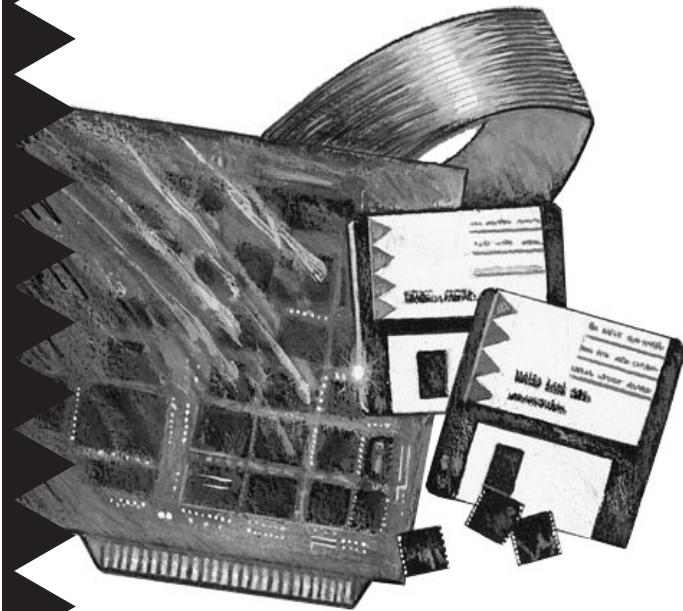


Installation Guide



AHA™ -1530P/1532P Plug and Play AT-to-SCSI Host Adapter with SCSISelect™ Utility

 **adaptec®**

AHA-1530P/1532P Installation Guide
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Note: Read the *AHA-1530P/1532P Getting Started* guide first when you are ready to install your AHA-1530P/1532P Plug and Play host adapter. *Getting Started* explains Plug and Play technology and tells you how to make your PC Plug and Play ready before you install the host adapter.

1 Overview

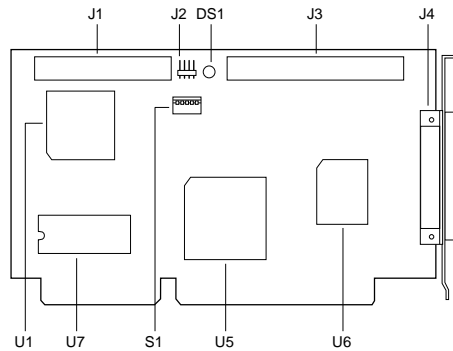
This *Installation Guide* explains how to physically install and configure Adaptec AHA-1530P/1532P Plug and Play SCSI host adapters. AHA-1530P/1532P host adapters can be installed in Plug and Play ready PCs with little or no manual configuration.

The steps needed to make your PC Plug and Play ready depend on how the PC is configured. Does it have a Plug and Play BIOS? Are you using an operating system that supports Plug and Play? One of the steps may be to install the ISA Configuration Utility (ICU) software included with the host adapter. All this is explained in *Getting Started*.

AHA-1530P/1532P host adapters support the SCSI Configured AutoMagically (SCAM) protocol, which assigns SCSI IDs dynamically and resolves SCSI ID conflicts automatically. If your system includes SCSI disk drives or other peripherals that support SCAM, you do not need to manually assign SCSI IDs to these devices.

2 Host Adapter Layout

This diagram and the following table show the major AHA-1530P/1532P components.



Label	Description	Label	Description
DS1	Termination Indicator	S1	Switch Block
J1	Floppy Drive Connector ¹	U1	Floppy Drive Controller ¹
J2	External LED Connector	U5	AIC-3350 Plug and Play Interface Chip
J3	Internal SCSI Connector	U6	AIC-6360 SCSI Protocol Chip
J4	External SCSI Connector	U7	Host Adapter BIOS Chip

¹ AHA-1532P only.

3 Default Settings

AHA-1530P/1532P host adapters operate correctly with their factory default settings in most PCs. The default settings are as follows:

Parameter	Default Setting
Host Adapter SCSI ID	7
Interrupt Channel	IRQ 11
Host Adapter Termination	Automatic
Host Adapter BIOS	Enabled at DC000h
Initiate Synchronous Negotiation	Enabled
Enable Disconnection	Enabled
Port Address	340h-35Fh
SCSI Parity Checking	Enabled
Extended BIOS Translation for Drives >1 GByte	Disabled
Maximum Synchronous Transfer Rate	10 MBytes/sec.
Support Removable Disks under BIOS	Boot only
Send Start Unit Command	Disabled
Floppy Drive Controller ¹	Enabled

¹ AHA-1532P only

Plug and Play may override some default settings when it assigns system resources. Section 6, *Configuring the Host Adapter*, explains how to change settings with the *SCSISelect* utility.

4 Installing the Host Adapter

Inserting the Host Adapter

Follow these steps to insert the host adapter in a slot:



WARNING: Turn OFF and disconnect the power to your PC and attached devices before you remove the chassis cover. See your PC's documentation for instructions.

- 1 Remove the PC chassis cover to expose the expansion slots and external access covers.
- 2 Identify an empty expansion slot.
- 3 Remove the corresponding external access cover from the rear opening on the PC chassis.
- 4 Align the bus connector on the bottom of the host adapter with the slot and carefully insert it into the slot. Attach the host adapter bracket to the PC chassis with the expansion slot cover screw.



Note: Do not replace the PC chassis cover or reconnect the power yet.

Setting Host Adapter Switches

If you need to change host adapter switch settings, do it now before you replace the chassis cover and run the *SCSISelect* utility. (See Section 9, *Switch Block Settings*.) Here are some possible reasons for changing the switch settings:

Controlling Floppy Drives (AHA-1532P only)

If you do not want to use the onboard floppy drive controller on your AHA-1532P host adapter, set *sw5* to **On** to *disable* it. If you connect the floppy drives to the AHA-1532P floppy controller you must *disable* other floppy controllers in the PC. See your PC documentation.

Disabling the BIOS

The AHA-1530P/1532P onboard BIOS is *enabled* by default. This allows you to boot your PC from a SCSI disk drive connected to the host adapter. It also allows you to run the *SCSISelect* utility when your PC boots, as described in Section 6. However, when the onboard BIOS is enabled, the host adapter's IRQ and other resources are fixed and cannot be re-assigned by Plug and Play, unless the PC motherboard BIOS supports Plug and Play.

Depending on how your PC is configured, you may need to change the default host adapter BIOS setting. This is controlled by switches sw1, sw2, and sw3 on switch block s1. *Getting Started* explains the possible configuration scenarios.

Section 9 of this *Installation Guide* lists the values of all the available switch settings.

5 Connecting Peripheral Devices

Assigning SCSI IDs

You can connect up to seven internal and/or external SCSI devices to your host adapter. Each SCSI disk drive, CD-ROM drive, or other peripheral device must have a unique SCSI ID in the range of 0 to 6. (The host adapter usually has ID 7.)

Some newer SCSI disk drives are *SCAM-capable*. The SCAM software included with your host adapter automatically assigns unique SCSI IDs to SCAM-capable devices when you boot your PC.

Most SCSI peripherals currently in use, however, are not SCAM-capable. SCSI IDs on these devices are set with switches or jumpers and cannot be changed by SCAM commands.

If your SCSI peripherals are not SCAM-capable, you must be sure that each device is set to a unique SCSI ID. See your SCSI device documentation for instructions.

The host adapter SCSI ID can be set in the *SCSISelect* utility but may be changed by SCAM. Normally, you should leave the host adapter SCSI ID at the default setting of 7.

If you need to set SCSI IDs with switches or jumpers, we recommend that you assign SCSI IDs 0 and 1 to the first two SCSI hard disk drives.

Terminating SCSI Devices

The SCSI bus is the cabling that connects SCSI devices to the AHA-1530P/1532P. Data can only be transmitted on the SCSI bus if the devices at each end of the bus are *terminated*. Termination must be disabled on all other devices on the SCSI bus.

Termination on the host adapter itself is controlled by software commands via the *SCSISelect* utility. The default setting is *Automatic*, which works like this:

- The host adapter terminates itself if *only* external or *only* internal peripherals are connected to it (that is, if the host adapter is the last device on the bus).
- The host adapter disables its termination if *both* internal and external peripherals are connected to it (that is, if the host adapter is in the middle of the bus).

You can also change the host adapter termination setting to *Enabled* or *Disabled*. To do this, first complete the physical installation, then run *SCSISelect*. (See Section 6, *Configuring the Host Adapter*.)

Termination Status Indicator

The onboard LED next to the internal SCSI connector changes color to indicate the SCSI bus termination status:

- A *green light* means that termination is set correctly (two devices are terminated).
- A *red light* means that more than two devices are terminated.
- An *orange light* means that fewer than two devices are terminated.

(The LED lights up only when the disk drive is active.)

Connecting Internal SCSI Peripherals



Caution: AHA-1530P/1532P host adapters support only *single-ended* SCSI devices. *Do not* connect *differential* SCSI devices to the host adapter. Read the device documentation to determine whether a SCSI device is single-ended or differential.

Follow these steps to connect the host adapter to SCSI devices mounted inside the PC case. Use the internal SCSI cable included with your host adapter.

- 1 Disable termination on all internal SCSI devices. Read the device documentation if you are not sure how to do this.
- 2 Plug the 50-pin female connector on one end of the internal cable into the host adapter's internal SCSI connector. (This is the end of the cable that does not have a terminator attached to it.) Be sure to match pin 1 on the cable with pin 1 on the host adapter's internal SCSI connector.

Pin 1 is marked with a contrasting color on one edge of the ribbon cable. A small triangle marks pin 1 on the host adapter SCSI connector.

- 3 Plug the next female connector on the cable into the connector of the closest internal SCSI device.
- 4 Plug the next female connector on the cable into the connector of the second internal SCSI device, if there is one. The terminator on the end of the internal cable will extend beyond the second internal device.

If you have more than two internal SCSI devices, you must get a 50-pin internal cable with enough connectors for all the devices. Be sure to terminate the last internal device attached to the cable.

- 5 If you are using the AHA-1532P onboard floppy drive controller, connect the 34-pin floppy ribbon cable to the host adapter's floppy connector. Be sure to maintain pin-1 orientation.

Connecting External SCSI Peripherals

Follow these steps to connect the host adapter to SCSI disk drives, CD-ROM drives, and other external devices.

- 1 Attach the connector of a 50-pin, high-density external SCSI cable to the host adapter's external SCSI connector. (External cables can only be plugged in one way, so pin-1 orientation is automatic.)
- 2 Plug the other end of the cable into one of the two SCSI connectors on the back of the first external SCSI device.
- 3a If there is *only one* external SCSI device, insert a terminator plug into the device's other SCSI connector to terminate this end of the SCSI bus, or
- 3b If you have *more than one* external device, plug an external cable into the first device's other SCSI connector. Plug the other end of this cable into a SCSI connector on the next external device. Link all external devices like this. Insert a terminator plug into the other SCSI connector on the last device.

If you have an external device with only one SCSI connector, place it at the end of the bus and terminate it. (Read the device documentation.)

Reassembling and Starting the PC

Follow these steps to reassemble and power the PC:

- 1 Replace the PC chassis cover, following the instructions in your PC's documentation.
- 2 Be sure all power switches are OFF, then reconnect the power cables to your PC.
- 3 Turn ON the power for the PC and peripheral(s).

At system bootup the host adapter BIOS sign-on message appears on the monitor (if the BIOS is enabled). The host adapter finds devices on the SCSI bus and assigns SCSI IDs to SCAM devices.

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this paragraph.

6 Configuring the Host Adapter

Your host adapter includes the *SCSISelect* utility, which lets you change configuration settings without opening your PC or editing configuration files.

Running the *SCSISelect* Utility

If the AHA-1530P/1532P onboard BIOS is enabled, you can start the *SCSISelect* utility by pressing **Ctrl-A** when the prompt appears at boot time.

If the AHA-1530P/1532P onboard BIOS is disabled, you must run an executable version of *SCSISelect* called *1530cfg.exe*. You can download this file from the Adaptec BBS. (The BBS phone number is listed on page 10 of this *Installation Guide*.)

Use the **↑**, **↓**, and **Enter** keys to make selections. Press **Esc** to return to the previous menu. Press **F6** to restore the *original SCSISelect* default values. To abandon changes made in the Configure/View Host Adapter Settings menu, press **Esc** and select **No** when asked if you want to save the changes.

SCSISelect Main Menu Options

Configure/View Host Adapter Settings

The Configuration screen displays these options: Host Adapter Interrupt (IRQ) Channel, Host Adapter SCSI ID, SCSI Parity Checking, and Host Adapter SCSI Termination. Highlight an option and press **Enter** to see a list of possible values.



Note: If the host adapter BIOS is disabled, Plug and Play assigns the host adapter's IRQ and other resources when you boot the PC. This may override any IRQ changes you made in the *SCSISelect* utility.

Select **SCSI Device Configuration** to view a menu of the following options for each device on the SCSI bus: Initiate Synchronous Negotiation, Maximum Synchronous Transfer Rate, Enable Disconnect, and Send Start Unit Command. You can set these options individually for each device on the SCSI bus.

Select **Advanced Configuration Options** to view a menu of the following options: Host Adapter BIOS Enable/Disable, Support Removable Disks under BIOS as Fixed Disks, and Extended BIOS Translation for DOS Drives > 1 GByte. Do not change these options unless absolutely necessary.

SCSI Disk Utilities

When you select **SCSI Disk Utilities** from the Main Menu, a list of installed SCSI devices appears. When you select a device, the Utilities menu appears.

Format Disk runs the Adaptec SCSI low-level format utility. Verify Disk Media scans the selected device's media for defects. If it finds bad blocks, it prompts you to reassign them.

7 I/O Operating Environment Software

DOS/Windows

You can connect up to two SCSI hard disk drives to the AHA-1530P/1532P without installing additional software. Adaptec EZ-SCSI™ provides the additional software you need if you want to

- Install more than two SCSI hard disk drives
- Install CD-ROM drives
- Remove and insert CD-ROMs and other removable media while your PC is running
- Use a scanner or a SCSI tape drive

To order EZ-SCSI and other Adaptec software products, call the *Adaptec software and cables* telephone number listed on page 10 of this *Installation Guide*.

Other Operating Environments

Contact Adaptec or your operating system vendor for information on the availability of AHA-1530P/1532P drivers for other operating environments.

8 Troubleshooting Checklist

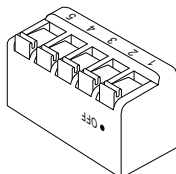
Do this if you have a problem during installation:

- Make sure all SCSI cables and power cables are properly connected and all devices are powered.

- Make sure all SCSI devices have unique SCSI IDs.
- Make sure the SCSI bus is correctly terminated.
(See Section 5, *Connecting SCSI Peripherals*.)

9 Switch Block Settings

The five switches on switch block s1 are all set to **Off** by default, as shown in this diagram:



This table shows all the possible settings of the switches on switch block s1. Default settings are marked with an asterisk (*).

BIOS Address	sw1	sw2	sw3
DC000h*	Off	Off	Off
D8000h	On	Off	Off
D4000h	Off	On	Off
D0000h	On	On	Off
CC000h	Off	Off	On
C8000h	On	Off	On
DC000h, Inactive	Off	On	On
BIOS Disable	On	On	On
Port Address	sw4		
340h to 35Fh*	Off		
140h to 15Fh	On		
Floppy Controller (AHA-1532P only)	sw5		
Enabled*	Off		
Disabled	On		

Off = Open

10 Adaptec Customer Support Services

- For information on software upgrades, new releases, technical advice, and other topics, call the Adaptec Electronic Bulletin Board Service (BBS) 24 hours a day at 408-945-7727; 1200/2400/9600/14400 baud, 8 data bits, 1 stop bit, no parity.
- For the latest online information about Adaptec products and services, call the Interactive Fax Service 23 hours a day, 7 days a week, at 408-957-7150.

- For technical assistance, call Adaptec's Technical Support Hot Line at 800-959-SCSI (7274), or 408-945-2550.
M-Th: 6:00 a.m.-5:00 p.m., F: 6:00 a.m.-3:00 p.m., Pacific Time.
- To order Adaptec software and cables, call 800-442-SCSI (7274) or 818-365-6264. M-F: 6:00 a.m.-5:00 p.m., Pacific Time. If you are calling from outside the U.S. and Canada, the number is 408-957-SCSI (7274).
- To request literature on Adaptec products, call 800-934-2766.
M-F: 5:00 a.m.-6:00 p.m., Pacific Time.

FCC Compliance Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

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

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

Each AHA-1530P/1532P is equipped with an FCC compliance label which shows only the FCC Identification number. The full text of the associated label follows:

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

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