# USER'S REFERENCE

SCSI CARD 2930U

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# ▾▾▾▾ SCSI Card 2930U

## User's Reference

adaptec®

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# Understanding SCSI

*SCSI* (pronounced “scuzzy”) stands for Small Computer System Interface. SCSI is an industry standard computer interface for connecting SCSI peripherals (such as a hard disk drive, 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 2930U) installed in a computer and one or more SCSI peripherals. SCSI cables are used to connect internal and external peripherals to the SCSI card.

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

## SCSI IDs

Each peripheral attached to the SCSI Card 2930U, as well as the SCSI Card 2930U itself, must be assigned a unique SCSI ID number from 0 to 7. A SCSI ID uniquely identifies each 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 peripheral’s documentation to set the SCSI ID. Here are some general guidelines for SCSI IDs:

- For internal SCSI peripherals, the SCSI ID usually is set by configuring a jumper on the peripheral.
- For external SCSI peripherals, the SCSI ID usually is set with a switch on the back of the peripheral.

- SCSI ID 7 has the highest priority on the SCSI bus. The priority of the remaining IDs, in descending order, is 6 to 0.
- The SCSI Card 2930U is preset to SCSI ID 7 and should not be changed. This gives it the highest priority on the SCSI bus.
- SCSI ID 0 is recommended for the first SCSI hard disk drive. Most internal SCSI hard disk drives come from the factory preset to SCSI ID 0.
- If you are booting your computer from a SCSI hard disk drive connected to the SCSI Card 2930U, the Boot SCSI ID setting in the SCSI*Select* utility must correspond to the SCSI ID of the peripheral you are booting from. By default, the Boot SCSI ID is set to 0. See *Boot Device Options* on page 22 to change the Boot SCSI ID.
- In Windows 95®, you can use the Device Manager to view the SCSI ID (and other details) assigned to each SCSI device installed.

## SCAM Protocol

The SCSI Card 2930U supports the SCSI Configured AutoMatically (SCAM) protocol, which assigns SCSI IDs dynamically and resolves SCSI ID conflicts automatically when you start the computer. If your computer includes SCSI disk drives or other peripherals that support SCAM, you do not need to assign SCSI IDs manually to these peripherals. To enable SCAM support, see *Configuring the SCSI Card 2930U with SCSISelect* on page 18.

## Terminating the SCSI Bus

To ensure reliable communication on the SCSI bus, both ends of the SCSI bus must be terminated. If the SCSI Card 2930U is connected at one end of the SCSI bus, you must still terminate the peripheral at the other end. Termination is necessary because it prevents the signal from bouncing off the end of the cable and interfering with the original signal.

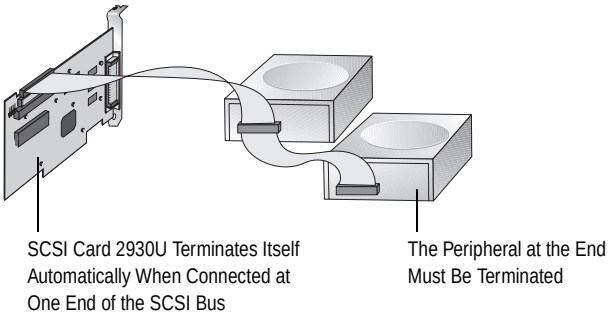


Figure 1. Terminating the SCSI Bus

If the SCSI Card 2930U is connected in the middle of the SCSI bus, it will not terminate itself and you will need to terminate the peripherals connected at both ends of the SCSI bus.

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

- Termination on internal SCSI peripherals usually is controlled by manually setting a jumper or a switch on the peripheral, or by physically removing or installing one or more terminator modules on the peripheral. The internal SCSI peripheral at the end of the cable must be terminated!
- Termination on external SCSI peripherals usually is controlled by installing or removing a SCSI terminator. On some external peripherals, termination is controlled by setting a switch on the back of the peripheral. The external SCSI peripheral at the end of the cable must be terminated!

- By default, termination on the SCSI Card 2930U itself is automatic (the preferred method). To manually set termination on the SCSI Card 2930U, see *Configuring the SCSI Card 2930U with SCSISelect* on page 18.
- Most SCSI peripherals come from the factory with termination enabled. Some SCSI peripherals include a terminator block or pass-through terminator. See your peripheral documentation for details.

# Troubleshooting

## Troubleshooting Hardware Checklist

Most problems with the SCSI Card 2930U result from errors in preparing and connecting peripherals on the SCSI bus. If you have problems, check the items below first.

If you have problems with a specific SCSI peripheral when other SCSI peripherals are working correctly, please contact the manufacturer of the problem peripheral for troubleshooting information.

- Are all SCSI peripherals turned on?
- Are all SCSI cables and power cables properly connected?
- Is the SCSI Card 2930U firmly seated and secured in the PCI expansion slot? If not, you'll receive the message: SCSI BIOS not installed when you first boot your computer; this message will not appear if the SCSI card is not seated properly.
- Are all SCSI peripherals and the SCSI Card 2930U assigned unique SCSI IDs? (See Step 1 in either *Connecting Internal SCSI Peripherals* or *Connecting External SCSI Peripherals* in the installation guide.)
- Are all SCSI peripherals terminated properly? (See Step 2 in *Connecting Internal SCSI Peripherals* or Step 3 in *Connecting External SCSI Peripherals* in the installation guide.)

- If your computer allows you to set up configuration options when the computer first boots up (through CMOS setup), are the following options set up as specified?
  - If there is an Interrupt Type or Interrupt Line option in the Setup program, select **Int-A** or **Interrupt Type = A** (you may also be required to change a motherboard jumper setting).
  - If there is a Triggering Interrupt option, select **Level**.
  - If there is an option to enable or disable bus mastering for the PCI slots, select **Enabled**. Bus mastering must be enabled. Check your computer documentation for more information on bus mastering.
  - If there is an option to enable or disable individual PCI slots, be sure the slot in which you install the SCSI Card 2930U is **Enabled**.
  - If your computer has a combination of ISA (or EISA) boards and PCI boards, you may need to mark the IRQs used by ISA/EISA boards as **Used** so the computer BIOS will not try to assign these IRQs to other PCI boards.
  - In some computers the BIOS reserves a set of available IRQs for PCI boards, and you have to assign these IRQs manually.

Some configuration options apply to a specific PCI bus slot, so if you change any option be sure you are applying the change to the correct slot. Check your computer documentation to determine the correct PCI bus slot.

If you're still experiencing problems, try installing the SCSI Card 2930U in another PCI slot, preferably the first PCI slot.

# Troubleshooting in Windows

### 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 displayed, select **Safe Mode.** (It may take several minutes for Windows 95 to load.)
4. Verify the SCSI Card 2930U software driver is loading properly (see below).

### How can I tell if the SCSI Card 2930U software driver is loading properly?

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. Double-click the **SCSI Controller** icon. The driver for the SCSI Card 2930U is listed as "Adaptec AIC-78XX PCI SCSI Controller."
   - If the driver is listed, the SCSI Card 2930U driver is loading properly.
   - If the driver is listed but has an 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 2930U software driver is disabled and isn't loading (see below).

– If the SCSI Controller icon or the SCSI Card 2930U 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*.

### Why does an "X" inside a red circle appear by the SCSI Card 2930U software driver in Device Manager?

The SCSI Card 2930U software driver is disabled and isn't loading. To enable the driver:

1. Double-click the SCSI Card 2930U software driver in Device Manager.
2. Under the General tab, check the Original Configuration (current) box.

**Note:** In most cases, this is the result of an IRQ conflict. Refer to page 9.

### In Windows 95, why is there a yellow ! beside my driver(s) in Device Manager?

The yellow ! may appear for many reasons. Use Table 1 to troubleshoot this problem. The reasons are listed by level of difficulty, the first being easiest to solve.

Table 1. Possible Reasons for Yellow !

| Reason | Page |
|---|---|
| Faulty cables, termination, or device | 8 |
| Master Boot Record was modified | 8 |
| Conflicting or unavailable resources | 9 |

### In Windows 95, how do I check for faulty cables, termination, or damaged device?

1. Turn OFF you computer and disconnect the cables from the host adapter. (*Do not* disconnect the hard disk drive if it is bootable or contains the operating system.)
2. Turn ON your computer, and check if the yellow ! disappeared in Device Manager.

If the yellow ! disappeared, the cabling, termination, or device is faulty.

### In Windows 95, where do I check that the Master Boot Record was modified?

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click **System**.
3. In the System Properties window, open the **Performance** tab. One of the following messages may appear:

   The Master Boot Record has been modified.

   Your system is configured for optimal performance.

   <Drive letter> using MS-DOS compatibility mode file system.

If the first message appears, click the **Details** button in the Performance tab.

If the second message appears, you must update or install the driver.

If the third message appears, remove the DOS driver from *config.sys* and *autoexec.bat*:

1. Click the **Start** button, and then click **Run**.
2. In the Run window, type sysedit and then click **OK**.
3. Go to the Autoexe.bat window. If there are lines containing files with **.exe*, **.com*, or **.bat* extensions, type rem at the beginning of those lines.
4. Go to the Config.sys window. If there are lines containing files with **.sys* extensions, type rem at the beginning of those lines.
5. Save the changes.

### In Windows 95, where do I check for conflicting or unavailable resources?

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click **System**.
3. In the **System Properties** window, open **Device Manager**.
4. In Device Manager, double-click **Computer** at the top of the list.
5. In the Computer Properties window, click **Interrupt request (IRQ)**, if it's not already selected.

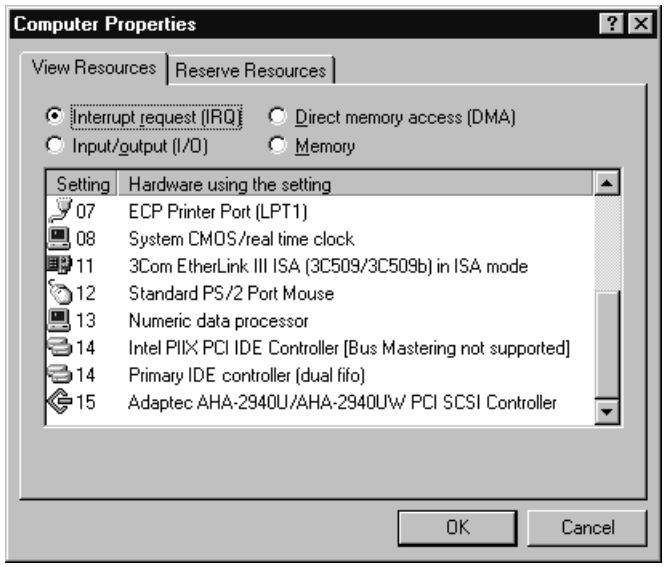


Figure 2. View Resources Tab

The Settings column lists the IRQs in use. IRQ settings range between 0 and 15. If an IRQ setting is not listed under Settings, then it's available. In the figure above, settings 09 and 10 aren't listed, and therefore, available IRQs.

### In Windows NT 4.0, where can I check which resources are available on my computer?

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click **SCSI Adapters**.
3. In the SCSI Adapters window, click the **Properties** button to find which resources are in use.

### What if there is no SCSI Controller icon under Device Manager, or the SCSI Card 2930U software driver does not appear under Device Manager?

Generally, when the SCSI Card 2930U software driver is not listed in the Device Manager, the system BIOS is not giving the SCSI Card resources. Check for available resources (see the previous page). If resources are available, install the SCSI Card in another PCI slot.

**Note:** The SCSI Card 2930U software driver may be listed as "PCI SCSI Bus Controller" under Other Devices in Device Manager. If it is listed there, reinstall the driver as described on the next page.

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

1. Double-click **Add New Hardware** in the Control Panel.
2. Click **Yes** on the second screen of the Add New Hardware Wizard to have Windows® search for the SCSI Card 2930U.
3. Follow the instructions on each screen.

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

1. In the Control Panel, double-click **Add New Hardware**.
2. In the second screen of the wizard, click **No**.
3. Select **SCSI controllers** on the next screen.
4. Select the model of your Adaptec SCSI Card.

If SCSI Card 2930U is not on the list, you may be able to install a SCSI card driver from the Windows 95 CD-ROM (or from the Adaptec Driver Diskette). Follow these steps:

1. Place the Windows 95 CD-ROM in your CD-ROM drive (or insert the Adaptec Driver Diskette 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 *\drivers\storage* directory of the CD-ROM and select the model of your SCSI card.

### 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 SCSI Card received no answer when it requested data from an installed SCSI peripheral.

- Run SCSI*Select* and set the Send Start Unit Command to **Yes** for the SCSI Card 2930U.
- Make sure the drive is set to spin up when the power is switched on. (See the documentation for the peripheral.) If you still have problems, you may have a bad drive. If you can still access your desktop, follow these steps:
    1. Click the Start button, point to Programs, Accessories, System Tools, and then click **ScanDisk**.
    2. Click **Start** and then wait a few moments for results.

**"Start unit request failed"**

The SCSI card BIOS was unable to send a Start Unit Command to the peripheral.

- Run SCSI*Select* and disable the Send Start Unit Command for the peripheral.

**"Time-out failure during..."**

An unexpected time-out occurred.

- Verify the SCSI bus is properly terminated.
- Verify all cables are properly connected.
- Disconnect the SCSI peripheral cables from the SCSI card and then start the computer. If the computer successfully restarts, one of the SCSI peripherals may be defective.

**"BIOS Not Installed"**

Non-bootable hard disk drive attached and BIOS is enabled. This is an informative message, not an error. This message will appear also if no boot device is attached.

# Using the SCSI Card 2930U and SCSI Peripherals

This section provides useful information on using the SCSI Card 2930U and your SCSI peripherals. For specific information, refer to the documentation that came with your SCSI peripheral.

## Using SCSI Peripherals

### Hard Disk Drives

- 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 drive to your SCSI card, you must partition and logically format the drive. For DOS, Windows (3.x and 95) use the DOS fdisk and format commands (see your computer, DOS, and Windows documentation).

- If you are booting from a SCSI hard disk drive, 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 disk drives. See your computer documentation for details.

- If both SCSI and non-SCSI (for example, IDE) disk drives are installed, then the non-SCSI disk drive is usually the boot drive.

### Scanners

- You must install the scanner manufacturer's proprietary software drivers. See your scanner's documentation for details. If the Adaptec driver loads successfully and you have problems with your system, contact your scanner manufacturer for support.

## 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) not used by other cards installed in your computer.
- Each SCSI card you install forms a separate SCSI bus with a different set of SCSI peripherals. SCSI IDs can be reused as long as the ID is assigned to a peripheral on a different SCSI card (for example, each SCSI card can have a peripheral 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.

## Connecting the LED Connector

(*Optional feature*) Most computers have an LED disk activity light on the front panel. If you 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.

**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.

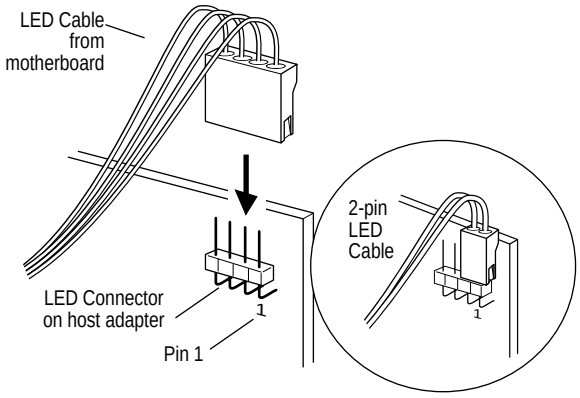


Figure 3. Connecting the LED Cable to the LED Connector

## Using SCSI and IDE (or EIDE) Peripherals

- 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 drive and a SCSI hard disk drive, the IDE drive will usually be the boot drive. In this case, disable the BIOS on the SCSI card (see *Advanced Configuration Options* on page 22).
- You cannot connect an IDE peripheral to a SCSI card, or a SCSI peripheral to an IDE card (controller).
- Disable the BIOS on the SCSI card if no SCSI hard disk drives are installed (see *Advanced Configuration Options* on page 22).

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

- SCSI is standard, but how data is translated on to a hard disk drive is not. Each SCSI card manufacturer uses its own translation schemes for writing data to a disk. To use a hard disk drive previously connected to a non-Adaptec SCSI card, low-level format the drive after connecting it to the Adaptec SCSI card. (See *Using SCSI Disk Utilities* on page 24.)

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

# Configuring the SCSI Card 2930U with SCSI*Select*

SCSI*Select*®, included with the SCSI Card 2930U, 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 disk drives. Table 2 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 on page 20.

Table 2. SCSI*Select* Settings

| SCSI*Select* Option | Available Settings | Default Setting |
|---|---|---|
| **SCSI Bus Interface Definitions:** | | |
| Host Adapter SCSI ID | 0-7 | 7 |
| SCSI Parity Checking | Enabled, Disabled | Enabled |
| Host Adapter SCSI Termination | Automatic, Enabled, Disabled | Automatic |
| **Boot Device Options:** | | |
| Boot SCSI ID | 0-7 | 0 |
| Boot LUN Number[1] | 0-7 | 0 |
| **SCSI Device Configuration:** | | |
| Initiate Sync Negotiation | Yes, No | Yes (Enabled) |
| Maximum Burst Rate | 20.0, 10.0, 8.0, 6.7, 5.0 | 20.0 |
| Enable Disconnection | Yes, No | Yes (Enabled) |
| Send Start Unit Command | Yes, No | No (Disabled) |
| BIOS Multiple LUN Support | Yes, No | No |
| **Advanced Configuration Options:** | | |
| Plug-and-Play SCAM Support | Enabled, Disabled | Disabled |
| Reset SCSI Bus at Initialization | Enabled, Disabled | Enabled |
| Host Adapter BIOS | Enabled, Disabled | Enabled |

Table 2. SCSI*Select* Settings *(Continued)*

| SCSI*Select* Option | Available Settings | Default Setting |
|---|---|---|
| Support Removable Disks Under BIOS as Fixed Disks[2] | Boot Only, All Disks, Disabled | Boot Only |
| Extended BIOS Translation for DOS Drives > 1 GByte[2] | Enabled, Disabled | Enabled |
| Display <Ctrl> <A> Messages during BIOS Initialization[2] | Enabled, Disabled | Enabled |
| BIOS Support for Bootable CD-ROMs[2] | Enabled, Disabled | Disabled |
| 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 computer.

   During the startup process, pay careful attention to the 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 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.

### SCSI Bus Interface Definitions

- **Host Adapter SCSI ID**—Sets the SCSI ID for the SCSI card. The SCSI Card 2930U 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 **Enable**, verifies the accuracy of data transfer on the SCSI bus. Leave this setting enabled unless any SCSI peripheral connected to the SCSI card does not support SCSI parity. (If one SCSI peripheral does not support SCSI Parity, all other peripherals must **Disable** this setting.)
- **Host Adapter SCSI Termination**—Determines the termination setting for the SCSI card. The default setting is **Automatic**, which determines termination as follows:
  - If a cable is connected to the SCSI card's internal or external SCSI connector, the terminators are *enabled*. (The SCSI card is at the *end* of the SCSI bus.)

– If a cable is connected to the SCSI card's internal and external SCSI connector, the terminators are *disabled*. (The SCSI card lies *between* the ends of the SCSI bus.)

We recommend that you leave this setting at **Automatic**.

## SCSI Device Configuration

**Note:** To configure settings for a SCSI peripheral, you must know its SCSI ID (see *Using SCSI Disk Utilities* on page 24).

- **Initiate Sync Negotiation**—When set to **Enable**, initiates synchronous data transfer negotiation (Sync Negotiation) between the peripheral and SCSI card. Leave this setting enabled unless any attached SCSI peripheral connected to the SCSI card does not support synchronous negotiation.
- **Maximum Burst Rate**—Determines the maximum synchronous data transfer rate the SCSI card supports. If your peripheral is an Ultra SCSI peripheral, use the maximum value of 20.0. If your peripheral is not Ultra SCSI, select a transfer rate of 10.0.
- **Enable Disconnection**—When set to **Yes**, allows the SCSI peripheral to disconnect from the SCSI bus. Leave the setting at **Yes** if two or more SCSI peripherals are connected to the SCSI card. If only one SCSI peripheral 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 peripheral at bootup.
- **BIOS Multiple LUN Support**—Determines whether booting from a SCSI drive that has multiple LUNs is supported. Enable this option if your boot drive has multiple LUNs.

## Boot Device Options

- **Boot Target ID**—Specifies the SCSI ID of your boot drive.
- **Boot LUN Number**—Specifies which LUN (Logical Unit Numbers) to boot from on your boot drive. BIOS Multiple LUN Support must be enabled (see above).

## Advanced Configuration Options

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

- **Plug-and-Play SCAM Support**—When set to **Enable**, the SCSI card automatically assigns SCSI IDs to SCSI peripherals that support the SCAM protocol (see *SCSI IDs* on page 1). The default is **Disable**, but you can set it to **Enable** even if you have a non-SCAM peripheral.
- **Host Adapter BIOS**—Enables or disables the SCSI card BIOS.
  - Set to **Enable** if you boot from a SCSI disk drive or a CD-ROM drive connected to the SCSI card.
  - Set to **Disable** if the peripherals 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. Choices are as follows:
  - **Boot Only**—Only the removable-media drive designated as the boot drive is treated as a hard disk drive.
  - **All Disks**—All removable-media drives supported by the BIOS are treated as hard disk drives.

– **Disabled**— No removable-media drives are treated as hard disk drives. Software drivers are required because the drives are not controlled by the BIOS.

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

- **Extended BIOS Translation for DOS Drives > 1 GByte**— When set to **Enable**, 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. The extended translation scheme supports 2-GByte partitions on disk drives as large as 8 GBytes.

  To partition a disk larger than 1 GByte controlled by the SCSI card BIOS, use the MS-DOS fdisk command and specify a partition size that is a multiple of 8. (fdisk rounds up to the nearest whole multiple of 8.)

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

- **Display <Ctrl> <A> Messages during BIOS Initialization**— When set to Enable, 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.
- **BIOS Support for Bootable CD-ROMs**—When set to **Enable**, the SCSI card BIOS allows booting from a CD-ROM drive. Set to Disable to boot from a hard disk or other peripheral.

- **BIOS Support for Int 13 Extensions**—When set to **Enable**, 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 peripherals installed and displays a list of all SCSI IDs and the peripherals assigned to each ID.
2. Use the ↑ and ↓ keys to move the cursor to a specific ID and peripheral, 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 drive, which may take up to one hour per GByte. *Most SCSI disk drives are preformatted at the factory and do not need to be formatted again*. Each hard disk drive 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 drive. Be sure to back up your data before performing this operation. You *cannot* abort a low-level format once it is started. Therefore, do not turn power OFF to abort this operation.

   - **Verify Disk Media**—Allows you to scan the media of a hard disk drive 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-SCSI (7274), Monday to Friday, from 6 a.m. to 5 p.m. (Pacific Time).

## External Cables

Table 3. External Cables

| Description | Retail Cable Number |
|---|---|
| DB25-pin to High-Density 50-pin Cable (3 ft) | 200 |
| High-Density 50-pin to High-Density 50-pin Cable (3 ft) | 300 |
| High-Density 50-pin to Centronics 50-pin Cable (3 ft) | 500 |

### External Connector Diagrams

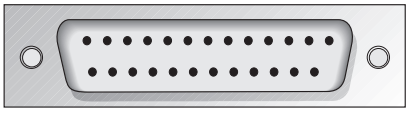

Figure 4. DB25-pin

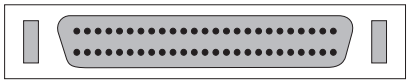

Figure 5. High-Density 50-pin

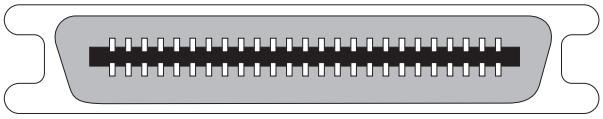

Figure 6. Centronics 50-pin

# Internal Cable

Table 4. Internal Cable

| Description | Retail Cable Number |
|---|---|
| 5 position (4 peripherals + SCSI card), standard 50-pin connectors (1.5 m) | 1100 |

## Internal Connector Diagram

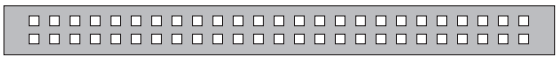

Figure 7. Standard 50-pin

# 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 Peripherals Supported[1] |
|---|---|---|
| 3 m (9.8 ft) | Fast SCSI (10 MBytes/sec) | 8 |
| 3 m (9.8 ft) | Ultra SCSI (20 MBytes/sec for 8-bit, 40 MBytes/sec for 16-bit) | 4 |
| 1.5 m (4.9 ft) | Ultra SCSI[2] | 4-8 |
| 6 m (19.7 ft) | 5 MByte/sec (asynchronous or synchronous) | 8 |

[1] Includes the SCSI card.

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

❒

## 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-2930U

FC Tested To Comply With FCC Standards

FOR HOME OR OFFICE USE

## Canadian Compliance Statement

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

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

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