

Nov. 17. 1991

Drive Configuration Information

The following drive configuration information may be helpful when using the Setup program with your AT-compatible system.

Flexible Diskette Drives

Drives *A:* and *B:* are reserved for flexible diskette drives in the DOS environment and may be assigned to either standard or non-floptical diskette drives or floptical diskette drives.

Floptical drives must be attached as SCSI target IDs 2 through 6. Do not use IDs 0 and 1 for floptical drives, as the host adapter BIOS looks for fixed disks at these addresses. The host adapter BIOS scans for flopticals starting with SCSI ID 2 and ending with SCSI ID 6.

When one floptical drive is installed, it is configured as the first, second, or third floppy, depending on the number of standard floppy drives installed in the system.

A floptical drive may be configured as the bootable *A:* with a standard floppy drive installed as floppy *B:*. This is possible only if your system CMOS Setup utility allows for configuration of a *B:* floppy drive without a standard *A:* floppy drive configured.

When two floptical drives are installed, they are configured as the first and second, second and third, or third and fourth floppy drives, depending on the number of standard floppy drives installed in the system.

Note that when a floptical drive is added to the system as the third or fourth floppy drive, the DOS logical drive designator (*A:*, *B:*, *C:*, etc.) assigned to the floptical drive is dependent on the DOS version. In general, versions of DOS prior to 5.0 logically map third and fourth floppy drives *before* hard disk drives. DOS versions 5.0 and later logically map third and fourth floppy drives *after* the hard disk drives.

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For example, in a system with two standard floppies, one hard disk, and one floptical drive, drive designators are assigned as follows:

Drive	DOS 3.x/4.x	DOS 5.0
A:	First Floppy	First Floppy
B:	Second Floppy	Second Floppy
C:	Floptical	Hard Disk
D:	Hard Disk	Floptical

Also, be aware of statements in a *config.sys* or *autoexec.bat* file which are drive designator dependent. For example, if you add a floptical drive to a DOS 3.x/4.x system containing two standard floppies and one hard disk (as described above) with the following statement in the *config.sys* file,

```
device = c:\driverxx.sys
```

the system won't find *driverxx.sys* because *C:* is no longer mapped to the hard disk. It is mapped to the floptical drive.

Fixed Disk Drives

Standard AT architecture supports up to two hard disk drives under DOS without the use of an additional device driver. The BIOS identifies these disks as hard drives 0 and 1.

The notation *standard hard disk* identifies the disks that can be set up to *installed* or *not installed* status by the Setup program that is supplied with your AT-class computer (e.g. IDE drives). The Setup program allows you to select the number of standard hard disks that are recognized by the system regardless of whether or not they are physically installed. SCSI disks can only be accessed by the host adapter's BIOS if the number of standard hard disks is equal to either 0 or 1.

System booting from a SCSI hard disk drive under DOS can only be achieved if the standard hard disk is mapped out through your AT computer vendor's Setup program. The system determines the number of hard disks at power up.



The only SCSI disk drives that the Floptical Host Adapter BIOS will recognize are 0:0 and 1:0 (Target/LUN (Logical Unit Number)). The host adapter assigns the SCSI drives found at these addresses to hard disk 0 and/or hard disk 1, depending on the number of standard drives recognized by the system.

The boot target will be from 0, not 1, which is the industry convention (C).

The SCSI target address is selected by setting a jumper or a dip switch on the drive. The drive SCSI address must be set to 0 to be recognized by the host adapter BIOS if only one SCSI drive is used. If two SCSI drives are to be installed under the host adapter BIOS, the SCSI addresses should be 0 and 1. Refer to your drive manual for SCSI address selection.

Factory Default Settings

The Adaptec Floptical AT-to-SCSI Host Adapter has been designed to operate as shipped in the majority of AT-class computers.

If you require other than the factory default settings, refer to Section Three, *Configuration*, for information on jumper settings to customize the Floptical Host Adapter before proceeding with installation.

The Floptical Host Adapter is shipped with the following factory default settings:

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Feature	Setting
SCSI Disconnection	Disabled
SCSI Address	7
SCSI Parity	Enabled
Terminators	Installed
Terminator Power	Supplying
Synchronous Negotiation	Enabled
DMA Channel	0
Interrupt Channel	11
AT Port Address	340h
AT BIOS Address	DC000h, Enabled
Floppy Disk Controller	Enabled on AHA-1522
Data Transfer Mode	PIO

Installation in an AT System

The following section details the installation procedure for the Adaptec AHA-1520 and AHA-1522 host adapters. The installation of the board consists of checking the various on-board jumpers, inserting the board into a full length AT-compatible slot connector, and connecting a SCSI cable from the on-board connector to a SCSI device. After the board has been prepared, a medium sized flat blade screwdriver will be needed to physically install it into the AT slot.

If you are installing the Floptical Host Adapter into a system that has an existing Adaptec host adapter already installed, refer to Appendix D, *Additional Host Adapter*, for further information before proceeding with the installation.

Refer to Figure 2-1 for board layout and jumper locations on the Floptical Host Adapter.

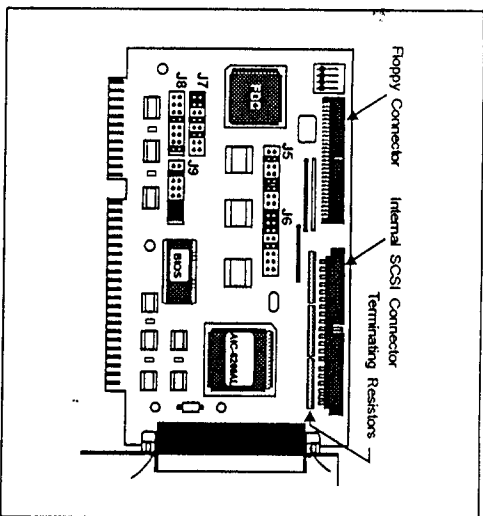


Figure 2-1. AHA-1522
Floptical Host Adapter

Quick Installation with System Defaults

Proceed with the following steps to install the Floptical Host Adapter with the factory default settings.

If you require other than the factory default settings, refer to Section Three, *Configuration*, for information on jumper settings to customize the Floptical Host Adapter before proceeding with installation.

CAUTION

Turn off power to the system and all external devices. Serious damage to your system unit and options can occur if you leave the power on. Adaptec recommends that you unplug your system from the AC outlet.

Floptical Host Adapter

Installation

Installing the Adapter in an Expansion Slot

Install the Floptical Host Adapter into an AT expansion slot on the motherboard.

1. Remove the cover of your AT personal computer that exposes the AT bus slots, typically the top cover if the system were sitting flat on its base on a table. With most AT personal computers, a flat blade, medium-sized screwdriver can be used to remove the screws at the rear of the system cabinet.
2. Locate an unused AT expansion slot in your system. Be careful, as some AT systems have both AT- and XT-style slots on their motherboards. AT-type slots can be recognized by having two physical edge connectors, one 62 pin and the other 36 pin, in line with each other.
3. Remove the corresponding system expansion slot cover by turning the screw counterclockwise that secures it from the top.
4. Align the AT I/O bus connector on the bottom of the Floptical Host Adapter to the open AT slot with the slot cover removed. Ensure the external connector passes cleanly through the cutout in the rear panel. Firmly plug the Floptical Host Adapter into this AT slot as shown in Figure 2-2.
5. Use the screw from the corresponding expansion slot cover to secure the adapter's bracket to your AT system frame.

Floptical Host Adapter, Model 1
1520-2-chip, aka-01, 1520-2-dac
Ch. No. 1520-2-00

Floptical Host Adapter, Model 1
1520-2-chip, aka-01, 1520-2-dac
Ch. No. 1520-2-00
Nov. 11, 1991, 1520-2-00

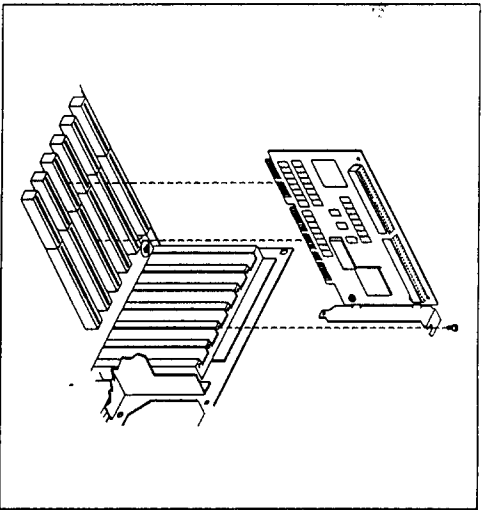


Figure 2-2. Adapter Insertion

Attaching Cables to the Adapter

Connect one end of the cable you are going to use to the internal or external SCSI 50-pin connector on the Floptical Host Adapter, depending on your device.

1. Locate Pin 1 on the SCSI cable you are going to use. When attaching the SCSI bus connector to the Floptical Host Adapter and the peripherals, make sure that pin 1 orientation is maintained throughout the bus.
2. For *internal* devices, line up pin 1 on the cable to pin 1 of the internal SCSI connector, which is located on top of the Floptical Host Adapter. Pin 1 is located on the top left side of the connector when facing the front of the board. On most 50-pin gray ribbon cables, pin 1 is denoted by a red stripe. Multi-color 50-pin ribbon cables signify pin 1 with a brown color.

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Firmly, but in a straight forward fashion (to avoid bending the end pins of the internal SCSI connector), put the cable end on to this connector, lining up the pin 1 orientation.

3. For *external* devices, the connector on the Floptical Host Adapter is a D-Shell connector that ensures correct pin 1 orientation.

Attach this cable to the external SCSI connector, then use the bail clips to hold it snugly in place.

Cable connection is shown in Figure 2-3. Both connectors would be attached only if both external and internal devices are being connected. If both are connected, remember to remove the terminating resistors.

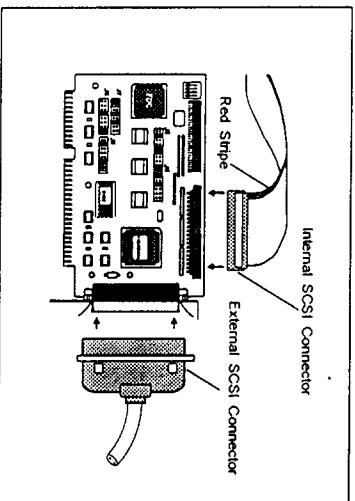


Figure 2-3. Adapter Cabling

Attaching the Cable to the SCSI Device

1. Place the cable so that it will lie freely within your system when the cover is replaced.
2. Install the disk drive or other SCSI device as specified in the manufacturer's directions. Install the free end of the cable to the connector of the SCSI device, ensuring that correct pin 1 orientation is maintained.

Floptical Host Adapter Proof-1
1520fs-2.dmp aka-01.rtf 1520fs-2.doc
C:\NCR\A-Cat\No-510187-00
11/11/91 gm

Floptical Host Adapter Proof-1
1520fs-2.dmp aka-01.rtf 1520fs-2.doc
C:\NCR\A-Cat\No-510187-00
Nov 11, 1991 gm

3. Replace the system cover to prevent personal injury.

Powering Up the System

First, plug the system into your AC outlet. Next, turn the power switch to the on position. The initialization routine now performs all of the necessary initialization functions. The following message is displayed if the system successfully recognizes the Floptical Host Adapter BIOS:

Adaptec AHA-1520/1522 BIOS Version 2.00f
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In addition, the type of SCSI floptical and/or standard disk devices recognized by the BIOS are displayed with their ID numbers. Device messages appear on the screen in the formats described in Appendix A, *Message Displays*.

The Floptical Host Adapter BIOS allows the use of zero, one, or two floptical drives on the SCSI bus under DOS without a device driver.

The BIOS first scans for up to two floptical drives starting at SCSI ID 2 and ending at SCSI ID 6. As a result, one or more of the following messages is displayed, where *n* indicates the SCSI ID:

Target *n*: Inside 1350VM installed as Drive A:

Target *n*: Inside 1350VM installed as Drive B:

Target *n*: Inside 1350VM installed as Floppy #3

Target *n*: Inside 1350VM installed as Floppy #4

If the system reports an initial number of hard drives greater than two, the following message is displayed:

SYSTEM CONFIGURATION ERROR.

The Floptical Host Adapter BIOS allows the use of zero, one, or two hard disks on the SCSI bus under DOS without a device driver.

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If two hard disks are attached to an internal hard disk controller, and are already recognized by the system, the BIOS passes control back to the standard hard disk controller. A device driver is needed to access SCSI devices and the following message is displayed:

2 hard disk drives already installed, SCSI BIOS not installed.

If one hard disk is attached to an internal hard disk controller, and is already recognized by the system, the BIOS attempts to assign the SCSI device (Target : LUN) 0:0 as the second drive (drive D:).

If no hard disks are attached to an internal controller, the BIOS attempts to assign the first SCSI device (Target : LUN) 0:0 as hard disk 0 (drive C:). If successful, the BIOS attempts to assign another SCSI device as hard disk 1 (drive D:).

If no floptical or SCSI disks are found by the BIOS, the following message is displayed:

No SCSI disk(s) found

Note

If you continue to have difficulties, or wish to change technical attributes, check your board configuration against the description in Section Three, *Configuration*.

Floptical Host Adapter Proof-1
1520fs-2.dbp aha-01.dty 1520fs-2.doc
Cl. No. Rev. A, Cat. No. 610197-00
Nov. 11, 1991 gm

Floptical Host Adapter Proof-1
1520fs-2.dbp aha-01.dty 1520fs-2.doc
Cl. No. Rev. A, Cat. No. 610197-00
Nov. 11, 1991 gm