initio®

Miles

PCI-UltraWide SCSI
Bus Master Host Adapter
for Power Macintosh with PCI
User's Manual

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Initio Technical Support

If you have questions about installing or using Initio products, 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:

Monday - Friday: 8:00 AM to 5:00 PM Pacific time
• Phone: (408) 577-1919
• Fax: (408) 577-0640

Initio provides on-line support for software upgrades, utility programs, and other information 24 hours a day; using 8 data bits, 1 stop bit, and no parity at speeds up to 28.8K baud.

• Initio Corporation BBS: (408) 577-0431
• World Wide Web: http://www.initio.com
• Email: support@initio.com

Outside of the US and Canada, contact your authorized Initio distributor. If you received your Initio hardware product as original equipment in a computer system or as part of a hardware bundle, please contact that manufacturer for technical support.

The following information is needed to assist in problem resolution:

- Model type
- Serial number
- Product description
- Operating system & version number (i.e. MacOS 8)
- Software driver product type and version number
- Location of purchase

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Introduction

Congratulations on your purchase of Miles, the PCI-Ultra Wide SCSI Bus Master Host Adapter for Power Macintosh and Macintosh OS compatibles. Miles is a high performance, accelerated PCI to UltraWide SCSI adapter card that dramatically increases system performance.

Correctly installing Miles consists of two procedures:
- Installing the Miles card
- Installing the Miles software

Miles will not install in computers not equipped with PCI.

Miles supports the Peripheral Component Interconnect (PCI) local-bus expansion card standard, adopted by Apple™ for its generation of Power Macintosh with PCI computers.

The ReadMe file on the Miles SmartSCSI Utility Disk contains information that was not available when this manual went to press. Please review this text document before installing or using your Miles card.

About this Manual

This manual is divided into chapters that describe the installation and use of your Miles hardware and software. It was written under the assumption that you have basic Power Macintosh knowledge. If you have questions regarding Power Macintosh procedures, refer to the manuals you received with your Power Macintosh computer.

About PCI

PCI is a local bus standard created by Intel™ and now maintained by the Peripheral Component Interconnect-Special Interest Group (PCI-SIG). A committee of companies, the PCI-SIG maintains and enhances the PCI standard. Initio has been a PCI-SIG member since 1994. Apple and Initio support version 2.0 of the PCI standard.

The PCI is designed for multiple hardware platforms. It surpasses the performance of NuBus and can transfer data at rates of up to 132 megabytes per second (MB/s). The PCI standard has built-in extension capabilities to 64-bit (264MB/s) and supports advanced bus capabilities.

About Your PCI-Ultra Wide SCSI Adapter

Miles (also referred to in this manual as the INI-9100UW Mac) is an accelerated UltraWide SCSI-3 host adapter for Power Macintosh and MacOS compatibles. Installing Miles creates an interface between PCI (the CPU bus) and the disk drive. Miles can transfer data through the Ultra SCSI-3 portion of the card at 40MB/s (as allowed by the SCSI-3 specification). The PCI portion of the card is capable of data transfer rate bursts up to 133MB/s. This means that your Power Macintosh can receive data as fast as your drives can provide it. By simply connecting Miles to your UltraSCSI drives, you can improve their overall performance. In addition, you can daisy-chain up to 15 SCSI devices.

Considerations for UltraWide SCSI

In order to utilize UltraWide SCSI you must have both an Ultra card (such as Miles) and an Ultra device. The UltraSCSI's high data transfer rate means that the movement of the data is more sensitive to "noise" in the data path. To insure optimal performance, Initio recommends that you:
- Limit total cable length– including the cabling between devices and cabling inside the devices - to 1.5 meters (about 5 feet). For more information on cabling requirements, see Table 1 on page 17.
- Use only the highest quality cables.
- Use only Active Termination.

How Miles Improves Performance

Miles is compatible with any Power Macintosh or MacOS compatible with PCI computer and improves performance in two ways:
- by breaking the standard SCSI bottleneck
- by providing on-board intelligence

Breaking the SCSI Bottleneck

When you install Miles, a high-speed SCSI bus is added to your computer. All Power Macintosh machines are constrained by older-generation SCSI controller chips that cannot transfer data as fast as today's high-performance SCSI drives. Miles allows your computer to sustain data transfer rates at the full speed of the drive, eliminating the constraints and restrictions of the Power Macintosh with PCI's native, built-in SCSI buses. Miles supports full 16-bit, 40 MB/s, SCSI-3 data transfers.

Miles' high performance allows you to bypass the native SCSI bottleneck. As a result, your UltraSCSI drives can transfer data at their full performance limit.

On-Board Intelligence

Miles features *bus mastering*. This frees the computer to manage other tasks and increases overall system performance. It also provides *automatic termination*. Miles detects its position in the SCSI chain and sets its termination accordingly.

Using the Miles Host Adapter

Once installed and configured, Miles operates transparently. As a user you will immediately notice faster data transfers and increased productivity. For example, when used with UltraSCSI drives, Miles can speed up file saves in popular programs, such as Adobe® Photoshop® or Microsoft® Access®, by 50 percent or more. You will also notice performance increases in other disk-intensive procedures, such as general database use, image rotation, video capture, or software compiling.

To start up from a hard drive connected to an Initio card, first make sure that the hard drive you wish to boot from has MacOS system software installed in it. Then select it in the Startup Disk Control Panel window. Although it isn't necessary to reformat a drive to connect it to an Initio card, we recommend standardizing all your drives by installing the high-performance driver software that came with your Miles Kit. For more information, see the documentation for the particular software that came with your Miles kit.

System Requirements

Hardware: • MacOS PCI-based Computer (UL-listed only)
              • Minimum 16MB RAM
              • An open PCI expansion slot
              • A SCSI device

Software: • MacOS version 7.5.2 or later

Precautions to Remember

Before installing Miles, there are several precautions you need to follow. Before beginning the installation procedure you should:
   • Make sure your data is backed up
   • Disconnect all accessory cables from the back of your Power Macintosh with PCI (including SCSI and monitor cables)
   • Leave the AC power cord connected to the computer and to a switched, grounded outlet (with the switch turned off)
   • Follow proper electrostatic discharge procedures

Electrostatic Discharge Procedures

While installing Miles, you must follow proper electrostatic discharge procedures. Static discharge can ruin electronic equipment such as Miles or your computer.

Damage caused by incorrect installation voids Miles' warranty.

To minimize the possibility of static discharge, follow these rules:
   • Make sure the computer is OFF when performing an installation
   • Leave the AC power cord connected to the computer and to a switched, grounded outlet (with the switch turned off)
   • If the computer has recently been powered on, then wait ten minutes before installing the SCSI card.
   • Before touching the insides of the computer, discharge any static electricity by touching the metal case of the power supply.
   • Use a grounding strap to maintain a ground, or keep one hand on the power supply at all times.
   • When handling Miles, use the same precautions as above and maintain a ground when handling it outside of its protective static bag.

If you don't understand static discharge precautions, or if you are not well-versed in the procedures for installing delicate electronic components, contact your local dealer for installation assistance.

Product Specifications:
- PCI 2.1 compliant
- Plug & Play
- MacOS version 7.5.2 or later
- 133 Mbytes per second PCI burst mode.
- Compatible with hard disks, CD-Rs, Optical, Tape, Scanners, Zip/Jaz™ drives and other SCSI peripherals
- Up to 40 MB/s transfers over UltraWide SCSI bus and 20 MB/s transfer over UltraSCSI bus
- SCSI Auto-termination
- On-board firmware supports bootable MacOS
- SCSI Manager 4.3 compliant

Power Requirements:
- DC Voltage: 5.0±0.25 Vde
- Power Dissipation: 350mW Typical

Environmental Specifications:
Operating Temperature:
- 0° to 55°C (32° to 131°F)
- 10% to 90% relative humidity (non-condensing)

Storage Temperature:
- -40° to 75°C (-40° to 167°F)
- 5% to 95% relative humidity (non-condensing)
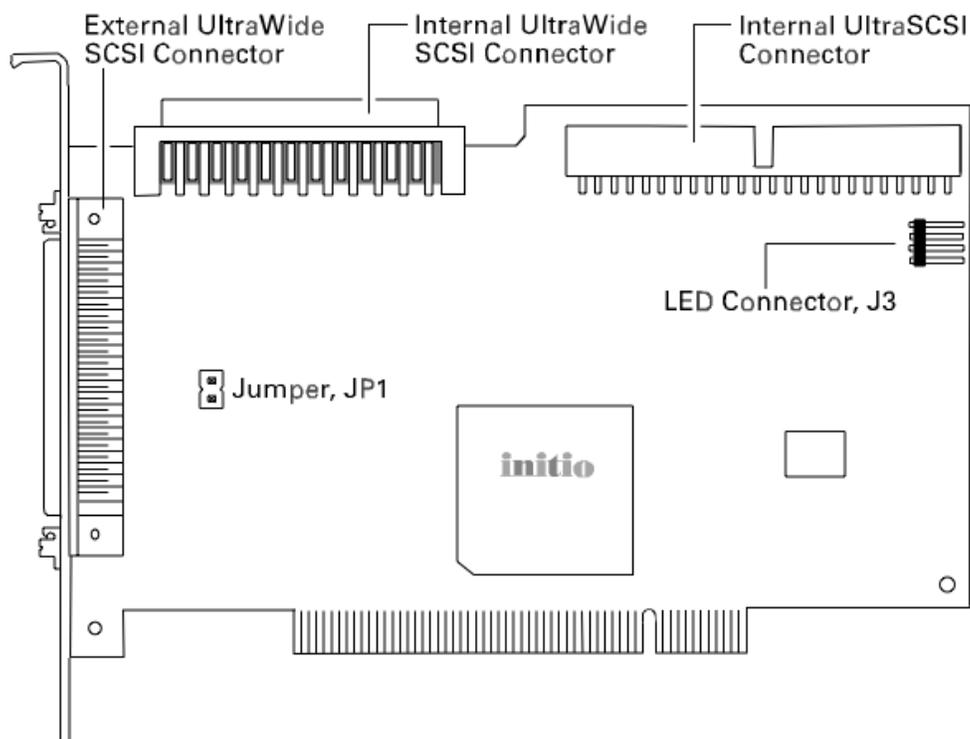
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Installing Miles & Connecting SCSI Devices

FIGURE 1– *The Miles PCI-UltraWide SCSI Host Adapter*

This chapter tells you how to do the following:
- Install the Miles card in your MacOS PCI-based system (both tower and desktop models)
- Connect internal and external SCSI devices to each Miles card installed
- Set SCSI chain termination
- Assign SCSI IDs

Installing Miles (Tower-Models)

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 11).

To install the Miles 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.

3   Open the computer's outer housing to expose it's internal components (refer to your Mac's User's Guide for help)..

4   Touch the metal part of the power supply to discharge any static electricity from your clothes and body (use a wrist grounding strip if you have one).

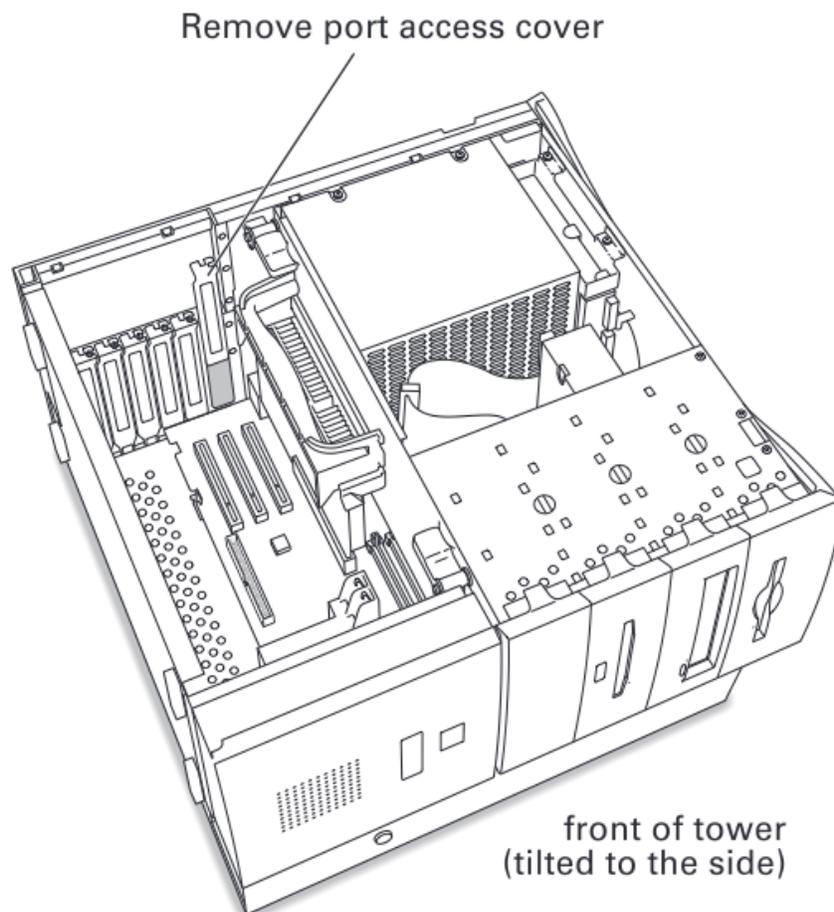**5**   Choose an empty PCI expansion slot and remove its port access cover.

Remove port access cover

front of tower
(tilted to the side)

FIGURE 2– *Tower-Model installation*

The six PCI slots in a Power Macintosh 9500 are divided into two groups of three, with each group assigned to a separate PCI controller chip on the motherboard (the three PCI slots closest to the power supply are one group). When installing Miles, you may see better performance if you install it in the group that does not contain the video card. If installing one or more Miles cards, you may see better performance if both are installed in different groups. When installing Miles in a Power Macintosh containing a video capture card, video capture performance may improve if you put all cards in the same group as the video capture card. For more information on the correct installation configuration for your system, contact your video card manufacturer.

6 Orient the host adapter for installation so that the external connector is facing the back of the System unit and align the card with the PCI connector on the system unit (see FIGURE 3). Holding the adapter by the mounting bracket and the card edge, match up the card edge connector with the PCI host computer socket and insert the card into the socket. Once the connector is in the PCI expansion slot socket tighten the mounting bracket screw to secure the card in place.
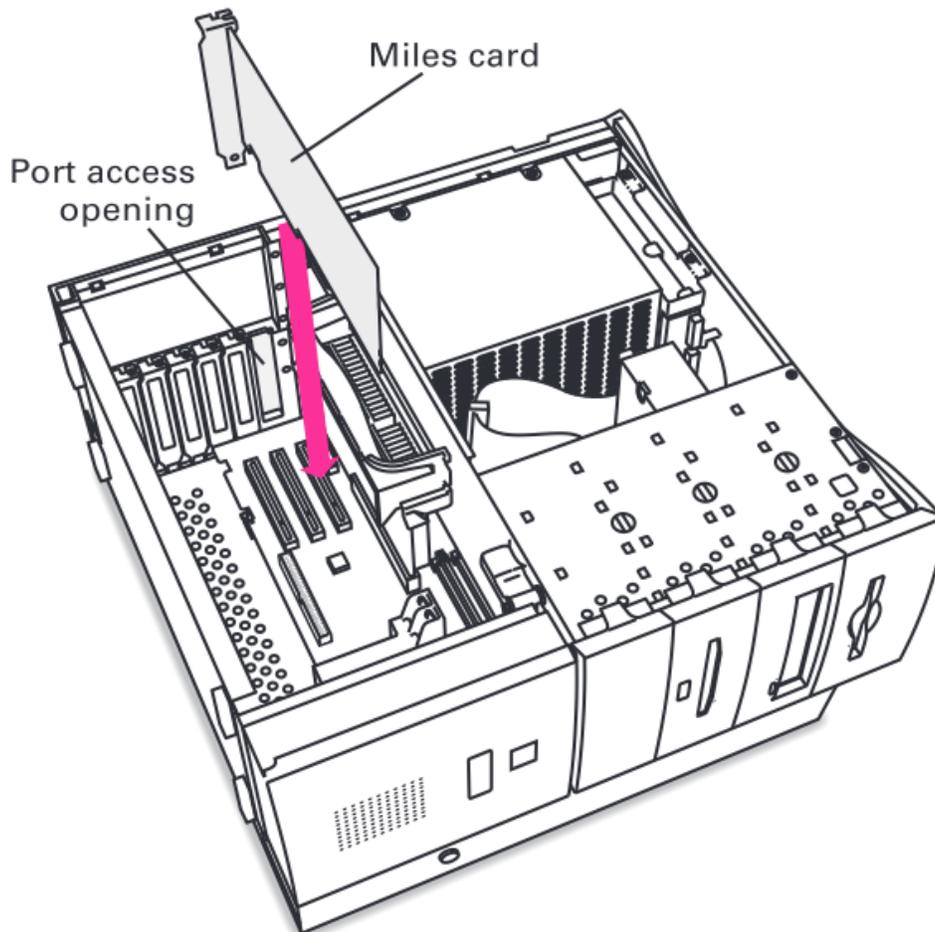
FIGURE 3— *Tower-Model card installation*

7 Now turn to Connecting Device Cables on page 14.

Installing Miles (Desktop-Models)

If your desktop-model differs from the one illustrated in this manual, refer to your computer user documentation for instructions on installing an expansion card (instructions for tower-models begin on page 8).

To install the Miles 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   Open the computer's outer housing to expose it's internal components (refer to your Mac's User's Guide for help).

4   Touch the metal part of the power supply to discharge any static electricity from your clothes and body (use a wrist grounding strip if you have one).

5 Choose an empty PCI expansion slot and remove its port access cover.

(back of computer)
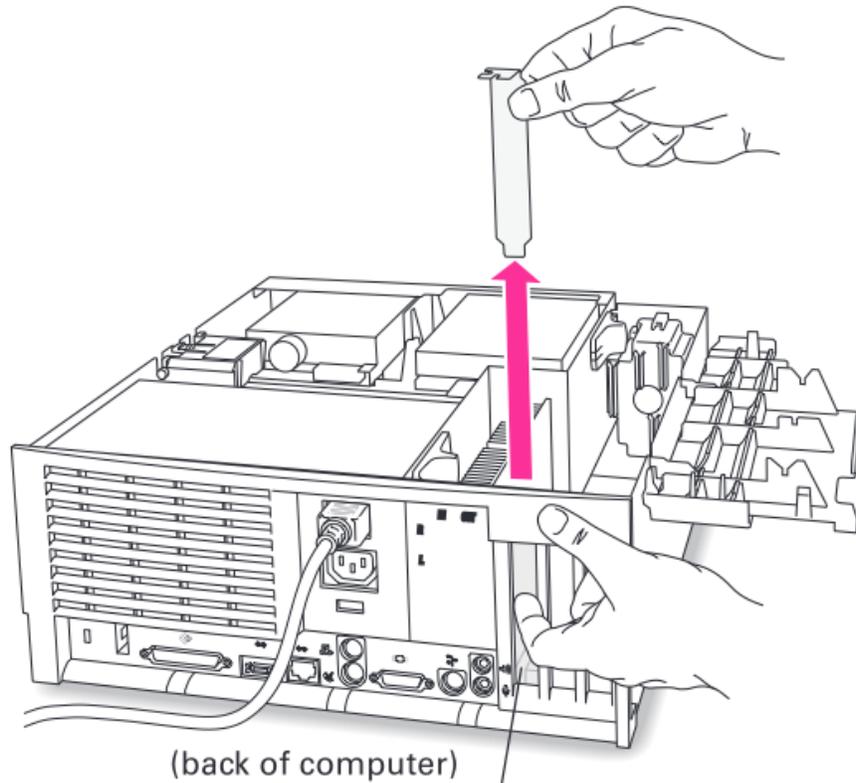
Push the port access cover in gently with the finger of one hand while pulling it straight up with the other hand.

FIGURE 4— *Desktop-Model installation*

6 Orient the host adapter for installation so that the external connector is facing the back of the System unit and align the card with the PCI connector on the system unit (see FIGURE 5). Holding the adapter by the mounting bracket and the card edge, match up the card edge connector with the PCI host computer socket and insert the card into the socket. Once the connector is in the PCI expansion slot socket tighten the mounting bracket screw to secure the card in place.
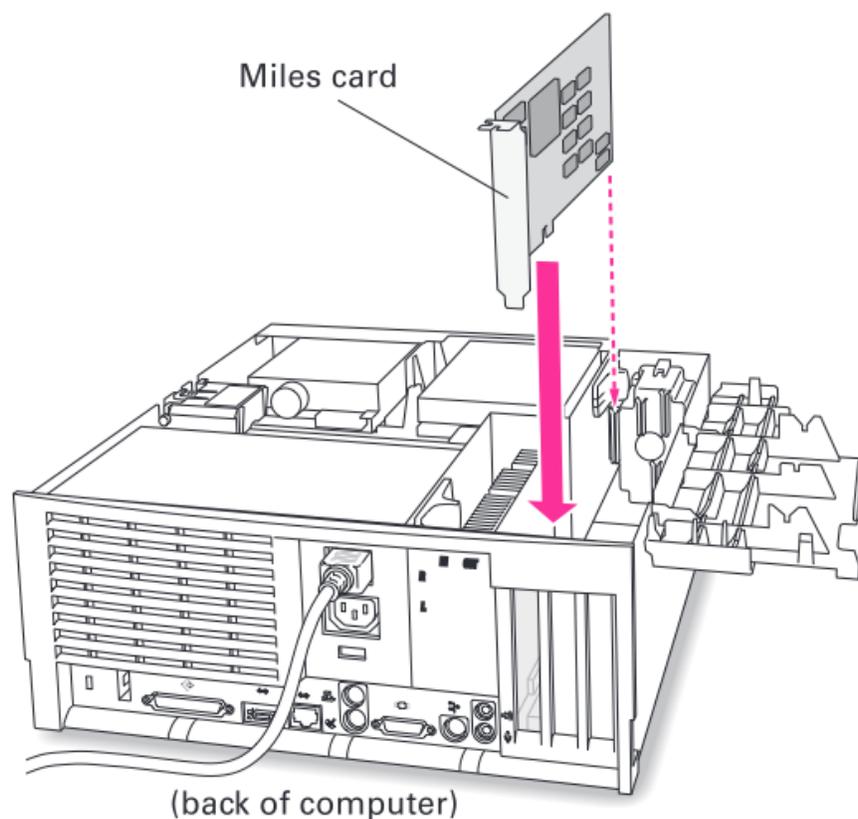
FIGURE 5– *Desktop-Model card installation*

7 Continue with the next section, Connecting Device Cables.

Connecting Device Cables

Miles is designed for ease of use. In most cases, you simply connect your SCSI devices and begin using them.

Miles has three SCSI connectors (Figure 1 on page 7):
• A 68-pin high density external Ultra Wide SCSI connector
• A 68-pin high density internal Ultra Wide SCSI connector
• A 50-pin internal Ultra Fast SCSI connector

Only two of the three connectors on Miles can be used concurrently. If external devices are going to be connected to Miles, only one of the two internal connectors can be connected to internal SCSI devices.

If you inadvertently connect devices to all three connectors at once, Miles will disable itself. Shut down your computer and remove all devices from at least one of Miles' connectors before continuing.

Initio recommends that you only connect one type of SCSI device to the external wide SCSI-3 16-bit connector. If you attempt to daisy-chain narrow 8-bit devices and wide 16-bit devices onto the same connector, you may encounter termination problems. In addition, mixing devices that have different data path widths on the same connector may result in reduced performance.

Installation of Internal SCSI cables

All internal connectors may be used simultaneously or singularly, depending on your bus configuration. Installation of internal SCSI cables must be performed before replacing the system covers. The internal ribbon cable is made with multiple connectors attached and used to daisy chain the host adapter with two or more devices. It is important that the cable be installed correctly for proper operation. The cable has a colored stripe running the length of the cable, on the edge distinguishing the pin one side of the connector. These identifying markings must match when mated on the host adapter board.

When attaching UltraSCSI devices, use the 68-pin or 50-pin UltraSCSI cable connector on the host adapter. Align the internal cable into the host adapter and the other cable connectors in a similar fashion into the other SCSI device connectors as described in the appropriate manufacturers instructions.
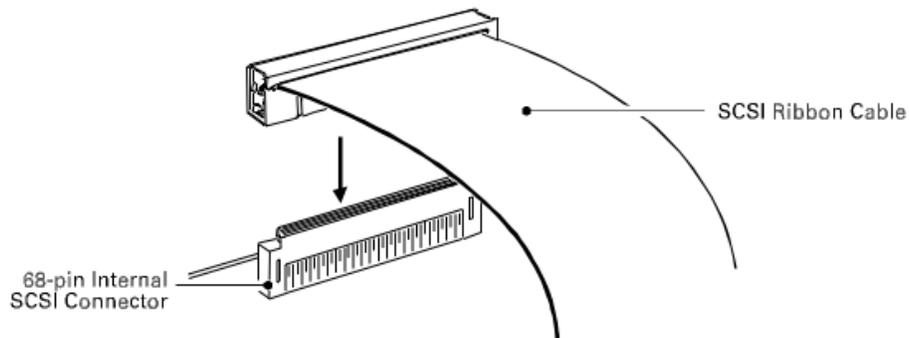
SCSI Ribbon Cable

68-pin Internal
SCSI Connector

FIGURE 6 — *Connecting the 68-pin internal flat ribbon cable*

SCSI Ribbon Cable
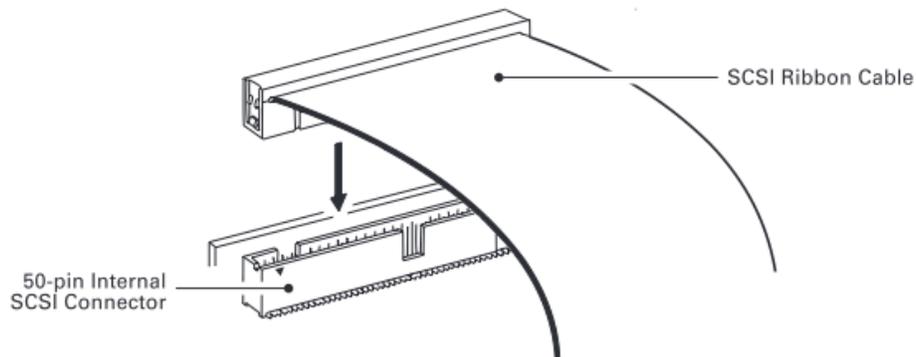
50-pin Internal
SCSI Connector

FIGURE 7 — *Connecting the 50-pin internal flat ribbon cable*

Installation of External SCSI cables

Installation of external SCSI cables can be performed after the cover has been closed. The cable is limited in length to a total of six meters including any internal cabling. The external cable can be daisy chained to include up to 15 with the host adapter in combination with internal devices. The external cable is designed to be inserted only one way, requiring termination at the end peripheral device on the bus as illustrated below.

Terminating Plug
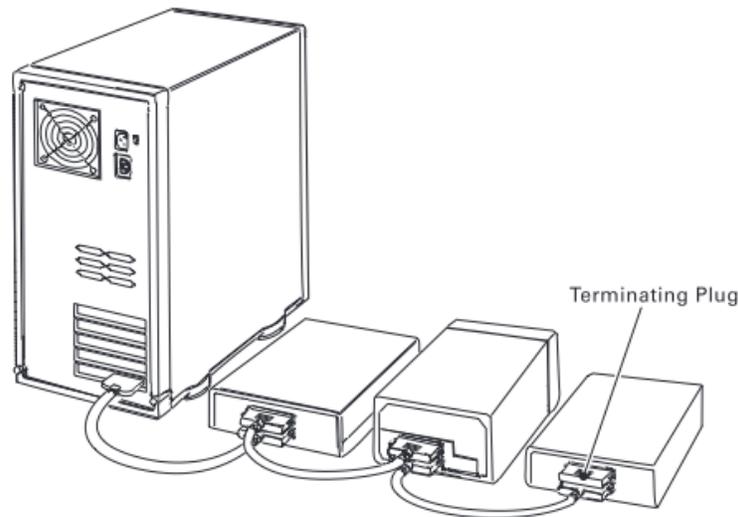
About Termination

SCSI bus terminators (or terminators) connect to SCSI devices and cables to make data transfers more reliable. SCSI guidelines require terminators on the first and last SCSI devices of each SCSI bus.

Host adapter termination is automatically controlled by the Initio firmware and is enabled by default. Miles detects the presence of cables on any of its three connectors and adjusts its internal termination accordingly. Miles is also backward compatible. Even though Miles is itself a SCSI-3 device, it can be connected to any SCSI device that conforms to one of the SCSI standards (SCSI, SCSI-2, or SCSI-3).

External SCSI-2 devices such as tape backup, CD-ROM, CD-R or Zip/Jaz drives can be connected to Miles via a Wide (68-pin) – to – Narrow (50-pin) SCSI converter. Your local computer accessory supplier can assist in identifying such a converter.

When connecting multiple internal SCSI devices, only the last SCSI device on the chain needs to be terminated. Refer to the peripheral manufacturer's user manual for proper device termination.

If you connect three external SCSI devices to Miles, the device closest to Miles is *not* at the end of the bus. Miles is at one end and the farthest device is at the other.
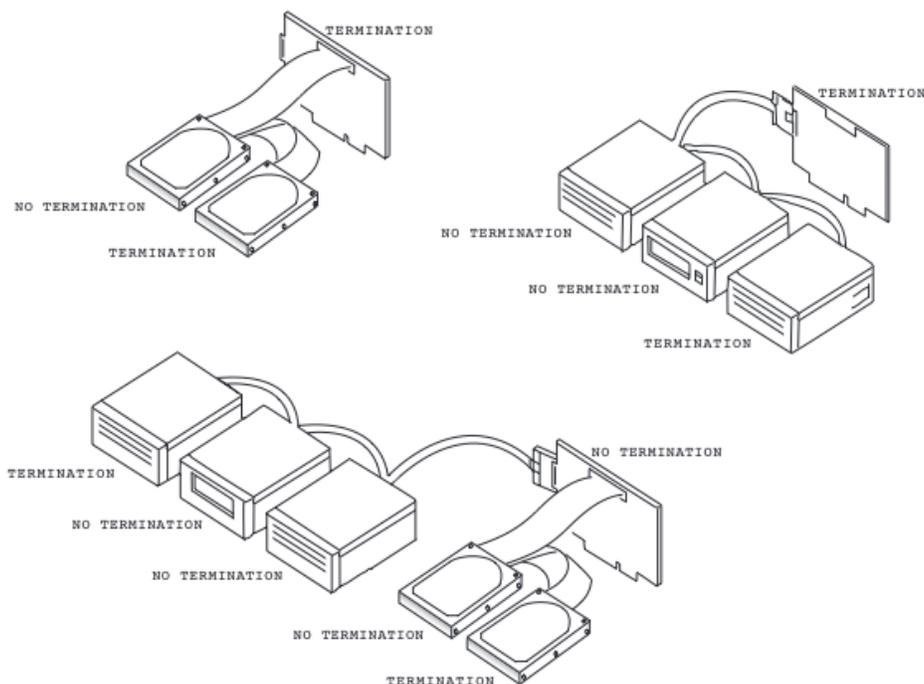
Each of the internal and external devices connected to a SCSI bus need to have a unique SCSI ID. Miles supports up to 15 SCSI peripherals. SCSI peripherals can use SCSI IDs from 0 to 15 (excluding ID 7). Miles defaults to using ID 7 but can be changed to use a different ID through the SmartSCSI utility.

The actual number of SCSI peripherals that can be connected to Miles is dependent on two factors: the total length of the SCSI cables used, and the SCSI type of connected peripherals. Refer to the table below for details.

Type of Device	Cable Length (Internal & External)	Maximum # of Devices
All Fast SCSI	3 Meters	15
At Least One Ultra Device	3 Meters	4
At Least One Ultra Device	1.5 Meters	8

TABLE 1: *Cable length & device limitations*

The original SCSI standard defined an 8-bit data bus. With the advent of SCSI-2, the data path increased to 16 bits for Wide devices. A device that connects to the 8-bit SCSI bus is called "narrow." A device that connects to the 16-bit bus is called "wide."

Connecting both narrow and wide devices together on the same bus can cause problems that may result in data loss.

Optional Activity LED Indicators

The host adapter activity LED connector J3 (shown in FIGURE 1) may be connected to an optional cable and routed to the computer front panel if your computer supports it.

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Software Utility Setup

Introducing the SmartSCSI Utility

Miles ships with software stored on a floppy disk included in the initial packaging. This Initio disk contains the SmartSCSI Utility and ReadMe files. The ReadMe text file contains important product information.

> **Review the ReadMe file before installing any software. The ReadMe file contains information about the software that became available after this manual was printed.**

The SmartSCSI utility is used to modify the SCSI characteristics of connected devices and the Miles host adapter. The SmartSCSI utility can also be used to update the firmware code on the Miles card. To make the update possible, a firmware file called "initio.sim" needs to be present in the same folder where SmartSCSI resides (firmware file updates are distributed via the Initio website on a need basis). The firmware version of the Miles card is displayed in the SmartSCSI Configuration panel.

The Miles host adapter comes bundled with Conley® SoftRAID™ software v.2.0 or later. Conley SoftRAID is an on-line storage management software that enables MacOS users to create and maintain RAID and HFS volumes. Follow the enclosed Conley SoftRAID user's manual for instructions on how to improve disk performance and fault tolerance by combining disks into an array.

Installing the Initio SmartSCSI Software

The Initio diskette contains a folder that includes all the software files needed for Miles. Two files are included: **Initio SmartSCSI for Mac** and a **ReadMe** text file. Installation of the files is basic:
1   Insert the Initio SmartSCSI disk into your floppy drive.
2   Double click the icon of the Initio disk you just inserted
3   With your mouse, drag and drop the folder onto an area of your hard drive
4   The folder should have successfully been copied over to your hard drive

## Running & Understanding the SmartSCSI Interface

Once you have copied the SmartSCSI folder onto your computer's hard drive, double click the SmartSCSI icon. This opens the SmartSCSI Configuration Panel. The panel provides two pull-down menu options: 'PCI Access' and 'Setup'.

PCI Access:

Three functions are available here: **Scan PCI Bus, Close PCI Access, and Quit.** At start-up, SmartSCSI *automatically* performs the **Scan PCI Bus** function and locates all available Miles cards in the system (**Scan PCI Bus** will therefore be shaded out). Once the Miles card(s) are found, the "Setup" pull-down menu can be used to select a Miles card for configuration . **Close PCI Access** is used to reset the PCI bus scan and clear the entries in the "Setup" pull-down menu. **Scan PCI Bus** is used to search for Miles cards and is only accessible following execution of the **Close PCI Access** command. **Quit** exits the SmartSCSI utility.

Setup:

Setup lists the Miles cards that were found during the last PCI bus scan. A Miles card can be selected from the list of available cards. If only one Miles card is installed in the system, the first option **1st Card Configuration** is available and the remaining two (**2nd Card Configuration** and **3rd Card Configuration**) are shaded out. Once a Miles card is selected, the SmartSCSI Configuration Panel is launched. The SmartSCSI Configuration Panel modifies the settings of only the card that was selected from the "Setup" pull-down menu.
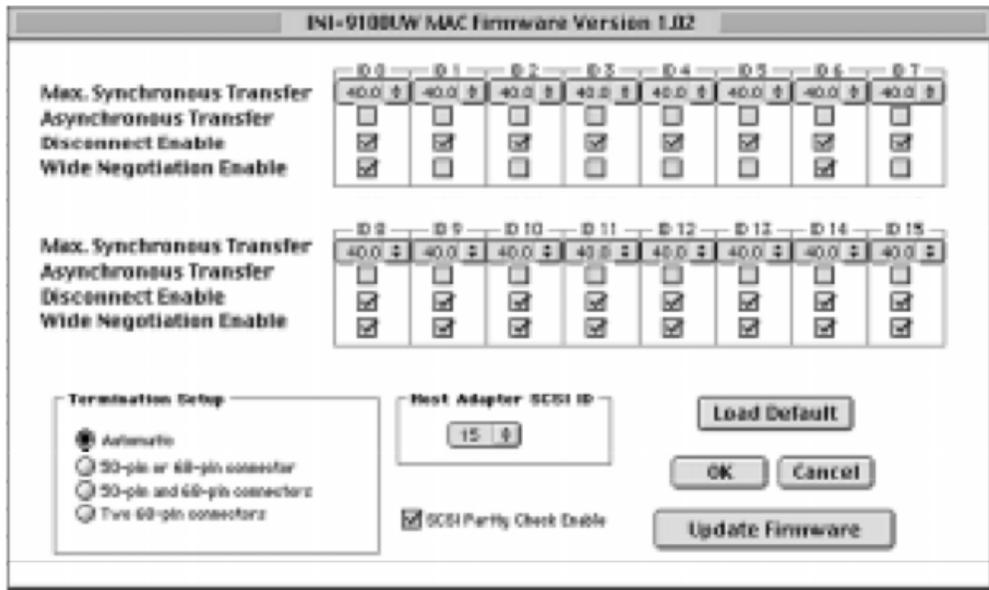
The Miles SmartSCSI Configuration Panel configures the SCSI settings for all SCSI peripherals on SCSI IDs 0 through 15. The next page describes the configuration options.

Maximum Synchronous Transfer Rate. This option determines the maximum speed at which data is moved between the Miles card and SCSI devices. Miles is capable of transferring data at up to 40 Megabytes per second in Wide UltraSCSI mode. The negotiated speed between the Miles card and any SCSI ID can be set to 40.0, 26.6, 20.0,16.0,13.2, 11.4, or 10.0 Mbytes/sec. The listed negotiation speed settings correspond to Wide SCSI (16-bit SCSI) interface. Non-Wide SCSI (Narrow or 8-bit SCSI) negotiated speeds are half of those listed in the pull-down menus. For example, a SmartSCSI "Maximum Synchronous Transfer Rate" setting of 20.0 for a Narrow SCSI hard disk at ID #4 would direct the Miles card to negotiate at 10.0 Megabytes/sec.   The default setting is 40 MB/sec for all SCSI IDs. SCSI devices would negotiate lower speeds if they don't support transfer at the higher default settings. Unless you are experiencing problems, most users should leave the settings at 40 Mbytes/sec.

Asynchronous Transfer. Use this option to set the asynchronous data transfer mode. The default setting for this option is NO *check*. Certain older CD-ROMs, CD-Recordables, and tape drives prefer asynchronous mode and can cause your system to hang or read errors when transferring data in synchronous mode. In such cases, the asynchronous mode should be set to *checked*. Asynchronous transfer mode is limited to a maximum of 5 MB/sec.

Disconnect Enable. This option determines whether Miles allows a specific SCSI device to share the SCSI bus with other devices. Miles uses this option to allow a device to temporarily disconnect from the SCSI bus (referred to as disconnect/reconnect). This allows the host adapter to perform other functions on the bus while the device is temporarily disconnected. The device and the host adapter can then reconnect when the bus is needed. The default setting for this option is *checked* to enable disconnect for all SCSI IDs.

Wide Negotiation Enable. This option determines whether the host adapter initiates wide data transfer with the specified SCSI device. However, not all SCSI devices can handle wide data transfer negotiations properly, which may cause system failure. Certain old CD-ROM, CD-Recordable, and tape drives cannot handle a Wide Transfer negotiation request from the Miles card and may fail to start the system. In such cases, use SmartSCSI to disable (NO *check*) the Wide Negotiation setting for the SCSI ID of the anomalous device.

Host Adapter SCSI ID. Used to change Miles' SCSI ID on the SCSI bus. Miles provides 16 ID's per channel with 0-15 available (7 having the highest priority). Miles defaults to SCSI ID 7. There should be no need to change it.

SCSI Parity Check Enable. Select this option to enable or disable parity checking on the SCSI bus by the host adapter. The default setting for this option is ON (*checked*). NOTE: If this option is ON, be certain that SCSI peripherals on the Miles card also has this option turned ON. Most SCSI devices on the market have SCSI Parity set to ON.

Load Default. Clicking on this button defaults Miles to the following configurations, preset by Initio:

SCSI Device Setup For All Device IDs

Synchronous Transfer	YES
Maximum Synchronous Transfer Rate	40
Enable Disconnect	YES
Enable Wide Negotiation	YES

Miles Host Adapter Setup:

Host Adapter SCSI Bus ID	7
SCSI Terminators	AUTOMATIC
SCSI Parity Check On	YES

Update Firmware. Clicking on this button allows the SmartSCSI utility to search and update the Initio firmware which should be residing in the SmartSCSI folder. Updates to Miles, which are stored in flash ROM, are distributed electronically. In most cases, updated firmware is not required; please update only when you encounter incompatibilities between the host adapter and your SCSI peripheral.

Periodically Initio will distribute new versions of the firmware files. Check the Initio website (www.initio.com) for the latest updates in the firmware. The firmware file, "initio.sim", needs to be present in the same folder as the SmartSCSI utility.

Termination Setup. This option allows the user to set SCSI termination on the Miles card. Four possible combinations of host adapter termination are provided:

• **Automatic:** Use this setting to let Miles detect the number of cables connected to its three SCSI connectors. ONLY TWO OF THE THREE CONNECTORS CAN BE CONCURRENTLY USED. Certain external SCSI peripherals also provide automatic termination features which may conflict with Miles' automatic detection circuitry. In such cases, select one of the three options below.

• **50-pin or 68-pin connector:** Use this option to manually set the host adapter termination. This setting corresponds to a single SCSI cable connected to any one of the three SCSI connectors on the card.

• **50-pin and 68-pin connectors:** Use this option to manually set the host adapter termination. This setting corresponds to one non-wide (Narrow) SCSI ribbon cable connected to the 50-pin connector and one Wide SCSI cable connected to either of the two 68-pin connectors (internal or external).

• **Two 68-pin connectors:** Use this option to manually set the host adapter termination. This setting corresponds to two Wide SCSI cables connected to both 68-pin connectors (internal and external) on the Miles card.

Note that if you are using an internal 68-pin cable/ device and a 68-pin to 50-pin external cable/converter to connect a Narrow external SCSI device, you need to choose "50-pin and 68-pin connectors" option.   Choosing Automatic setting will cause the Miles card to detect two 68-pin cables resulting in incorrect termination.

4

Troubleshooting

Problem: External SCSI peripherals are not visible or cause system hang during heavy data transfer.

Solution: This is usually caused by improper termination or cable length violation. Check this Installation Guide for Cabling and Termination setting requirements. Make sure your external and internal SCSI buses are terminated using ACTIVE TERMINATION. If your bus is terminated using drive built-in termination, check your drive documentation for termination type being used.

Problem: On boot-up, not all the peripherals are scanned and recognized.

Solution: Verify that each of the SCSI devices on the bus has its own distinct SCSI ID number and all peripherals are receiving power. Refer to your peripheral manual for information regarding changing SCSI ID's. Verify the SCSI Termination is set correctly. Make sure the last peripheral on the SCSI bus has termination. See the peripheral manual for proper termination information. After the above steps are executed, if you are still not recognizing all attached peripherals, configure the host adapter to operate in an Asynchronous Transfer mode by changing its setting under the SCSI Devices Setup section of the SmartSCSI Setup Utility.

Problem: I've followed the instructions concerning termination settings on my Miles card, but I'm still having problems. What else can you tell me?

Solution: A SCSI bus should have two and only two termination points (resistance used to maintain impedance and reduce 'reflection' of the signal). These may be located on either the external or internal bus cables, or on the Initio adapter depending on your system configuration. If you have just internal, or just external devices on your SCSI

bus, then the Initio adapter termination should be set to ON or AUTO. If your system includes both internal and external devices, set the Initio termination to OFF or AUTO. This is checked/set by entering the SmartSCSI setup utility during the boot process. If you have any external devices, the last one should be terminated, which is accomplished either by a small switch on the device or by placement of a terminator (a small block with a SCSI connector on one side) on the dangling connector. If you have any internal devices, it is highly recommended that one of these be connected to the very end connector to reduce reflection from the wiretips. Only one internal device should have it's termination set. Termination is either a jumper or a resister block.

If are still having problems, or if your computer hangs or cannot find the SCSI devices,

- Check the cable length and integrity
- Be sure SCSI termination is set correctly
- 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.

Initio Corporation warrants to the original purchaser that this product shall be free from defects in material and workmanship for a period of 5 years from the date of purchase. Should this product, in the judgment of Initio Corporation, prove to be defective, Initio Corporation will at its option repair or replace the product once it has been returned to Initio Corporation free of charge. Any replaced parts or products become the property of Initio Corporation. You may obtain warranty service by first getting authorization from Initio Corporation then returning this product with proof of delivery date, shipping charges prepaid, to Initio Corporation. This warranty does not apply to the software component of the product nor to any product which has been subjected to misuse, accident, abuse or use in a manner inconsistent with normal host adapter operations. The original purchaser must be registered with Initio Corporation (by mailing the Product Registration Card) to qualify for warranty coverage. This remedy is your exclusive remedy for breach of this warranty.

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FCC Compliance Statement

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 operations.

Class B Equipment
Information to User

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 contained in this manual, 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:

- Re-orient 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 of the receiver.
- Consult the dealer or a experienced audio television technician.

Note: Connecting this device to peripheral devices that do not comply with CLASS B requirements or using an unshielded peripheral data cable could also result in harmful interference to radio or television reception.

The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

To ensure the use of this product doesn't contribute to interference, it is necessary to use shielded I/O Cables.

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Declaration of the Manufacturer/Importer

We hereby certify that Miles PCI–UltraWide SCSI Bus Master Host Adapters, in compliance with the requirements of BMPT Vfg 243/1991, is RFI suppressed. The normal operation of some equipment (e.g., signal generators) may be subject to specific restrictions. Please observe the notices in the user's manual.

The marketing and sale of the equipment was reported to the Federal Office for Telecommunication Permits (BZT). The right to retest this equipment to verify compliance with the regulation was given to the ZZF.

EN 55 9100UW2 Declaration of Conformance

This is to certify that Miles PCI–UltraWide SCSI Bus Master Host Adapters are shielded against the generation of radio interference in accordance with the application of Council Directive 89/336/EEC, Article 4a. Conformity is declared by the application of EN 55 9100UW2:1987 Class B (CISPR 22:1985/ BS 6527:1988).

EN50081-1 GENERIC EMISSIONS STANDARD
EN50082-1 GENERIC IMMUNITY STANDARD

1. IEC 801-2 :1984(1000-4-2:1995);
2. IEC 801-3 :1984(1000-4-3:1995);
3. IEC 801-4 :1988(1000-4-4:1995).

Production Notes

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