

adaptec

ASW-410 Ver. 2.1
ASPI DOS CD-ROM
Device Driver

Installation Guide

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Section One

Introduction

This document provides installation information if you are installing a SCSI based CD-ROM drive into a systems with an Adaptec SCSI host adapter, with DOS as the operating system. DOS versions 3.3 and newer arc supported.

Both High Sierra and ISO 9660 formats are supported by the device drivers.

1.1 FILES INCLUDED ON THIS DISKETTE

"The files included on the ASW-410 distribution diskette are:

ASWCDFEC.SYS	:device driver for NEC CD-ROM drives, data and audio :modes	
ASWCDLMS.SYS	:device driver for Laser Magnetic Storage (LMS) CD-ROM :drives, data and audio modes	
ASWCDFSH.SYS	:device driver for Toshiba CD-ROM drives, data and modes	:audio
ASWCDSNY.SYS	:device driver for Sony CD-ROM drives, data and audio :modes	
ASWCDDAT.SYS	:device driver for all supported CD-ROM drives, data :mode only	
ASWCDFHI.SYS	:device driver for Chinon CD-ROM drives, data and	:audit modes
ASWCDFHT.SYS	:device driver for Hitachi CD-ROM drives, data and	:audio modes
ASWCDFEC.SYS	:device driver for Digital Equipment (DEC) CD-ROM :drives, data and audio modes	
ASWCDDEN.SYS	:device driver for Denon CD-ROM drives, data and audio :modes	
ASWCDFPAN.SYS	:device driver for Panasonic (Matsushita) CD-ROM and audio modes	:drives, data
MSCDEX.EXE	:Microsoft CD-ROM extensions, used to install the CD- :ROM as a logical drive under DOS	
INSTALL.EXE	:Installation program	
INSTALL.CWA	:Installation program file	
INSTALL.HLP	:Installation program help file	

1.2 OTHER SOFTWARE REQUIRED

The device drivers included with the ASW-410 are written to the ASPI interface (Advanced SCSI Programming Interface), and therefore require that the appropriate DOS ASPI manager device driver be loaded (via CONFIG.SYS). The following is a list of the required DOS ASPI managers:

Soft-ware Package	Device Driver Name	Supported SCSI Host Adapter
ASW-1210	ASPI2DOS.SYS	AHA-1520

hard drive.

2.1.1 Before Running INSTALL.EXE

Make sure that all the INSTALL support files are in the same directory as INSTALL.EXE. The files and their functions are listed below.

File	Function
INSTALL.EXE	CD-ROM driver installation utility
INSTALL.CWA	INSTALL system file
INSTALL.HLP	INSTALL HELP file

To invoke INSTALL, simply type INSTALL at the DOS prompt.

For systems with monochrome monitors, type INSTALL /M at the DOS prompt. If INSTALL /M does not work, use the DOS MODE command: MODE BW80 before running INSTALL.

Note: The install utility may rename previously installed drivers. It requires all drivers to specify a drive name consistent with "ASPICDx", where x is a number. If previous installations were done with a different naming scheme, they should be deleted, or renamed as above. To prevent a mismatch between renames the CONFIG.SYS and those in MSCDEX, Adaptec recommends that you delete "old" drivers prior to running install, and reinstall as necessary.

2.1.2 Running INSTALL.EXE

The INSTALL program will display an introductory screen. If the DOS ASPI manager is not installed, as is described in section 1.2 of this document, an error message will be displayed.

Press the <enter> key to continue.

The screen will ask for the desired logical drive and subdirectory to copy the ASW-410 files. If that subdirectory does not exist, it will be created. The default subdirectory name is C:\ASW410. Enter the desired subdirectory name, or press <enter> to accept the default.

A list of CD-ROM drives will be displayed. The CD-ROM drives listed are supported in both data and audio modes. If the generic driver is used (Generic Data), then only the data mode is supported. Select the CD-ROM driver that corresponds to the desired CD-ROM drive. The CD-ROM driver can be selected or deselected by moving the cursor to the desired driver and pressing <y> or <n>, or pressing the <insert> key.

When all drivers are selected, as desired, press the <enter> key twice, and the selected drivers will be copied to the default drive and directory.

Command Line Options: Microsoft CD ROM Extensions (MSCDEX)

First Drive Letter Reserved for CD ROM : G ('D' to 'Z')
Number ~f Reserved Cache Sector Buffers: 12 (8 to 15)
Display Verbose Messages during Booting: Yes (Y or N)
Install MSCDEX.EXE In Expanded Memory : Yes (Y or N)

The command line switches for Microsoft extensions program, MSCDEX.EXE, can be added or changed.

First Drive Letter Reserved for CD-ROM: G ('D' to 'Z')

This determines the logical drive letter that will be assigned to the CD-ROM drive. This specifies the drive letter that will be used by MSCDEX.EXE, and will be the first logical drive letter for CD-ROMs. The last logical drive letter available for CD-ROM drives is specified by the 'LASTDRIVE' statement in the CONFIG.SYS file.

Note: If multiple drives are used, the first drive letter must have enough following drive letters to support the number of CD-ROM drives being used.

The actual default drive letter used will be dynamically determined by inspecting the system for the first available drive letter, total number of drives to be installed, and the number of CD-ROM drives to be installed in the system.

Number of Cache Buffers for MSCDEX.EXE: 12 (8 to 15)

The number of cache buffers determines how much memory is allocated for sector buffers for caching CD-ROM information. A higher number of cache buffers will increase CD-ROM performance, but will use more memory. This adds the switch "/m<number of cache buffers>" to the MSCDEX.EXE command line in the AUTOEXEC.BAT file.

Display Verbose Message during Booting: No ('Y' or 'N')

If the 'y' option is selected, MSCDEX will display additional information when installed. The additional information includes available free memory, expanded memory used, and amount of memory used by the MSCDEX program. This adds the switch "/v" to the MSCDEX.EXE command line in the AUTOEXEC.BAT file.

Install MSCDEX.EXE in Expanded Memory: No ('Y' or 'N')

This option will allow the MSCDEX program to use expanded memory, if available. If this option is selected and expanded memory is not available, main memory will be used. This adds the switch "/e" to the MSCDEX.EXE command line. If no expanded memory is available, main memory will be used in the AUTOEXEC.BAT file.

When these options are selected, as desired, press the <enter> key twice.

INSTALL will give the option of automatically modifying the CONFIG.SYS and AUTOEXEC.BAT files

If 'Yes' is selected, the CONFIG.SYS and AUTOEXEC.BAT files will be modified to support the CD-ROM drives selected during this installation procedure. The old CONFIG.SYS and AUTOEXEC.BAT are saved as

CONFIG.SAV and AUTOEXEC.SAV. The new CONFIG.SYS and AUTOEXEC.BAT will not take effect until the system is rebooted. The INSTALL program only loads the CD-ROM drivers, not the ASPI manager. Thus, if the ASPI manager has not been loaded prior to the installation process, then load it before rebooting the system in order for the CD-ROM drivers to take affect.

A sample CONFIG.SYS file, called CONFIG.ADP, will be created in the root directory if 'Yes' is selected. A similar option will be displayed for the AUTOEXEC.BAT file.

When 'Y' or 'N' is selected, as desired, press the <enter> key to continue.

INSTALL will ask for the CD-ROM drive count

Up to 7 CD-ROM drives can be handled per host adapter. This command determines what value will be assigned by the 'LASTDRIVE=' command in the CONFIG.SYS. At this point one more information screen will be displayed. Press the <enter> key to return to DOS.

When the user inputs a number of CD-ROM drives:

1. If the number is equal to the total number of CD-ROM drivers loaded on Screen 4 then OK.
2. If the number is less than the actual number of CD-ROM drivers loaded, then no CD-ROM drivers will be loaded and the user will see this message when the system is rebooted.

Not enough letter drives

3. If the number is greater than the actual number of CD-ROM drivers loaded, then the user will have two cases:
 - a. If the user chooses 'E' as the first drive letter and states that there are five CD-ROM drives when there are actually only two, then the last drive statement = T instead of 'F.'
 - b. Else it will reassign your first drive letter. For example:
If the user chose 'W' as the first drive letter and states that there are five CD-ROM drives when there are actually only two, then the program (INSTALL) will automatically reassign the first letter drive for the user. In this case, it would be 'U' instead of 'W.' The program will ask for the user's confirmation.

2.1.3 After Running INSTALL.EXE

The ASPI CD-ROM drivers will not load unless the appropriated DOS ASPI manager is loaded in the CONFIG.SYS. INSTALL will not make this addition, so if not already installed, the ASPI manager will need to be added using any simple ASCII text editor.

Some CD-ROM programs require that DOS FILES and BUFFERS be allocated via the CONFIG.SYS.

A sample CONFIG.SYS should look similar to:

```
DEVICE=\DOS\SETVER.EXE           :required for MS DOS 5.0
LASTDRIVE=J                       :the 'LASTDRIVE' command is required
DEVICE=ASPI4DOS.SYS               :for the AHA-1542B
DEVICE=\ASW410\ASWCDSNY.SYS /D:ASPICDO :for the Sony CD-ROM drive
```

FILES=20 :required by some CD-ROM
BUFFERS=20 :programs

The corresponding AUTOEXEC.BAT would look similar to:

```
MSCDEX/D:ASPICDO/L:h/M:12/v
```

Section Three

Software Installation Procedure: Manual Method

The ASW-410, z-410 CD-ROM drivers can be installed without the use of the INSTALL.EXE program. The installation involves creating or modifying the CONFIG.SYS and AUTOEXEC.BAT files. Any ASCII text editor can be used.

3.1 EDITING THE CONFIG.SYS

The CONFIG.SYS consists of three main parts:

- 'LASTDRIVE =' command
- DOS ASPI manager
- DOS CD-ROM module
- optional lines

3.1.1 DOS ASPI Manager

The DOS ASPI manager should be loaded in the CONFIG.SYS before all ASPI modules, including the ASPI module for CD-ROM. Section 1.2 of this document should be consulted to determine the proper DOS ASPI manager for the Adaptec SCSI host adapter that you are using.

The DOS ASPI manager for bus master host adapters should be loaded before caching device drivers, Windows device drivers, and memory manager device drivers. Consult the ASW-1410 and the ASW-1210 installation guide for complete information on the DOS ASPI managers.

3.1.2 DOS CD-ROM Module

The CD-ROM drivers included are considered ASPI modules, and should be loaded after the ASPI manager in the CONFIG.SYS.

There are two types of drivers included with the ASW-410:

1. CD-ROM specific driver
2. Generic data only CD-ROM driver

.

The CD-ROM specific drivers and the CD-ROM drives that they support are listed below:

Model #	Firmware
---------	----------

Driver Name	Manufacturer	Tested	Level
ASWCDCHI.SYS	Chinon	CDX-431	H38 and H42
ASWCDDEC.SYS	Digital Equipment (DEC)		CDU-541
ASWCDDEN.SYS	Denon	RRD-42	1.4A
ASWCDHIT.SYS	Hitachi	CDR-3650/ 16505, 17505 respectively	0002, 0007,
ASWCDLMS.SYS	Laser Magnetic Storage (LMS)	CM212	2.22
ASWCDNEC.SYS	NEC	CDR-72	N/A
ASWCDPAN.SYS	Panasonic	Matsushita	1.06
ASWCDSNY.SYS	Sony	CDU-541-01, 6211-10	2.6A, 2.6A
ASWCDTSH.SYS	Toshiba	XM3201B	3332

When using any of these drivers with the appropriate CD-ROM drives, both data mode and audio mode are supported. Audio must also be supported by the CD-ROM drive (e.g., it must have some physical way to output sound; not all CD-ROM drives have this capability). CD-ROM drives other than the models listed above have not been tested and may or may not work properly. Consult the CD-ROM manufacturer for support of models other than those listed above.

The generic driver supplied, named ASWCDDAT.SYS, provides support for all the CD-ROM drives in the above list. Only data mode is supported.

Some CD-ROM drives claim to be compatible with any or all of the above CD-ROM drives. For example, if a generic named CD-ROM drive is "Hitachi compatible", then the Hitachi device driver ASWCDHIT.SYS should be used and both data and audio modes will be supported. In this case, however, only <me CD-ROM drive total can be installed with the ASW-410 drivers. The /I command line switch should not be used.

3.1.2.1 Command Line Switches

There are three available command line switches available for the CD-ROM drivers.

x/D:<name>

This assigns a name to the CD-ROM driver that MSCDEX.EXE' can install the CD-ROM a logical drive letter. This is a required command line switch.

/I

'This line causes the CD-ROM driver to issue a SCSI Inquiry command to SCSI devices on the SCSI bus. 'The SCSI Inquiry data returned by the drive is compared the driver type. If the driver type matches the CD-ROM), 'd drive manufacturer, then the driver will install normally (e.g. ASWCDSNY with a Sony CD-ROM). If the driver type does not match the CD ROM drive manufacturer, then the driver will not install (e.g., ASWCDSNY with a Toshiba CD-ROM drive). This option must be used to support more than one CD-ROM drive of different types installed in the system. See Sections ,1.1.2 and 4.1.3 for

examples.

/NORST

This option will cause the driver to not issue a SCSI bus reset during initialization.

3.1.3 'LASTDRIVE =' command

LASTDRIVE is used to set the maximum number of disk drives your system can have. The usage is LASTDRIVE=<last logical drive letter>. A value of M is common (e.g. LASTDRIVE=M). If logging on to a network, your network drive letter will follow the one specified in this command. If installing multiple CD-ROM drives, be sure that enough logical drive letters are reserved.

3.1.4 Optional Lines

The optional lines that can be added are the "FILES =" and "BUFFERS =" command lines that can be added to the CONFIG.SYS.

A buffer is a block of memory used to store data read from and written to a disk by DOS. Some CD-ROM programs require a number higher than the DOS default of 15 (each buffer is equal to about 512 bytes). At least 20 DOS buffers should be sufficient to run most CD-ROM applications.

The maximum numbers of files that can be open at the same time is specified by the "FILES =" command. The DOS default value is 8 (each additional FILE specified above 8, increases the resident portion of DOS by 64 bytes). Select a value of at least 20 to be compatible with most CD-ROM applications.

3.1.5 Sample CONFIG.SYS

A sample CONFIG.SYS should look something like:

```
DEVICE=\DOS\SETVER.EXE           :required for MS DOS 5.0
LASTDRIVE=M                       :last allowed drive letter
DEVICE = ASPI4DOS.SYS             :ASPI manager for busmasters
DEVICE=\ASW410\ASWCDSNY.SYS /D:ASPICD0 :for the Sony CD-ROM drive
FILES=20                          :required by some CD-ROM
BUFFERS=20                        :programs
```

or

```
DEVICE=\DOS\SETVER.EXE           :required for MS DOS 5.0
LASTDRIVE=M                       :last allowed drive letter
ASPI2DOS.SYS                     :for A1C-6260 based host adapters
DEVICE=\ASW410\ASWCDSNY.SYS /D:ASPICD0 :for the Sony CD-ROM drive
FILES=20                          :required by some CD-ROM
BUFFERS=20                        :programs
```

Consult Section 1.2 of this document for the appropriate ASPI manager.

Section Three

Software Installation Procedure:
Manual Method

3.1.6 Sample AUTOEXEC.BAT

sample AUTOEXEC.BAT should look something like:

```
MSCDEX /D:ASPICDO /L:H /M: 12 /v
```

This assigns a CD-ROM name of ASPICDO (which matches the device name in the CONFIG.SYS file), logical drive letter H:, and allots 12 buffers for the CD-ROM. MSCDEX will display useful information when loading, since the /v switch is set.

Note: The "last drive" statement in the CONFIG.SYS file is used only when the first letter drive chosen is greater than D and E (i.e., if you chose 'E' as the 1st letter and you have only one CD-ROM drive, then no last drive statement will be assigned).

3.2 EDITING THE AUTOEXEC.BAT

AUTOEXEC.BAT is used to load the Microsoft Extensions, MSCDEX.EXE. The Microsoft Extensions allow a CD-ROM drive to be recognized as a single logical drive under DOS. Thus even if MS DOS 3.3 is used, with a partition size limit of 32 Megabytes per logical drive letter, it is not uncommon for CD-ROMs to have capacities of 700 MBytes per logical drive letter.

It is not required to load MSCDEX.EXE in the AUTOEXEC.BAT. This is merely a convenience so that the CD-ROM will be ready to use when the system is booted up. If CD-ROM is desired at boot time, MSCDEX.EXE can be removed from the AUTOEXEC.BAT and placed in a batch file, or simply typed by hand.

The usage of MSCDEX.EXE is:

```
MSCDEX / D:<device name> / L:<drive letter> / M :<number of cache buffers>/V/E
```

Manual Method

/D Device name should match the name assigned to the CD-ROM drive in the CONFIG.SYS. The name ASPICDO is used by the INSTALL program, but any 8 character name can be used.

/L This is the logical drive letter that will be assigned to the CD-ROM drive. The value chosen must be less than the value specified by the "LASTDRIVE =" command in the CONFIG.SYS.

/M This determines how much memory is allocated as sector buffers for caching CD-ROM information. The default number of buffers is 10, and each uses 2048 bytes of RAM. A value of 12 should be sufficient for most applications.

/V This option enables verbose mode, which displays information about MSCDEX.

/E This option will allow the MSCDEX program to use expanded memory, if available. If this option is selected and expanded memory is not available, main memory will be used.

Section Four Installation of Multiple CD-ROM Drives

More than one CD-ROM device can be added per SCSI host adapter, if desired. The CD-ROM drives can be from the same or different manufacturer.

The installation of more than one CD-ROM drive involves loading the CD-ROM device driver once for each drive manufacturer. MSCDEX only needs to be loaded once, but can be loaded more than once if not all the CD-ROM drives are desired at the same time.

4.1 EXAMPLE 1: THREE OF THE SAME TYPE OF CD-ROM DRIVE

CON FIG .SYS for example 1:

```
DEVICE=\DOS\SETVER.EXE      :required for MS DOS 5.0
LASTDRIVE=J                 :last allowed drive letter [h, i, j]
DEVICE = ASPI4DOS.SYS       :for bus master host adapters
DEVICE=\ASW410\ASWCDDEN.SYS /D:ASPICDO:for all three Denon CD-ROM drives
FILERS=20                   :required by some CD-ROM
BUFFERS=20                  :programs
```

AUTOEXEC.BAT for example 1:

```
MSCDEX/D:ASPICD0 /L:h /M:12 /v :first Denon CD-ROM drive assigned to H;
                               :the second Denon CD-ROM drive as I;
                               :and the third Denon CD-ROM drive will
                               :be J:
```

4.2 EXAMPLE 2: THREE DIFFERENT TYPES OF CD-ROM DRIVES

CONFIG.SYS for example2:

```
DEVICE=\DOS\SETVER.EXE      :required for MS DOS 5.0
LASTDRIVE=J                 :last allowed drive letter [h, i, j]
DEVICE = ASPI4DOS.SYS       :for bus master host adapters
DEVICE=\ASW410\ASWCDNEC.SYS /D:ASPICDO /I
                               :for the NEC CD-ROM drive
                               :letter=H
DEVICE=\ASW410\ASWCDCHI.SYS /D:ASPICD1 /I
                               :for the Chinon CD-ROM drive
                               :letter=I
DEVICE=\ASW410\ASWCDDEC.SYS /D:ASPICDO /I
                               :for the DEC CD-ROM drive
                               :letter=J
FILES=20                    :required by some CD-ROM
BUFFERS=20                  :programs
```

AUTOEXEC.BAT for example 1:

```
MSCDEX/D:ASPICD0 /L:h /M:12 /v :first Denon CD-ROM drive assigned to H;
                               :the second Denon CD-ROM drive as I;
                               :and the third Denon CD-ROM drive will
                               :be J:
```

AUTOEXEC.BAT for example 2:

MSCDEX /D:ASPICD0 /D:ASPICD1 /D:ASPICD2 /L:h /M:12 /v

 :NEC CD-ROM drive assigned to H:
 :Chinon CD-ROM drive assigned to I: :DEC
CD-ROM drive assigned to J:

4.3 EXAMPLE 3: TWO OF THE SAME TYPE OF DRIVE, AND ONE DIFFERENT TYPE OF DRIVE

An example of such a case would be two Panasonic CD-ROM drives and one Hitachi CD-ROM drive.

CONFIG.SYS for example 3:

```
DEVICE=\DOS\SETVER.EXE          :required for MS DOS 5.0
LASTDRIVE=J                      :last allowed drive letter [h, i, j]
DEVICE = ASPI4DOS.SYS              :for bus master host adapters
DEVICE=\ASW410\ASWCDPAN.SYS /D:ASPICD0 /I
                                  :for the Panasonic CD-ROM drives
                                  :letter=H and I
DEVICE=\ASW410\ASWCDHIT.SYS /D:ASPICD1 /I
                                  :for the Hitachi CD-ROM drive
                                  :letter=J
FILES=20                          :required by some CD-ROM
BUFFERS=20                        :programs
```

AUTOEXEC.BAT for example 3:

MSCDEX /D:ASPICD0 /D:ASPICD1 /L:h /M:12 /v

 :The Panasonic CD-ROM drive with the
 :lowest SCSI ID will be H:, the other
 :Panasonic will be I:, and the Hitachi CD-
 :ROM will be J:

If the SCSI Inquiry data does not match the driver name used (in the case of a clone CD-ROM drive), then the /I option should not be specified and only one CD-ROM driver type can be installed.

When the CD-ROM drive is added to the system and attached to the SCSI host adapter, certain hardware considerations need to be taken into account.

5.1 SCSI BUS TERMINATION

The SCSI bus is an electrical bus and has rules that must be followed for proper operation. The SCSI cable or cables attached to a SCSI host adapter is can also be referred to as the SCSI bus. The SCSI bus is like a chain, with SCSI devices on the ends of the chain and sometimes in the middle. Only the devices on the ends of the SCSI bus should have terminating resistors installed. All other SCSI devices on the chain must have the terminating resistors removed.

On Adaptec SCSI host adapters, the terminating resistors are socketed in line modules that can be removed if required.

Socketed
Terminating Resistors SCSI Host Adapter

AHA-1510	RN2, RN3, RN4
AHA-1520	RN2, RN3, RN4
AHA-1522	RN2, RN3, RN4
AHA-1540B	RN2, RN3, RN5
AHA-1542B	RN2, RN3, RN5
AHA-1640	*RN2, RN3
AHA-1740	RN2, RN4, RN5
AHA-1740A	RN5, RN6, RN7
AHA-1742A	RN5, RN6, RN7

*Dual Inline Package (DIP) type terminator

Consult the appropriate user's manual for the exact location on the host adapter.

Some SCSI devices have socketed in line modules, while others have dual in line resistor packs. Some SCSI devices have a switch that can be toggled to enable or disable SCSI bus termination.

Adaptec SCSI host adapters have both an internal and an external connector. If only the internal or only the external connector is used, then the host adapter should have its terminators installed, since it is on the end of the SCSI bus. If both the internal and external connectors of the host adapter are used, the terminators on the host adapter must be removed, since it is no longer on the end of the SCSI chain.

5.2 SCSI ID

All devices attached to a SCSI bus must have a unique SCSI ID. SCSI ID values range from 0 to 7. SCSI ID 7 is usually used by the SCSI host adapter, and generally should not be assigned to the CD-ROM drive. The SCSI ID for the AHA-1510, 1520, 1522, 1540B, and 1542B is set via jumpers. The SCSI ID for the AHA-1640, 1740, 1740A, and 1742A is set via software.

The Adaptec SCSI host adapter BIOS reserves SCSI IDs 0 and 1 for SCSI hard disks, and so these values should not be used for the CD-ROM (the AHA-1740 series adapters ((enhanced mode)) do not have these limitations. Consult the AHA-1740 User's Manual for details.).

The SCSI ID for CD-ROM should be set to 2, 3, 4, 5, or 6.

5.3 SCSI PARITY

SCSI parity generation should be either enabled for all or disabled for all SCSI devices on the SCSI bus. Therefore, if one attached SCSI device does not support SCSI parity generation, then SCSI parity checking must be disabled on the host adapter. If every SCSI device does support parity generation, then in general parity checking on the host adapter should be enabled.

On Adaptec SCSI host adapters SCSI parity checking is enabled by default, and can be disabled by toggling a jumper (or via software on the AHA-1640 and AHA-1740 series host adapters).

Host

Adapter Parity Jumper To Disable Parity Checking

AHA-1510 none DEVICE=ASPI2DOS.SYS /Z /Y

AHA-1520 J6, position 8 Install a jumper, or use
DEVICE=ASPI2DOS.SYS /Y

AHA-1522 J6, position 8 Install a jumper, or use
DEVICE=ASPI2DOS.SYS /Y

AHA-1540B J5, position 3 Remove jumper
AHA-1542B J5, position 3 Remove jumper

AHA-1640 none Use the configuration software
AHA-1740 none Use the configuration software
AHA-1740A none Use the configuration software
AHA-1742A none Use the configuration software

5.4 SYNCHRONOUS DATA TRANSFERS

Synchronous data transfers can be used by the SCSI host adapter to increase the data transfer rate over the SCSI bus. However, some CD-ROM drives do not support synchronous data transfers and will not work properly if the host adapter negotiates for synchronous transfers. In these cases, synchronous negotiation should be disabled on the host adapter. For other SCSI peripherals, synchronous negotiation can be enabled on the drive itself (and disabled on the host adapter) to take advantage of the higher data transfer rate for those drives that support it.

Thus, the host adapter will be communicating synchronously with the faster drives and asynchronously with the CD-ROM drives at the same time.

Host Adapter Jumper How to Disable Synchronous Negotiations

AHA-1510 none DEVICE=ASPI2DOS.SYS /Z /U-
AHA-1520 J5, position 6 remove jumper
AHA-1522 J5, position 6 remove jumper
AHA-1540B J5, position 1 remove jumper
AHA-1542B J5, position 1 remove jumper
AHA-1640 none Use the configuration software
AHA-1740 none Use the configuration software
AHA-1740A none Use the configuration software
AHA-1742A none Use the configuration software

Section Six

Troubleshooting

6.1 HARDWARE TROUBLESHOOTING

In order to make sure the hardware is connected correctly, the Adaptec format utility can be run. Although the CD-ROM drives will not be formatted with this utility, the utility displays all SCSI devices and SCSI IDs. In this way one can tell if the host adapter and CD-ROM drive are communicating to each other.

6.2 IF USING THE AHA-1540B OR AHA-1542B

These host adapters use bus master DMA data transfer, and require that the computer system that they are in support bus mastering. A test in the AHA-1540/1542B BIOS can be run to determine if the system supports bus master DMA transfers at the jumpered DMA transfer rate. Remove the jumper at J5, position 12 to set the host adapter to the slowest and most compatible rate of 5.0 MBytes/sec. The test is accessible through DOS DEBUG.COM at -g=dc00:9. The test is self explanatory. If the screen displays funny characters or the system hangs, then the computer does not support bus mastering and the AHA-1540/1542B (or any other bus mastering I/O card) cannot be used in that system.

In these cases, the AHA-1510, 1520, or 1522 host adapters should be used, since they have no system requirements and work in the vast majority of systems.

6.3 TECHNICAL SUPPORT

Adaptec recommends that you contact your distributor for technical support. In addition, Adaptec has a Bulletin Board Service (BBS) available at telephone number (408) 945-7727, 1200/2400/9600 baud, 8 data bits, 1 stop bit, no parity or technical support can be reached at (408) 945-2550.