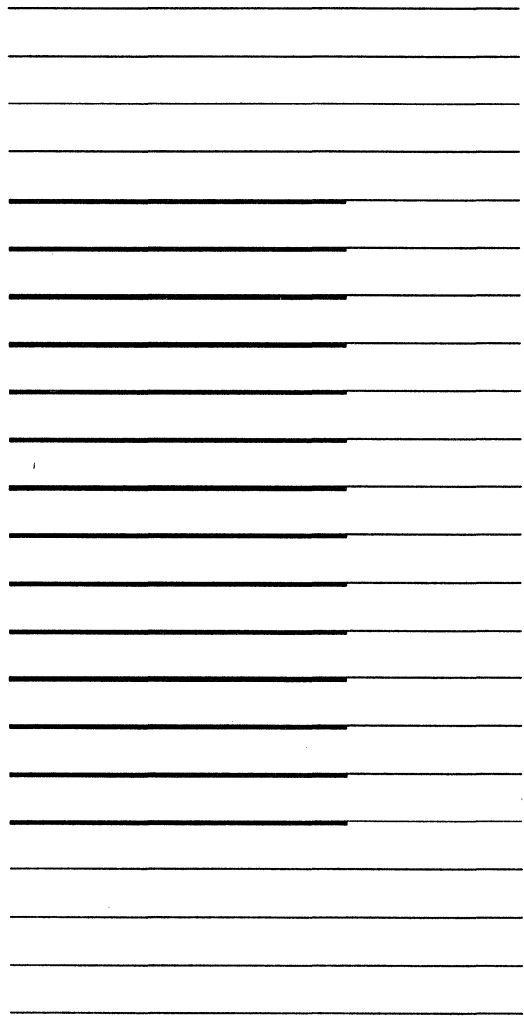


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AHA-1740A/1742A/1744  
Using ASW-C174  
Version 3

*Installation Guide*



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## Changes

The material in this manual is for information only and is subject to change without notice.

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Additional information may be obtained from:

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## Preface

This Installation Guide provides information for installing and configuring Adaptec's AHA-1740A/1742A/1744 EISA-to-Fast SCSI Host Adapter in an EISA (Extended Industry Standard Architecture) system.

**Chapter One, *Introduction***, provides general information and a list of files provided for configuration.

**Chapter Two, *Installation***, describes how to install the AHA-1740A/1742A/1744 host adapter in your EISA system.

**Chapter Three, *System Configuration***, contains information on configuring the host adapter with a configuration utility.

**Chapter Four, *Download Firmware***, explains firmware download, which is available for the AHA-1740 and AHA-1744 only.

**Chapter Five, *Low-Level Format Utility***, provides information on how to reformat a hard disk.

**Appendix A, *Disk Drives Over 1 Gigabyte***, explains disk drive support for hard disk drives greater than 1 Gigabyte in size.

---

## Conventions

The following typographic conventions are used throughout this Installation Guide.

### **bold**

Used for keystrokes (.. press the **Enter** key ..) and screen selection fields (.. select **Backup Device** and ..).

### Helvetica

Used for operator entry that must be typed exactly as shown (.. device=c:\cdrom\cdrom.tsd ..) and for screen messages (.. Enter Password ..).

### *Helvetica Italics*

Used as a placeholder for text you must determine and type in (.. enter *nn* for number ..). Also used for program and file names in body text (.. the *autoexec.bat* file ..).

### *Italics*

Used for emphasis (.. *is only* supported ..) and document reference (.. refer to Chapter 2, *Installation* ..).

### ALL CAPITALS

Used for acronyms, such as SCSI.

□

# Chapter One

## Introduction

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### Installation and Configuration Diskette

This Installation Guide provides installation and configuration information for the AHA-1740, AHA-1740A, AHA-1742A, or AHA-1744 host adapter installed in an EISA (Extended Industry Standard Architecture) computer system.

The *ASW-C174 Configuration and Download Utilities* software diskette is required to perform proper installation or configuration of the host adapter and contains the following files:

- *!adp0000.cfg*      AHA-1740 Configuration
- *!adp0001.cfg*      AHA-1740A Configuration
- *!adp0002.cfg*      AHA-1742A Configuration
- *!adp0400.cfg*      AHA-1744 Configuration
- *!adp0100.cfg*      AHA-1540B EISA Configuration
- *adp0000.ovl*      Configuration Overlay
- *adl.exe*            Download Utility
- *hlp, dta, etc.*      Additional Files

Details on the AHA-1740A/1742A/1744 are available in the AHA-1740 Family User Manual. Note that the AHA-1740 is an early version of the AHA-1740A and has its own configuration file included in this package. Other questions should be directed to your local Adaptec sales representative.

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# Chapter Two

## Installation

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### Hardware Installation

The Adaptec AHA-1740A/1742A/1744 EISA-to-Fast SCSI host adapter has been designed to operate as shipped in standard EISA class computers. The board, or the system in which it is installed, is normally shipped with a configuration diskette which permits the board to be configured to the actual slot location in which it is installed. Unlike AT<sup>®</sup> ISA (Industry Standard Architecture) boards, but like Micro Channel<sup>®</sup> boards, EISA (Extended Industry Standard Architecture) boards do not normally require hardware jumpers. An exception is configuration of the floppy disk controller on the AHA-1742A.

Ensure that you have the correct version of the AHA-1740/1744 for your system. The AHA-1740A/1742A supports the more common single-ended SCSI interface. The AHA-1744 supports the differential interface, more common on SCSI peripherals for minicomputers. While the two use the same signal protocol, they are not electrically compatible.

To perform hardware installation:

1. Turn off the power to your computer system.
2. Remove the cover of your EISA personal computer to expose the EISA bus slots on the motherboard.
3. Locate an unused EISA slot in your system which supports bus master operations. Refer to your host system documentation for details.

#### WARNING

Connection of a single-ended board to a differential driver or vice versa may cause permanent damage to one or both components.

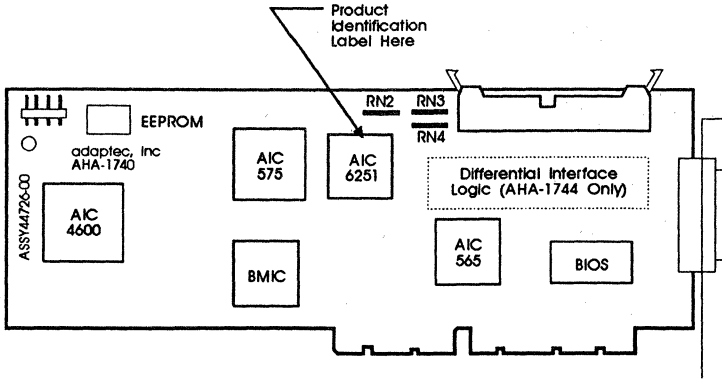


Figure 2-1. AHA-1740/1744 Board Layout

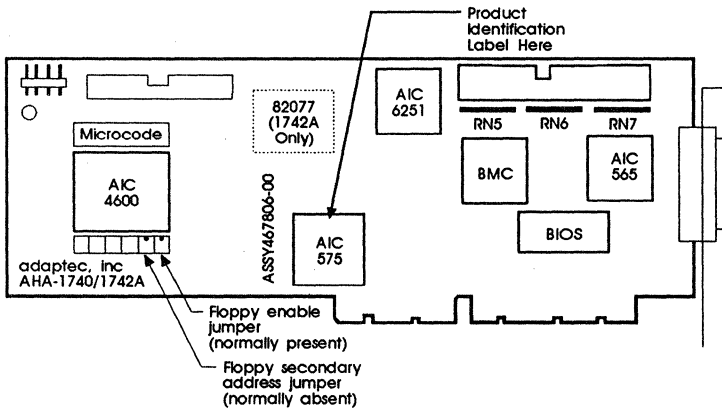


Figure 2-2. AHA-1740A/1742A Board Layout

4. Remove the corresponding system expansion slot cover by turning the screw that secures it from the top, counterclockwise.
5. Examine the board to be installed. If it is an AHA-1742A, and your system already has a floppy disk controller, disable the floppy disk controller on the AHA-1742A by removing the rightmost jumper from jumper block J6 in the lower left corner of the board.
6. If both internal and external devices are to be connected, remove the three terminator resistor packages near the internal connector. Only the two devices at either end of a SCSI cable should have terminators installed. On the AHA-1740 and AHA-1744, these are RN2, RN3, and RN4, located to the side of the internal SCSI connector. On the AHA-1740A and AHA-1742A, these are RN5, RN6, and RN7, located below the internal SCSI connector.
7. Align the EISA bus connector on the bottom of the AHA-1740/1744 to the open chassis slot with the slot cover removed. Ensure the external connector and bracket pass cleanly through the cutout in the rear wall.
8. Firmly plug the board into the slot. Use the screw from the corresponding expansion slot cover to secure the board bracket to the system frame.
9. If an internal SCSI peripheral is to be used, install a 50-pin SCSI ribbon cable to the host adapter. This cable must be oriented correctly. Pin 1 of the SCSI cable is designated by a red stripe. Multicolor 50-pin ribbon cables signify pin 1 with a brown color. Most cables and the corresponding sockets are keyed to ensure correct orientation. Pin 1 on the host adapter 50-pin SCSI header is located on the left hand side, farthest from the installation bracket.

After locating pin 1 on the host adapter and on the SCSI cable, carefully insert the connector located at the end of the long end of the cable into the host adapter connector. On the AHA-1740 and the AHA-1744, firmly seat the connector to the board such that the locking ears snap into place to hold the cable firmly.

If it is ever necessary to remove the cable, gently push the two locking ears horizontally outwards along the axis of the board until the cable connector is pushed upward and free.

**WARNING**

The AHA-1740, AHA-1740A, and AHA-1742A require single-ended devices. The AHA-1744 requires differential devices. Failure to match drive types can result in electrical damage to the board and the peripherals.

10. If an internal SCSI device is also being installed, it should be installed in the drive bays in accordance with the directions on the peripheral at this time. The proper power supply connection also must be made to the SCSI peripheral device.
11. The 50-pin SCSI ribbon cable can now be attached to each internal SCSI device. Refer to the device's installation instructions to ensure proper pin 1 orientation. Pin 1 orientation must be consistent throughout the system. Keep the ribbon cable neatly dressed away from the ventilation slots in the computer system. Keep the ribbon cable dressed away from possible electrical noise sources or noise sensitive components, particularly large microprocessors, memory boards, switching power supplies, and analog data acquisition boards.

If the internal configuration requires the cable to come near noise sensitive circuits, make sure that the cable crosses the boards at right angles and is near the noise sensitive circuits for the shortest distance possible.

12. Carefully reinstall the cover of the computer.
13. If an external SCSI subsystem is being installed, it can now be cabled to the external SCSI connector projecting from the shielding bracket on the back of the AHA-1740A/1742A/1744 host adapter. The external connector on the AHA-1740A/1742A/1744 is a small form factor SCSI alternate-2 D shell connector that ensures correct pin 1 orientation on the host adapter. The correct shielded SCSI cable

must be used for proper operation. Ensure that the external device drive types all correspond with the Single-Ended/Differential marking on the bracket of the AHA-1740/1744 respectively.

Note that a cable with the appropriate connector at each end is all that is required to connect a SCSI alternate-2 D-shell with a Centronics-type or vice versa. There is no electrical or signal difference although the connectors are different sizes.

The subsystem, cables, and SCSI terminators must be installed in accordance with the directions provided with the external SCSI subsystem. The addresses selected for external SCSI devices must not overlap with the addresses of the host adapter or any other SCSI devices attached internally.

Generally speaking, there can be no more than seven other SCSI devices attached, each with its own unique address and the total cable length must not exceed 20 feet for single-ended and 80 feet for differential.

## **Checklist**

Before applying power to your system, the following items should be completed and checked:

1. The 50-pin SCSI ribbon cable is connected to the host adapter with proper pin 1 orientation.
2. The host adapter is firmly seated in the host computer's adapter slot.
3. The correct SCSI addresses are selected on all attached SCSI devices. Address 0 is reserved for the boot hard disk and address 1 is used for a second hard disk.
4. The correct operating modes are selected on all attached SCSI devices.
5. Terminators are installed or removed on the drives and host adapter as required.
6. External SCSI devices are properly installed and cabled.

## Terminators

The SCSI bus must also be terminated correctly to ensure proper operation. The first and last physical SCSI devices on the SCSI cable must have terminators installed. All other SCSI devices must have terminators removed.

The AHA-1740A/1742A/1744 host adapter is usually the first device on the SCSI bus and has terminators installed at the factory.

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## Chapter Three

# System Configuration

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## Introduction

The AHA-1740A/1742A/1744 requires an EISA system configuration utility when it is being installed in an EISA system. This file may be part of the system software or may be supplied on a separate diskette. If it is separate, installation is easier when the contents of the diskette are copied onto the main bootable system configuration disk.

---

## Configuring Your System

Place the bootable configuration diskette in an operative drive and reset the system to boot from this diskette. This configuration diskette is normally supplied by the EISA system vendor.

Ignore any error which indicates that an unknown board has been detected in the system. Selection of board configuration varies with the configuration utility supplied with the EISA system. There are two main types, supplied by MCS and Phoenix. The type may be obscured by the screen banner used by the system vendor. Follow the procedure which is closest to your environment.

In the case of the MCS configuration, enter **cf**. For the Phoenix configuration, enter **ptlecu**. Select **Board Configuration** and press **Enter**.

If the main configuration disk does not contain files for the AHA-1740/1744, load the ASW-C174 diskette with the AHA-1740/1744 configuration files and copy the contents to the boot floppy.

Run the appropriate configuration program as follows:

- *ladp0000.cfg*      AHA-1740
- *ladp0001.cfg*      AHA-1740A
- *ladp0002.cfg*      AHA-1742A
- *ladp0400.cfg*      AHA-1744
- *adp0000.ovl*      All boards

The configuration utility will usually allow selection among a number of options, including copying new configuration files. Select this last option to install the appropriate files from the ASW-C174 floppy disk. To select the configuration utility on a system already running, insert the system configuration disk, select that drive and enter *cf* or *ptlecu* (see above).

The program will autoconfigure the system and display a diagram of the motherboard showing which boards have been configured into which slots.

---

## MCS Configuration

For configuration under MCS, select the slot in which the AHA-1740A/1742A/1744 is installed and press **Enter**. The screen will display the System Configuration Detailed View. These settings should normally not be changed for Standard Mode operation. Use the arrow keys to make selections and the **Enter** key to enter the selection.

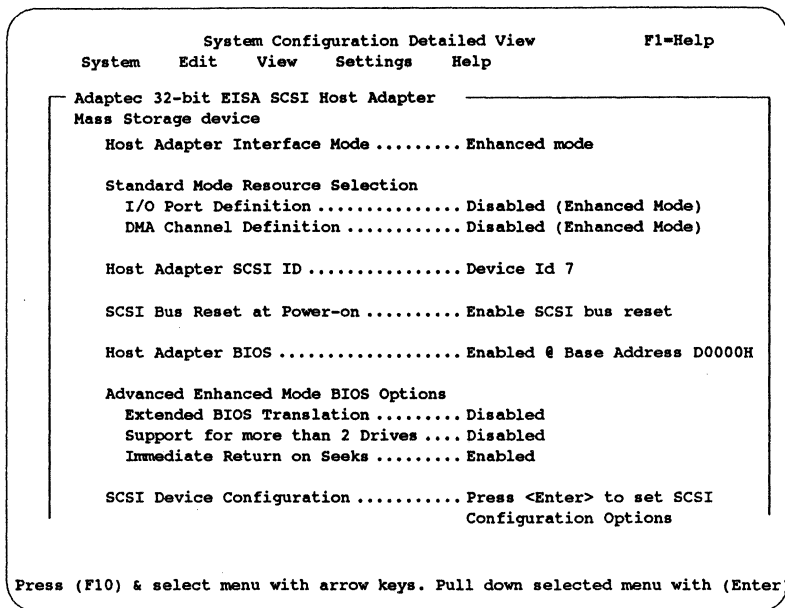
When installing multiple boards in Standard Mode, ensure that none share the same configuration parameters for port address. The configuration utility normally automatically ensures that there is no conflict. SCSI ID can be the same provided that the boards do not share the same SCSI bus. Normally, the host adapter is given address 7.

A typical selection detailed view is shown in Figure 3-1. Use the arrow keys to move around in a selection and the **Enter** or



**Return** key to choose a highlighted selection. If a mouse is installed, it may also be used.

Please read Appendix A, *Disk Drives Over 1 Gigabyte*, before attempting to use the **Extended BIOS Translation** feature.



*Figure 3-1. System Configuration Detailed View Screen*

#### Note

It is not normally necessary to alter any settings for configuration. Selection of the appropriate interrupt request will also select between Standard and Enhanced Modes. If selecting Enhanced Mode, it is not necessary to alter the system resource selection, but if resources are left selected, they will be allocated, even if not used.

Select the AHA-1740A/1742A/1744 installation configuration as follows:

1. Select the host adapter interface. There are two available. Standard Mode allows software written for the AHA-1540

or AHA-1640 families to run the AHA-1740 Family. Enhanced Mode allows a higher-performance interface to be used. If Standard Mode is selected, the host adapter interrupt level must also be selected (see Figure 3-2).

System Configuration Detailed View F1=Help

System
Edit
View
Settings
Help

Change Function

Host Adapter Interface Mode  
Your selection will set the Host Adapter interface mode. Standard mode is an AHA-1540/1542 compatible interface that allows the use of AHA-1540/1542 software drivers. Enhanced mode is a higher performance interface that uses AHA-1740 software drivers. In standard mode the interrupt request must also be selected. (IRQ 11 is the default choice)

IRQ 11, Standard Mode

IRQ 12, Standard Mode

IRQ 10, Standard Mode

IRQ 15, Standard Mode

IRQ 14, Standard Mode

IRQ 9, Standard Mode

Enhanced Mode

Ok <Cancel>

Configuration Options

Use arrow keys to mark choice and (Tab) between functions.

**Figure 3-2. Interface Mode and Interrupt Selection Screen**

#### Note

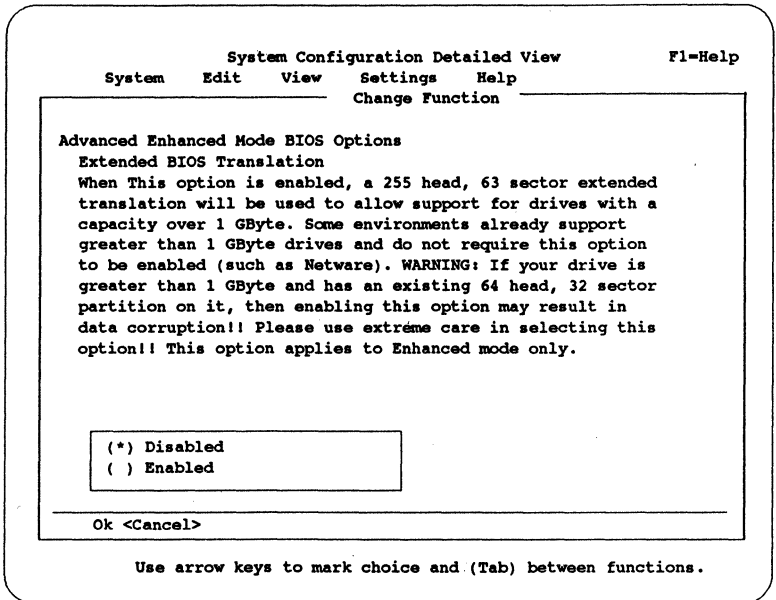
If the Enhanced Mode is selected for a board which has Standard Mode firmware loaded, the LED on the board will blink repeatedly. The only operation the board will perform is a microcode download.

2. If Standard Mode is selected, choose both the host adapter port address and DMA channel. For Enhanced Mode, both should be disabled.
3. Select the base address of the bootstrap BIOS on the host adapter.

## 4. Select the advanced Enhanced Mode BIOS options.

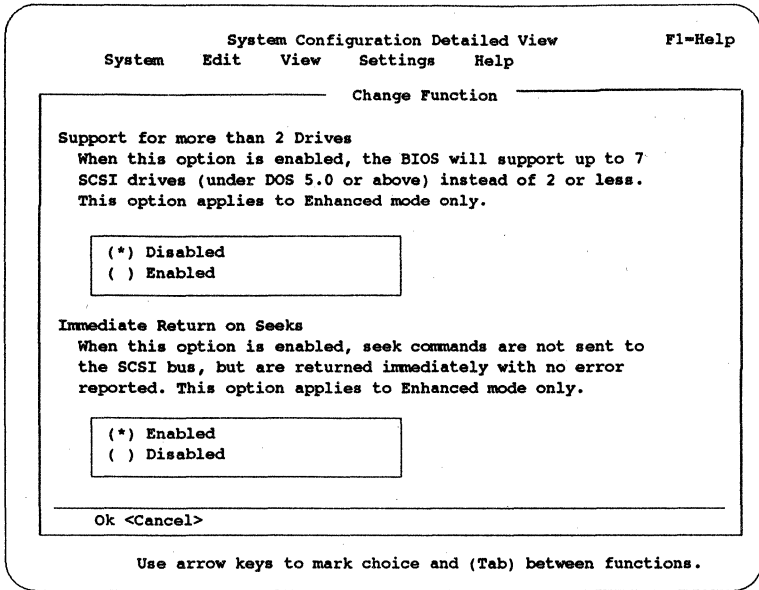
**Note**

Please read Appendix A, *Disk Drives Over 1 Gigabyte*, before attempting to use the **Extended BIOS Translation** feature.



**Figure 3-3. System Configuration Detailed View  
(Top half of screen)**

Use the **PgDn** key to see the rest of the screen shown as follows:

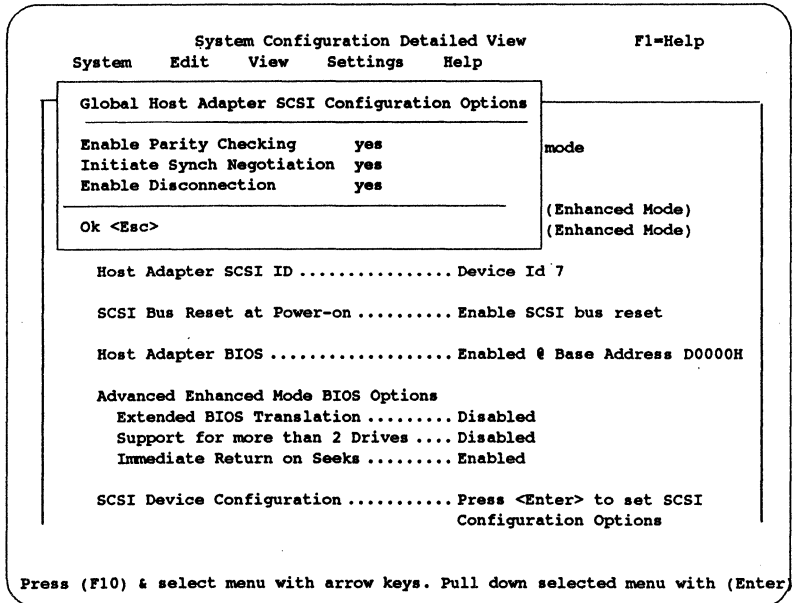


**Figure 3-4. System Configuration Detailed View  
(Bottom half of screen)**

5. Select the device address for the host adapter on the SCSI bus.
6. Select whether the host adapter generates a reset on the SCSI bus at power-on or reset.
7. If required, select the device configuration to select parameters on the SCSI bus. A pop-up window appears. Select the host adapter interface mode chosen in Step 1.

## Standard Mode SCSI Configuration

The view for Standard Mode is a simple selection for those variables which apply to all SCSI peripherals connected. This is shown in Figure 3-5. Normally, the default of one device at SCSI ID 0 with normal default parameters is selected.



*Figure 3-5. Standard Mode SCSI Configuration Screen*

Select **Enable Parity Checking** to allow the host adapter to generate parity on data sent and check parity on data received on the SCSI bus.

Select **Initiate Synch Negotiation** to allow the host adapter to attempt to use the faster synchronous protocol for data transfers on the SCSI bus. If deselected, the transfers will be done asynchronously, unless a SCSI device itself requests synchronous negotiation.

Select **Enable Disconnection** to allow a peripheral to go off-line while it completes a lengthy operation like a seek. This

allows the host adapter to perform other operations on the SCSI bus while the device is temporarily disconnected.

### Enhanced Mode SCSI Configuration

The view for Enhanced Mode allows more flexible selection and is shown in Figure 3-6.

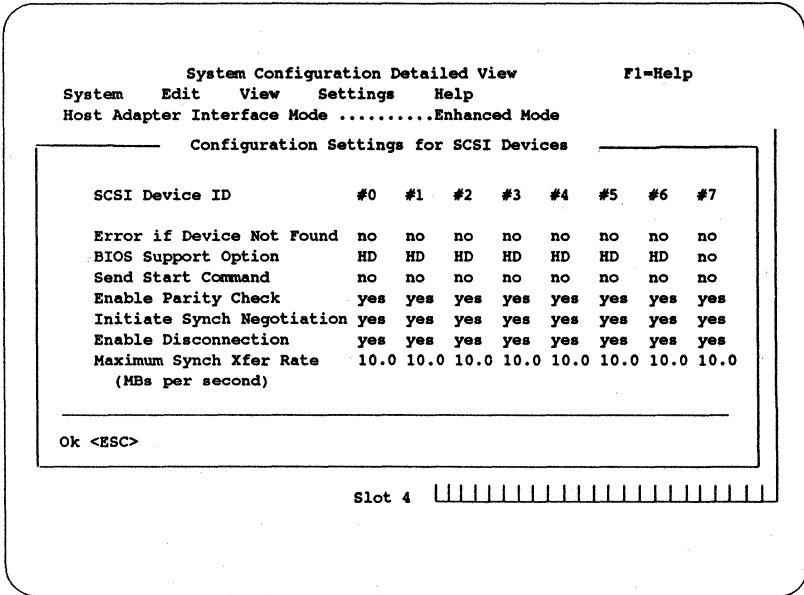


Figure 3-6. Enhanced Mode SCSI Configuration Screen

The enhanced mode offers a greater selection of SCSI configuration options. Use the **Tab** or **Cursor** keys or a mouse to highlight a particular selection and press **Enter** to toggle between no and yes. Each device can have a number of parameters selected individually.

**Error if Device Not Found** selects whether the operator will be notified if the BIOS is unable to find the device during the boot procedure.

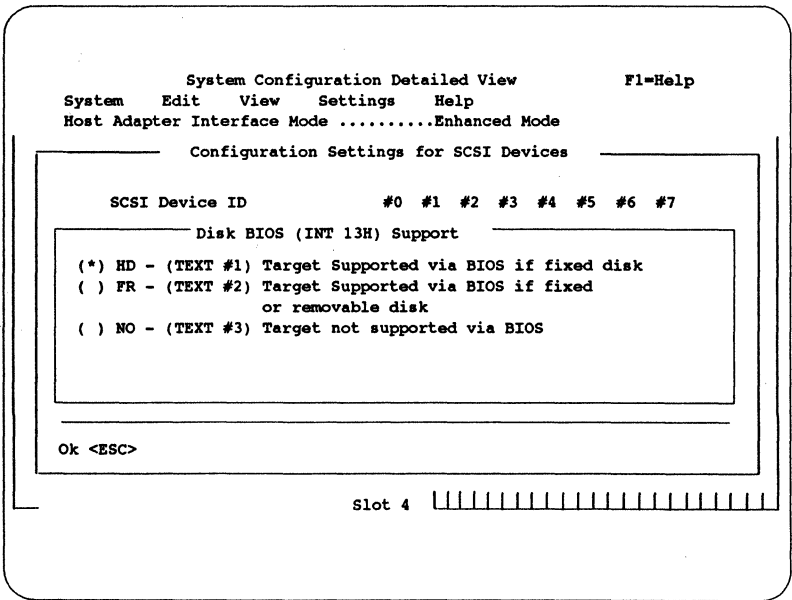
**BIOS Support Option** allows up to two devices attached to the SCSI bus to be recognized by the host adapter BIOS and installed as devices on the system without the need for driver software. Only fixed and removable hard disks are supported under the BIOS, with default for hard disks only.

Select this option to allow removable support or to remove any disk support for each SCSI address.

**Note**

Support for removable disks does not allow the disk media to be removed during operation. Only use a removable disk as if it were a fixed disk.

When this option is selected, use the cursor keys to move among the options shown in Figure 3-7.



**Figure 3-7. BIOS Support Selection Screen**

**Send Start Command** is used for devices which require a command to start up after power on. Most devices do not require this.

**Enable Parity Check** is similar to Standard Mode where the host adapter will generate and check for parity on SCSI bus data.

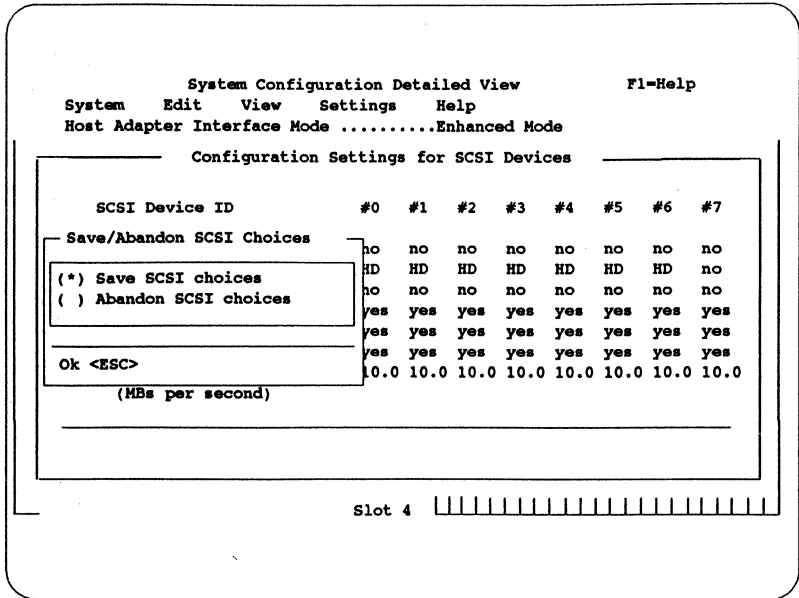
**Initiate Synch Negotiation** is similar to Standard Mode and allows the host adapter to attempt to communicate with the device using the faster synchronous SCSI protocol. Most disk drives support synchronous protocol.

**Enable Disconnection** is similar to Standard Mode. It allows the device to go off-line while performing an operation, freeing up the SCSI bus and host adapter for other operations in parallel.

**Maximum Synch Transfer Rate** allows selection of the highest data transfer speed that the host adapter will attempt with that peripheral. The AHA-1740/1744 supports rates up to the Fast SCSI maximum of 10 MBytes/second.

When the selection is completed, press **Esc** to reach the SCSI configuration exit menu shown in Figure 3-8.





**Figure 3-8. Enhanced Mode Configuration Exit Screen**

Use the cursor keys or mouse to select whether to make the changes or abandon all changes made on this attempt. When the correct line is highlighted, press **Esc** to select.

Exit the configuration utility by pressing **Ctrl + x**

Select the **Save Configuration and Exit** option using the arrow keys and press **Enter**.

Reboot from the original boot diskette.

---

## Phoenix Configuration

Configuration using the Phoenix utility is similar to that under MCS. Use the arrow keys to select the board to configure after entering the Configuration menu, selecting function choices and pressing **Enter**. Press **Enter** when the appropriate board slot is highlighted.

Selection among the available system options is made by using the up/down arrows. Press the **Spacebar** at the option to alter for a toggling among options available. There is no facility for selection of peripheral options under Phoenix. To exit, skip to the bottom of the page and press **Enter** when **OK** is highlighted.

---

## Floppy Disk Configuration

The AHA-1742A is normally shipped with its floppy disk controller enabled. This may be disabled to prevent conflict with an existing floppy disk controller already in the system by removing the rightmost jumper from J6 on the lower left of the board. If the jumper is removed, the board will return the identity of an AHA-1740A to any software inquiry command. This allows software to use the appropriate configuration file for the main part of the board, as described previously.

The floppy disk can reside at one of two address blocks. Normally, it uses addresses 3F0h - 3F6h as the primary address. A secondary address of 370h - 376h can be selected by placing a jumper on block J6 in the second position from the right, next to the floppy enable jumper described above.

□

## Chapter Four

# Download Firmware

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### Using the Download Firmware Utility

The AHA-1740/1744 (*not* the AHA-1740A or AHA-1742A) have the unique flexibility of allowing firmware to be altered or upgraded while the board is installed in a system. This is done by using a utility on the ASW-C174 and new files supplied with ASW-M174. Note that it is not necessary to perform a download when installing a system for the first time or to select between Standard and Enhanced Modes.

The microcode with which the AHA-1740/1744 is equipped consists of two components:

- Standard Mode
- Enhanced Mode

Selection between these modes affects the software manager required to support the board. It has no effect on the SCSI or host bus hardware. The firmware download can either be used to configure the board for one of the two main modes or to upgrade the board to a later revision of firmware for a particular mode.

The Standard Mode allows software drivers written for the AHA-1540 or AHA-1640 families to run unaltered on the AHA-1740 family. There is no performance penalty for this. The AHA-1740 performs 32-bit transfers at speeds up to 33 MBytes/second and can operate 10 MByte/second Fast SCSI transfers.

The Enhanced Mode allows the board to take advantage of a number of features which were not available on earlier host adapters. These include:

- 32-bit addressing capability
- Single fast mailbox handling
- Contingent allegiance (SCSI)
- Tagged queuing (SCSI)

Adaptec's AHA-1740/1744 Download utility should be used to perform a firmware download or to upgrade the installed microcode to a new revision to retrieve firmware information and also format attached drives. This utility contains three main features:

- Download Firmware
- Firmware Information
- Low-level Disk Format

Firmware download causes the host adapter to overwrite its program memory with microcode supplied by the user from an external source like the ASW-M174. After the data is written to the host adapter's internal RAM, and a successful checksum test done by the host adapter, the host adapter will then reprogram its EEPROM with the new firmware. In order to change the host adapter current interface mode, the user must reconfigure the system memory by running the Configuration utility (described above).

Firmware information is used to obtain release information and revision level of the host adapter's firmware. Use this command to ensure that proper firmware is loaded or to confirm the mode in which the board is currently operating.

---

## Download Operation

Insert the Utility diskette into Drive A. At the DOS prompt, type `adl` to bring up Adaptec's AHA-1740/1744 Download utility. The following will describe the procedures and the screen display. During the operation, **F1** can be pressed to display help messages and **Esc** to exit the current message box and the

utility. If using a monochrome or gray-scale monitor, enter `adl-m` to improve viewing contrast.

## List of Adapters

When the utility is first loaded, a list of installed host adapter(s) is displayed at the upper left corner of the screen. Along with each installed host adapter is its configured mode.

### Note

You must run the System Configuration utility in order to change the mode in which the host adapter is selected to operate.

If more than one host adapter is installed, use the up and down arrow keys to choose the host adapter. When the host adapter to be selected is highlighted, press **Enter** to select.

The **Esc** key can be used to exit the utility. When using other parts of the utility, return to this screen to exit. If either the Download Firmware or Low-level Format utility has been used, the system will reboot automatically to allow correct configuration.

## Main Menu

After selecting the host adapter, a main menu will appear. Three operations are provided as follows:

- Download Firmware
- Firmware Information
- Low-level Format

Use the up and down arrow keys to choose the operation. Press **Enter** to start an operation. Following is a description of each operation.

## Download Firmware

Have the new firmware ready on a floppy diskette or copy it onto the internal hard disk drive. New firmware on the ASW-M174 will come with its checksum value on the floppy diskette label.

First, an edit form will pop up when this operation is chosen. Use the arrow keys to move from field to field, or within the field. Type in the firmware file name (example : a:\standard1.hex) that is going to load into the host memory, and choose the mode (Standard or Enhanced) that is going to download by toggling with the + and - keys. Press **Esc** to exit the form and continue.

After exiting from this screen the new firmware file will be automatically loaded into the host memory. The checksum will be calculated and displayed if the firmware file is loaded successfully. At this point, verify the displayed checksum with the checksum on the floppy label. Press **Esc** to cancel the operation. Press **Y** to continue. This will issue the Download Firmware command to the host adapter. The whole process may take up to 45 seconds. A message will indicate the success or failure of downloading the new firmware.

Subsequently, a confirm message window will be displayed to allow verification of the download operation. If the displayed information is valid, press **Esc** to continue and return to the Main menu.

## Firmware Information

This operation queries the board for the release, revision, and checksum information of microcode currently on the host adapter. If the command is successfully completed, all information that is retrieved from the host adapter will be displayed. Otherwise, an error message will be displayed. After reading the host adapter information, press **Esc** to continue. If multiple host adapters are installed, the **Esc** key can be used to select another host adapter from the List of Host Adapters menu.

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## Chapter Five

# Low-Level Format Utility

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### Using the Low-Level Format Utility

The Low-level Format utility is used to reformat a hard disk and erase all previous information stored on the disk. This may be necessary with disks formatted to operate with a different system or SCSI controller.

The Low-level Format utility is entered as a part of the Download utility previously described. Run the download utility and select **Low-Level Format** from the menu displayed.

Choosing the option will display a **List of Device(s)**, which contains the list of all attached SCSI device(s) on the previously selected host adapter. Press **Esc** to return to the Main menu or **Enter** to select the SCSI drive to be formatted. Note that the only device type that is currently supported is the **Direct Access Device**.

After choosing a SCSI device, a menu is displayed to allow you to choose either the **Format and Verify** option, or the **Wipe Boot Sector** option. Press **Enter** to select your choice.

A warning message is displayed to alert you that this operation results in losing the data content that is stored on the drive. You can either press **Y** to continue the operation or **Esc** to abort the operation.

Appropriate messages for successful or unsuccessful completion of the operation are displayed. Simply press **Esc** to continue and return to the Main menu.

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# Appendix A

## Disk Drives Over 1 Gigabyte

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### Extended Translation (Using DOS 5)

Adaptec host adapters have always supported the full range of disk drive sizes under all major operating systems. As disk drives have recently grown beyond 1 Gigabyte in formatted capacity, they have run up against the DOS 1024 cylinder limit.

To continue to provide support of all SCSI disk drive capacities under DOS, Adaptec has introduced extended translation for the AHA-1740A and AHA-1742A. This new feature bypasses the DOS disk capacity limit and supports disk drives up to under DOS, providing room for years of disk drive evolution.

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### The DOS One Gigabyte Limit

All versions of DOS are limited to 1024 cylinders of capacity per drive. The standard translation scheme for SCSI host adapters, using 64 heads and 32 sectors, provides a maximum accessible capacity of 1 Gigabyte.

To eliminate the 1 Gigabyte limit, Adaptec's new extended translation feature uses 255 heads and 63 sectors, extending the disk drive capacity limit under DOS to 8 Gigabytes.

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### When to Use Extended Translation

#### With DOS Version 5 Only

NetWare<sup>®</sup> 386™ and the newer versions of UNIX<sup>®</sup> do not share the 1024 cylinder limit of DOS and do not require extended translation to support large disk drives. OS/2<sup>®</sup> does not currently support extended translation.

## Drives With Mixed Partitions

Do not use extended translation on drives formatted with two or more partitions for different operating systems. Use standard translation. The sum of the DOS partitions will be less than 1 Gigabyte. Partitions for UNIX<sup>1</sup> and NetWare can be larger than 1 Gigabyte when using standard translation.

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## Using Extended Translation

### CAUTION

If you have already partitioned a large disk drive with one translation method, conversion to another method will erase your data. Be sure to back up your disk drive prior to any change in the translation method used.

## Using fdisk

To install a new disk, or to re-partition an existing disk, use the fdisk DOS utility as you normally would. The cylinder size increases to 8 MBytes when you enable extended translation. The size of the partition you request must therefore be a multiple of 8 MBytes. If you request a partition size that is not a multiple of 8 MBytes, fdisk will round up to the nearest whole multiple of 8 MBytes.

## Load ASW-1410 v3.0a

Load ASW-1410 v3.0a for ASPI support of non-disk peripheral devices. The ASW-1410 v3.0a is fully compatible with extended translation in the AHA-1740A/1742A.

1 ATT/USL all versions, SCO v3.2.4 (or later), ISC v3.0 (or later)

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## Questions and Answers About Extended Translation

### **What happens if I enable extended translation with SCSI drives that are less than 1 Gigabyte in capacity?**

Drives handled by the BIOS will use extended translation provided they are over 1 Gigabyte in formatted capacity. Drives with less than 1 Gigabyte of formatted capacity will use standard translation regardless of whether extended translation is enabled. Drives handled by the disk driver `aspidisk.sys` will continue to use standard translation and not be capable of DOS partitions over 1 Gigabyte.

### **What if I have more than two hard drives on the AHA-1740A/1742A?**

You can use up to seven hard drives under the BIOS provided you are running DOS 5.0.

### **What if I use older versions of software drivers with extended translation enabled?**

To protect your data, the host adapter will lock out any driver that does not identify itself as capable of extended translation. If you need to use software that is not compatible with extended translation, do not enable extended translation.

Adaptec's ASW-1410 v3.0a (and later) is the appropriate ASPI manager software to use with extended translation enabled.

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