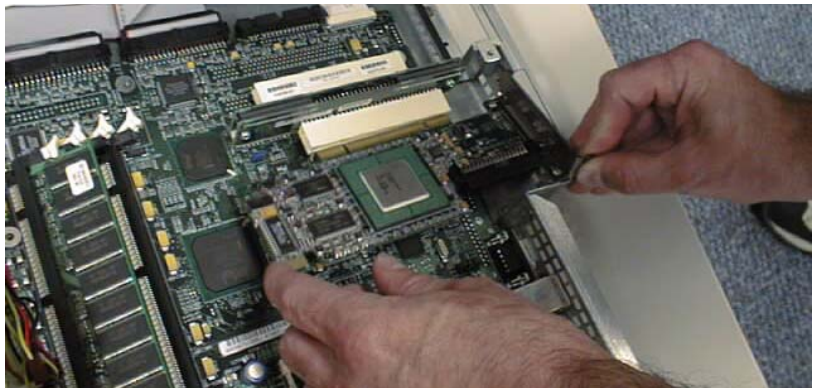

Figure 9. Plug the Controller into a 32-bit PCI Slot on the 2U Chassis

In the finished installation, the controller will be in a flat, horizontal position, as shown in Figure 10.

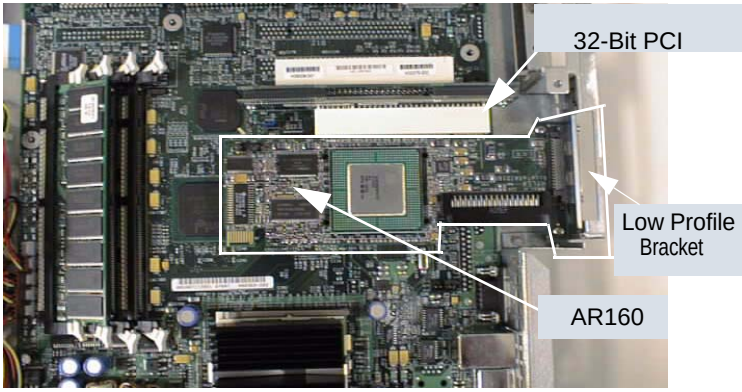

Figure 10. AcceleRAID 160 Installed into a 2U Chassis

3. 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 set the SCSI ID address.

> ⚠ ***Caution***
>
> If internal and external drives are used, be sure that drive addresses are NOT duplicated. External SCSI cabinets usually automatically assign drive addresses according to the drives' location in the cabinet.

4. Be sure termination is *disabled* on all SCSI drives connected to the controller. See the documentation that comes with your drives for instructions on how to do this. (Termination must be enabled on the last device, if not using an active terminator.)
5. Be sure that termination power is *enabled* on all SCSI drives connected to the controller. See the documentation that comes with your drives for instructions on how to do this.

Connecting Internal SCSI Devices

6. If you are installing internal SCSI devices to the controller, connect a wide, high-density, 68-pin SCSI ribbon cable to the internal SCSI connector on the AcceleRAID 160 controller and connect the other cable connectors to any SCSI devices as required (see Figure 11). Termination is automatic on the AcceleRAID 160.
7. Connect an active terminator to the last device at the end of the SCSI ribbon cable (see Figure 11).

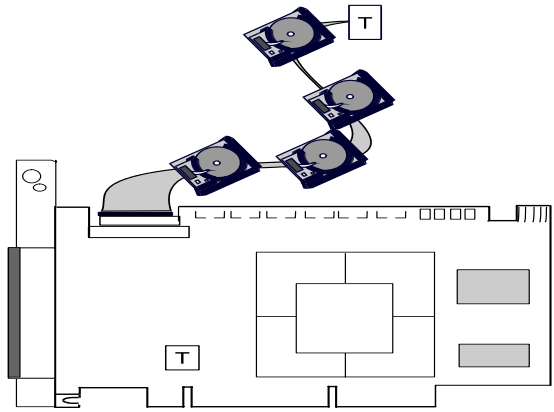

Figure 11. Connecting Internal SCSI Devices

Connecting External SCSI Devices

8. If you are installing external SCSI devices to the controller, individually or in an external drive cabinet, connect a cable, with the 68 pin VHDCI, to the external SCSI connector on the AcceleRAID 160 controller. Connect the other end of the cable connector to other devices or to a SAF-TE external drive cabinet, as required (see Figure 12).
9. 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.

Note

AcceleRAID 160 termination is enabled by default, but will be automatically disabled if necessary.

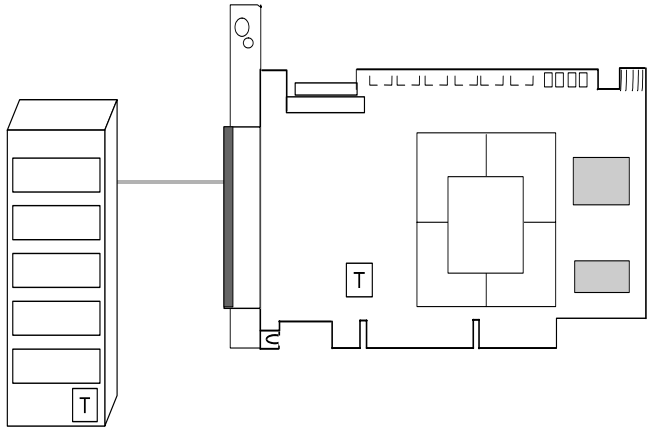

Figure 12. Connecting External SCSI Devices

Connecting Both Internal and External SCSI Devices

A combined installation showing internal and external devices with proper termination is illustrated in Figure 13.

> **Note**
>
> A combined configuration using both internal and external connectors works best with high quality cables. It is recommended that you use an Amphenol® Fast LVD and a Hitachi® twisted pair, flat cable in this unique setup.

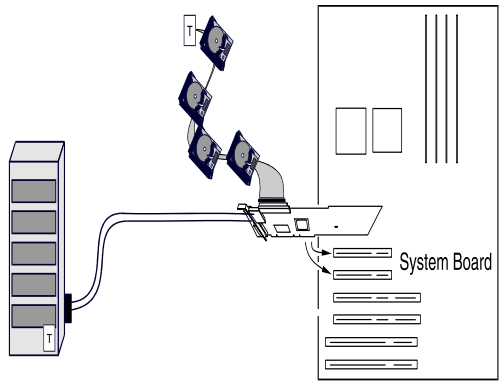

Figure 13. Connecting Both Internal and External SCSI Devices

The hardware portion of the 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 160 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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SOFTWARE LICENSE AND WARRANTY POLICY

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LSI Logic Corporation
North American Headquarters
Milpitas, CA
408.433.8000