AHA-1520/1522
Installation Guide

FILE COPY

HARDWARE INSTALLATION

The Adaptec AHA-1520/1522 AT-to-SCSI Host Adapter has been designed to operate as shipped in the majority of AT class computers. The host adapter's factory default settings should remain in their original positions. The AHA-1520/1522 is shipped with the following factory default settings:

SCSI Disconnection	Enabled
SCSI Address	7
SCSI Parity	Enabled
Terminators	Installed
Terminator Power	Supplying
Synchronous Negot.	Enabled
DMA Channel	0
Interrupt Channel	11
AT Port Address	340h
AT BIOS Address	DCOOOH, Enabled
FD Controller	Enabled (AHA-1522)
Data Transfer Mode	Programmed I/O

To Perform Installation:

TURN OFF POWER TO THE SYSTEM AND EXTERNAL EQUIP-MENT.

Remove the cover of your AT personal computer that exposes the AT bus slots.

Locate an unused AT expansion slot in your AT system. AT-type slots can be recognized by the fact that they have two physical edge connectors, one 62-pin and the other 36-pin, in line with one another.

Remove the corresponding system expansion slot cover by turning the screw that secures it from the top counterclockwise.

Align the AT I/O Bus Connector on the bottom of the AHA-1520/1522 into this AT slot. Use the screw from the corresponding expansion slot cover to secure the AHA-

Jumper Configuration Reference

Five jumper blocks are located on the board to configure user-selectable options. A black bar represents a jumper installed. It should not be necessary to change the jumper settings.

Jumper Block J5 (Data)

Default settings of jumper block J5:

DT BT M0 M1 SN DN R- R-

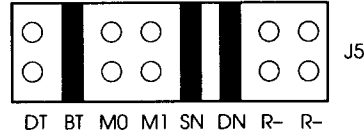| Pin Pair	Description
DT	Use this pin pair to choose whether data transfer will be performed in PIO or 2nd-party DMA mode. *No jumper = PIO; Jumper = 2nd-party DMA
BT	Use this pin pair to choose whether the host adapter BIOS performs the boot operation. No jumper = Disable booting from SCSI disk drive; Jumper = Boot from SCSI disk drive.
M0,M1	Use these pin pairs to select which types of messages you want the AHA-1520/1522 to display when you boot your computer. *1. No jumper M0, no jumper M1 = Adaptec header display and error messages 2. No jumper M0, jumper M1 = Adaptec header display, boot progress and error messages 3. Jumper M0, no jumper M1 = SCSI device information, jumper configuration, boot progress, and error messages 4. Jumper M0, jumper M1 = Error messages
SN	Use this pin pair to enable or disable synchronous negotiation. No jumper = syn. neg. off; *Jumper = syn. neg. on
DN	Use this pin pair to enable and disable disconnection by the target SCSI device. No jumper = disconnect disallowed; *jumper = disconnect allowed
R	Not used

*denotes default configuration

T system frame.

st adapter and the
ternal or external con-
orientation is maintained

irst or the last unit at-
th internal and external
e the SCSI terminators from

the reverse order.

1520/1522's bracket to your A

Attach the SCSI Bus to the ho
peripherals, using either the ir
nector, making sure that pin
throughout the bus.

If the host adapter is not the f
tached to the cable (e.g., bo
connectors are used), remov
the host adapter.

Reassemble the PC system in

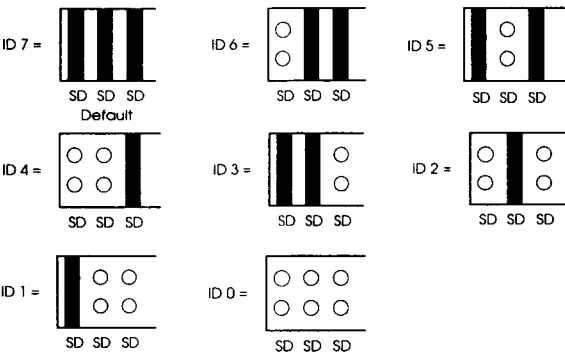## Jumper Block J6 (Channel Selection and SCSI ID)

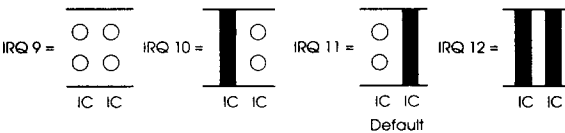The following diagram shows the default settings of jumper block J6:

SD SD SD IC IC DC DC SP
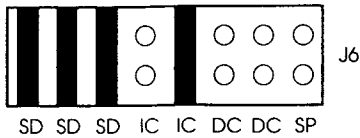
Pin Pair	Description
SD	Use the three pin pairs marked SD to determine the SCSI ID of the host adapter.

ID 7 =   ID 6 =   ID 5 =

SD SD SD / Default   SD SD SD   SD SD SD

ID 4 =   ID 3 =   ID 2 =

SD SD SD   SD SD SD   SD SD SD

ID 1 =   ID 0 =

SD SD SD   SD SD SD

IC — Use the two pin pairs marked IC to select the host adapter REQ channel. You must also use pin pairs I0, I1, I2, and I9 on jumper block J9 to select an IRQ channel.

IRQ 9 =   IRQ 10 =   IRQ 11 =   IRQ 12 =

IC IC   IC IC   IC IC / Default   IC IC

DC — The two pin pairs marked DC to select the host adapter DMA channel. Only DMA channel 0 is supported.

DMA 0 =

DC DC
Default
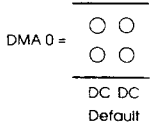
SP — Parity checking enabled or disabled.
*No jumper = parity enabled; Jumper = parity disabled.

*denotes default configuration

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## Jumper Block J7 (Floppy Drive Options) – AHA-1522 Only

The following diagram shows the default settings of jumper block J7:

FE DR DR DA DA I6 I0 DS

Pin Pair	Description
FE	Use this pin pair to determine whether the floppy controller on the host adapter is enabled or disabled. *Jumper = floppy enabled (default); No jumper = floppy disabled.
DR, DA	Use the four pin pairs marked DR and DA to set the floppy DMA request channel.

CH 2 =   CH 3 =

DR DR DA DA / Default   DR DR DA DA
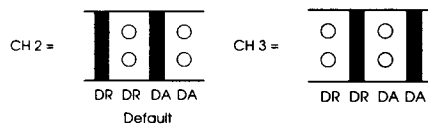
I6, I0 — Set Floppy IRQ Channel.
*Jumper I6 = Interrupt Channel 6 enabled; Jumper I0 = Interrupt Channel 10 enabled.

DS — Set to support floppy drive with dual speed spindle.
*No jumper= disabled; Jumper = enabled.

*denotes default configuration.

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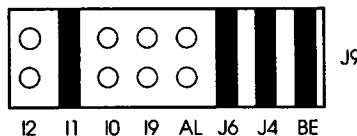## Jumper Block J8 (DMA Request & Acknowledge Channel)

Note that the DMA channel is also controller by jumper block J6. The following diagram shows the default settings of jumper block J8:


DR D6 D5 D0 DA D6 D5 D0
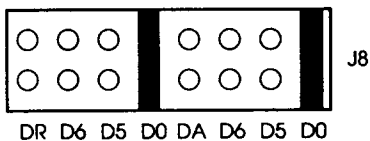
Pin Pair   **Description**

D0, D0   When jumpers are installed on D0, D0, it selects DMA channel 0. The other J8 jumper options are reserved.

Jumper Block J9 (IRQ Channel, Port Address, and BIOS)

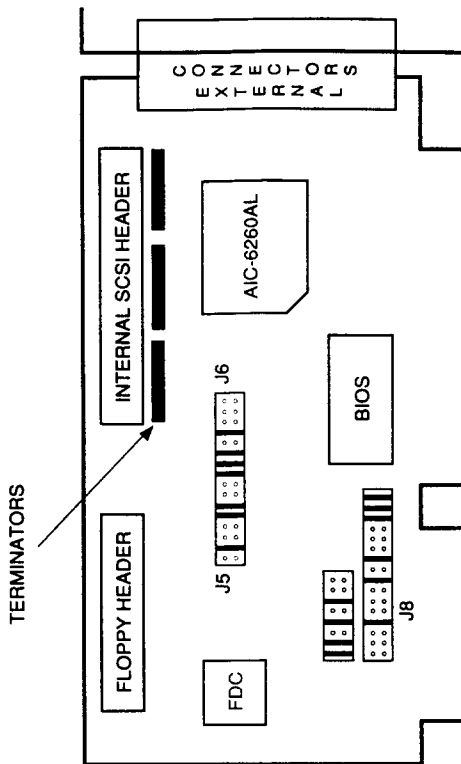The following diagram shows the default settings of jumper block J9:

I2 I1 I0 I9 AL J6 J4 BE

Pin Pair   **Description**

I2, I1,   Use these four pin pairs to select the IRQ
I0, I9   channel. You must also select the corresponding interrupt channel with the IC pin pairs on jumber block J6.
Jumper I2 = IRQ 12
*Jumper I1 = IRQ 11 (Default)
Jumper I0 = IRQ 10
Jumper I9 = IRQ 9 (not recommended with Windows 3.0)

AL   Select port address range.
No jumper = 340–35E (hex); Jumper = 140–15E (hex)

J6, J4   Select BIOS address location.

C8000 =   J6 J4

CC000 =   J6 J4

D8000 =   J6 J4

DC000 =   J6 J4
Default
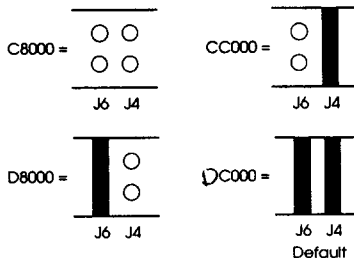
BE   Select host adapter BIOS enable.
*Jumper = Boot from SCSI disk enabled; No jumper = boot from SCSI disk disabled.

*denotes default configuration

TERMINATORS

INTERNAL SCSI HEADER

AIC-6260AL

FLOPPY HEADER

FDC

BIOS

CONNECTORS EXTERNAL

J6
J5
J8

DEFAULT SETTINGS AND REFERENCE DIAGRAM

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-1520/1522 host adapter is usually the first device on the SCSI Bus and has terminators installed at the factory.

SOFTWARE INSTALLATION

Copy the files from the ASW-1210 Program diskette to the root directory of drive C using the DOS COPY command. In order for the ASPi DOS Manager files to be loaded whenever the system is booted, the CONFIG.SYS file must contain the following DEVICE= commands:

```
DEVICE = ASPI2DOS.SYS
DEVICE = ASPIDISK.SYS
```

Using any ASCII file editor, add the individual device driver commands to an existing CONFIG.SYS file, or follow the instructions in the DOS Operations Reference Manual to create a new CONFIG.SYS file. FAILURE TO LOAD ALL THE DEVICE DRIVERS IN THE CORRECT ORDER CAUSES THE PROGRAM TO NOT BE INSTALLED. The following command line options may be added to the device drivers in the CONFIG.SYS file. (Refer to the User's Manual for details or the ASW-1210 Installation Guide.)

```
DEVICE = ASPI2DOS.SYS [/D] * [/P<port address>]
[/L] [/C or /C-] [/TD or /TP] [/Y or /Y-]
[/U or /U-], * [/A<DMA channel>]
[/H<HA SCSI ID>] * [/Q<interrupt channel>] [/L]
[/I] [/Z]
```

```
DEVICE = ASPIDISK.SYS [/D] [/R<number of
logical drives>]
```

Host adapter must be jumpered accordingly.

DOS provides access to physical hard disk drives C and D. You must use the DOS FDISK and **Format** programs for drives C and D. DO NOT use AFDISK with drive C and D. To use a hard disk partitioned by AFDISK as drive C or D, you should install that hard disk under the host adapter BIOS by changing the drive SCSI ID to 0 or 1.

When starting AFDISK program, it must be run from the root directory of drive C or the AFDISK directory if an AFDISK directory was created. When ready, type:

AFDISK (at the DOS prompt)

and press ENTER. The AFDISK utility is menu driven. Follow the directions on the screen to partition and format the selected SCSI devices including removable media. The AFDISK utility also includes an on-line **HELP** file which is accessed by pressing the **F1** key. The AFDISK may be exited at any time without executing by pressing the ESC key.

When the SCSI device(s) are successfully partitioned and formatted, reboot the system. This saves any changes made and allows use of the newly installed disk(s) or partitions(s). The new partitions will be installed with the ASPIDISK.SYS driver.

F.C.C. CERTIFICATION

This equipment generates and uses radio frequency, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type-tested and found to comply with the limits for a Class B computing device in accordance with the specifications in "Subpart J of Part 15 of FCC Rules", which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient receiving antenna.
Relocate the computer with respect to the receiver.
Move the computer away from the receiver.
Plug the computer into a different outlet so that computer and
    receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful.

"How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 004-000-00345-4.

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CHANGES

The material in this guide is for information only and is subject to change without notice. Adaptec reserves the right to make changes in the product design without reservation and without notification to its users.

Details are available in the AHA-1520/1522 User's Manual. Questions can be answered via the Adaptec Bulletin Board (8 data bits, 1 stop bit, no parity, 1200 or 2400 baud) at: **(408) 945-7727**.

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Stock No.: 510096-00 Rev B   TH 5/91

SOFTWARE INSTALLATION

Copy the files from the ASW-1210 Program diskette to the root directory of drive C using the MS-DOS COPY command. In order for the ASPI MS-DOS Manager files to be loaded whenever the system is booted, the CONFIG.SYS file must contain the following DEVICE= commands:

DEVICE = ASPI2DOS.SYS
DEVICE = ASPIDISK.SYS

Using any ASCII file editor, add the individual device driver commands to an existing CONFIG.SYS file, or follow the instructions in the MS-DOS Operations Reference Manual to create a new CONFIG.SYS file. FAILURE TO LOAD ALL THE DEVICE DRIVERS IN THE CORRECT ORDER, CAUSES THE PROGRAM TO NOT BE INSTALLED. The following command line options may be added to the device drivers in the CONFIG.SYS file. (Refer to the User's Manual for details.)

DEVICE = ASPI2DOS.SYS (/D) (/P<port address) (/L) (/V) (/W) (/X<speed>) (/N<bus on time>) (/F<bus off time>) (/I).

MS-DOS provides access to physical hard disk drives C and D. You must use the MS-DOS FDISK and **Format** programs for drives C and D. DO NOT use AFDISK with drive C and D. To use a hard disk partitioned by AFDISK as drive C or D, you must use AFDISK to delete the partitions, and then use MS-DOS **FDISK** to create new partitions.

When starting AFDISK program, it must be run from the root directory of drive C or the AFDISK directory if an AFDISK directory was created. When ready, type:

AFDISK (at the DOS prompt)

The AFDISK utility is menu driven. Follow the directions on the screen to partition and format the selected SCSI devices. The AFDISK utility also includes an on-line **HELP** file which is accessed by pressing the **F1** key. The AFDISK may be exited at any time without executing by pressing the ESC key.

When the SCSI device(s) are successfully partitioned and formatted, reboot the system. This saves any changes made and allows use of the newly installed disk(s) or partition(s).

F.C.C. CERTIFICATION

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Reorient receiving antenna.
Relocate the computer with respect to the receiver.
Move the computer away from the receiver.
Plug the computer into a different outlet so that computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful.

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CHANGES

The material in this guide is for information only and is subject to change without notice. Adaptec reserves the right to make changes in the product design without reservation and without notification to its users.

Details are available in the AHA-152X User's Manual. Questions can be answered via the Adaptec Bulletin Board (8 data bits, 1 stop bit, no parity, 1200 or 2400 baud) at: **(408) 945-7727**.

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510096-00 TH 3/90

HARDWARE INSTALLATION

The Adaptec AHA-152X AT-to-SCSI Host Adapter has been designed to operate as shipped in the majority of AT class computers. The host adapter's factory default settings should remain in their original positions. The AHA-152X is shipped with the following factory default settings:

Setting	Value
SCSI Disconnect	Enabled
SCSI Address Selection	7
SCSI Parity	Enabled
Terminators	Installed
Terminator Power	Supplying
Synchronous Power	Supplying
DMA Channel Selection	Enabled
Interrupt Channel	0
AT Port Address	340h
AT BIOS Address	DC000H, Enabled
FD Controllers	Enabled (AHA-1522)
Data Transfer Mode	PIO

To Perform Initial Installation:

TURN OFF POWER TO THE SYSTEM AND EXTERNAL EQUIPMENT.

Remove the cover of your AT personal computer that exposes the AT bus slots.

Locate an unused AT expansion slot in your AT system. AT type slots contused AT expansion slot in your AT system. AT 2 physical slots can be recognized by the fact that they have 36-pin, in line edge connectors, one 62-pin and the other with one another.

Remove the host adapter with one another.
by turning the corresponding system expansion slot cover clockwise. Loosen the screw that secures it from the top counter-clockwise.

Align the AHA-152X in the AT Bus Connector on the bottom of the AHA-152X in its AT slot. Use the screw from the corresponding expansion slot cover to secure the AHA-152X's bracket to your AT system frame.

Attach the SCSI to the host adapter and the peripherals, using the SCSI Bus to the host adapter and the periph-making sure that the internal or external connector, out the bus that pin 1 orientation is maintained through-

If the host adapter is not the first or the last unit in the cable, remove the SCSI terminators from the board. Reassemble the system in the reverse order.

Jumper Configuration Reference

Five sets of jumpers are located on the board to configure user-selectable options. Jumpers installed at the factory are shown as "(x)." Those not installed are shown as "o." It should not be necessary to change the jumper settings.

J5—General Control

Pin	1	2	3	4	5	6	7	8
	o	(x)	o	o	(x)	(x)	o	o

1—Data Transfer in DMA
2—Boot Enable (Intercept INT19 call)
3,4—Message—Allow a combination of:
- Adaptec Header (default)
- Jumper Config. Information
- SCSI Device Information
- Boot Progress Report
- Error Messages (default)

5—Synchronous Negotiation Enable
6—Disconnect/Reconnect enable for target
7,8—(Reserved)

J6 SCSI Selection

Pin	1	2	3	4	5	6	7	8
	(x)	(x)	(x)	o	(x)	o	o	(x)

1,2,3—SCSI ID (Set in binary 0-7)
4,5—Interrupt Channel Select (9 thru 12)
6,7—DMA Channel Select (Coded 0,5,6,7)
8—SCSI Parity Disable

J7 Floppy Disk Selection (AHA-1522 only)

Pin	1	2	3	4	5	6	7	8
	(x)	(x)	o	(x)	o	(x)	o	o

1—FLOPPY Enable
2—DMA REQ 2 Select
3—DMA REQ 3 Select
4—DMA ACK 2 Select
5—DMA ACK 3 Select
6—INT Request 6 Select
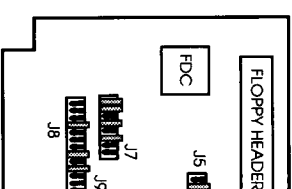7—INT Request 10 Select
8—DUAL SPEED Enable

J8 DMA Selection

Pin	1	2	3
	o	o	o

1—DMA REQ 7 Se
2—DMA REQ 6 Se
3—DMA REQ 5 Se
4—DMA REQ 0 Se
5—DMA ACK 7 Se
6—DMA ACK 6 Se
7—DMA ACK 5 Se
8—DMA ACK 0 Se

J9 Interrupt Select

Pin	1	2	3
	o	(x)	o

1—Interrupt Requ
2—Interrupt Requ
3—Interrupt Requ
4—Interrupt Requ
5—PRIMARY/Seco
6,7—BIOS Address
8—BIOS Enable

Terminators

The SCSI bus must ensure proper op SCSI devices on t installed. All othe tors removed. The the first device or installed at the fa

DEFAULT SETTI

FLOPPY HEADER

FDC   J5

FLOPPY HEADER

J7

J8   J9