

# User's Guide

## PowerDomain 2940UW/3940UW

Fast and Wide UltraSCSI Accelerator

PowerDomain 2940UW/3940UW User's Guide  
Stock Number: 510864-00, Rev. B      Page: Front Cover  
Print Spec Number: 493742-00  
Current Date: 2/20/96      ECN Date: 2/27/96

Adaptec, Inc.  
691 South Milpitas Boulevard  
Milpitas, CA 95035

Copyright © 1996, Adaptec, Inc.  
All rights reserved. Adaptec and the  
Adaptec logo are trademarks of Adaptec,  
Inc. which may be registered in some  
jurisdictions.

Printed in Singapore  
STOCK NO.: 510864-00, Rev. B CW 2/96

PowerDomain 2940UW/3940UW User's Guide  
Stock Number: 510864-00, Rev. B      Page: Back Cover  
Print Spec Number: 493742-00  
Current Date: 2/20/96      ECN Date: 2/27/96

▼▼▼▼ **PowerDomain 2940UW**  
**/3940UW**  
**Fast and Wide UltraSCSI Accelerator**

**User's Guide**



## Copyright

Copyright © 1996 Adaptec, Inc. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of Adaptec, Inc., 691 South Milpitas Blvd., Milpitas, CA 95035.

## Trademarks

Adaptec, the Adaptec logo, and PowerDomain are trademarks of Adaptec, Inc., which may be registered in some jurisdictions.

All other trademarks used are owned by their respective owners.

## Changes

The material in this document is for information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, Adaptec, Inc. assumes no liability resulting from errors or omissions in this document, or from the use of the information contained herein.

Adaptec reserves the right to make changes in the product design without reservation and without notification to its users.

## Adaptec Technical Support and Services

If you have questions about installing or using the PowerDomain 2940UW/3940UW, check this document first—you will find answers to most of your questions here. If you need further assistance, please contact us. We offer the following support and information services:

- For technical support, for information about the Adaptec World Wide Web (WWW) and File Transfer Protocol (FTP) Servers and the Adaptec USA Bulletin Board Service (BBS), and for access to the Interactive Fax system, call 800-959-SCSI (7274) or 408-945-2550, 24 hours a day, 7 days a week. To speak with a product support representative, call 408-934-SCSI (7274), Monday through Friday, 6:00 A.M. to 5:00 P.M., Pacific Time; after these hours, on weekends, and on holidays, product support is also available for a fee at 800-416-8066.
  - The Adaptec WWW and FTP Servers provide product literature, answers to commonly asked questions, and information on software upgrades and other topics. The WWW and FTP Servers are available from the Internet 24 hours a day, 7 days a week, at <http://www.adaptec.com> and <ftp.adaptec.com>.
  - The Adaptec BBS provides answers to commonly asked questions and information on software upgrades and other topics. The BBS is available 24 hours a day, 7 days a week, at 408-945-7727; 1200/2400/9600/14,400/28,800 bps, 8 data bits, 1 stop bit, no parity.

- The Adaptec Interactive Fax system provides product literature, answers to commonly asked questions, and current information about Adaptec products and services. The Adaptec Interactive Fax system is available 23 hours a day, 7 days a week. The Fax system is out of service 1 hour each day. You can call this service directly at 408-957-7150.
- For sales information, call 800-959-SCSI (7274) or 408-945-2550, Monday through Friday, 6:00 A.M. to 5:00 P.M., Pacific Time.
- To order Adaptec software and cables, call 800-442-SCSI (7274) or 408-957-SCSI (7274), Monday through Friday, 6:00 A.M. to 5:00 P.M., Pacific Time.
- To request additional documentation for Adaptec products, call 800-934-2766 or 510-732-3829, Monday through Friday, 6:00 A.M. to 5:00 P.M., Pacific Time.

### FCC Compliance Statement

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 residential installations. 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 interference to radio or television equipment 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
- Move the equipment away from the receiver
- Plug the equipment into an outlet on a circuit different from that to which the receiver is powered
- If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions

CAUTION: Only equipment certified to comply with Class B (computer input/output devices, terminals, printers, etc.) should be attached to this equipment, and must have shielded interface cables.

Finally, any changes or modifications to the equipment by the user not expressly approved by the grantee or manufacturer could void the user's authority to operate such equipment.

Each PowerDomain 2940UW/3940UW is equipped with an FCC compliance label which shows only the FCC identification number. The full text of the associated label follows:

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.



# ▼▼▼▼ Contents

## **1 Getting Started**

System Requirements **1-1**

Hardware **1-1**

Software **1-1**

Tools and Equipment Required **1-2**

Notes, Cautions, and Warnings **1-2**

## **2 Installing the PowerDomain 2940UW/ 3940UW and Connecting SCSI Devices**

Installing the PowerDomain 2940UW/3940UW—  
Tower Models **2-2**

Installing the PowerDomain 2940UW/3940UW—  
Desktop Models **2-11**

Connecting SCSI Cables and Devices **2-19**

Choosing SCSI Cables **2-21**

Connecting Internal SCSI Devices **2-22**

Connecting External SCSI Devices—Tower  
Models **2-34**

Connecting External SCSI Devices—Desktop  
Models **2-41**

Setting SCSI Chain Termination **2-48**

Setting SCSI Device Termination **2-49**

Setting Accelerator Card Termination **2-49**

Termination Examples **2-49**

Setting SCSI IDs **2-54**

Installing Multiple PowerDomain 2940UW/3940UW  
Accelerator Cards **2-54**

v

### **3 Opening and Using the PowerDomain Control Utility**

- Opening the PowerDomain Control Utility **3-2**
- Using the PowerDomain Control Utility **3-3**
  - Obtaining Additional SCSI Controller Information **3-4**
  - Setting Termination **3-7**
  - Updating Flash ROM **3-11**
  - Setting Advanced Options **3-14**
  - Setting Defaults **3-15**
  - Target Options **3-16**
- Saving Settings **3-20**
  - Target Options Dialog Box **3-20**
  - PowerDomain Control Window **3-21**
- Using Balloon Help **3-22**
- Getting Information about the PowerDomain Control Utility **3-22**
- Quitting the PowerDomain Control Utility **3-23**

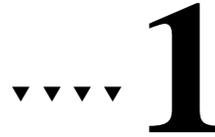
### **4 Troubleshooting**

- SCSI Troubleshooting Checklist **4-1**
- Error Messages **4-3**

### **A Product Specifications**

- System Interface **A-1**
- Unit Connectivity (Single-ended) **A-1**
  - PowerDomain 2940UW **A-1**
  - PowerDomain 3940UW **A-1**
- Speed **A-2**
- Dimensions (Standard PCI Bus Form Factor) **A-2**
- Operating Environment **A-2**
- Power Requirement **A-2**

### **Index**



# Getting Started

Welcome to Adaptec<sup>®</sup>, and congratulations on your purchase of the PowerDomain<sup>™</sup> 2940UW/3940UW. Your new SCSI (Small Computer System Interface) accelerator card features

- Fast, reliable data transfer among the SCSI devices connected to it
- A configuration control utility that enables you to easily change SCSI-related settings directly from your desktop

## System Requirements

You must have the following hardware and software to use the PowerDomain 2940UW/3940UW.

### Hardware

- MacOS PCI-based (peripheral component interconnect) computer
- 8 MB RAM (random-access memory)
- At least one free PCI expansion slot

### Software

MacOS version 7.5.2 or later

## Tools and Equipment Required

To install the PowerDomain 2940UW/3940UW, you should have the following items on hand:

- At least one PowerDomain 2940UW/3940UW accelerator card
- The *PowerDomain Control Utility* diskette included with your accelerator card
- A medium-sized standard screwdriver
- A wrist grounding strap (optional)

## Notes, Cautions, and Warnings

Always use care when handling any electrical equipment. To avoid injury to people or damage to equipment and data, be sure to follow the cautions and warnings in this document.



**Note:** Notes are reminders, tips, or suggestions that might simplify the procedures included in this document.

---



**Caution:** Cautions alert you to actions that might cause damage to your system or your data.

---



**WARNING:** Warnings alert you to actions that might cause injury to you or someone else.

---

Adaptec does not claim to have included in this document every condition or situation that might require a caution or warning notice. Be sure to consult the documentation for your computer and any connected equipment when you are installing the equipment or changing its configuration.



---

**WARNING:** *Always use caution when handling electrical equipment!*

---





# ... 2

## **Installing the PowerDomain 2940UW/ 3940UW and Connecting SCSI Devices**

This chapter tells you how to do the following:

- Install PowerDomain 2940UW/3940UW accelerator cards in your MacOS PCI-based system (both tower and desktop models)
- Connect internal and external SCSI devices to each PowerDomain 2940UW/3940UW installed
- Set SCSI chain termination
- Assign SCSI IDs

2-1

## Installing the PowerDomain 2940UW/ 3940UW—Tower Models



---

**Note:** If your tower model differs from the one illustrated in this manual, refer to your computer user documentation for instructions on installing an expansion card. (Instructions for desktop models begin on page 2-11.)

---

To install the PowerDomain 2940UW/3940UW in your tower-model computer

- 1 Turn **OFF** the power to the computer and any attached devices, and disconnect all power cords.



---

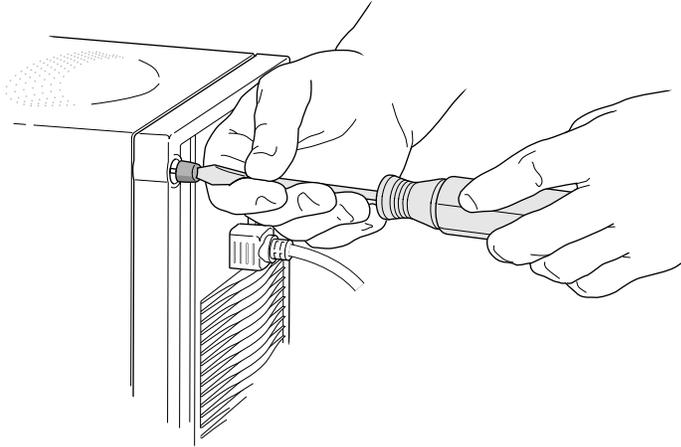
**WARNING:** To avoid possible exposure to electric shock, be sure all power to your system is turned **OFF**.

---

- 2 Press the computer's power button. This will dissipate the charge in the power supply capacitors.

*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*

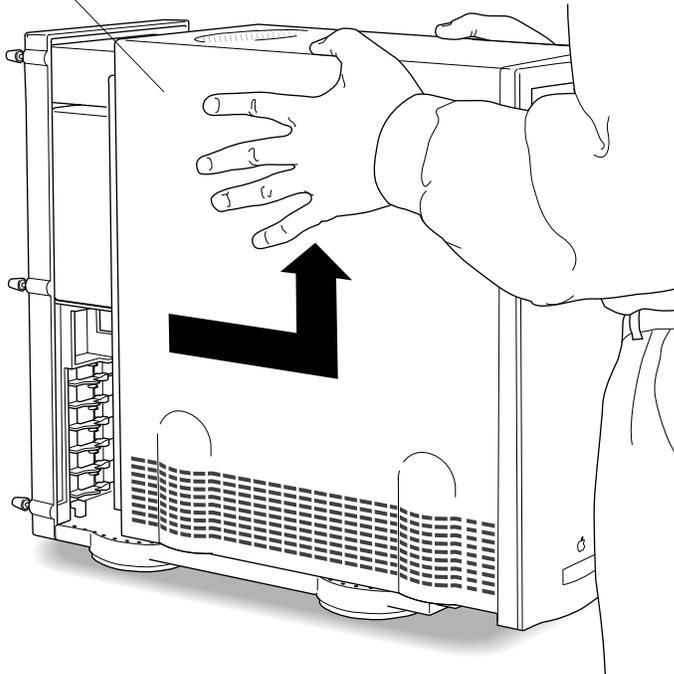
- 3** Loosen the six large screws on the corners and sides of the computer's back panel. Do not completely remove the screws or the back panel.



- 4** Remove the front cover.
  - a** With the front of the computer facing you, place one hand on either side of the cover.
  - b** Slide the cover toward you about 8 in.
  - c** Lift the cover straight up and off the computer.

Refer to your computer user documentation if you need more information about removing the cover.

Slide cover toward  
you approximately 8 in.



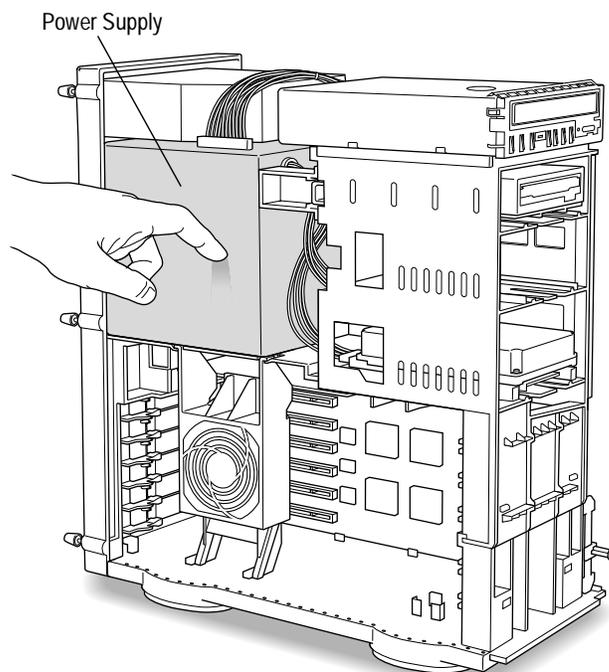
- 5 Touch the metal part of the power supply to discharge any static electricity from your clothes and body. (Use a wrist grounding strap if you have one.)



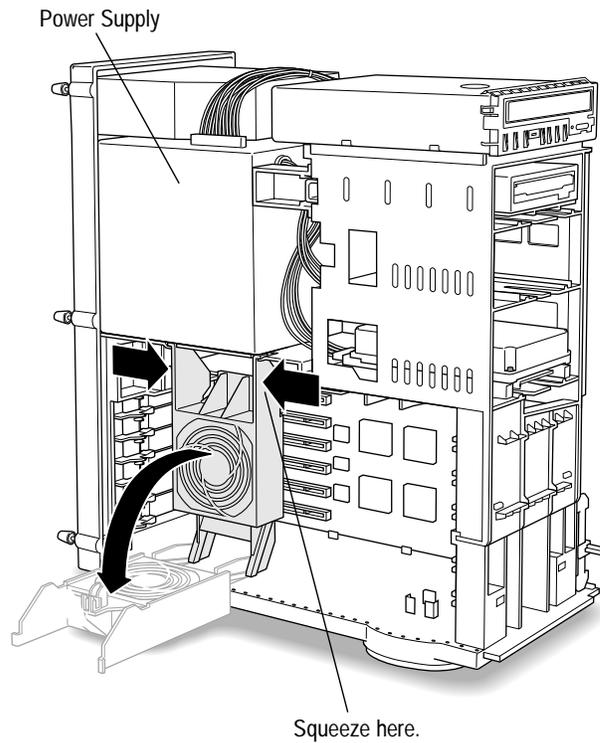
---

**Caution:** Be sure to do this step before you touch any parts inside the computer, install the PowerDomain 2940UW/3940UW, or install any internal devices.

---



- 6 Lower the auxiliary fan.
  - a Release the auxiliary fan by squeezing the sides of the fan housing just below the power supply.
  - b Continue to squeeze while pulling down on the fan.

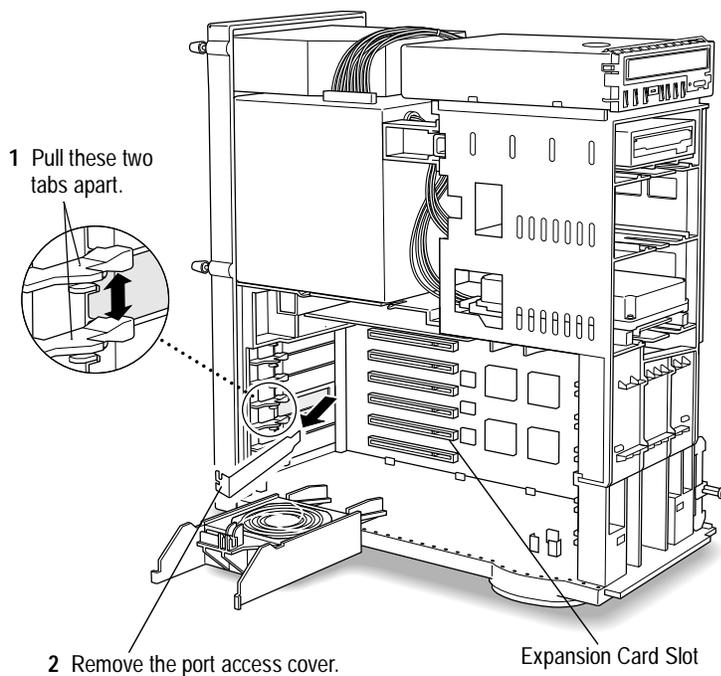


*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*

- 7 Choose an empty PCI expansion card slot, and remove its port access cover.
  - a To release the port access cover, spread the two tabs apart slightly that secure the cover to the computer case.

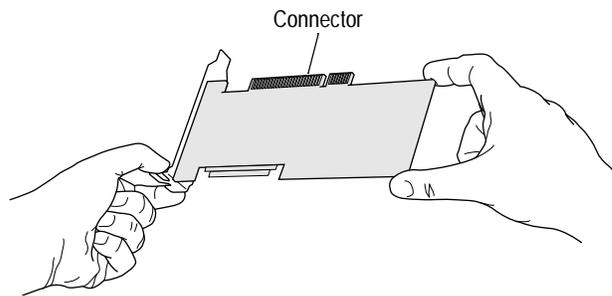


**WARNING:** Be careful not to touch the sharp edges of the port access cover.



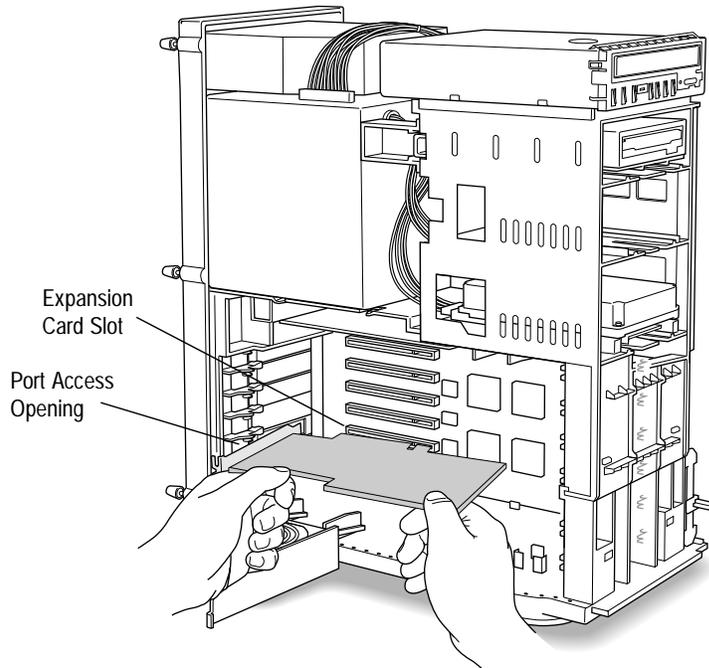
- b** Pull the front portion of the port access cover away from the computer case about 15 degrees.
  - c** Pull the port access cover toward you to remove it from the computer.
  - d** Store the port access cover in a safe place in case you need to use it again.
- 8** Remove the PowerDomain 2940UW/3940UW from its conductive tray. Hold the card by its edges to avoid touching the components.

Place the card on top of the tray if you need to put the card down.



*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*

- 9 Position the PowerDomain 2940UW/3940UW accelerator card component-side down. Align the left side of the card with the port access opening, and align the connector with the expansion card slot.



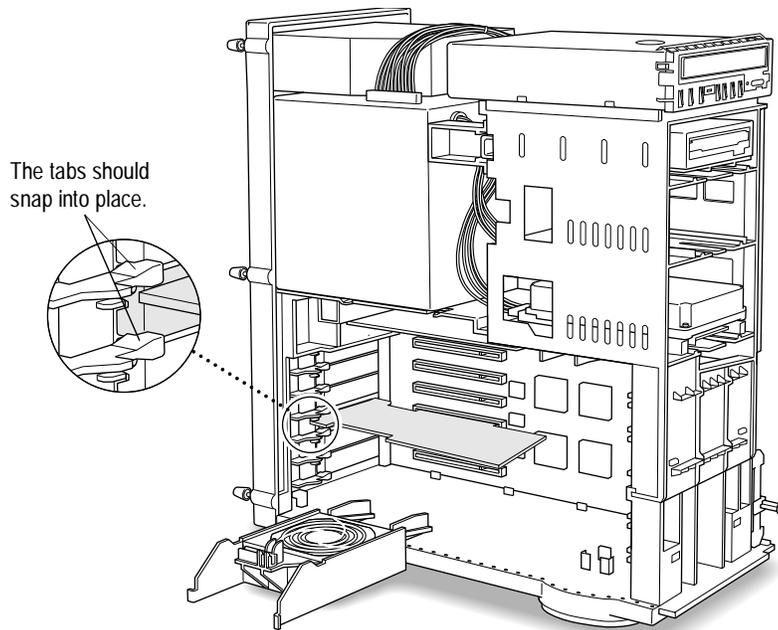
- 10 Insert the connector end of the PowerDomain 2940UW/3940UW firmly into the expansion card slot.
  - a Hold the PowerDomain 2940UW/3940UW at a 15-degree angle while you insert the back left corner of the card into the port access opening and the right corner of the connector into the expansion card slot.

- b Position the card between the two tabs that secured the port access cover you removed in step 7. (You might need to pull the tabs apart slightly so the card fits between them.) At the same time, push the PowerDomain 2940UW/3940UW into the expansion card slot as far as it will go.



**Caution:** *Do not* force the card. If you're having trouble installing it, carefully remove the card and try installing it again.

- c Pull on the accelerator card slightly. If it stays in place, the card is securely seated. If it doesn't, try installing the card again.



**11** Now turn to *Connecting SCSI Cables and Devices* on page 2-19.

## Installing the PowerDomain 2940UW/ 3940UW—Desktop Models



**Note:** If your desktop model differs from the model illustrated in this manual, refer to your computer user documentation for instructions on installing an expansion card. (Instructions for tower models begin on page 2-2.)

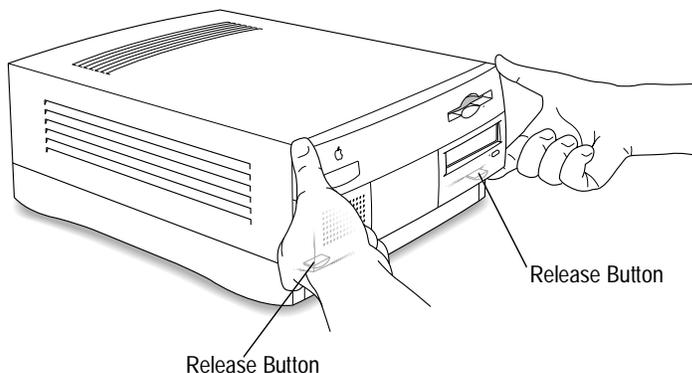
To install the PowerDomain 2940UW/3940UW in your desktop-model computer

- 1 Turn OFF the power to the computer and any attached devices, and disconnect all power cords.

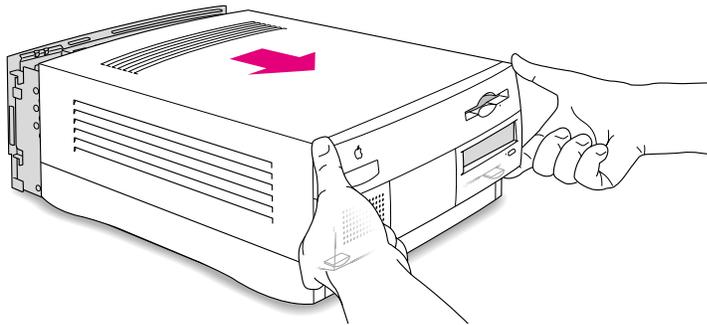


**WARNING:** To avoid possible exposure to electric shock, be sure all power to your system is turned OFF.

- 2 Press the computer's power button. This will dissipate the charge in the power supply capacitors.
- 3 Locate the two release buttons under the front panel ledge with your fingertips.



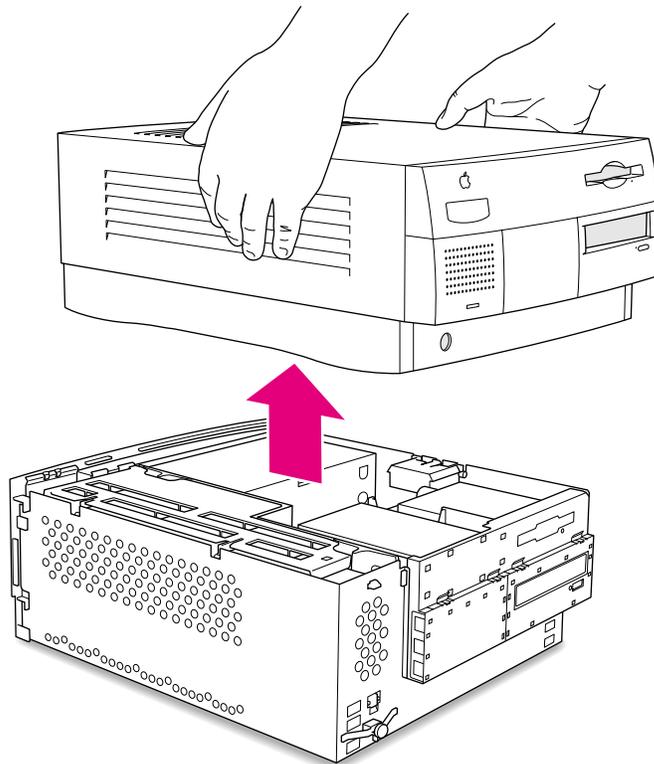
- 4** To release the cover from the computer chassis
  - a** Position the computer so its front is facing you.
  - b** Press and hold the release buttons.
  - c** Pull the cover toward you approximately 2 in.



*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*

- 5 Lift the cover straight up and off the computer.

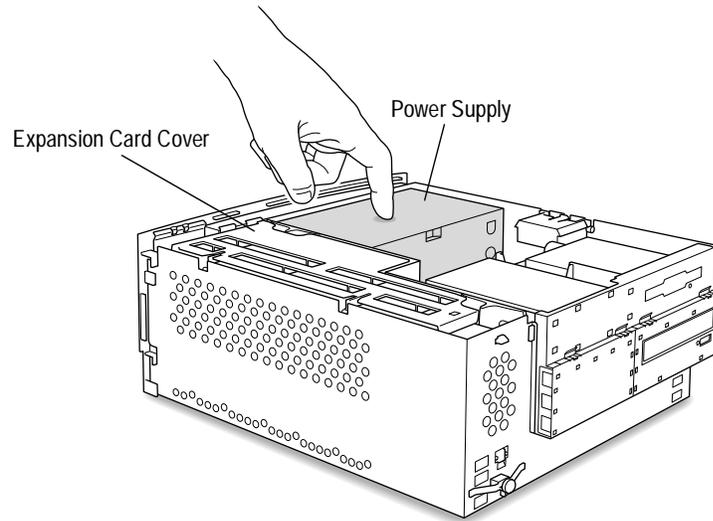
Refer to your computer user documentation if you need more information about removing the cover.



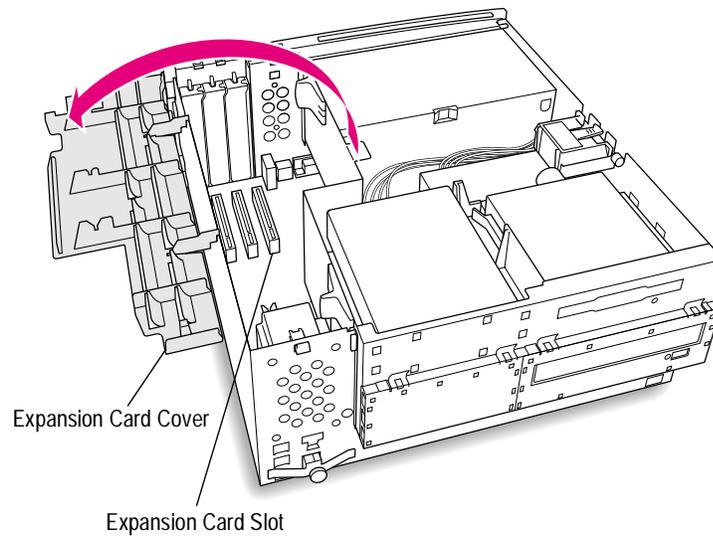
- 6 Touch the metal part of the power supply to discharge any static electricity from your clothes and body. (Use a wrist grounding strap if you have one.)



**Caution:** Be sure to do this step before you touch any parts inside the computer, install the PowerDomain 2940UW/3940UW, or install any internal devices.



**7** Open the expansion card cover.

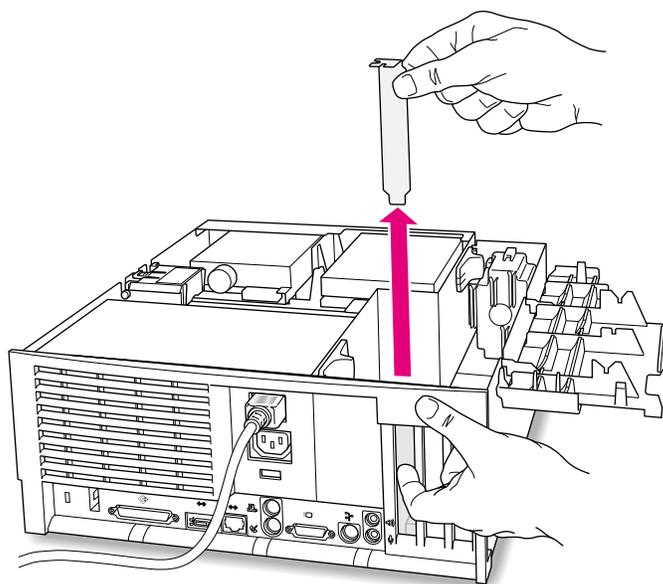


*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*

- 8 Choose an empty PCI expansion card slot, and remove its port access cover. (The three port access covers are located at the back of the computer.)
  - a Grasp the port access cover with your right hand.



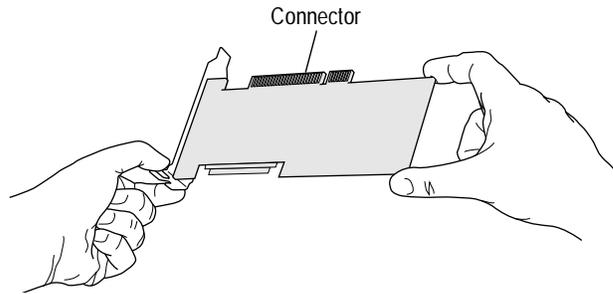
**WARNING:** Be careful not to touch the sharp edges of the port access cover.



(Back of Computer)

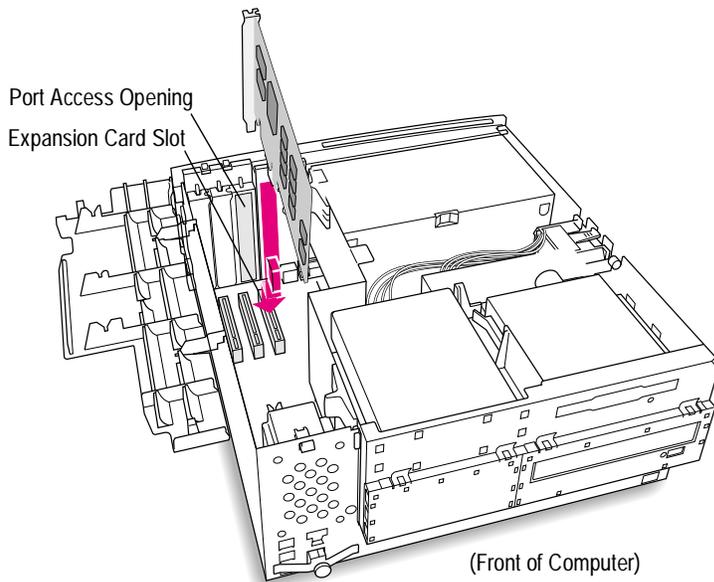
- b** Gently push the port access cover toward the inside of the computer with a finger of your left hand. At the same time, lift the port access cover straight up and out of the computer with your right hand.
  - c** Store the port access cover in a safe place in case you need to use it again.
- 9** Remove the PowerDomain 2940UW/3940UW from its conductive tray. Hold the card by its edges to avoid touching the components.

Place the card on top of the tray if you need to put the card down.



*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*

- 10** Position the PowerDomain 2940UW/3940UW accelerator card so its components face the expansion card cover. Align the left side of the card with the port access opening, and align the connector with the expansion card slot.



- 11** Insert the connector end of the PowerDomain 2940UW/3940UW firmly into the expansion card slot.
  - a** Hold the PowerDomain 2940UW/3940UW at a 15-degree angle while you insert the right corner of the connector into the empty expansion card slot and the back left corner of the card into the access port opening.

- b** Push the PowerDomain 2940UW/3940UW into the expansion card slot as far as it will go.



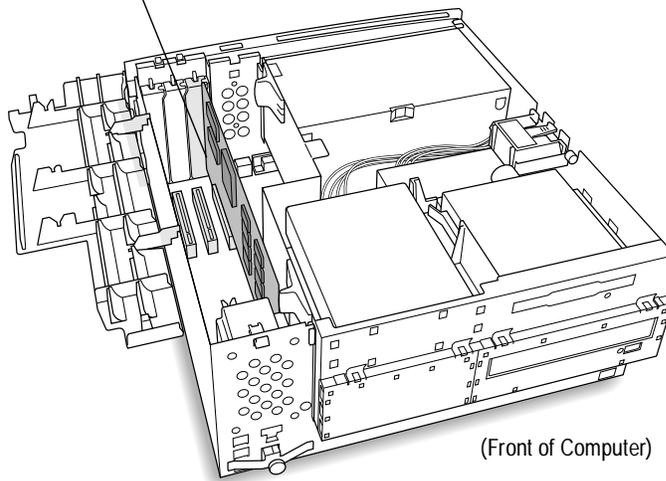
---

**Caution:** *Do not* force the card. If you're having trouble installing it, carefully remove the card and try installing it again.

---

- c** Pull on the accelerator card slightly. If it stays in place, the card is securely seated. If it doesn't, try installing the card again.

PowerDomain 2940UW/3940UW

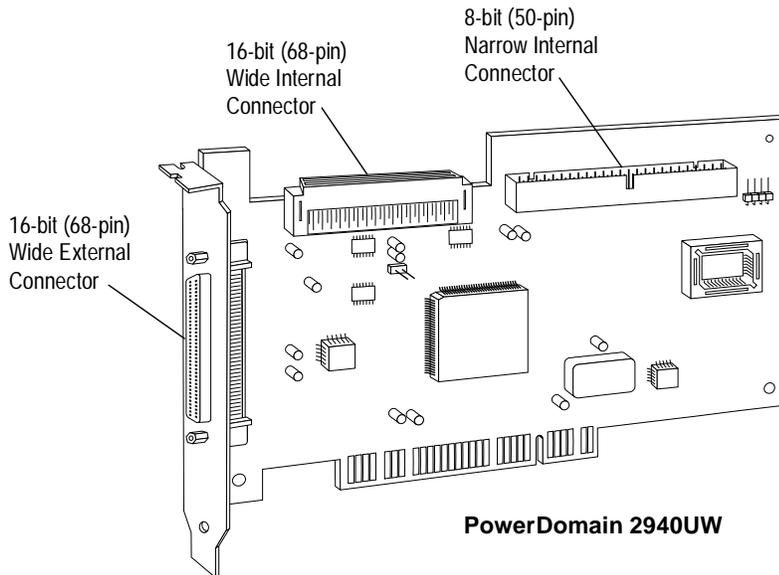


- 12** Continue with the next section, *Connecting SCSI Cables and Devices*.

## Connecting SCSI Cables and Devices

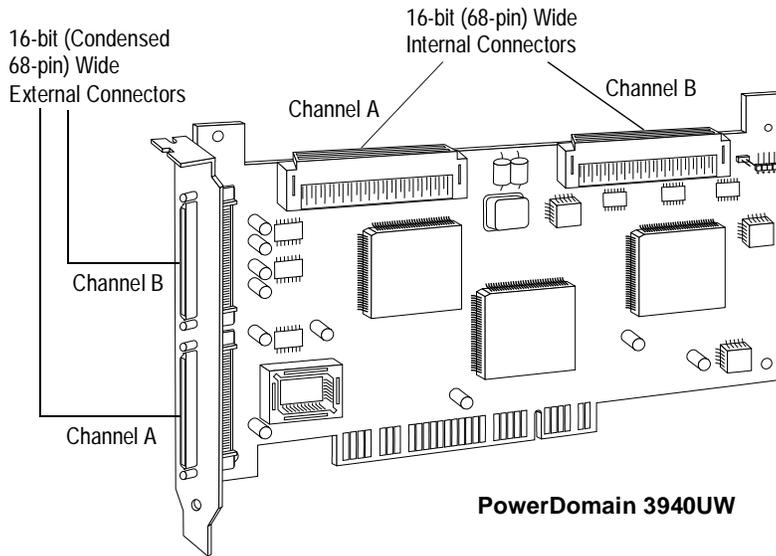
SCSI devices are connected by cables in one continuous line called the *SCSI chain*. A SCSI chain consists of an accelerator card and the SCSI cables and devices connected to it. The SCSI chain can include both internal and external devices.

The PowerDomain 2940UW has one internal and one external 16-bit (68-pin) Wide connector and one internal 8-bit (50-pin) Fast connector. You can connect up to 15 SCSI devices (seven of which can be 8-bit Narrow devices) to a maximum of two connectors in various configurations.



**Caution:** Do not connect SCSI devices to all three connectors of a PowerDomain 2940UW.

The PowerDomain 3940UW has one internal 16-bit (68-pin) and one external 16-bit (condensed 68-pin) Fast and Wide connector per channel (channels A and B). You can connect up to 15 SCSI devices (seven of which can be 8-bit Narrow devices) to each channel in any combination, for a maximum of 30 devices per card.



The PowerDomain 2940UW/3940UW supports single-ended SCSI devices only.



**Caution:** The PowerDomain 2940UW/3940UW accelerator card supports only *single-ended* SCSI devices. *Differential* devices might be damaged if you connect them to the PowerDomain 2940UW/3940UW chain. Refer to your SCSI device documentation to determine if a device is single-ended or differential.

## Choosing SCSI Cables

Always use high-quality SCSI cables to connect the PowerDomain 2940UW/3940UW to devices on the SCSI chain. Poor-quality cables can cause data corruption and other problems.

The round cables used for external SCSI devices vary widely in quality and electrical characteristics. Be sure external SCSI cables meet SCSI-2 standards. (Your cable reseller should be able to verify this.)

When purchasing external SCSI cables

- Choose external round-shielded cables with a single-ended impedance range of 80 to 110 ohms.
- Make sure all cables in the chain have the same wire gauge: at least #28 AWG for the PowerDomain 2940UW and at least #30 AWG for the PowerDomain 3940UW. (The gauge is usually printed on the cable.)



---

**Note:** Adaptec sells high-quality internal and external SCSI-2 cables, which you can purchase by calling Adaptec at the number listed on page iii.

---

To assure reliable operation, the total length of the SCSI chain, including both internal and external cabling, should not exceed 6 m (19.5 ft).

When calculating the total length of the SCSI chain, consider the following:

- The length of cables inside external cases. A drive might have up to 12 in. of cabling inside.
- The number of connections. One connection equals approximately 6 in.

- Any change in cable impedance, including the following
  - A change in wire gauge from one cable to the next
  - A change in the type of wire from one cable to the next
  - A change in the type of insulation from one cable to the next
  - A change from twisted-pair to ribbon cables, which often happens in drive cases

The effects of impedance changes will reduce the maximum reliable length of the SCSI chain.

- The maximum length of stub (drop) cables is 10 cm (4 in.), and the minimum spacing between stub cables is 30 cm (12 in.).
- Flat single-ended cables should be spaced at least 0.05 in. from the cable itself (when the cable is folded), from other cables, and from any metallic part of the system.

## Connecting Internal SCSI Devices



---

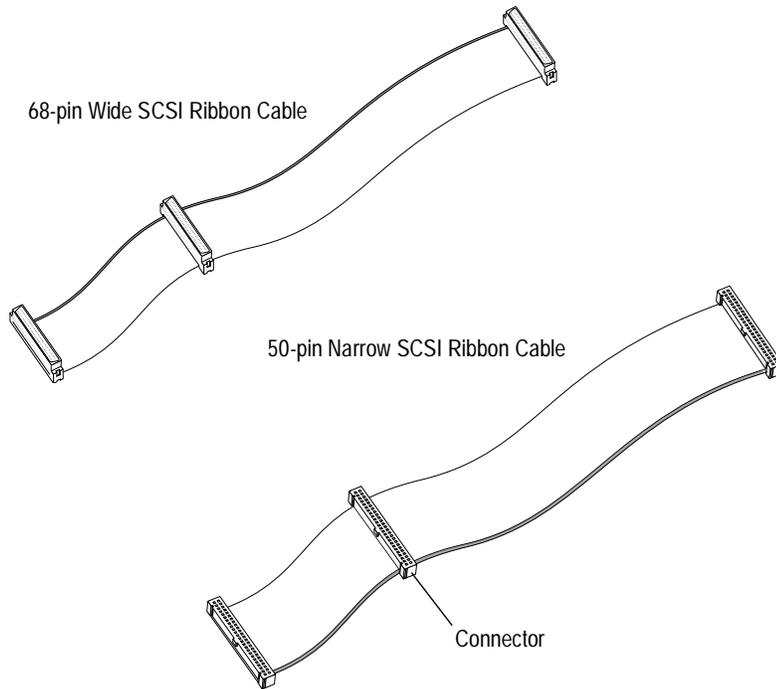
**Note:** If you are not installing internal SCSI devices, turn to *Connecting External SCSI Devices—Tower Models* on page 2-34 or *Connecting External SCSI Devices—Desktop Models* on page 2-41.

Before installing an internal SCSI device, refer to the documentation included with the device for installation instructions. Sometimes a SCSI device must be installed before you can connect it to the accelerator card.

---

*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*

To attach devices to the 50-pin internal connector of the PowerDomain 2940UW, use a 50-pin Narrow ribbon cable. To attach devices to the 68-pin internal connectors of the PowerDomain 2940UW/3940UW, use 68-pin Wide ribbon cables. Make sure your SCSI ribbon cable(s) have enough connectors to accommodate all your internal SCSI devices.

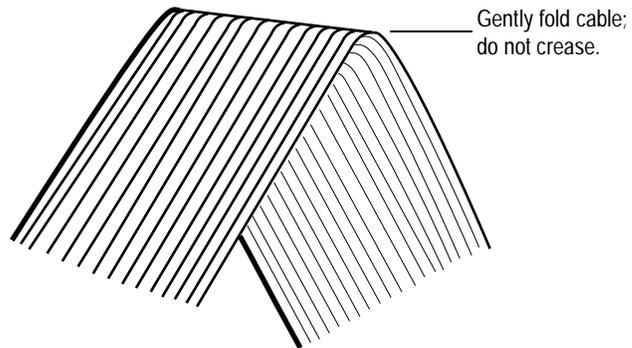




---

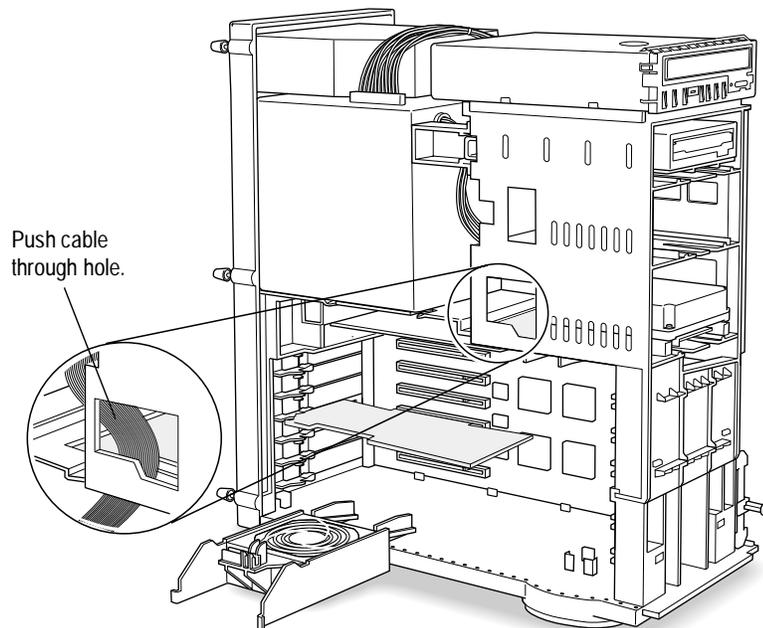
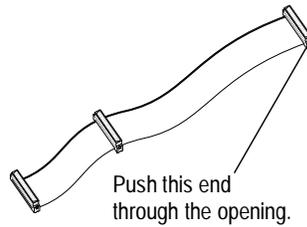
**Caution:** When arranging ribbon cables so they'll fit in the computer, be careful not to crease them.

---



### Routing the Cables—Tower Models

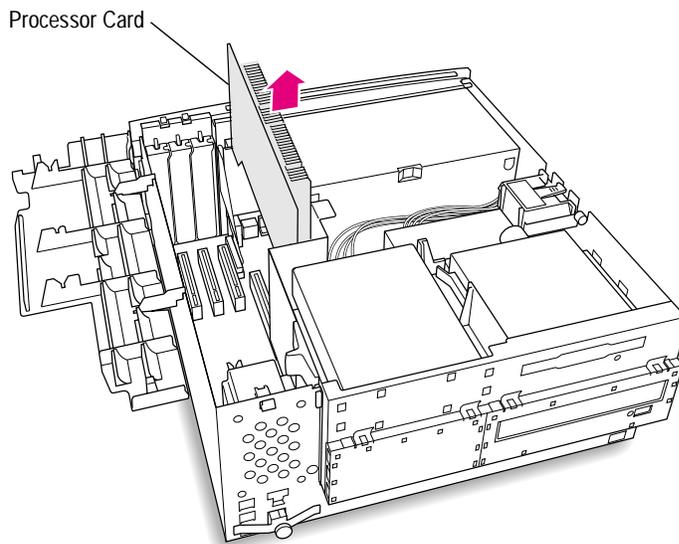
- 1 Push one end of a 50- or 68-pin SCSI ribbon cable (as shown in the illustration on the right) through the opening between the upper and lower portions of the computer.



- 2 Continue with step 1 in *Connecting Internal Devices—Tower and Desktop Models* on page 2-29.

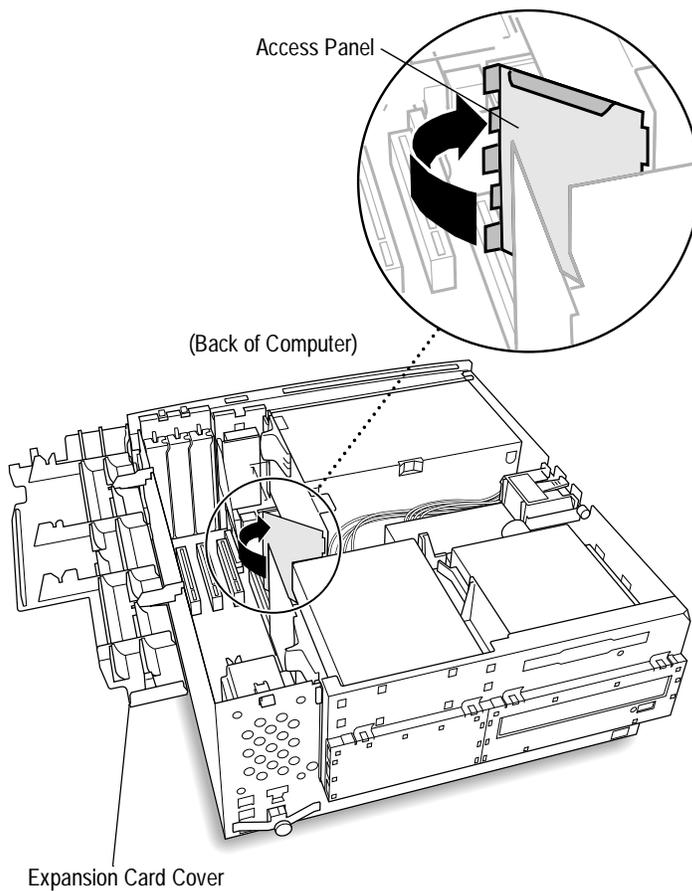
## Routing the Cables—Desktop Models

- 1 If your computer has a processor card, grasp both ends of the processor card and pull it straight up and out of the computer.

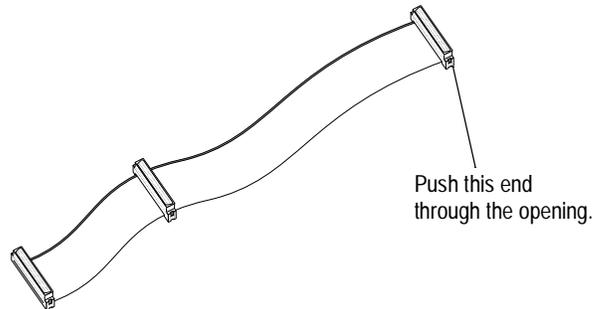


- 2 Remove the access panel.
  - a To release the left side of the access panel, push it toward the expansion card cover.
  - b Swing the left side of the access panel toward the back of the computer.
  - c Grasp the left side of the access panel, and pull the panel toward the expansion card cover and out of the three slots in the chassis.
  - d Store the access panel in a safe place in case you need to use it later.

*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*



- 3 Push one end of a 50- or 68-pin SCSI ribbon cable (as shown in the following illustration) through the opening created when you removed the access panel.



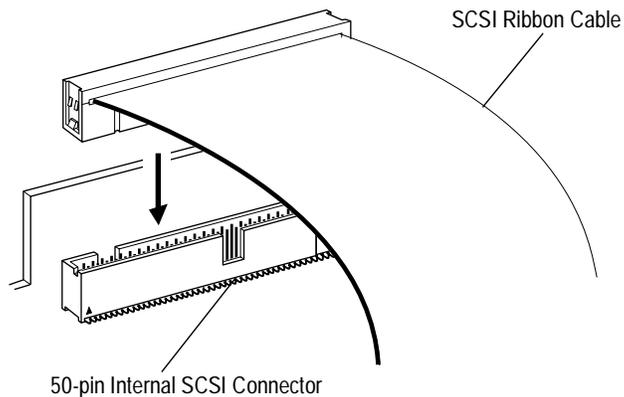
- 4 Replace the processor card (if you have one).
- 5 Continue with the next section, *Connecting Internal Devices—Tower and Desktop Models*.

## Connecting Internal Devices—Tower and Desktop Models

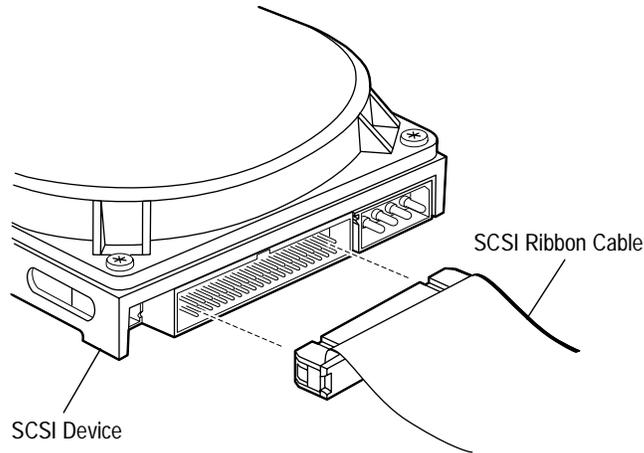
### 50-pin Internal Connector (PowerDomain 2940UW only)

To connect internal SCSI devices to the 50-pin internal connector of the PowerDomain 2940UW

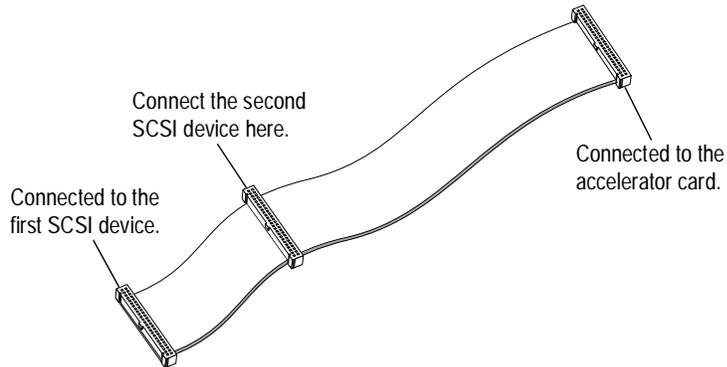
- 1 Connect the cable end referred to in step 1 on page 2-25 (for tower models) or in step 3 on page 2-28 (for desktop models) to the 50-pin internal accelerator card connector. (PowerDomain 2940UW connectors are designed to plug in only one way.)



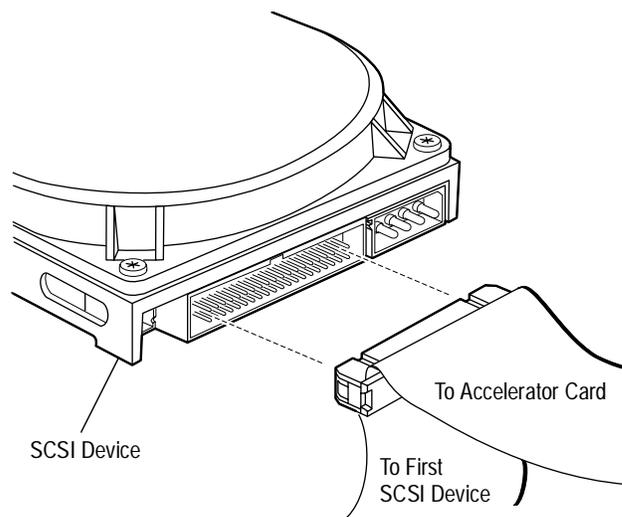
- 2 Plug the last connector on the ribbon cable (opposite the end attached to the accelerator card) into the 50-pin SCSI connector on an internal SCSI device.



- 3 To connect a second internal SCSI device, plug a free 50-pin SCSI ribbon cable connector into the SCSI connector on the second internal SCSI device.



*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*

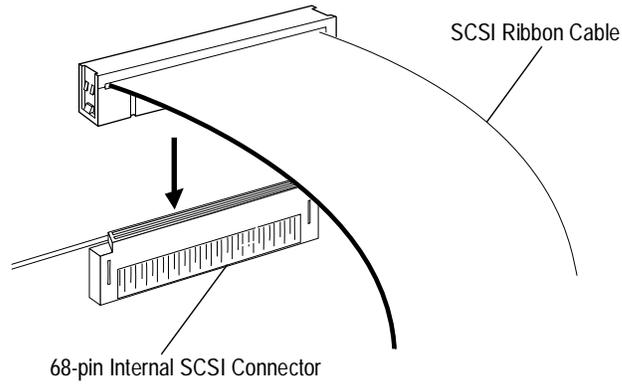


**Note:** Be sure to terminate the device at the end of the SCSI chain. (Termination is explained in *Setting SCSI Chain Termination* on page 2-48.) Be sure to check the documentation included with your SCSI device for any special installation instructions.

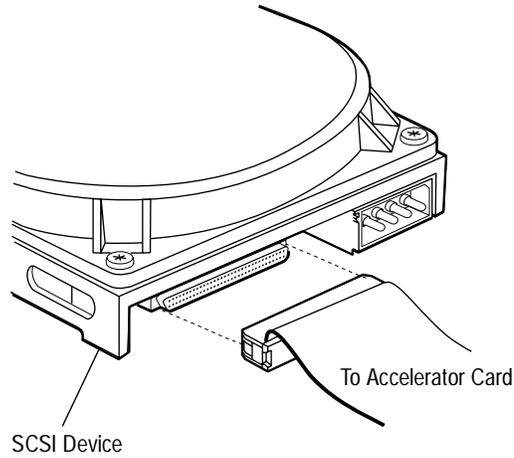
**68-pin Internal Connector (PowerDomain 2940UW/3940UW)**

To connect internal SCSI devices to the 68-pin internal connector(s) of the PowerDomain 2940UW/3940UW

- 1 Connect the cable end referred to in step 1 on page 2-25 (for tower models) or in step 3 on page 2-28 (for desktop models) to a 68-pin internal accelerator card connector. (PowerDomain 2940UW/3940UW connectors are designed to plug in only one way.)

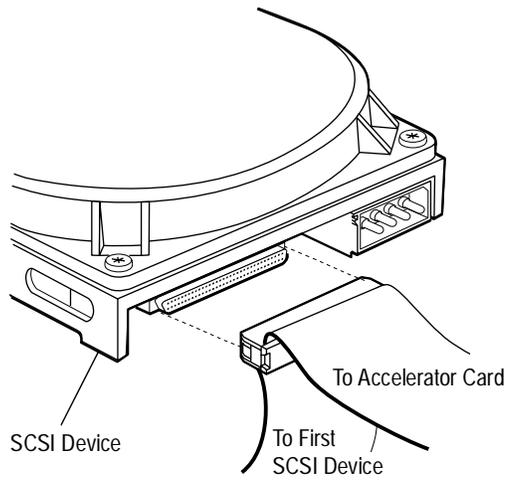
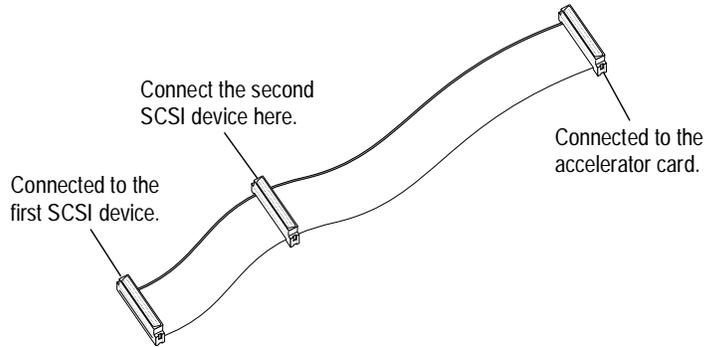


- 2 Plug the last connector on the ribbon cable (opposite the end attached to the accelerator card) into the 68-pin SCSI connector on an internal SCSI device.



*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*

- 3** To connect a second internal SCSI device, plug a free 68-pin SCSI ribbon cable connector into the SCSI connector on the second internal SCSI device.





---

**Note:** Be sure to terminate the device at the end of the SCSI chain. (Termination is explained in *Setting SCSI Chain Termination* on page 2-48.) Be sure to check the documentation included with your SCSI device for any special installation instructions.

---

## Connecting External SCSI Devices—Tower Models



---

**Note:** Instructions for desktop models begin on page 2-41.

---

Before you connect external SCSI devices, you should reassemble your computer and restore power.

### Reassembling the Computer and Restoring Power

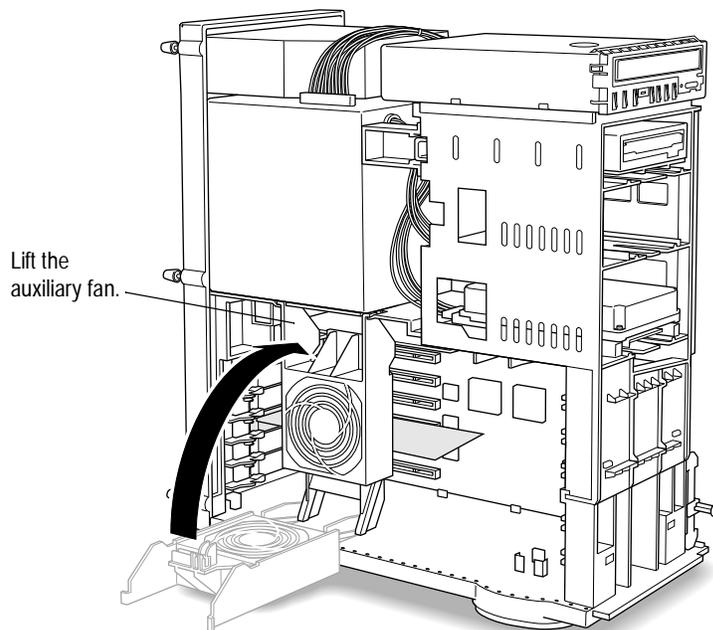
If you installed internal devices, before you reassemble your computer, check the following:

- Is each SCSI chain properly terminated?
- Is each SCSI device on a specific SCSI chain set to a unique SCSI ID?
- Is the PowerDomain 2940UW/3940UW firmly seated and secured in its expansion card slot?
- Are internal and external SCSI devices firmly connected to the PowerDomain 2940UW/3940UW?

*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*

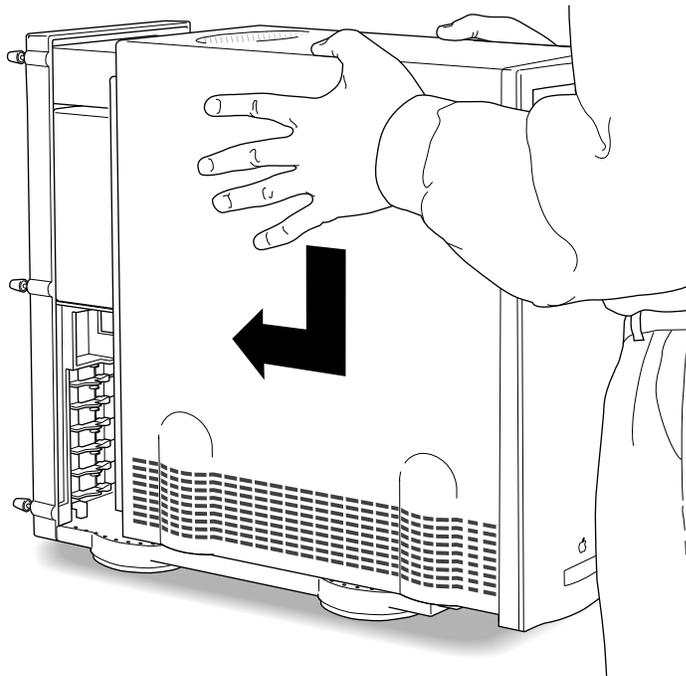
To reassemble the computer and restore power

- 1 Lift the auxiliary fan back in place.



The fan housing should touch all expansion cards installed in the computer.

- 2 Replace the cover on the computer case.
  - a Align the cover with the case, and lower the cover onto the case.
  - b Push the cover back until it engages the back panel.



*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*

- 3 Tighten all six screws on the back panel.
- 4 Reconnect the power cords to all external SCSI devices and to the computer.
- 5 Turn ON the power to all external devices, and then turn ON the power to the computer.

After the accelerator card is installed, you can change its configuration using the configuration control utility, which is explained in Chapter 3, *Opening and Using the PowerDomain Control Utility*.



---

**Note:** If you encounter any problems during installation, see Chapter 4, *Troubleshooting*.

---

## Connecting External SCSI Devices



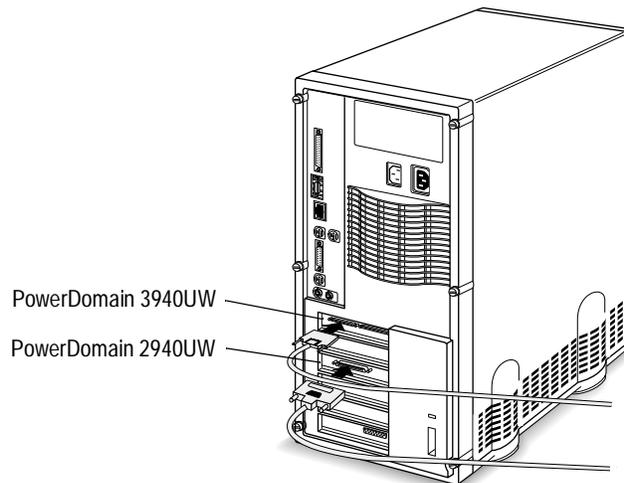
---

**Note:** Mixing Wide (68-pin) and Narrow (50-pin) devices requires special work to ensure proper termination. Contact Adaptec Technical Support at the number shown on page ii for assistance.

---

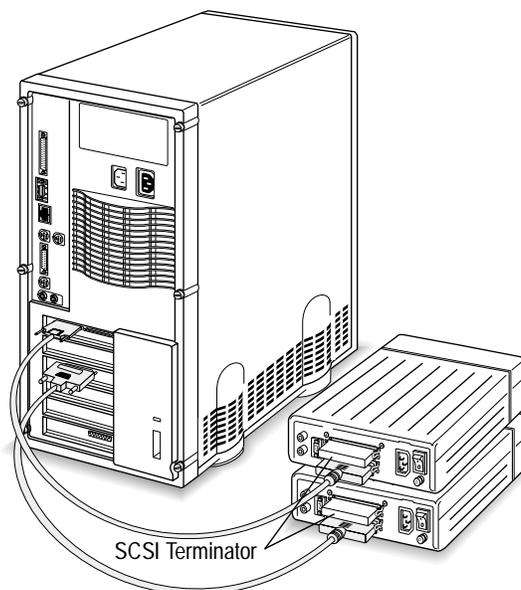
To connect external SCSI devices

- 1 Attach one 68-pin SCSI cable connector to the PowerDomain 2940UW external 68-pin connector,  
or  
attach a condensed 68-pin SCSI cable connector to one or both of the PowerDomain 3940UW external condensed SCSI cable connectors.



*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*

- 2** Attach the connector at the other end of the external cable to either one of the SCSI connectors on the external SCSI device.



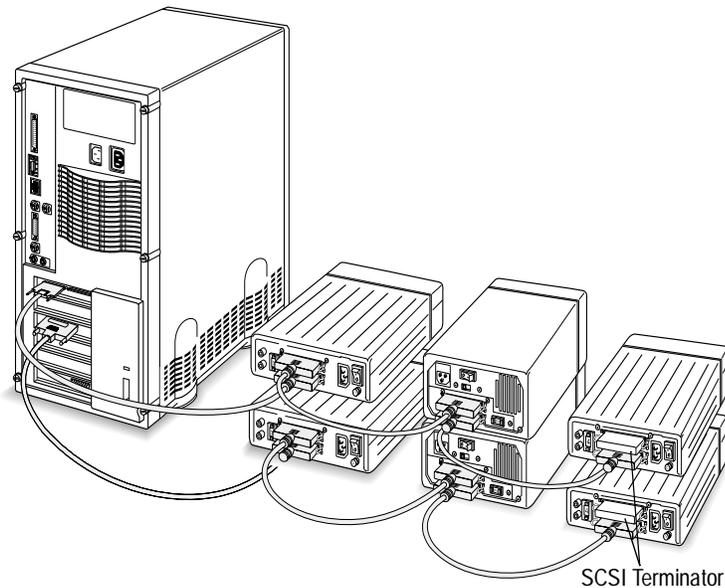
- 3** To connect another external SCSI device
  - a** Attach one end of a SCSI cable to the empty connector on the device you just connected to the computer.
  - b** Attach the other end of the cable to either SCSI connector on the second external device.
- 4** To connect a third external SCSI device
  - a** Attach one end of a SCSI cable to the empty connector on the second device in the chain.
  - b** Attach the other end of the cable to either SCSI connector on the third internal device.

- Repeat step 4 until you have connected all external SCSI devices.



**Note:** Remember, you can connect up to 15 SCSI devices to the PowerDomain 2940UW (seven of which can be 8-bit Narrow devices) to a maximum of two connectors in various configurations.

You can connect up to 15 SCSI devices (seven of which can be 8-bit Narrow devices) to each channel of the PowerDomain 3940UW in any combination, for a maximum of 30 devices per card.



- Terminate the device at the end of the SCSI chain.

Turn to *Setting SCSI Chain Termination* on page 2-48 for instructions.

## **Connecting External SCSI Devices—Desktop Models**

Before you connect external SCSI devices, you should reassemble your computer and restore power.

### **Reassembling the Computer and Restoring Power**



---

**Note:** Instructions for tower models begin on page 2-34.

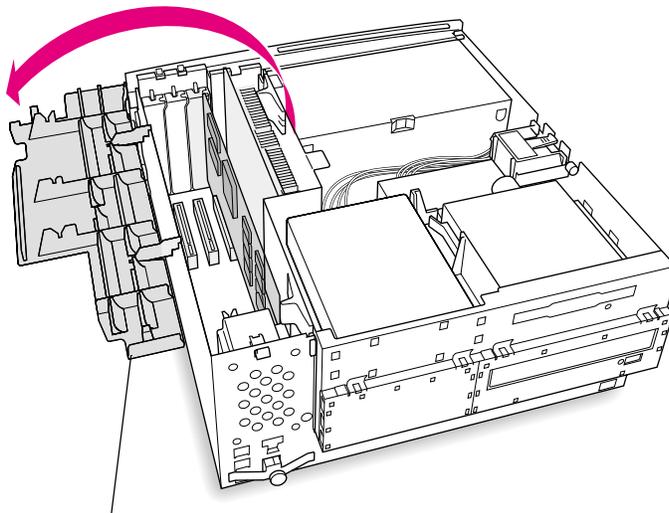
---

If you installed internal devices, before you reassemble your computer, check the following:

- Is each SCSI chain properly terminated?
- Is each SCSI device on a specific SCSI chain set to a unique SCSI ID?
- If you have a processor card, is it firmly seated and secured in its expansion card slot?
- Is the PowerDomain 2940UW/3940UW firmly seated and secured in its expansion card slot?
- Are internal and external SCSI devices firmly connected to the PowerDomain 2940UW/3940UW?

To reassemble the computer and restore power

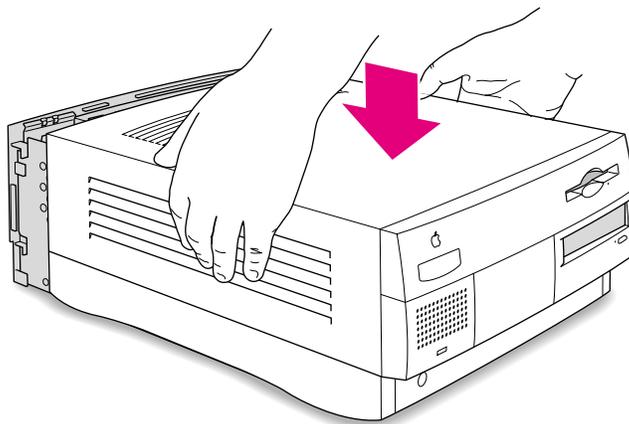
- 1 Close the expansion card cover, and snap it into place.



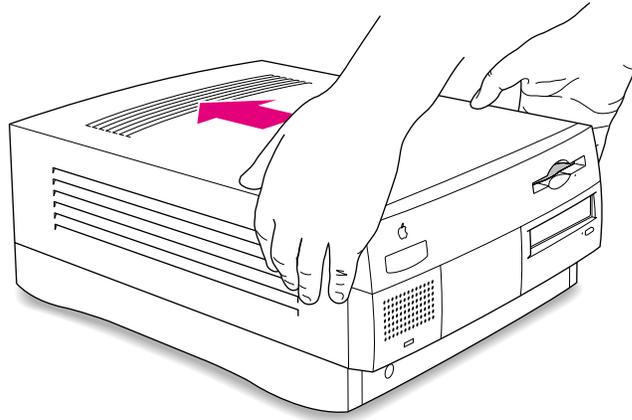
Expansion Card Cover

*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*

- 2 Replace the cover on the computer case.
  - a Align the cover with the case, and lower the cover onto the case so there is about a 2 in. gap between the back of the top cover and the back of the chassis.



- b** Slide the cover back until it snaps into place.



- 3** Reconnect the power cords to all external SCSI devices and to the computer.
- 4** Turn ON the power to all external devices, and then turn ON the power to the computer.
- 5** After the accelerator card is installed, you can change its configuration using the configuration control utility, which is explained in Chapter 3, *Opening and Using the PowerDomain Control Utility*.

## Connecting External SCSI Devices



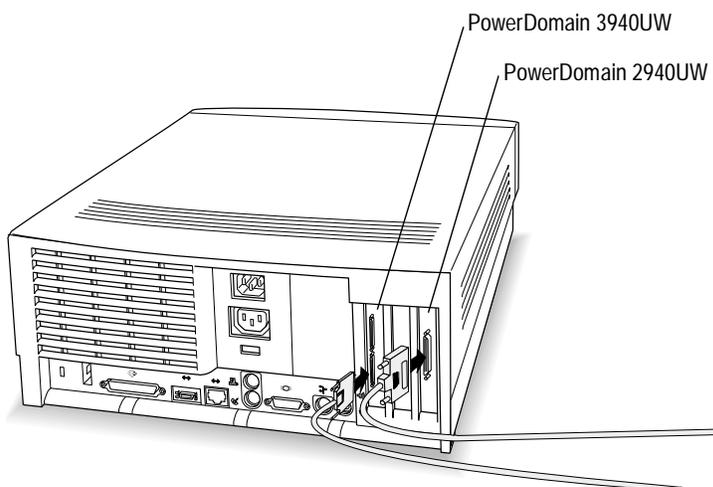
---

**Note:** Mixing Wide (68-pin) and Narrow (50-pin) devices requires special work to ensure proper termination. Contact Adaptec Technical Support at the number shown on page ii for assistance.

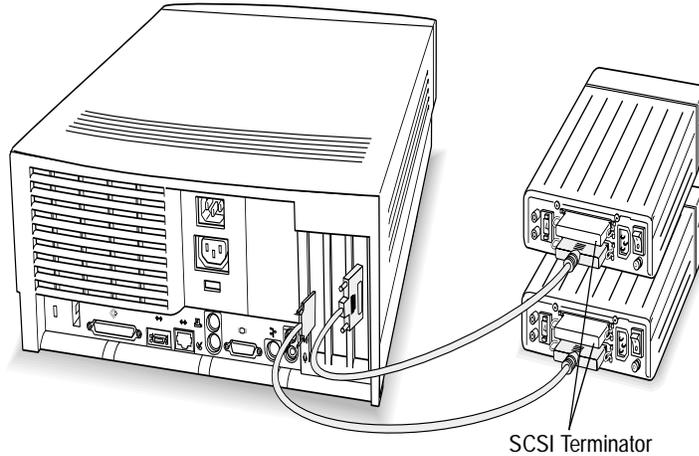
---

To connect external SCSI devices

- 1 Attach one 68-pin SCSI cable connector to the PowerDomain 2940UW external 68-pin connector,  
or  
attach a condensed 68-pin SCSI cable connector to one or both of the PowerDomain 3940UW external condensed SCSI cable connectors.



- 2** Attach the connector at the other end of the external cable to either one of the SCSI connectors on the external SCSI device.



- 3** To connect another external SCSI device
  - a** Attach one end of a SCSI cable to the empty connector on the device you just connected to the computer.
  - b** Attach the other end of the cable to either SCSI connector on the second external device.
- 4** To connect a third external SCSI device
  - a** Attach one end of a SCSI cable to the empty connector on the second device in the chain.
  - b** Attach the other end of the cable to either SCSI connector on the third internal device.

*Installing the PowerDomain 2940UW/3940UW and Connecting SCSI Devices*

- 5 Repeat step 4 until you have connected all external SCSI devices.

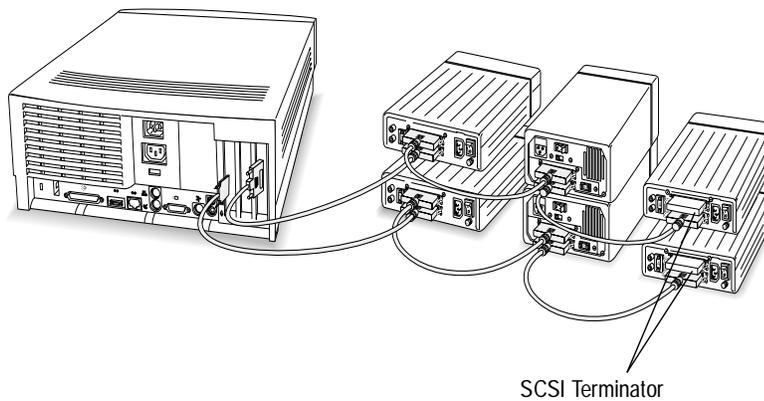


---

**Note:** Remember, you can connect up to 15 SCSI devices to the PowerDomain 2940UW (seven of which can be 8-bit Narrow devices) to a maximum of two connectors in various configurations.

You can connect up to 15 SCSI devices (seven of which can be 8-bit Narrow devices) to each channel of the PowerDomain 3940UW in any combination, for a maximum of 30 devices per card.

---



- 6 Terminate the device at the end of the SCSI chain.  
The next section explains how.

## Setting SCSI Chain Termination

*Termination circuits* must be either installed in or enabled on the first and last physical devices of the SCSI chain; otherwise, the chain will not operate properly. Incorrect termination can cause numerous problems such as missing drives, system error messages, applications reported as bad, failure to restart, or system hangs during restart.

Because PowerDomain 2940UW/3940UW accelerator cards support fast SCSI-2 transfers, they use a special form of termination: *active termination*. This termination is designed for the faster transfer rates of Fast SCSI-2 drives.

Many drive manufacturers supply hard disk drives with *passive* terminators, which you must remove before you can safely use the drive with the PowerDomain 2940UW/3940UW. If you are using Fast SCSI-2 drives, check the documentation that came with the drive to determine if your hardware has active termination. If you are unsure, contact the supplier of your hard disk drive; the supplier should be able to assist you.

To set termination on a SCSI chain

- 1 Determine which two SCSI devices, including the PowerDomain 2940UW/3940UW, are at the two ends of the SCSI chain. Then refer to the SCSI device documentation for instructions on enabling termination for these devices.
- 2 Disable termination on all other devices on the SCSI chain.



---

**Note:** Some SCSI devices have internal terminators. You should place these devices at the end of the SCSI chain, if possible; remove the terminators yourself; or have a qualified technician remove them for you.

---

Read the following sections for more information about changing termination settings.

## **Setting SCSI Device Termination**

Termination on some SCSI devices is controlled by a device (such as a switch) located close to the SCSI connector. On other SCSI devices, you must physically remove or install built-in terminators. Refer to the SCSI device documentation to determine how to enable or disable termination on your particular SCSI device(s), or contact a qualified technician to perform the procedure for you.

## **Setting Accelerator Card Termination**

Use the configuration control utility to change the termination of the PowerDomain 2940UW/3940UW accelerator card. (See *Setting Termination* on page 3-7.)

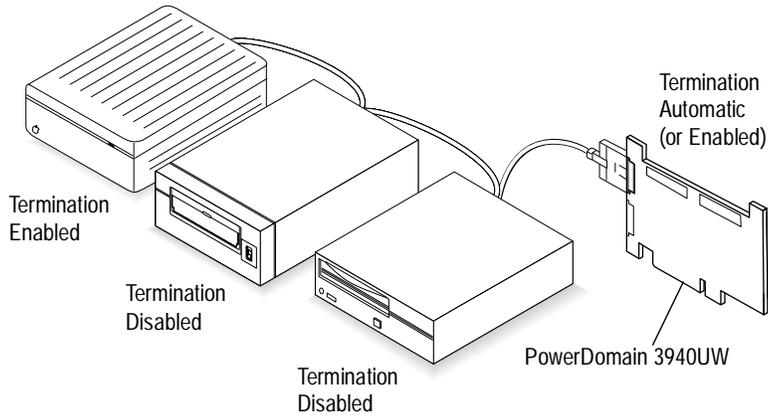
## **Termination Examples**

The following sections show the most commonly used termination configurations.

### **PowerDomain 3940UW with 68-pin External Devices**

When only the PowerDomain 3940UW external connector for channel A (and/or B) has SCSI devices connected to it, you must enable termination on the last SCSI device. You must also enable termination on the PowerDomain 3940UW. (See *Setting Termination* on page 3-7 for instructions.)

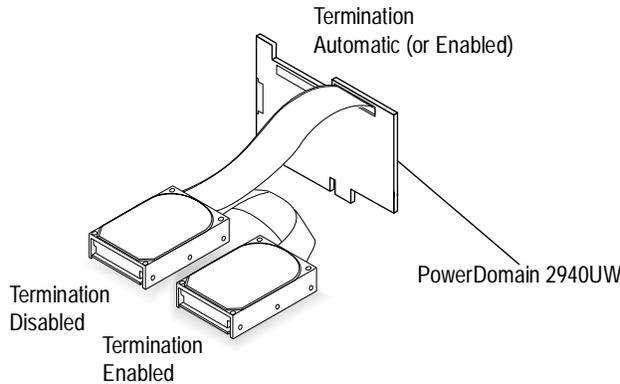
The following illustration shows three external devices connected by three external cables. One external cable is also attached to one of the condensed 68-pin external connectors.



### PowerDomain 2940UW with 50-pin Internal Devices

If you attach internal SCSI devices to the PowerDomain 2940UW 50-pin internal SCSI connector and do not attach any external devices, you must enable termination on the last internal device in the chain and disable termination on the other devices. You must also enable termination on the PowerDomain 2940UW. (See *Setting Termination* on page 3-7 for instructions.)

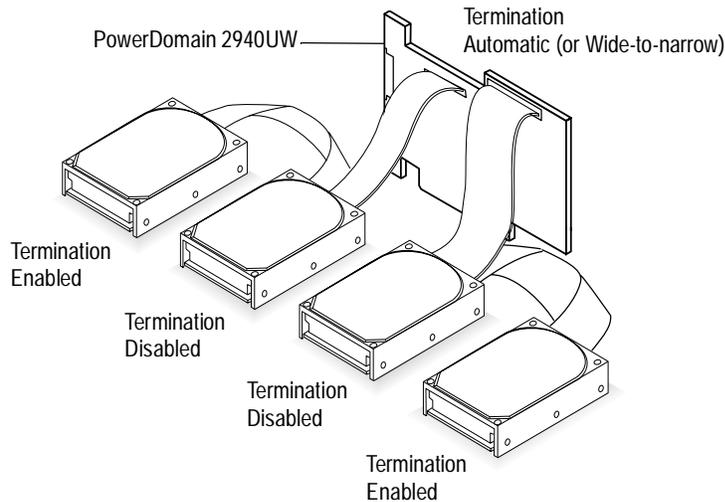
The following illustration shows two internal devices connected to an internal cable, which is attached to the 50-pin connector.



### PowerDomain 2940UW with 50-pin and 68-pin Internal Devices

When both the 50-pin and 68-pin internal connectors on the PowerDomain 2940UW have SCSI devices connected to them, you must enable termination on the last SCSI device connected to each connector, and you must set termination on the PowerDomain 2940UW to Automatic or Wide-to-narrow. (See *Setting Termination* on page 3-7 for instructions.)

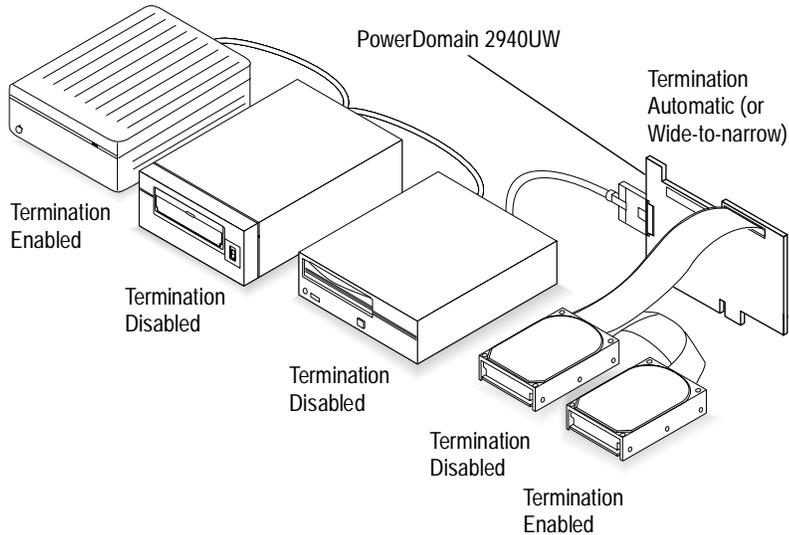
The following illustration shows four internal devices connected to two internal cables. One cable is attached to the 50-pin (Narrow) connector, and the other cable is attached to the internal 68-pin (Wide) connector.



### PowerDomain 2940UW with 50-pin Internal and 68-pin External Devices

When both the 50-pin (Narrow) internal and 68-pin (Wide) external connectors of the PowerDomain 2940UW have SCSI devices attached to them, you must enable termination on the last SCSI device attached to each connector, and you must set termination on the PowerDomain 2940UW to Automatic or Wide-to-narrow. (See *Setting Termination* on page 3-7 for instructions.)

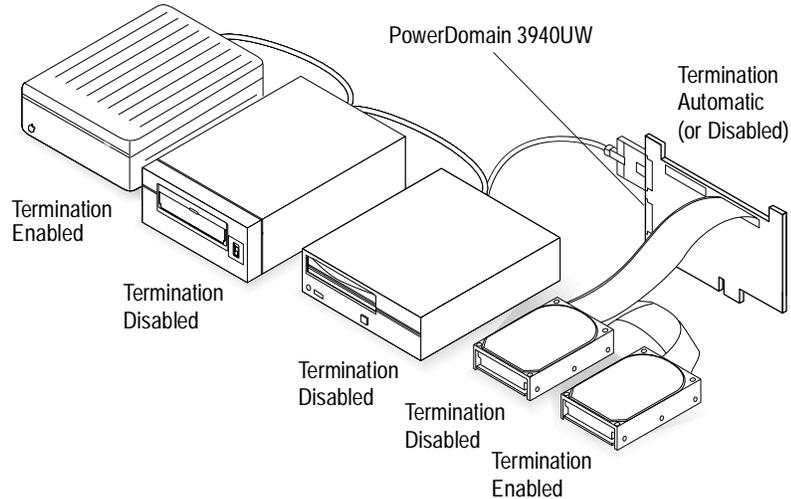
The following illustration shows two internal devices connected to an internal cable, which is attached to the 50-pin connector, and three external devices connected by three external cables. One external cable is also attached to the 68-pin external connector.



### PowerDomain 3940UW with 68-pin Internal and Condensed 68-pin External Devices

When both the 68-pin internal and condensed 68-pin external connectors have SCSI devices attached to them, you must enable termination on the last SCSI device attached to each connector, and you must disable termination on the PowerDomain 3940UW. (See *Setting Termination* on page 3-7 for instructions.)

The following illustration shows two internal devices connected to an internal cable, which is attached to the internal connector for channel B, and three external devices connected by three external cables. One external cable is also attached to the condensed 68-pin external connector for channel B.



## Setting SCSI IDs

Each device on the SCSI chain, including the accelerator card, must have a unique *SCSI ID*. The computer uses the SCSI ID to identify the SCSI device on the SCSI chain.

Setting SCSI IDs is a two-step process:

- 1 Determine the SCSI ID of each device to be connected on the SCSI chain.

The PowerDomain 2940UW/3940UW is shipped with a SCSI ID of 7. To determine the SCSI IDs of disk drives, CD-ROM drives, and other devices, refer to the device documentation.

- 2 Change the SCSI IDs, if needed, so no IDs are duplicated on the *same* SCSI chain and each device has an appropriate SCSI ID.

## Installing Multiple PowerDomain 2940UW/3940UW Accelerator Cards

You can install multiple PowerDomain 2940UW/3940UW accelerator cards in your computer if enough PCI expansion card slots are available. Each accelerator card has its own separate SCSI chain and attached SCSI devices.

To install additional accelerator cards, repeat steps 7 through 10, beginning on page 2-7.



---

**Note:** If you encounter any problems during installation, see Chapter 4, *Troubleshooting*.

---



# ... 3

## Opening and Using the PowerDomain Control Utility

The PowerDomain Control utility enables you to do the following for all installed PowerDomain 2940UW/3940UW accelerator cards—directly from your computer’s desktop:

- Obtain additional SCSI controller information
- Set termination
- Update a SCSI controller’s firmware by programming its flash ROM
- Set parity options
- Select an initiator SCSI ID
- Reset SCSI default values
- Set target options, including synchronous transfer rate, SCSI disconnect, wide negotiation, and ultraSCSI transfer

This chapter provides instructions for opening and using the PowerDomain Control utility.

## Opening the PowerDomain Control Utility

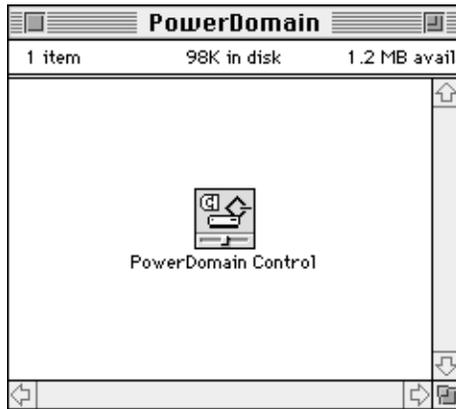
Before you begin this procedure, make a back-up copy of the *PowerDomain Control Utility* disk supplied with your PowerDomain 2940UW/3940UW accelerator card. Then store the original disk in a safe place.

If you need information about making a back-up copy or about performing any other basic procedure, refer to your user documentation or request assistance from someone who knows how to use MacOS systems.

To open the PowerDomain Control utility

- 1 Insert the back-up copy of the *PowerDomain Control Utility* disk into the floppy disk drive.

A window similar to the following appears. (If the window doesn't appear, double-click the PowerDomain Control disk icon on your desktop.)

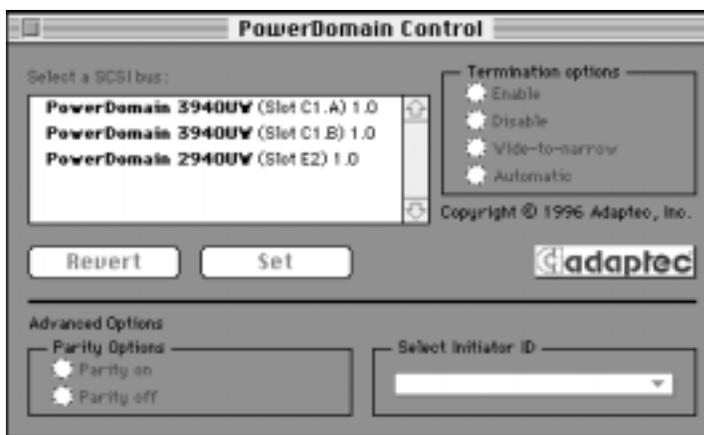


- 2 If you see a Read Me icon, double-click it and follow the instructions in the document that appears. Unless instructed otherwise, go to the next step.

### Opening and Using the PowerDomain Control Utility

- 3 Drag the PowerDomain Control application icon onto your system hard disk drive, and place it in the folder of your choice.
- 4 Eject the back-up disk, and put it away.
- 5 Double-click the PowerDomain Control icon.

The PowerDomain Control window appears. This window contains a list of all PowerDomain 2940UW/3940UW accelerator cards installed in your computer.



## Using the PowerDomain Control Utility

Use the PowerDomain Control utility to obtain additional SCSI controller information, set SCSI termination, update flash ROM, set parity options, select an initiator SCSI ID, reset SCSI default values, and set target options for all PowerDomain 2940UW/3940UW accelerator cards installed in your system.

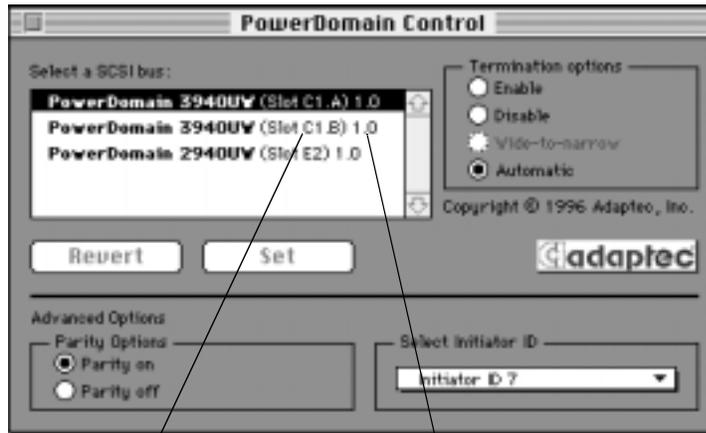
## Obtaining Additional SCSI Controller Information

To obtain additional SCSI controller information

- 1 From the Select a SCSI bus list, click the accelerator card for which you want additional SCSI controller information.

The item becomes highlighted.

The information in parentheses identifies the PCI slots on your motherboard in which PowerDomain 2940UW/3940UW accelerator cards are installed. (An *.A* or *.B* next to the slot identifier indicates the channel on the PowerDomain 3940UW.) The *1.0* indicates the firmware version.



PCI Slot .Channel Identifier

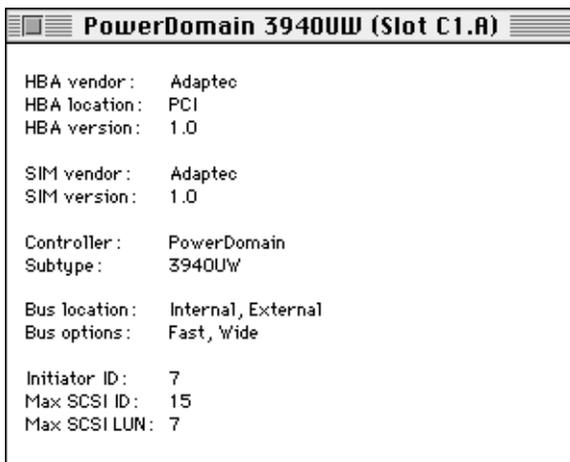
Firmware Version

*Opening and Using the PowerDomain Control Utility*

- 2 While the PowerDomain Control window is active, choose Get Info from the Special menu or press Command-I.



The Information dialog box appears.



The table below defines each item in the Information dialog box.

Information Item	Definition
HBA <sup>1</sup> vendor	The name of the vendor of the selected SCSI bus
HBA location	The location of the selected SCSI bus
HBA version	The version number of the selected SCSI bus
SIM <sup>2</sup> vendor	The name of the vendor of the driver for the selected SCSI bus
SIM version	The version number of the driver for the selected SCSI bus
Controller	The family to which the controller of the selected SCSI bus belongs
Subtype	The model of the controller of the selected SCSI bus
Bus location	The available connectors on the selected SCSI bus
Bus options	The options supported by the selected SCSI bus
Initiator ID	The initiator SCSI ID of the selected SCSI bus
Max SCSI ID	The maximum SCSI ID number supported by the selected SCSI bus (e.g., a SCSI bus with a maximum SCSI ID of 7 supports 8 SCSI IDs, numbered 0-7)
Max SCSI LUN <sup>3</sup>	The maximum LUN number supported by the selected SCSI bus (e.g., a SCSI bus with a maximum LUN of 7 supports 8 LUNs, numbered 0-7)

<sup>1</sup> Host bus adapter

<sup>2</sup> SCSI interface module

<sup>3</sup> Logical unit number

Repeat steps 1 and 2 to obtain additional SCSI controller information on any other PowerDomain 2940UW/3940UW accelerator cards installed in your system.

## Setting Termination

The PowerDomain Control utility provides the following termination options:

- **Enable**

Click this button to enable termination on the SCSI chain highlighted in the Select a SCSI bus list.

- **Disable**

Click this button to disable termination on the SCSI chain highlighted in the Select a SCSI bus list.

- **Wide-to-narrow**



---

**Note:** This option is only available for the PowerDomain 2940UW.

---

Use this setting *only* when a 50-pin cable is attached to one of the connectors on the PowerDomain 2940UW (either directly or via a 68-to-50-pin adapter) and a 68-pin cable is attached to another connector on the accelerator card.

When you click the Wide-to-narrow button, only the Wide SCSI lines of the selected bus are terminated at the SCSI accelerator card.

- **Automatic**

When you click the Automatic button, the PowerDomain Control utility automatically sets termination for the selected SCSI chain after examining the connectors on the SCSI accelerator card. This setting should work for most SCSI device configurations.

### PowerDomain 2940UW Termination

Termination is initially set to Automatic on the PowerDomain 2940UW accelerator card. If you are using only *one* internal SCSI connector or *only* the external SCSI connector, you do not need to change this setting.

In case your particular SCSI device does not respond appropriately to the Automatic setting, refer to the following table to determine which termination setting you should use:

Devices Connected to the PowerDomain 2940UW	PowerDomain 2940UW Termination
External (68-pin) connector only	Enabled
Internal (50-pin) connector only	Enabled
Internal (68-pin) connector only	Enabled
Internal (50- and 68-pin) connectors	Wide-to-narrow
Internal (50-pin) and 68-pin external connectors	Wide-to-narrow
Internal (68-pin) and external (68-pin) connectors with 68-to-68-pin cable	Disabled
External (68-pin) and internal (68-pin) connectors with 68-to-50-pin cable	Wide-to-narrow

### PowerDomain 3940UW Termination

Termination is initially set to Automatic on the PowerDomain 3940UW accelerator card. For each channel, if you are using *only* the internal SCSI connector or *only* the external SCSI connector, you do not need to change this setting.

In case your particular SCSI device does not respond appropriately to the Automatic setting, refer to the following table to determine which termination setting you should use:

Devices Connected to the PowerDomain 3940UW	PowerDomain 3940UW Termination
External (condensed 68-pin) connector only	Enabled
Internal (68-pin) connector only	Enabled
External (condensed 68-pin) and internal (68-pin) connectors	Disabled

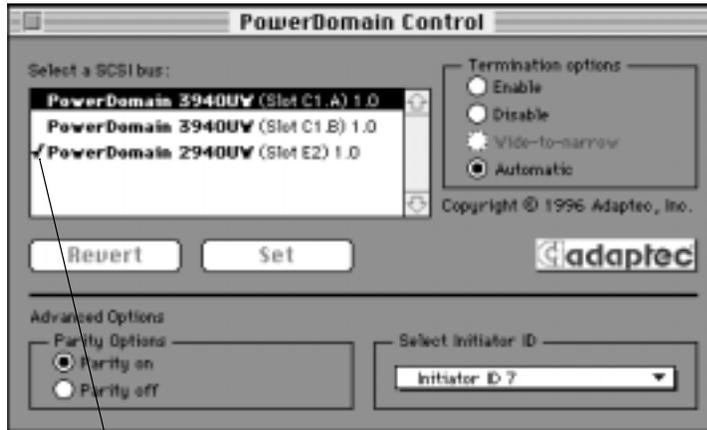
To set termination for a PowerDomain 2940UW/3940UW accelerator card

- 1 From the Select a SCSI bus list, click the accelerator card (or channel) for which you want to set termination.

The item becomes highlighted.



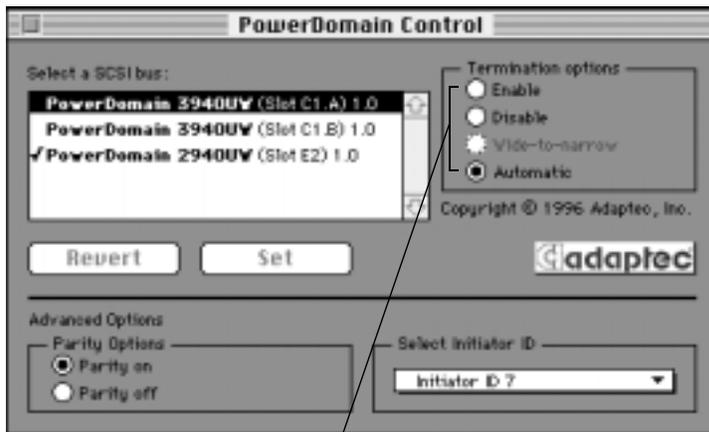
**Note:** A check mark to the left of the selected SCSI bus indicates that any changes you made to that bus have not yet been saved.



Check Mark

*Opening and Using the PowerDomain Control Utility*

- 2 Select the Termination option by clicking the appropriate button.



Termination Options

## Updating Flash ROM

Updates to the PowerDomain 2940UW/3940UW firmware, which is stored in flash ROM, are distributed electronically. You can use the PowerDomain Control utility to update flash ROM.

You can recognize firmware files by their distinctive icon, such as the one shown below.



PowerDomain 3940UW Firmware



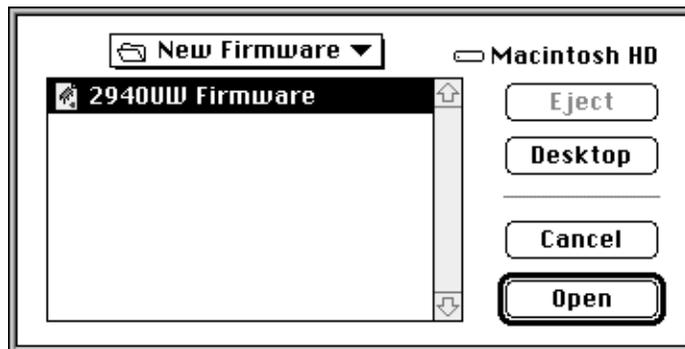
**Note:** Adaptec will distribute new versions of the firmware files as they become available.

To update the PowerDomain 2940UW/3940UW flash ROM

- 1 Choose Update Flash ROM from the Special menu.



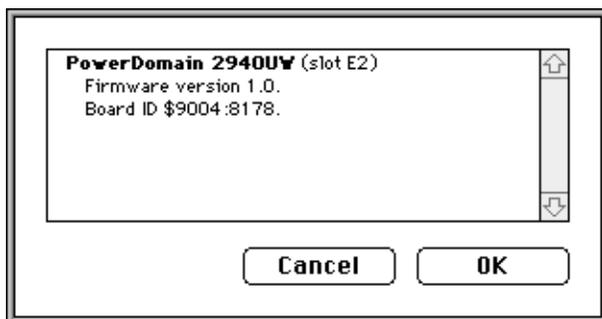
The following dialog box appears:



*Opening and Using the PowerDomain Control Utility*

- 2 Click the file that contains the most recent version of the PowerDomain firmware, and click Open.

A list of the PowerDomain 2940UW/3940UW accelerator cards installed in your system will appear in a dialog box similar to the following. This dialog box also contains the number of the slot in which the accelerator card is installed and the current firmware version.



- 3 Click the accelerator card you want to update, and then click OK.

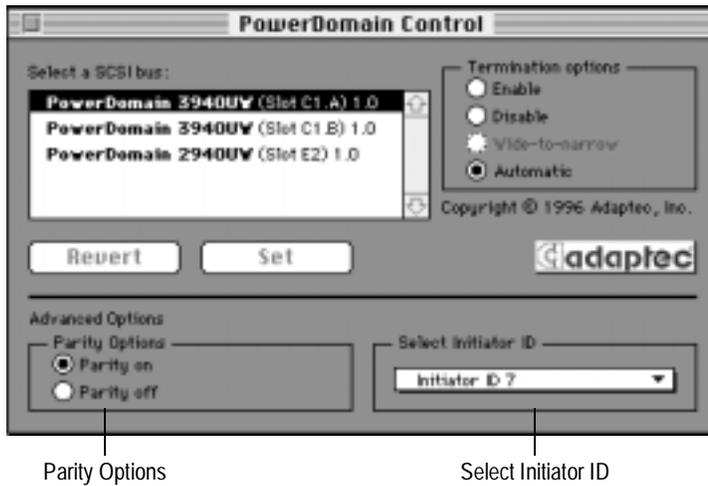
A progress bar appears.

- 4 When the update is complete, restart your system for the new firmware to take effect.

## Setting Advanced Options

### Parity Options

Click Parity on to enable parity checking. Click Parity off to disable parity checking. Parity Options are set to Parity on for most SCSI devices. (A check mark to the left of the selected SCSI bus indicates that any changes you made to that bus have not yet been saved.)

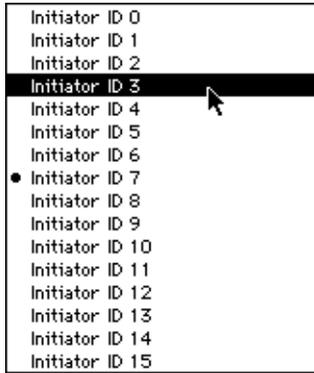


### Select Initiator ID

The Initiator ID is the ID of the SCSI accelerator card. This setting is usually 7. However, if another device is set to 7 and its setting cannot be changed, the Initiator ID option enables you to change the accelerator card's ID. Some software might not work correctly when this ID is not set to 7.

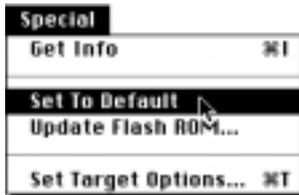
*Opening and Using the PowerDomain Control Utility*

To change the Initiator ID, select an Initiator ID from the Select Initiator ID menu. The current Initiator ID is indicated by a filled circle on the left. (A check mark to the left of the selected SCSI bus indicates that any changes you made to that bus have not yet been saved.)



### Setting Defaults

To reset all controls for the selected SCSI accelerator card to their default values, choose Set To Default from the Special menu.

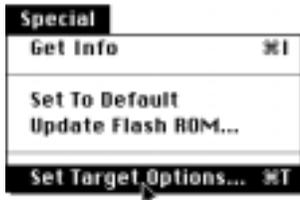


## Target Options

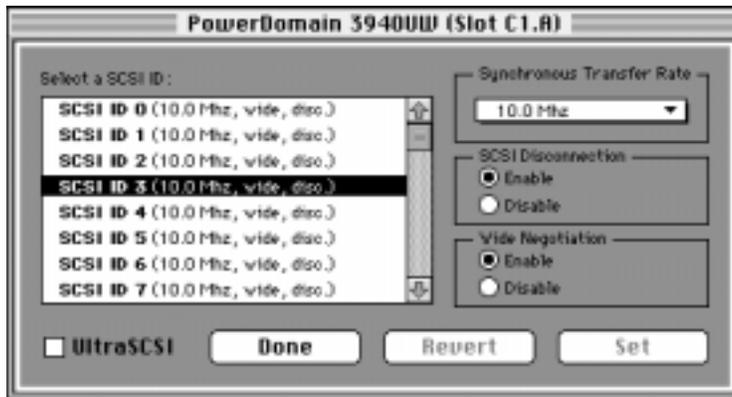
A *target* is a device attached to a SCSI bus and identified by a target ID. Target ID numbers range from 0 to 7 for narrow devices and from 0 to 15 for wide devices.

To access the target options

- 1 Select the bus for which you want to set the target options.
- 2 Choose the Set Target Options command from the Special menu.



The Target Options dialog box appears. [In this documentation, the window is titled PowerDomain 3940UW (Slot C1.A) because that bus was selected.]

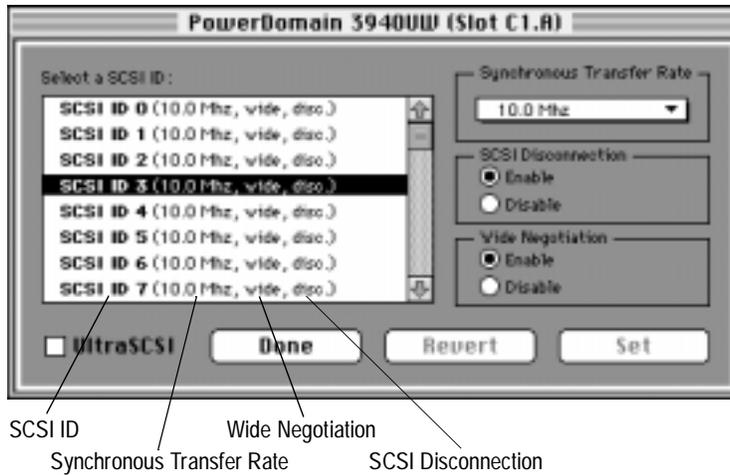


Target Options Dialog Box

### Select a SCSI ID List

This list contains the following information for the selected target:

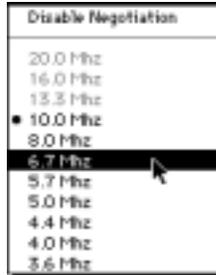
- **SCSI ID**
- **Current Synchronous Transfer Rate.** This setting is either async (asynchronous), indicating that synchronous negotiation is disabled, or *nn* MHz, where *nn* is the transfer rate (for example, 10 MHz).
- **Current Wide Negotiation.** If this setting is wide, Wide Negotiation is enabled. If the setting is narrow, Wide Negotiation is disabled.
- **Current SCSI Disconnection.** If this setting is disc, SCSI Disconnection is enabled. If the setting is no-disc, SCSI Disconnection is disabled.



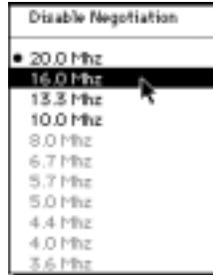
### Synchronous Transfer Rate

Normally, the transfer rate is negotiated between the SCSI accelerator card and the device connected to it. However, some very old devices might require that the transfer rate be changed before these devices will operate correctly.

To specify the maximum synchronous transfer rate the SCSI accelerator card will accept from the selected device during negotiation, choose an item from the Synchronous Transfer Rate menu.



**Synchronous Transfer Rate Menu:  
UltraSCSI Not Selected**



**Synchronous Transfer Rate Menu:  
UltraSCSI Selected**

The current synchronous transfer rate is indicated by a filled circle on the left. Dimmed options are not available with the current UltraSCSI setting. (A check mark to the left of the selected target indicates that any changes you made to that target have not yet been saved.)



---

**Note:** If you choose Disable Negotiation, the SCSI accelerator card will not initiate synchronous negotiation with the selected SCSI device.

---

### SCSI Disconnection

This option determines whether the SCSI accelerator card will allow the selected SCSI device to disconnect from the SCSI bus (sometimes called *disconnect/reconnect*). While the SCSI device is temporarily disconnected, the SCSI bus can be used for other operations.

*Opening and Using the PowerDomain Control Utility*

Click Enable to enable SCSI Disconnection; click Disable to disable SCSI Disconnection. (A check mark to the left of the selected target indicates that any changes you made to that target have not yet been saved.)

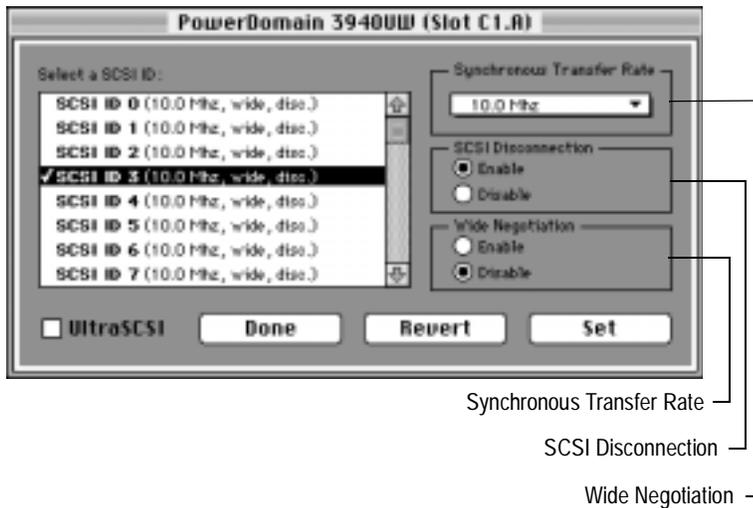
**Wide Negotiation**

Wide Negotiation is normally negotiated between the SCSI accelerator card and the device connected to it. However, some old devices might not work correctly with Wide Negotiation enabled.

Click Enable to enable Wide Negotiation; click Disable to disable Wide Negotiation. (A check mark to the left of the selected target indicates that any changes you made to that target have not yet been saved.)



**Note:** If Wide Negotiation is disabled, all data transfers will run at narrow speeds.



## UltraSCSI

UltraSCSI provides faster bus transfer rates when used with UltraSCSI devices.

To enable or disable UltraSCSI transfers for the selected bus (in the PowerDomain Control window), click the UltraSCSI checkbox. A checkmark indicates that UltraSCSI is enabled.

When switching between UltraSCSI and Fast SCSI, all the target IDs' settings will revert to their defaults.



## Saving Settings

### Target Options Dialog Box

When you have made all your changes in the Target Options dialog box



Click Done to return to the PowerDomain Control window.



Click Revert to restore all target options to their last-saved settings.



Click Set to save the current target option settings. (A check mark to the left of the selected SCSI bus indicates that any changes you made to that bus have not yet been saved.)



---

**Note:** The Revert and Set functions are only applied to SCSI IDs in the Select a SCSI ID list that are preceded by a check mark.

---

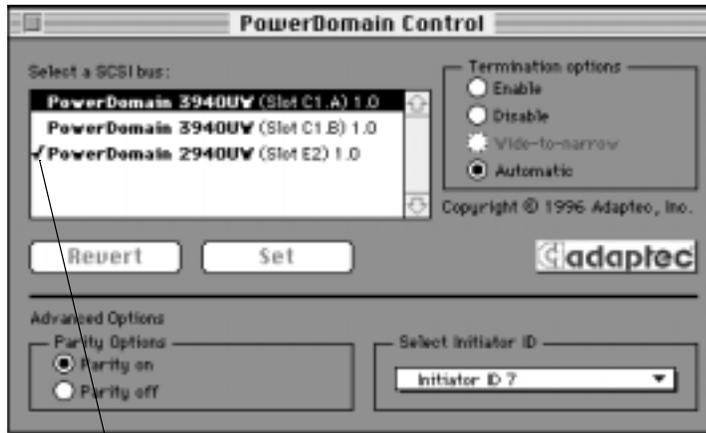
## PowerDomain Control Window

When you have made all your changes in the PowerDomain Control window

- Revert** Click Revert to restore all PowerDomain Control window settings (not target options settings) as they were when you last opened the PowerDomain Control window or when you last clicked Set.
- Set** Click Set to save all settings in the PowerDomain Control window to the memory on the accelerator card. (A check mark to the left of the selected target indicates that any changes you made to that target have not yet been saved.)



**WARNING:** The Revert and Set functions are only applied to accelerator cards in the Select a SCSI bus list that are preceded by a check mark.



Check Mark

## Using Balloon Help

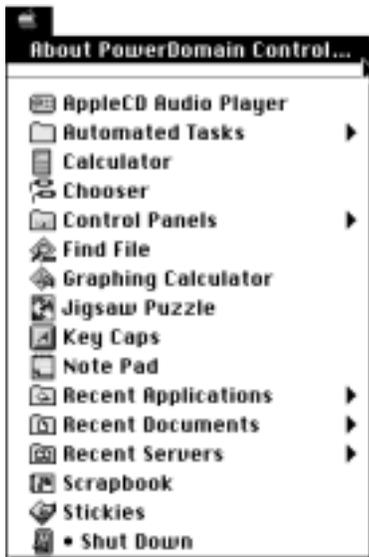
The PowerDomain Control utility fully supports Balloon Help. Refer to your computer user documentation for instructions on using Balloon Help.



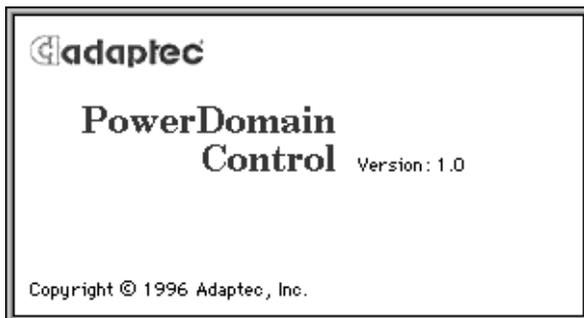
## Getting Information about the PowerDomain Control Utility

The *about* box provides information about the PowerDomain Control utility, such as version number and copyright date.

To access the about box, choose About PowerDomain Control from the Apple menu.



The following about box appears.



To dismiss the about box, click in it.

## Quitting the PowerDomain Control Utility

There are two ways to quit the PowerDomain Control utility:

- 1 Choose Close from the File menu when the PowerDomain Control window is active. (If the PowerDomain Control window is not active, choosing the Close command will close whichever window is currently active.)



- 2 Choose Quit from the File menu.





# 4

## Troubleshooting

This chapter tells you how to do the following:

- Diagnose problems that might occur when you install a PowerDomain 2940UW/3940UW accelerator card in your computer
- Fix these problems
- Recognize error messages

### SCSI Troubleshooting Checklist

PowerDomain 2940UW/3940UW accelerator cards have been tested for compatibility with a wide range of SCSI devices. Most problems that occur during installation result from errors in preparing and connecting devices on the SCSI chain.

If you continue to have problems after trying the solutions listed in this section, call Adaptec Technical Support at the number listed on page ii.

Answer the following questions *first* if a problem occurs during installation.

- Are the power cables and SCSI cables properly connected?  
(See *Connecting SCSI Cables and Devices* on page 2-19.)

Follow the instructions in the computer and SCSI device documentation for installing SCSI devices.

- Is the PowerDomain 2940UW/3940UW firmly seated and secured in the PCI expansion card slot?
- Does each SCSI device on a particular SCSI chain, including the PowerDomain 2940UW/3940UW, have a unique SCSI ID? (See *Setting SCSI IDs* on page 2-54.)

Check the SCSI device installation manual for information about setting the SCSI ID.

- Is SCSI termination set correctly? (See *Setting SCSI Chain Termination* on page 2-48.)

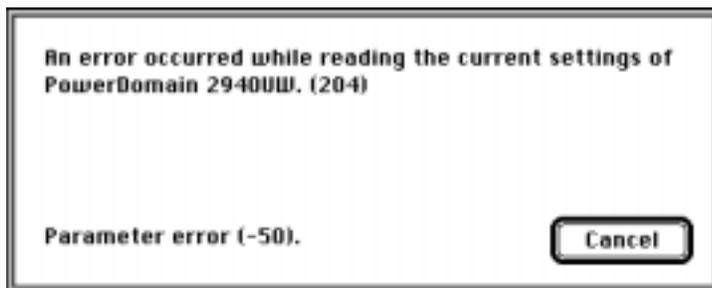
If you still haven't resolved your problem, read on.

If your computer hangs or the accelerator card cannot always find the SCSI devices

- Be sure SCSI termination is set correctly.
- Check cable length and integrity.
- After a hang, turn OFF your computer and any devices connected to it, and then turn the system ON again to reset the SCSI chain.

## Error Messages

Most error messages tell you what problem has occurred. Whenever you see an error message, contact Adaptec Customer Support as directed on page ii. The following illustration shows an example of a PowerDomain Control error message.







# Product Specifications

## System Interface

- Peripheral Component Interconnect (PCI)
- Host bus transfer up to 133 MB/sec burst rate
- Bus master DMA interface protocol

## Unit Connectivity (Single-ended)

### PowerDomain 2940UW

- One internal and one external 68-pin connector (Wide)
- One internal 50-pin connector (Fast)
- Up to 15 devices (Fast and/or Wide) can be connected

### PowerDomain 3940UW

- Two internal 68-pin connectors (Wide)
- Two external condensed 68-pin connectors (Wide)
- Up to 30 devices (Fast, Wide, and/or Ultra Wide) can be connected

## Speed

- Up to 6.0 MB/sec asynchronous burst rate
- Up to 10 MB/sec synchronous Fast 8-bit burst rate
- Up to 20 MB/sec synchronous Fast and Wide 16-bit burst rate
- Up to 20 MB/sec synchronous Ultra 8-bit burst rate
- Up to 40 MB/sec synchronous Ultra and Wide 16-bit burst rate

## Dimensions (Standard PCI Bus Form Factor)

- Height 4.25 in.
- Width 0.44 in.
- Depth 6.875 in.

## Operating Environment

32 °F (0 °C) to 131 °F (55 °C)

## Power Requirement

7.5 W maximum



# ▼▼▼▼ Index

## A

About PowerDomain Control  
command **3-22**

accelerator card

- external devices, connecting  
to **2-34, 2-38, 2-41, 2-45**
- installing in the computer
  - desktop models **2-11**
  - tower models **2-2**
- internal devices, connecting  
to **2-22**
- multiple accelerator cards,  
installing **2-54**
- termination, setting for **2-49**  
*See also* PowerDomain 2940UW;  
PowerDomain 3940UW **2-1**

Advanced Options, setting **3-14**

attaching SCSI cables and  
devices **2-19**

Automatic option **3-7**

## B

Balloon Help **3-22**

## C

cables, ribbon, caution against  
creasing **2-24**

cables, SCSI

- caution against installing  
differential devices **2-20**

- caution against using all three  
PowerDomain 2940UW  
connectors **2-19**
- caution to install only single-  
ended devices **2-20**
- choosing
  - characteristics **2-21**
  - length restrictions **2-21, 2-22**
- connecting **2-19**
- ordering from Adaptec **iii**

caution notice, explanation of **1-2**

channel/slot identifier **3-4**

check mark, meaning of

- in Select a SCSI bus list **3-10**
- in Select a SCSI ID (target)  
list **3-18**

Close command **3-23**

computer

- disassembling
  - desktop models **2-11**
  - tower models **2-3**
- reassembling
  - desktop models **2-41**
  - tower models **2-34**

## D

defaults, resetting **3-15**

devices, SCSI, connecting **2-19**

dimensions of the accelerator  
card **A-2**

Disable (termination) option **3-7**

*Index-1*

Disable Negotiation option **3-18**  
disassembling the computer  
    desktop models **2-11**  
    tower models **2-3**  
disconnection, SCSI, setting **3-18**  
Done button **3-20**

## **E**

Enable (termination) option **3-7**  
equipment required for  
    installation **1-2**  
error messages **4-3**  
external SCSI devices,  
    connecting **2-34, 2-38, 2-41, 2-45**

## **F**

firmware files icon **3-11**  
firmware, updating **3-11**  
flash ROM, updating **3-11**

## **G**

Get Info command **3-5**

## **H**

hardware requirements **1-1**

## **I**

Information dialog box  
    contents of **3-6**  
    illustrated **3-5**  
initiator ID, selecting **3-14**  
installing  
    accelerator card in the  
        computer  
        caution against forcing the  
        card **2-10, 2-18**

caution to discharge static  
    electricity **2-5, 2-13**  
desktop models **2-11**  
tower models **2-2**  
warning about electric  
    shock **2-2, 2-11**  
warning to avoid sharp  
    edges of access port  
    cover **2-7, 2-15**  
multiple accelerator cards **2-54**  
internal SCSI devices,  
    connecting **2-22**  
internal terminators **2-48**

## **M**

MacOS PCI-based computer, *See*  
    computer  
messages, error **4-3**  
multiple accelerator cards,  
    installing **2-54**

## **N**

note, explanation of **1-2**

## **O**

opening the PowerDomain  
    Control utility **3-2**  
operating environment **A-2**

## **P**

Parity Options, setting **3-14**  
power requirement **A-2**  
power to the computer, restoring  
    desktop models **2-41**  
    tower models **2-34**

PowerDomain Control utility  
 functions of **3-1**  
 opening **3-2**  
 using **3-3**  
 PowerDomain Control  
 window **3-3**  
 PowerDomain 2940UW  
 description and illustration  
 of **2-19**  
*See also* accelerator card  
 PowerDomain 3940UW  
 description and illustration  
 of **2-20**  
*See also* accelerator card  
 PowerDomain 3940W Firmware  
 icon **3-11**  
 problems  
 checklist **4-1**  
 computer hangs or accelerator  
 card can't always find SCSI  
 devices **4-2**  
 error messages **4-3**  
 product specifications, *See*  
 specifications

## Q

Quit command **3-23**  
 quitting the PowerDomain Control  
 utility **3-23**

## R

reassembling the computer  
 desktop models **2-41**  
 tower models **2-34**  
 requirements  
 hardware **1-1**  
 power **A-2**  
 software **1-1**

system **1-1**  
 tools for installation **1-2**  
 resetting defaults **3-15**  
 restoring power  
 desktop models **2-41**  
 tower models **2-34**  
 Revert button  
 PowerDomain Control  
 window **3-21**  
 Target Options dialog box **3-20**  
 ribbon cables, caution against  
 creasing **2-24**

## S

sales information **iii**  
 saving settings  
 PowerDomain Control  
 window **3-21**  
 Target Options dialog box **3-20**  
 SCSI cables  
 caution against installing  
 differential devices **2-20**  
 caution against using all three  
 PowerDomain 2940UW  
 connectors **2-19**  
 caution to install only single-  
 ended devices **2-20**  
 choosing  
 characteristics **2-21**  
 length restrictions **2-21, 2-22**  
 connecting **2-19**  
 ordering from Adaptec **iii**  
 SCSI chain  
 definition of **2-19**  
 termination, setting **2-48**  
 SCSI controller information,  
 additional, obtaining **3-4**

- SCSI devices
    - connecting **2-19**
    - external, connecting **2-34, 2-38, 2-41, 2-45**
    - internal, connecting **2-22**
    - termination, setting **2-49**
  - SCSI Disconnection, setting **3-18**
  - SCSI IDs
    - definition of **2-54**
    - setting **2-54**
  - Select a SCSI bus list, contents of **3-4**
  - Select a SCSI ID list, contents of **3-17**
  - Select Initiator ID menu **3-14**
  - Set button
    - PowerDomain Control window **3-21**
    - Target Options dialog box **3-20**
  - Set Target Options command **3-16**
  - Set To Default command **3-15**
  - settings, saving
    - PowerDomain Control window **3-21**
    - Target Options dialog box **3-20**
  - Show Balloons command **3-22**
  - slot/channel identifier **3-4**
  - software requirements **1-1**
  - specifications
    - dimensions **A-2**
    - operating environment **A-2**
    - power requirement **A-2**
    - speed **A-2**
    - system interface **A-1**
    - unit connectivity **A-1**
  - speed of the accelerator card **A-2**
  - support, technical **ii**
  - Synchronous Transfer Rate, setting **3-17**
  - system interface **A-1**
  - system requirements **1-1**
- T**
- target options, setting **3-16**
  - target, definition of **3-16**
  - technical support **ii**
  - termination, examples of
    - PowerDomain 2940UW with 50-pin and 68-pin internal devices **2-51**
    - PowerDomain 2940UW with 50-pin internal and 68-pin external devices **2-52**
    - PowerDomain 2940UW with 50-pin internal devices **2-50**
    - PowerDomain 3940UW with 68-pin external devices **2-49**
    - PowerDomain 3940UW with 68-pin internal and condensed 68-pin external devices **2-53**
  - termination, setting
    - for SCSI devices **2-49**
    - on the accelerator card **2-49**
    - on the SCSI chain **2-48**
    - via the PowerDomain Control utility **3-7**
    - PowerDomain 2940UW **3-8**
    - PowerDomain 3940UW **3-9**
    - procedure **3-10**
  - terminators, internal **2-48**
  - tools required for installation **1-2**
  - troubleshooting
    - checklist **4-1**
    - computer hangs or accelerator card can't always find SCSI devices **4-2**
    - error messages **4-3**

## **U**

- UltraSCSI setting and synchronous transfer rate **3-18**
- UltraSCSI transfers, enabling **3-20**
- unit connectivity **A-1**
- Update Flash ROM command **3-12**
- using the PowerDomain Control utility **3-3**

## **W**

- warning notice, explanation of **1-2**
- Wide Negotiation, setting **3-19**
- Wide-to-narrow option **3-7**

