USER'S REFERENCE

SCSI CARD 2940UW PRO

Adaptec, Inc.
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Milpitas, CA 95035

Printed in Singapore

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▾▾▾▾ SCSI Card 2940UW Pro

User's Reference

adaptec®

Federal Communications Commission Radio Frequency Interference Statement

WARNING: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. However, 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.
- Increase the separation between equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Use a shielded and properly grounded I/O cable and power cable to ensure compliance of this unit to the specified limits of the rules.

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.

Adaptec, Inc. AHA-2940UW Pro

FC Tested To Comply With FCC Standards

FOR HOME OR OFFICE USE

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Understanding SCSI

SCSI (pronounced “scuzzy”) stands for Small Computer Systems Interface. SCSI is an industry standard computer interface for connecting SCSI devices (such as a hard disk, CD-ROM drive, or scanner) to a common SCSI bus.

A SCSI bus is an electrical pathway that consists of a SCSI card (such as the SCSI Card 2940UW Pro) installed in a computer and one or more SCSI devices. SCSI cables are used to connect the devices to the SCSI card.

For the SCSI bus to function properly, SCSI IDs must be assigned to SCSI devices (SCSI devices and SCSI card), and the SCSI bus must be properly terminated.

SCSI IDs

Each device attached to the SCSI Card 2940UW Pro, as well as the SCSI Card 2940UW Pro itself, must be assigned a unique SCSI ID number from 0 to 15. A SCSI ID uniquely identifies each SCSI device on the SCSI bus and determines priority when two or more devices are trying to use the SCSI bus at the same time.

Refer to the device's documentation to set the SCSI ID. Here are some general guidelines for SCSI IDs:

- For internal SCSI devices, the SCSI ID usually is set by configuring a jumper on the device.
- For external SCSI devices, the SCSI ID usually is set with a switch on the back of the device.
- SCSI ID numbers do not have to be sequential, as long as the SCSI Card 2940UW Pro and each SCSI device has a unique number. For example, you can have an internal SCSI device with ID 0, and an external SCSI device with ID 6.
- SCSI ID 7 has the highest priority on the SCSI bus. The priority of the remaining IDs, in descending order, is 6 to 0, 15 to 8.
- The SCSI Card 2940UW Pro is preset to SCSI ID 7 and should not be changed. This gives it the highest priority on the SCSI bus.
- Most internal SCSI hard disks come from the factory preset to SCSI ID 0.
- If you have 8-bit (or narrow) SCSI devices, they must use SCSI IDs 0, 1, 2, 3, 4, 5, or 6. SCSI ID 0 is recommended for the first SCSI hard disk.
- If you are booting your computer from a SCSI hard disk connected to the SCSI Card 2940UW Pro, the Boot Target ID setting in the SCSI*Select* utility must correspond to the SCSI ID of the SCSI device you are booting from. By default, the Boot Target ID is set to *0*. See *Boot Device Options* on page 16 to change the Boot Target ID.
- In Windows® 95/98 you can use the Device Manager to view the SCSI ID (and other details) assigned to each SCSI device installed.
- If you installed Adaptec® EZ-SCSI® software, you can use the SCSI Explorer utility to view the SCSI ID (and other details) assigned to each SCSI device installed.

Terminating the SCSI Bus

To ensure reliable communication on the SCSI bus, *terminators* must be installed (or enabled) on the devices at the physical ends of the SCSI bus. The terminators on all devices between the physical ends must be removed (or disabled).

Since the method for terminating a SCSI device can vary widely, refer to the SCSI device's documentation for instructions on how to enable or disable termination. Here are some general guidelines for termination:

- Termination on internal SCSI devices usually is controlled by manually setting a jumper or a switch on the SCSI device, or by physically removing or installing one or more resistor modules on the SCSI device.
- Termination on external SCSI devices usually is controlled by installing or removing a SCSI terminator. On some external SCSI devices, termination is controlled by setting a switch on the back of the SCSI device.
- By default, termination on the SCSI Card 2940UW Pro itself is *Automatic* (the preferred method). To manually set termination on the SCSI Card 2940UW Pro, see *Configuring the SCSI Card 2940UW Pro with SCSISelect* on page 13.
- Most SCSI devices come from the factory with termination enabled.

Troubleshooting

Have you reviewed the Troubleshooting Checklist provided in the *SCSI Card 2940UW Pro Installation Guide*? You can resolve most problems by following the recommendations in the checklist. If you still experience problems, continue with this section.

Troubleshooting in Windows 95

When I start Windows 95, the system locks up when the Windows logo is displayed. How can I get the system to start so that I can verify that the SCSI card is functioning normally?

1. Start or restart your computer. View the messages that appear onscreen.
2. When the message "Starting Windows 95" appears, press and release the **F8** function key while the text is on your screen.
3. From the menu that is displayed, select **Safe Mode.** (It may take several minutes for Windows 95 to load.)
4. If the computer boots into safe mode, the core software is functional.

How can I tell if the SCSI Card 2940UW Pro software driver is loading properly?

1. Start or restart your computer. Allow the computer to perform a normal startup.
2. Click the **Start** button, point to **Settings**, then click **Control Panel**.
3. Double-click the **System** icon.
4. Click the **Device Manager** tab.
5. Double-click the **SCSI Controller** icon. The software driver for the SCSI Card 2940UW Pro is listed as "Adaptec AHA 2940UW Pro/AIC-788x PCI SCSI Controller."
   - If the driver is listed, the SCSI Card 2940UW Pro driver is loading properly.

- If the driver is listed but has as exclamation mark (!) inside a yellow circle, the software driver may be in conflict with other hardware using the same resources. Double-click the icon to see the device status and possible solutions.
- If the driver is listed but has an "X" inside a red circle, the SCSI Card 2940UW Pro software driver is disabled and is not loading (see below).
- If the SCSI Controller icon or the SCSI Card 2940UW Pro software driver is not listed, reinstall the driver (see below).

Note: Software upgrades (including downloadable drivers) for Adaptec products are available on the Adaptec Web Site at *http://www.adaptec.com*.

An "X" inside a red circle appears with the SCSI Card 2940UW Pro software driver in Device Manager. What does this mean?

The SCSI Card 2940UW Pro software driver is disabled and is not loading. To enable the driver

1. Double-click the SCSI Card 2940UW Pro software driver in Device Manager.
2. Under the General tab, check the Original Configuration (current) box.

What if there is no SCSI Controller icon under Device Manager, or the software driver for the SCSI Card 2940UW Pro does not appear under Device Manager?

If the SCSI Controller icon or the software driver do not appear

1. Double-click the **Add New Hardware** icon in Control Panel.
2. Select **Yes** on the second screen of the Add New Hardware Wizard to have Windows search for the SCSI Card 2940UW Pro.
3. Follow the onscreen instructions.

If Windows 95 does not detect the SCSI card, run the Add New Hardware Wizard again:

1. Double-click the **Add New Hardware** icon in Control Panel.
2. Select **No** on the second screen of the wizard.

3. Select **SCSI controllers** on the next screen.
4. Select the model of your Adaptec SCSI Card.

If your Adaptec SCSI Card model is not on the list, you can install the SCSI card driver from the Adaptec EZ-SCSI Setup Disk. Follow these steps:

1. Place the Adaptec EZ-SCSI Setup Disk in the floppy disk drive and run the Add New Hardware wizard.
2. Select **No** on the second screen of the wizard.
3. Select **SCSI controllers** on the next screen.
4. Click the **Have Disk** button, then click the **Browse** button.
5. Look in the root directory of the EZ-SCSI Setup Disk and select the **EZ-SCSI v.5.0 E** driver.

How can I check the status of a resource (for example, IRQ, Memory, I/O)?

1. Click the **Start** button, point to **Settings**, then click **Control Panel**.
2. Double-click the **System** icon.
3. Click the **Device Manager** tab.
4. Click **Computer**, and then click **Properties**.
5. On the View Resources tab, click the option button for the type of resource you want to check.
6. The setting and the hardware using the setting is displayed.
   - If a specific resource is not listed, the resource is not used by a device.
   - If a resource is listed more than once, the resource is used by more than one device.
   - If a resource is used by an unknown device, the resource is used but the device using the resource cannot be detected.

How do I use the Hardware Conflict Troubleshooter in Windows 95?

1. Click the **Start** button, then click **Help**.
2. From the Contents tab, double-click **Troubleshooting**.
3. Double-click **If you have a hardware conflict**.
4. Follow the step-by-step instructions in the Windows Help window.

Common Error Messages

"Device connected, but not ready"

The host received no answer when it requested data from an installed SCSI device.

- Run SCSI*Select*® and set the Send Start Unit Command to **Yes** for the SCSI ID of the SCSI device. (See *Configuring the SCSI Card 2940UW Pro with SCSISelect* on page 13.)
- Make sure the SCSI device is set to spin up when the power is switched on. (See the documentation for the SCSI device.)

"Start unit request failed"

The SCSI Card BIOS was unable to send a Start Unit Command to the SCSI device, or the SCSI device failed to respond.

- Run SCSI*Select* and disable the Send Start Unit Command for the SCSI device. Test the SCSI device using the Verify Disk Media option of the disk utilities. (See *Using SCSI Disk Utilities* on page 20.)

"Time-out failure during..."

An unexpected time-out occurred.

- Verify the SCSI bus is properly terminated.
- Verify all cables are properly connected.
- Try disconnecting the SCSI device cables from the SCSI card and then starting the computer. If the computer successfully restarts, one of the SCSI devices may be defective.

"Attention! Too many devices are terminated on a 68-pin (wide) connector of your AHA-2940UW Pro. Consult documentation. Press any key to continue."

The SCSI Card BIOS has detected that more than two devices have been terminated on the wide SCSI segment.

- Verify the termination on both internal and external wide (68-pin) connectors. Terminate only the last SCSI device at the far end of each cable. The SCSI devices between the ends of each cable must have their terminators removed (or disabled). See *Cabling Examples* on page 22.

"Attention! Insufficient termination detected on a 68-pin (wide) connector of your AHA-2940UW Pro. Consult documentation. Press any key to continue."

The SCSI Card BIOS has detected that either only one or no devices have been terminated on the wide SCSI segment.

- Verify the termination on both internal and external wide (68-pin) connectors. Terminate the SCSI device at the end of each cable. The SCSI devices between the ends of each cable must have their terminators removed (or disabled). See *Cabling Examples* on page 22.

"Attention! Too many devices are terminated on the 50-pin (narrow) connector of your AHA-2940UW Pro. Consult documentation. Press any key to continue."

The SCSI Card BIOS has detected that more than two devices have been terminated on the wide SCSI segment.

- Verify the termination on the internal narrow (50-pins) connector. Terminate only the last SCSI device at the end of the cable. The SCSI devices between the end of the cable and the host adapter must have their terminators removed (or disabled). See *Cabling Examples* on page 22.

"Attention! Insufficient termination detected on a 50-pin (narrow) connector of your AHA-2940UW Pro. Consult documentation. Press any key to continue."

The SCSI Card BIOS has detected that either only one or no devices have been terminated on the wide SCSI segment.

- Verify the termination on the internal narrow (50-pins) connector. Terminate the SCSI device at the end of the cable. The SCSI devices between the end of the cable and the host adapter must have their terminators removed (or disabled). See *Cabling Examples* on page 22.

Using the SCSI Card 2940UW Pro and SCSI Devices

This section provides useful information on using the SCSI Card 2940UW Pro and your SCSI devices. For specific information, refer to the documentation that came with your SCSI device.

Using SCSI Devices

Hard Disks

- Every SCSI hard disk must be physically low-level formatted, partitioned, and logically formatted before it can be used to store data. SCSI hard disks are physically low-level formatted at the factory and do not usually need to be formatted again.

  If you connected a new SCSI hard disk to your SCSI card, you must partition and logically format the hard disk. For DOS and Windows (3.x, 95, 98) use the DOS Fdisk and Format commands (see your computer, DOS, and Windows documentation). For other operating systems, see your operating system documentation.

- If you are starting from a SCSI hard disk, make sure the hard disk (or drives) setting in your computer's CMOS setup program is set to **None** or **No Drives Installed**, as is required for SCSI hard disks. See your computer documentation for details.

- If both SCSI and non-SCSI (for example, IDE) hard disks are installed, then the non-SCSI hard disk is typically the boot drive. If your computer supports BBS (BIOS Boot Specification), both SCSI and non-SCSI hard disks can co-exist and you can specify which hard disk to start from. Refer to your computer documentation for more information.

Scanners

- You may need to install the proprietary software drivers provided by the scanner manufacturer. See your scanner's documentation for details.

Caution: Do not connect SCSI devices to all three connectors of an AHA-2940UW Pro host adapter!

Installing Multiple SCSI Cards

- You can install multiple SCSI cards in your computer; you are limited only by the available system resources (for example, IRQ settings, I/O port addresses, BIOS addresses, and so forth).
- Each SCSI card you install forms a separate SCSI bus with a different set of SCSI devices. SCSI IDs can be reused as long as the ID is assigned to a SCSI device on a different SCSI card (for example, each SCSI card can have a SCSI device with SCSI ID 2).
- If you have two or more SCSI cards, enable the BIOS on the boot SCSI card only; disable the BIOS on the remaining SCSI cards. The SCSI Card 2940UW Pro is shipped with the BIOS enabled. You can disable the BIOS on any Adaptec SCSI card by changing the default setting in SCSI*Select*.

Connecting the LED Connector

(*Optional feature*) Most computers have an LED disk activity light on the front panel. You may choose to disconnect the cable from the LED connector on the motherboard and connect it to the LED connector on the SCSI card. The LED on the front panel of the computer will light whenever there is activity on the SCSI bus (see Figure 1).

Note: If you are using non-SCSI disk drives (for example, IDE), you may not want to connect your computer's LED to the SCSI card, since the LED will no longer indicate non-SCSI disk activity.

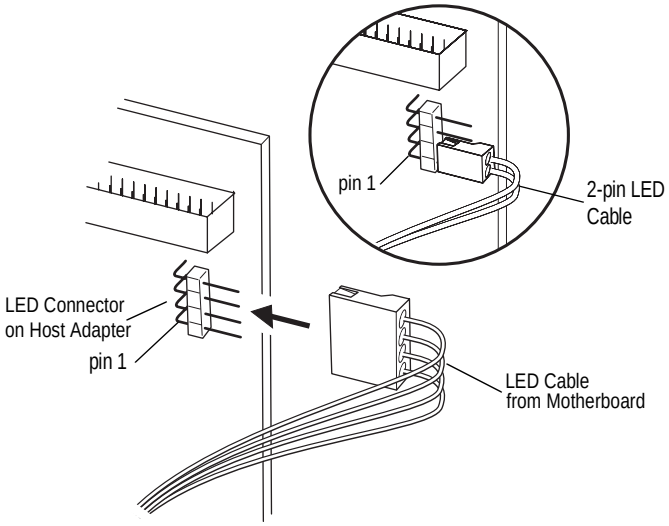

Figure 1. Connecting the LED Cable to the LED Connector

Using SCSI and IDE (or EIDE) Devices

- All Adaptec SCSI cards can co-exist with another controller (IDE, EIDE, RLL, etc.) installed in the computer.
- If you have both an IDE hard disk and a SCSI hard disk, the IDE hard disk is typically the boot disk. If your computer supports BBS (BIOS Boot Specification), both SCSI and non-SCSI disk drives can coexist and you can specify which hard disk to boot from. Refer to your computer documentation for more information.
- You cannot connect an IDE device to a SCSI card, or a SCSI device to an IDE card (controller).
- Disable the BIOS on the SCSI card if no SCSI hard disks are installed (see *Advanced Configuration Options* on page 18).

Replacing a Non-Adaptec SCSI Card with an Adaptec SCSI Card

- SCSI is standard, but how data is translated on to a hard disk is not. Each SCSI card manufacturer uses its own translation schemes for writing data to a hard disk. To use a hard disk previously connected to a non-Adaptec SCSI card, low-level format the hard disk after connecting to the Adaptec SCSI card. (See *Using SCSI Disk Utilities* on page 20.)

Caution: A low-level format destroys all data on the hard disk. Be sure to back up your data before performing a low-level format.

Configuring the SCSI Card 2940UW Pro with SCSI*Select*

SCSISelect, included with the SCSI Card 2940UW Pro, enables you to change SCSI settings without opening the computer or handling the card. SCSI*Select* also enables you to low-level format or verify the disk media of your SCSI hard disks. Table 1 lists the available and default settings for each SCSI*Select* option.

Note: The default settings are appropriate for most systems. Run SCSI*Select* if you need to change or view current settings, or if you would like to run the SCSI disk utilities. See the descriptions of each option starting on page 16.

Table 1. SCSI*Select* Settings

SCSI*Select* Options	Available Settings	Default Setting
Basic Host Adapter Options:		
Host Adapter SCSI ID	0-15	7
SCSI Parity Checking	Enabled, Disabled	Enabled
Host Adapter SCSI Termination:		
Narrow Connector	Enabled, Disabled	Enabled
Wide Connector	Automatic, Enabled, Disabled	Automatic
Boot Device Options:		
Boot Target ID	0-15	0
Boot LUN Number[1]	0-7	0
SCSI Device Configuration Options:		
Sync Transfer Rate (MBytes/sec)	40.0, 32.0, 26.8, 20.0, 16.0, 13.4, 10.0, ASYN	40.0
Initiate Wide Negotiation	Yes, No	Yes (Enabled)
Enable Disconnection	Yes, No	Yes (Enabled)
Send Start Unit Command	Yes, No	Yes (Enabled)
Enable Write Back Cache	Yes, No, N/C	N/C (No Change)
BIOS Multiple LUN Support	Yes, No	No (Disabled)

Table 1. SCSI*Select* Settings *(Continued)*

SCSI*Select* Options	**Available Settings**	**Default Setting**
Include in BIOS Scan	Yes, No	Yes (Enabled)
Advanced Configuration Options:		
Reset SCSI Bus at IC Initialization	Enabled, Disabled	Enabled
Display <Ctrl> <A> Messages during BIOS Initialization[2]	Enabled, Disabled	Enabled
Extended BIOS Translation for DOS Drives > 1 GByte[2]	Enabled, Disabled	Enabled
Verbose/Silent Mode	Verbose, Silent	Verbose
Host Adapter BIOS	Enabled, Disabled: NOT SCAN, Disabled: SCAN Bus	Enabled
Support Removable Disks Under BIOS as Fixed Disks[2]	Boot Only, All Disks, Disabled	Boot Only
BIOS Support for Bootable CD-ROMs[2]	Enabled, Disabled	Enabled
BIOS Support for Int 13 Extensions[2]	Enabled, Disabled	Enabled

[1] Setting is valid only if Multiple LUN Support is enabled.
[2] Settings are valid only if host adapter BIOS is enabled.

Starting SCSI*Select*

Follow these steps to start SCSI*Select*:

1. Turn on or restart your system.

   During the startup process, read all messages that appear on your screen.

2. When the following message appears on your screen, press the **Ctrl-A** keys simultaneously (this message appears for only a few seconds):

   Press <Ctrl><A> for SCSISelect (TM) Utility!

3. From the menu that appears, use the ↑ and ↓ keys to move the cursor to the option you want to select, then press **Enter**.

Note: If you have difficulty viewing the display, press **F5** to toggle between color and monochrome modes. (This feature may not work on all monitors.)

Exiting SCSI*Select*

Follow these steps to exit SCSI*Select*:

1. Press **Esc** until a message prompts you to exit. (If you changed any settings, you are prompted to save the changes before you exit.)

2. At the prompt, select **Yes** to exit, then press any key to reboot the computer. Any changes you made in SCSI*Select* take effect after the computer boots.

Using SCSI*Select* Settings

To select an option, use the ↑ and ↓ keys to move the cursor to the option, then press **Enter**.

In some cases, selecting an option displays another menu. You can return to the previous menu at any time by pressing **Esc**.

To restore the original SCSI*Select* default values, press **F6** from the main SCSI*Select* screen.

Basic Host Adapter Options

- **Host Adapter SCSI ID**—Sets the SCSI ID for the SCSI card. The SCSI Card 2940UW Pro is set at 7, which gives it the highest priority on the SCSI bus. We recommend you do not change this setting.
- **SCSI Parity Checking**—When set to **Enabled**, verifies the accuracy of data transfer on the SCSI bus. Leave this setting enabled unless any SCSI device connected to the SCSI card does not support SCSI parity.
- **Host Adapter SCSI Termination**—Determines the termination setting for the SCSI card. The default setting is *Automatic*. We recommend that you leave this setting at Automatic.

Boot Device Options

- **Boot Target ID**—Specifies the SCSI ID of your boot device.
- **Boot LUN Number**—Specifies which LUN (Logical Unit Numbers) to boot from on your boot device. Multiple LUN Support must be enabled (see *Advanced Configuration Options* on page 18).

SCSI Device Configuration Options

Note: To configure settings for a SCSI device, you must know its SCSI ID (see *Using SCSI Disk Utilities* on page 20).

- **Sync Transfer Rate (MBytes/sec)**—Determines the maximum synchronous data transfer rate the SCSI card supports. Use the maximum value of 40.0. If your SCSI device is not Ultra SCSI, select a transfer rate of 10.0.
- **Initiate Wide Negotiation**—When set to **Yes**, the SCSI card attempts 16-bit data transfer (wide negotiation). When set to **No**, the SCSI card uses 8-bit data transfer unless the SCSI device requests wide negotiation.

Note: Set Initiate Wide Negotiation to **No** if you are using an 8-bit SCSI device that hangs or exhibits other performance problems with 16-bit data transfer.

- **Enable Disconnection**—When set to **Yes**, allows the SCSI device to disconnect from the SCSI bus. Leave the setting at **Yes** if two or more SCSI devices are connected to the SCSI card. If only one SCSI device is connected, changing the setting to **No** results in slightly better performance.
- **Send Start Unit Command**—When set to **Yes**, sends the Start Unit Command to the SCSI device at bootup.
- **Enable Write Back Cache**—When set to **Yes**, the disk write cache on the selected device will be enabled. When set to **No**, the disk write cache will be disabled. When set to ***N/C***, no change will be made to the disk write cache; the SCSI card recognizes the disk's default setting and does not change it. Enabling SCSI write cache will improve the overall performance. The default setting is ***N/C***, but you can enable it if the SCSI device supports the feature.
- **BIOS Multiple LUN Support**—When set to **Yes**, the SCSI card BIOS provides boot support for a SCSI device with multiple LUNs. Leave this setting set to **No** if your boot device does not have multiple LUNs.
- **Include in BIOS Scan**—When set to **Yes**, the SCSI card BIOS includes the SCSI device as part of its BIOS scan at bootup.

Advanced Configuration Options

Note: *Do not* change the Advanced Host Adapter Settings unless absolutely necessary.

- **Reset SCSI Bus at IC Initialization**—When set to **Enabled**, the SCSI card generates a SCSI bus reset during its power-on initialization and after a hard reset.
- **Display <Ctrl> <A> Messages during BIOS Initialization**—When set to **Enabled**, the SCSI card BIOS displays the Press <Ctrl> <A> for SCSISelect (TM) Utility! message on your screen during system bootup. If this setting is disabled, you can still invoke the SCSI*Select* utility by pressing **<Ctrl> <A>** after the SCSI card BIOS banner appears.
- **Extended BIOS Translation for DOS Drives > 1 GByte**—When set to **Enabled**, provides an extended translation scheme for SCSI hard disks with capacities greater than 1 GByte. This setting is necessary only for MS-DOS 5.0 or above; it is not required for other operating systems, such as NetWare or UNIX. The extended translation scheme supports hard disks as large as 8 GBytes.

  To partition a hard disk larger than 1 GByte controlled by the SCSI card BIOS, use the MS-DOS Fdisk command.

  

  Caution: Back up your hard disk before changing the translation scheme.

- **Verbose/Silent Mode**—When set to Verbose, the SCSI card BIOS displays the host adapter model and <Crtl><A> message on the screen during system bootup. When set to **Silent**, the message will not be displayed during bootup. The default setting is *Verbose*.
- **Host Adapter BIOS (Configuration Utility Reserves BIOS Space)**—Enables or disables the SCSI card BIOS.
  - Set to **Enabled** if you boot from a SCSI hard disk connected to the SCSI card.

- Set to **Disabled** if the SCSI devices on the SCSI bus (for example, CD-ROM drives) are controlled by software drivers and do not need the BIOS.

- **Support Removable Disks Under BIOS as Fixed Disks**—Determines which removable-media drives are supported by the SCSI card BIOS. Settings are as follows:
  - **Boot Only**—Only the removable-media drive designated as the boot device is treated as a hard disk.
  - **All Disks**—All removable-media drives supported by the BIOS are treated as hard disk.
  - **Disabled**— No removable-media drives are treated as hard disks. Software drivers are required because the removable-media drives are not controlled by the BIOS.

Caution: *Do not* remove a removable-media cartridge from a SCSI removable-media drive controlled by the SCSI card BIOS while the removable-media drive is on. You may lose data. To allow the removal of the media while the removable drive is on, install the removable-media software driver and set Support Removable Disks Under BIOS as Fixed Disks to **Disabled**.

- **BIOS Support for Bootable CD-ROMs**—When set to **Enabled**, the SCSI card BIOS allows booting from a CD-ROM drive.
- **BIOS Support for Int 13 Extensions**—When set to **Enabled**, the SCSI card BIOS supports Int 13h extensions as required by Plug-and-Play. The setting can be either enabled or disabled if your system is not Plug-and-Play.

Using SCSI Disk Utilities

To access the SCSI disk utilities, follow these steps:

1. Select the **SCSI Disk Utilities** option from the menu that appears after starting SCSI*Select*. SCSI*Select* scans the SCSI bus (to determine the devices installed) and displays a list of all SCSI IDs and the devices assigned to each ID.
2. Use the ↑ and ↓ keys to move the cursor to a specific ID and device, then press **Enter**.
3. A small menu appears, displaying the options Format Disk and Verify Disk Media.

   - **Format Disk**—Allows you to perform a low-level format on a hard disk. *Most SCSI disk devices are preformatted at the factory and do not need to be formatted again*. Each hard disk must be low-level formatted before you can use your operating system's partitioning and file preparation utilities, such as MS-DOS Fdisk and Format.

     

     Caution: A low-level format destroys all data on the hard disk. Be sure to back up your data before performing this operation. You *cannot* abort a low-level format once it is started.

   - **Verify Disk Media**—Allows you to scan the media of a hard disk for defects. If the utility finds bad blocks on the media, it prompts you to reassign them; if you select *yes*, those blocks are longer used. You can press **Esc** at any time to abort the utility.

Obtaining SCSI Cables

High-quality cables are required in high-performance SCSI systems to ensure data integrity. Adaptec provides the highest quality SCSI cables designed specifically for use with Adaptec SCSI cards. For purchasing information, contact Adaptec at 1-800-442-7274, Monday to Friday, from 6 a.m. to 5 p.m. (Pacific Time).

When ordering cables, note the SCSI Card 2940UW Pro connector and the connector for your SCSI device, and select a cable that best meets your needs. Figure 2 shows the connectors on the SCSI Card 2940UW Pro.

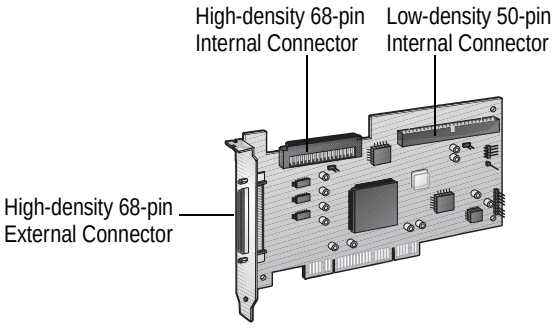

Figure 2. SCSI Card 2940UW Pro Connectors

External Cables

Table 2. External Cables

Description	Cable Model Number	Ordering Name
DB25-pin to DB25-pin Cable (1 m)	100	ACK-D2D CBL KT(97)
DB25-pin to High-density 50-pin Cable (1 m)	200	ACK-D2H CBL KT(97)
High-density 50-pin to High-density 50-pin Cable (1 m)	300	ACK-H2H CBL KT(97)
High-density 50-pin to Centronics 50-pin Cable (1 m)	500	ACK-H2L CBL KT(97)
High-density 68-pin to High-density 68-pin Cable (1 m)	600	ACK-W2W-E

External Connector Diagrams

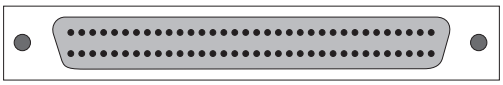

Figure 3. High-density 68-pin

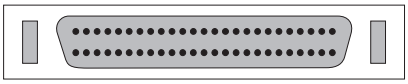

Figure 4. High-density 50-pin

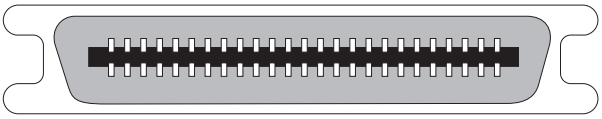

Figure 5. Low-density 50-pin

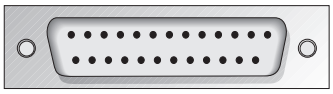

Figure 6. DB25-pin

Cabling Examples

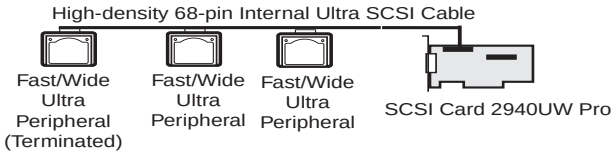

Figure 7. Connecting Fast/Wide Ultra Internal SCSI Devices

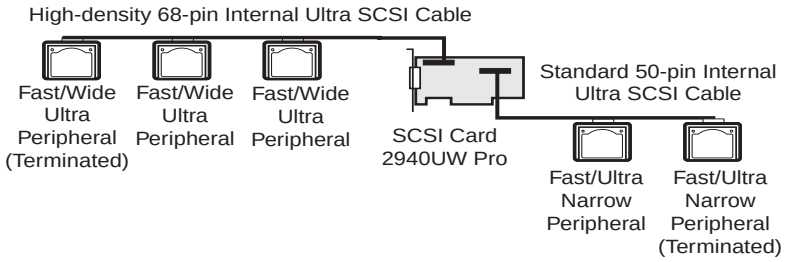

Figure 8. Connecting Fast/Wide Ultra and Fast/Narrow Ultra Internal SCSI Device

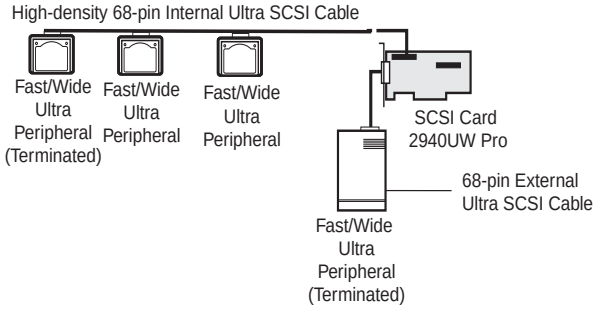

Figure 9. Connecting Fast/Wide Ultra Internal and External SCSI Devices

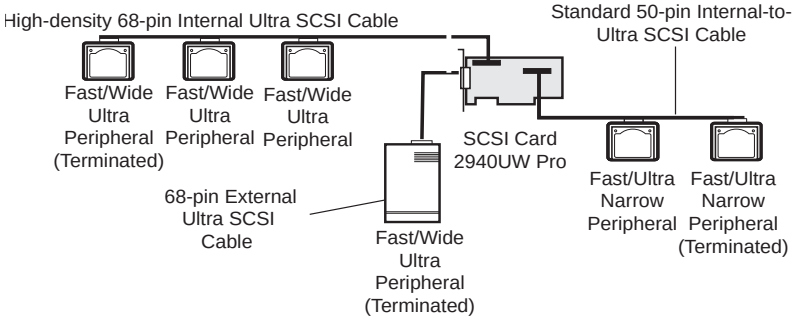

Figure 10. Connecting Fast/Wide Ultra Internal and External and Fast/Wide Ultra Narrow Internal SCSI Devices

Examples of Cabling Wide and Narrow External SCSI Devices

All host adapter SCSI termination is set to *Automatic* in *SCSISelect.*

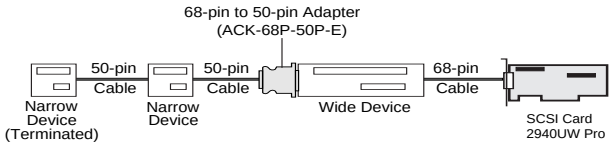

Figure 11. Connecting Narrow and Wide External SCSI Devices

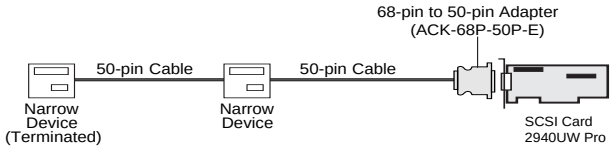

Figure 12. Connecting Narrow External SCSI Devices

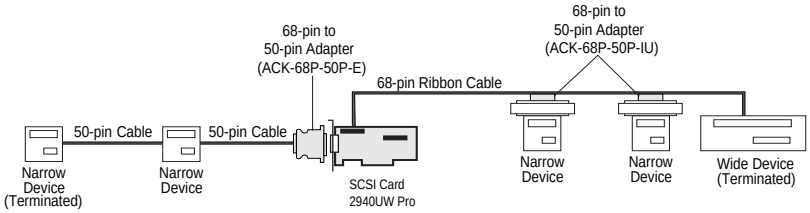

Figure 13. Connecting Narrow External SCSI Devices
and Internal Narrow and Wide SCSI Devices

Note: If correct 68-pin to 50-pin adapter is not used, incorrect termination could occur and hang the SCSI bus.

Internal Cables

Table 3. Internal Cables

Description	Cable Model Number	Ordering Name
50-pin with connector for 4 SCSI devices + SCSI card (1.5 m)	1100	ACK-INT5
68-pin with connectors for 4 SCSI devices + SCSI card (1.1 m)	1200	ACK-W2W-E

Internal Connector Diagrams

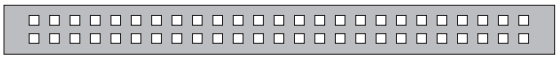

Figure 14. Low-density 50-pin

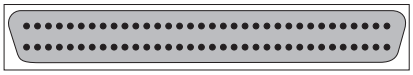

Figure 15. High-density 68-pin

Adapters, Converters, and Terminators

Table 4. Adapters, Converters, and Terminators

Description	Cable Model Number	Ordering Name
External High-density 68-pin to External High-density 50-pin Adapter	400	ACK-68P-50P-E
Internal High-density 68-pin to Internal Standard 50-pin Adapter	450	ACK-68P-50P-IU
Internal High-density 50-pin to External High-density 50-pin Cable with 2 Additional Internal Positions	700	ACK-50I-50E CBL KT (98)
68-pin Terminator Block	800	ACK-68 TERM CBL KIT
50-pin Terminator Block	900	ACK-50 TERM CBL KIT

Maximum Cable Lengths

The total length of cabling (internal and external) on the SCSI bus may not exceed the maximum lengths listed in Table 5.

Table 5. Maximum Cable Lengths

Maximum Cable Length	Data Transfer Rate	Maximum SCSI Devices Supported[1]
3 m (9.8 ft)	Fast SCSI (10 MBytes/sec)	7
3 m (9.8 ft)	Wide SCSI (20 MBytes/sec)	15
3 m (9.8 ft)	Ultra SCSI (40 MBytes/sec for 16-bit, 20 MBytes/sec for 8-bit)	4
1.5 m (4.9 ft)	Ultra SCSI (40 MBytes/sec for 16-bit, 20 MBytes/sec for 8-bit)	5-8[2]

[1] Not including the SCSI card.

[2] Ultra SCSI data transfer rates do not currently support more than eight devices.