Cadaptec®

AVA-1515

AT-to-SCSI Host Adapter
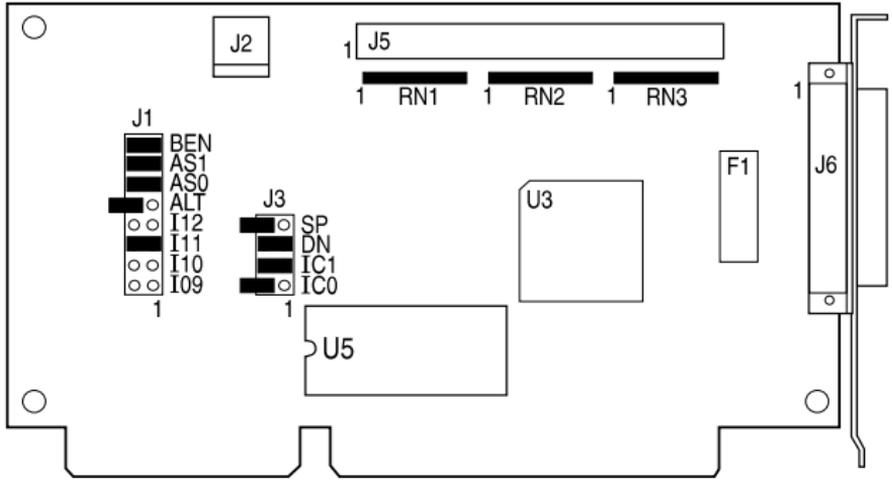
Installation Guide

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1 Getting Started

This guide tells you how to install and configure the AVA™-1515 AT®-to-SCSI host adapter. Installation instructions are given in Sections 4 through 8.

2 Board Layout

This figure identifies the major AVA-1515 components, and the table describes each component.

AVA-1515 Host Adapter

Location	Description
J1[1]	Jumper Block
J2	External LED Connector
J3[1]	Jumper Block
J5[1]	50-pin Internal SCSI Connector
J6[1]	DB25 External SCSI Connector
F1	Fuse
RN1, RN2, RN3[1]	Terminators
U3	AIC-6360 PIO Chip
U5	BIOS

[1] Pin 1 is marked by 1 on the board.

3 Default Settings

The AVA-1515 is designed to operate as shipped in most AT-class computers. The default settings are listed on the following page.

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Parameter	Board Label	Default Setting
SCSI Disconnection [1]	DN	Enabled
SCSI Address		7
SCSI Parity [1]	SP	Enabled
Terminators		Installed
Terminator Power		Supplied by host adapter
Interrupt Channel [1]	I09, I10, I11, I12	11
IRQ Channel [1]	IC1, IC0	11
AT Port Address [1]	ALT	340h-35Fh
Host Adapter BIOS [1]	BEN	Enabled
Host Adapter BIOS Address [1]	AS1, AS0	DC000h-DFFFFh

[1] See Section 8, *Jumper Block Settings*, to change these settings.

4 Installing the Host Adapter

Setting Jumpers
If you need to change jumper block settings, do it now before you replace the chassis cover. See Section 8, *Jumper Block Settings*, for details.

In most cases, you *do not* have to change the default jumper settings. Here are situations in which you should change the settings:

- If you change the default port address by installing the extra jumper on pin pair ALT, you may also need to change options in the software (see Section 6, *Software Installation*).

- If another Adaptec SCSI host adapter is already installed in your computer, you may need to change the interrupt channel and IRQ channel of the AVA-1515. Interrupt and IRQ setting must be the same number. If you change the setting you may also need to change options in the software (see Section 6, *Software Installation*).

  Note: If you change the BIOS address, disable the BIOS, because the host adapter BIOS supports booting only from the default port address range.

Inserting the Board

> **WARNING:** Turn OFF and disconnect the
> power to your computer and attached
> devices before you remove the chassis cover.
> See your computer's documentation for
> instructions on how to do this.

1 Remove the cover of your computer to expose the
AT expansion slots.

2 Locate an unused AT expansion slot. AT-type
slots have two edge connectors (one 62-pin and
the other 34-pin) in line with each other.

3 Remove the expansion slot cover for this slot.

4 Align and insert the host adapter into the AT slot.
Use the expansion slot cover screw to secure the
host adapter to the frame.

> **Note:** *Do not* replace the chassis cover or
> reconnect the power yet!

5 Connecting Peripherals

Setting SCSI IDs
You must assign a *different* SCSI ID to each device on
the AVA-1515 SCSI bus. See your SCSI peripheral
documentation for directions on how to determine
the ID and change it.

- The default SCSI ID for AVA-1515 host adapters is
SCSI ID 7.

- We recommend that you assign SCSI IDs 0 and 1
to the first two SCSI hard disk drives in your PC.

Connecting Cables
SCSI devices are cabled together in a single, con-
nected series called the *SCSI bus*. The SCSI bus cables
must run sequentially from one device to the next.

The host adapter is at the end of the SCSI bus if
either the internal or the external SCSI connector is
unused. The host adapter is in the middle of the bus
if internal *and* external SCSI devices are installed.

Caution: AVA-1515 host adapters support only *single-ended SCSI* devices. *Differential SCSI* devices may be damaged if connected to the host adapter. The peripheral documentation will tell you whether the device is single-ended or differential.

1 Lay out the cables and find the *pin-1* element of each cable and peripheral connector.

On *internal* cables, pin 1 is usually marked with a contrasting color on one edge of the ribbon cable, and a small triangle marks pin 1 on the SCSI connector. *External* cable connectors can only be plugged-in one way, so pin-1 orientation is automatic.

2 Attach the SCSI cable(s) to the host adapter and the peripheral(s), using the internal and/or external connector(s).

3 Be sure to maintain correct pin-1 orientation throughout the bus. The AVA-1515 uses a 25-pin DB25 external connector (Apple compatible), and a 50-pin flat ribbon-type internal connector.

Terminating the SCSI Bus Cable
The last physical SCSI device on either end of the SCSI bus must have a set of resistors called *terminators*. Terminators must be removed from, or disabled on, all *other* devices on the SCSI bus.

The AVA-1515 and most SCSI peripherals have built-in terminators that can be enabled or disabled. Terminate o*nly* the devices at each end of the SCSI bus.

Terminating the Host Adapter
The three factory-installed terminators on the AVA-1515 host adapter are located below the internal SCSI connector, as shown in the diagram on page 1. You must remove these terminators if you attach SCSI devices to *both* the internal and external SCSI connectors, since the host adapter is then in the middle of the SCSI bus. Terminators are 8-pin 220/330 ohms resistors.

The table below shows termination for the three possible configurations.

Devices Connected to Host Adapter	AVA-1515 Terminators
Internal devices only (host adapter at end of bus)	All three installed
External devices only (host adapter at end of bus)	All three installed
Internal and external devices (host adapter in the middle of the bus)	All three removed

Terminating SCSI Peripherals
1 Check the manufacturer's documentation to determine how to enable or disable SCSI bus termination on your SCSI peripheral device(s).

2 Install/enable terminators on SCSI devices at the *ends* of the SCSI bus (cable).

3 Remove/disable terminators on all other devices on the SCSI bus.

4 Be sure the SCSI cables are connected securely. They may have been loosened if you changed jumpers settings on the peripherals.

Reassembling and Starting the System
1 Replace the computer chassis cover, following the instructions in your computer's documentation.

2 Turn all power switches OFF, then reconnect power cables to your computer.

3 Turn ON the power for the peripheral(s) then for the computer.

In most cases your computer, host adapter, and SCSI peripherals are now ready to use.

Booting the Computer
Standard AT architecture supports up to two hard disk drives under DOS. Set SCSI IDs for the SCSI booting devices at 0 and 1. If you have an IDE drive, the system BIOS recognizes this as the first boot device.

If the system recognizes two standard hard disks, you will need to use the *aspi2dos* and *aspidisk* device drivers to access additional SCSI hard disk drives or other devices. See software documentation.

The AVA-1515 provides booting capability at AT port address 340h-35Fh. If you change this option, disable the BIOS, because the host adapter BIOS supports booting only from the default port address range.

6 Software Installation

DOS/Windows Platforms

For installing software, insert the software diskette into a floppy diskette drive, change to the drive letter of that drive (either *A* or *B*), and type install and press **Enter**. Then follow the instructions onscreen or in the software documentation.

Remember the software and hardware settings must match for interrupt channel, IRQ channel, and port address, see Section 4, *Installing the Host Adapter*, and Section 8, *Jumper Block Settings*.

> **Note:** If you change the interrupt channel, IRQ channel, or port address jumper setting after installing the software, you may need to reinstall or reconfigure the software. See the software documentation.

7 Troubleshooting Checklist

If you have a problem during installation, check these items first:

- Are all SCSI peripheral devices powered? Did you power them before booting your system?

- Are all SCSI bus cables and power cables properly connected?

- Do the host adapter and all devices on the SCSI bus have unique SCSI IDs?

- Are all devices on the bus terminated properly?

- Do your SCSI devices support parity checking?

- Is the fuse (F1) discolored?

- If your system has multiple host adapters, did you assign each host adapter a unique interrupt channel, IRQ channel, or port address?

If you need replacement components, such as a fuse, jumper shunt, or terminator, see your dealer.

8 Jumper Block Settings

The AVA-1515 jumper block settings are silk-screened on the board and are used to configure user-selectable options. In the diagram on page 1, the black bar covering both pins represents an installed jumper. This table shows all the possible settings on Jumper blocks J1 and J3.

AS1	AS0	BIOS Address	BEN	Host Adapter BIOS
Off	Off	C800h-CBFFFh	On	Enabled*
Off	On	CC00h-CFFFFh	Off	Disabled
On	Off	D800h-DBFFFh	ALT[1]	AT Port Address
On	On	DC00h-DFFFFh*	On	140h-15Fh
Pin Pair[2]		Interrupt Channel[3]	Off	340h-35Fh*
I09		Interrupt 09[4]	SP	SCSI Parity Check
I10		Interrupt 10	On	Disabled
I11		Interrupt 11*	Off	Enabled*
I12		Interrupt 12	DN	SCSI Disconnection
IC1	IC0	IRQ Channel[3]	On	Enabled*
Off	Off	IRQ 09	Off	Disabled
Off	On	IRQ 10	On = Jumper	
On	Off	IRQ 11*	Off = No Jumper	
On	On	IRQ 12	* = Default	

[1] An extra jumper is provided if you want to change the port address. If you change this option, disable the BIOS, because the host adapter BIOS supports booting only from the default port address range.

[2] Place jumper on *only* one interrupt channel pin pair.

[3] Interrupt and IRQ channels must be set to the same number. For example, if you use interrupt 12, use IRQ 12.

[4] Not recommended with Windows 3.x.

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9 Adaptec Customer Support

- For information on upgrades, utility programs, and technical advice, call Adaptec's Electronic Bulletin Board Service 24 hours a day at 408-945-7727. 1200, 2400, 9600, or 14400 baud, using 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 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: 6:00a.m.–5:00p.m., F: 6:00a.m.–3:00p.m., Pacific Time.

- To order Adaptec software, call 800-442-SCSI (7274) or 818-365-6264. M–F: 5:00a.m.–6:00p.m., Pacific Time.

- To request literature on Adaptec products, call 800-934-2766. M–F: 5:00a.m.–6:00p.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 AVA-1515 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.