

Adaptec AHA-2742AT SCSI Interface Card

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CAUTION: STATIC ELECTRICITY CAN DAMAGE THE COMPONENTS ON THIS CARD. MAKE SURE THAT YOU ARE WEARING AN ANTI-STATIC WRIST BRACELET WHEN YOU TAKE THE CARD OUT OF THE ANTI-STATIC BAG.

1 Introduction

The Adaptec AHA-2742AT is a dual channel SCSI interface card with an onboard floppy controller. It is one of the AHA-2740 series of Adaptec EISA-to-Fast SCSI Host adapters.

2 Installing the SCSI Adapter card

Instructions for gaining access to the plug-in cards in the Main Crate are given in the *Installation* and *Technical Manuals*. This Data Sheet provides details of how to set the card up for use in Lightworks products. You will also need to refer to the *EISA Settings Data Sheet* for details of how to run the setup program.

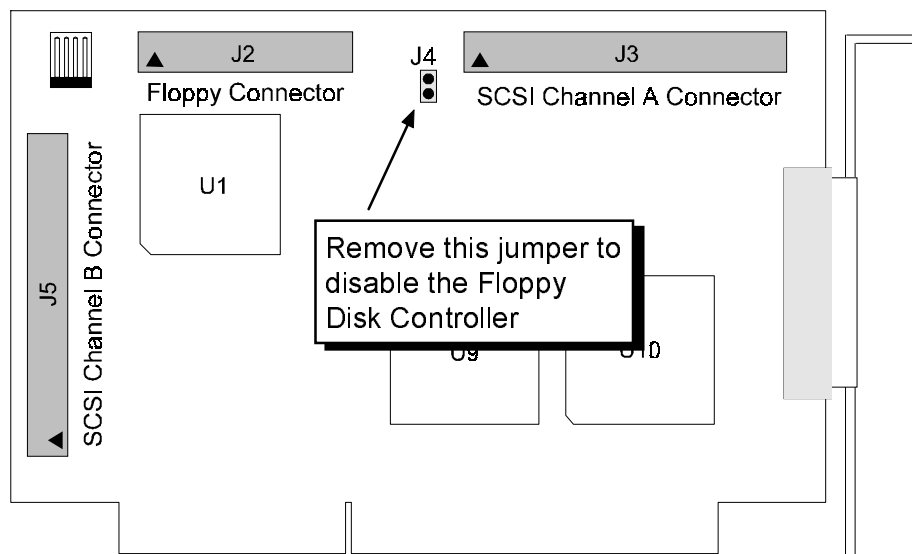


Fig. 1 - AHA-2742AT SCSI Interface Card

- ▶ The only jumper on this card is J4 which is used to enable or disable the onboard floppy controller. This jumper should only be installed on the primary SCSI adapter card in any Lightworks, Newsworks or Heavyworks system as it is this card that is used to control the floppy drive. In the V.I.P machine, this jumper is NOT installed. Once J4 has been removed, if appropriate, the card should be plugged into the appropriate slots and screwed in place.

3 Connecting Cables

- ▶ Most earlier Main Crates were supplied with all necessary extra SCSI rear-panel connectors and internal ribbon cables already installed. However, later systems do not have the additional connectors or cable fitted so these are supplied with the new AHA-2742AT card. Please refer to the instructions in the *Installation* or *Technical Manual* for installing the connector/cable assemblies.
1. If the card is fitted as a replacement for the primary interface then the 34-way floppy drive interface cable must be connected to J2, if this is not the primary card then J2 is left empty.
 2. The two SCSI interfaces provided by this card should be connected to a pair of SCSI buses within the system; either 1&2, 3&4 or 5&6. The appropriate ODD-numbered SCSI bus ribbon cable should be plugged into J3, the EVEN-numbered SCSI cable plugs into J5.
- ▶ If this card is being used in a Shared Storage system please read the notes in the *Technical Manual* or *Shared Storage Manual*.
 - ▶ Note that no connection should ever be made to the external SCSI connector on the card's mounting bracket except in Shared Storage systems.

4 SCSI Terminations

- The terminations for both the SCSI buses on this card are enabled or disabled as part of the configuration setup (see below).
- ▶ Note that if this card is used in a Shared Storage system the termination settings will depend on the system installation. Please refer to the *Technical Manual* when setting the SCSI bus terminations in Shared Storage systems.

5 Configuring the Card

- Once J4 has been set and the card installed in the Main Crate, it must be configured by running the EISA Configuration Utility.(ECU) Please refer to the *EISA Settings Data Sheet* for information on the ECU program.



CAUTION: THE PRIMARY SCSI CARD CONTROLS THE BOOTUP OF THE MACHINE FROM HARD DISK. IF THE SETTINGS ON THIS CARD ARE INCORRECT, THE MACHINE MAY FAIL TO BOOT AND WILL HAVE TO BE BOOTED FROM A BOOT FLOPPY CONTAINING THE ECU PROGRAM.

5.1 Procedure

- ▶ The different EISA motherboards used in Lightworks, Heavyworks and Newsworks systems have different configuration programs. There are slight differences between their initial menus, however, the menus for setting the AHA-2742AT SCSI card are the same. The following steps assume you have already got to the main menu of the EISA Configuration Utility, set up the system settings and made sure that the correct list of EISA boards is installed. (See the *EISA Settings Data Sheet*).
1. From the main ECU menu select the appropriate step to edit or change configuration settings (usually 'Step 3'); a list of settings will appear.

Depending on the type of motherboard in use, either all the settings for all installed EISA boards will be displayed as a continuous list, or you will have to select a specific slot from another menu (for example AMI systems). *Fig. 2*, below, shows the list of settings for the AHA-2742AT card.
 2. Using the cursor keys, highlight any of the settings which need to be changed from the values shown on the screen (according to the tables at the end of this section) and press **<Enter>**.
 3. For each of the parameters, a sub-menu will appear (*Fig. 2* shows the BIOS address as an example). Select the correct value and press **<Enter>**.
 4. Repeat this process for each of the sections headed 'Host Adapter Interface Definitions', 'SCSI Channel A (and B) Configuration', and 'Primary Channel Selection', working your way down the list. Details of the settings are given in the tables at the end of this Data Sheet.
 5. Now select 'BIOS and Device configuration' and press **<Enter>**.
 6. From the sub-menu, first select 'BIOS'. The BIOS Configuration options will now appear (see *Fig. 3*, below).

Host Adapter Interface Definition

Host Adapter BIOS Base Address

- (.)D8000H
- ()CC000H
- ()D0000H
- ()D4000H
- ()DC000H
- ()E0000H
- ()E4000H
- ()E8000H
- ()BIOS disabled

[Select=ENTER] [Cancel=ESC]

Please refer to the table at the end of this section for settings for different machines. There are also different settings if there is more than one card in the machine.

This is a scrolling display so not all of it will be visible on the screen.

Edit Settings for: Adaptec AHA-2740/2742 S

Host Adapter Interface Definitions

Interrupt Level

INQ 11 LEVEL

Bus Release Time

60 BCLKS

Data FIFO Threshold

100%

Host Adapter BIOS Base Address

D8000H

SCSI Channel A Configuration

Host Adapter SCSI ID

?

SCSI Bus Parity Check

Enabled

SCSI Selection Timeout

256 milliseconds

SCSI Bus Reset at Power-on

Enabled

SCSI Bus Termination

Enabled

SCSI Channel B Configuration

Host Adapter SCSI ID

?

SCSI Bus Parity Check

Enabled

SCSI Selection Timeout

256 milliseconds

SCSI Bus Reset at Power-on

Enabled

SCSI Bus Termination

Enabled

Primary Channel Selection

A

BIOS and Device configuration

Press <Enter> to configure

Utilities

Press <Enter> to access

[Done=ESC] [Change=ENTER] [Resources=F6] [PgUp] [PgDn] [Help=F1]

Fig. 2 - AHA-2742AT Configuration Menu (AMI setup program)



Fig. 3 AHA-2742 BIOS settings

7. Set the options according to the tables at the end of this section. Once the options are set correctly press <Esc>.
9. Now select 'Device Configuration' from the sub-menu and press <Enter>.
10. The Device Configuration settings for all SCSI IDs will now appear as shown in Fig. 4.

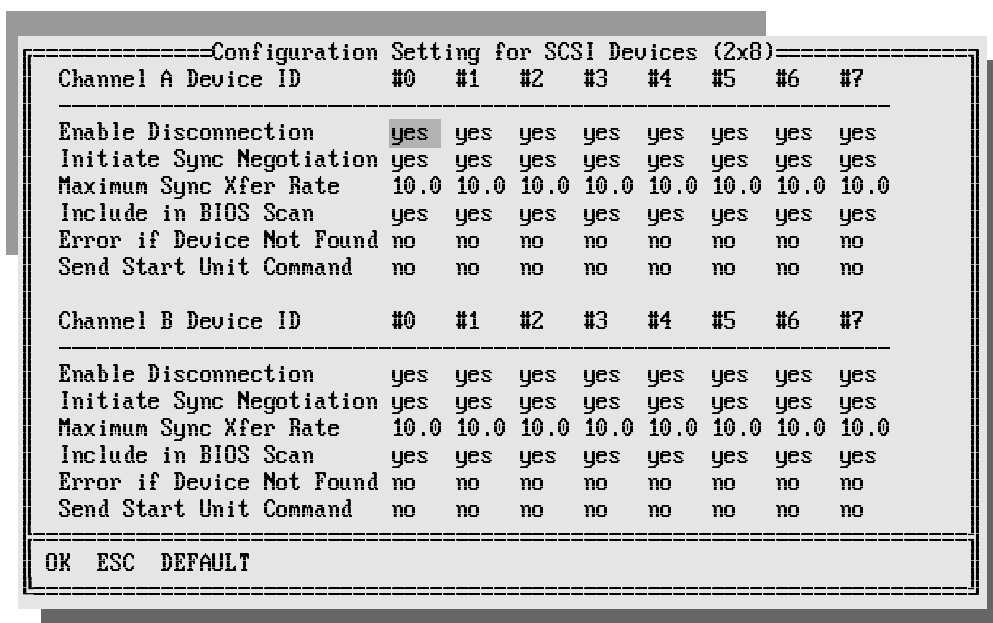


Fig. 4 Device Configuration Options

10. Set each of the device configuration parameters which needs to be changed, according to the tables below, and press <Enter>.
11. Once each of the parameters is set move the cursor to "OK" at the bottom of the screen and press <Enter>.
12. The settings must now be saved.

13. Return to the main ECU menu by pressing <Esc> three times.
 14. Use the ↓ cursor key to select the 'Save' option and press the <Enter> key.
 15. The new settings will be stored in non-volatile RAM and the main config file will be updated in the ECU directory.
 16. Finally, exit from the EISA Configuration Utility.
- The machine should now be rebooted so that the new settings can take effect.

6 Device Drivers

In Lightworks, Newworks and Heavyworks machines, this adapter card requires a DOS device driver to allow the operating system to control it correctly. The file is called "ASPI7DOS.SYS" and must be present in the C:\ root directory. Note that this device driver can control up to three AHA-2742AT cards.

In addition to this driver, two other drivers are required to control all the other SCSI devices correctly; "ASPIDISK.SYS" (located in the C:\ root directory) and "UNI_ASP.SYS" (located in the C:\CORELDR1\ directory). For more information on these drivers please refer to the *Technical Manual*.

The correct versions of these files are shown below.

Table 1 - SCSI Device Drivers

Driver	Location	Version	Date	File Size
ASPI7DOS.SYS	C:\	1.42	02/Feb/95	36160 Bytes
ASPIDISK.SYS	C:\	3.41	02/Feb/95	13538 Bytes
UNI_ASP.SYS	C:\CORELDR1\	2.50c	07/Dec/93	22693 Bytes

7 Card Settings for Lightworks Turbo

Table 2 - 'Adapter' settings

Setting	First (Primary) Card	Second Card	Third Card
Host Adapter Interface Definitions: Interrupt Level Bus Release Time Data FIFO Threshold Host Adapter BIOS Base Address	IRQ 11 60 BCLKS 100% CC000H	IRQ 11 60 BCLKS 100% BIOS Disabled	IRQ 11 60 BCLKS 100% BIOS Disabled
SCSI Channel A Configuration: Host Adapter SCSI ID SCSI Bus Parity Check SCSI Selection Timeout SCSI Bus Reset at Power-on SCSI Bus Termination	7 Enabled 256 milliseconds Enabled Enabled	7 Enabled 256 milliseconds Enabled Enabled	7 Enabled 256 milliseconds Enabled Enabled
SCSI Channel B Configuration: Host Adapter SCSI ID SCSI Bus Parity Check SCSI Selection Timeout SCSI Bus Reset at Power-on SCSI Bus Termination	7 Enabled 256 milliseconds Enabled Enabled	7 Enabled 256 milliseconds Enabled Enabled	7 Enabled 256 milliseconds Enabled Enabled
Primary Channel Selection:	A	A	A

Table 3 - AHA2742 BIOS settings - Note that these only apply to the Primary Card

Setting	First (Primary) Card
Support Removable Disks as Fixed Disk:	Boot Device Only
Extended Translation for Drives > 1 Gbyte:	Enabled
Support More than two drives:	Disabled

Table 4 - SCSI Device settings (These apply to all cards fitted)

Channel A Device ID:	#0	#1	#2	#3	#4	#5	#6	#7
Enable Disconnection	yes	yes	yes	yes	yes	yes	yes	yes
Initiate Sync Negotiation	no	no	no	no	no	no	no	no
Maximum Sync Xfer Rate	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Include in BIOS Scan	yes	yes	yes	yes	yes	yes	yes	yes
Error if Device Not Found	no	no	no	no	no	no	no	no
Send Start Unit Command	no	no	no	no	no	no	no	no
Channel B Device ID:	#0	#1	#2	#3	#4	#5	#6	#7
Enable Disconnection	yes	yes	yes	yes	yes	yes	yes	yes
Initiate Sync Negotiation	no	no	no	no	no	no	no	no
Maximum Sync Xfer Rate	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Include in BIOS Scan	yes	yes	yes	yes	yes	yes	yes	yes
Error if Device Not Found	no	no	no	no	no	no	no	no
Send Start Unit Command	no	no	no	no	no	no	no	no

8 Card Settings for Heavyworks

Table 5 - 'Adapter' settings

Setting	First (Primary) Card	Second Card	Third Card
Host Adapter Interface Definitions: Interrupt Level Bus Release Time Data FIFO Threshold Host Adapter BIOS Base Address	IRQ 11 60 BCLKS 100% E0000H	IRQ 11 60 BCLKS 100% BIOS Disabled	IRQ 11 60 BCLKS 100% BIOS Disabled
SCSI Channel A Configuration: Host Adapter SCSI ID SCSI Bus Parity Check SCSI Selection Timeout SCSI Bus Reset at Power-on SCSI Bus Termination	7 Enabled 256 milliseconds Enabled Enabled	7 Enabled 256 milliseconds Enabled Enabled	7 Enabled 256 milliseconds Enabled Enabled
SCSI Channel B Configuration: Host Adapter SCSI ID SCSI Bus Parity Check SCSI Selection Timeout SCSI Bus Reset at Power-on SCSI Bus Termination	7 Enabled 256 milliseconds Enabled Enabled	7 Enabled 256 milliseconds Enabled Enabled	7 Enabled 256 milliseconds Enabled Enabled
Primary Channel Selection:	A	A	A

Table 6 - AHA2742 BIOS settings - Note that these only apply to the Primary Card

Setting	First (Primary) Card
Support Removable Disks as Fixed Disk:	Boot Device Only
Extended Translation for Drives > 1 Gbyte:	Enabled
Support More than two drives:	Disabled

Table 7 - SCSI Device settings (These apply to all cards fitted)

Channel A Device ID:	#0	#1	#2	#3	#4	#5	#6	#7
Enable Disconnection	yes	yes	yes	yes	yes	yes	yes	yes
Initiate Sync Negotiation	yes	yes	yes	yes	yes	yes	yes	yes
Maximum Sync Xfer Rate	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Include in BIOS Scan	yes	yes	yes	yes	yes	yes	yes	yes
Error if Device Not Found	no	no	no	no	no	no	no	no
Send Start Unit Command	no	no	no	no	no	no	no	no
Channel B Device ID:	#0	#1	#2	#3	#4	#5	#6	#7
Enable Disconnection	yes	yes	yes	yes	yes	yes	yes	yes
Initiate Sync Negotiation	yes	yes	yes	yes	yes	yes	yes	yes
Maximum Sync Xfer Rate	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Include in BIOS Scan	yes	yes	yes	yes	yes	yes	yes	yes
Error if Device Not Found	no	no	no	no	no	no	no	no
Send Start Unit Command	no	no	no	no	no	no	no	no

9 Card Settings for Newsworks

Table 8 - 'Adapter' settings

Setting	First (Primary) Card	Second Card	Third Card
Host Adapter Interface Definitions: Interrupt Level Bus Release Time Data FIFO Threshold Host Adapter BIOS Base Address	IRQ 11 2 BCLKS 100% E0000H	IRQ 11 2 BCLKS 100% BIOS Disabled	IRQ 11 2 BCLKS 100% BIOS Disabled
SCSI Channel A Configuration: Host Adapter SCSI ID SCSI Bus Parity Check SCSI Selection Timeout SCSI Bus Reset at Power-on SCSI Bus Termination	7 Enabled 256 milliseconds Enabled Enabled	7 Enabled 256 milliseconds Enabled Enabled	7 Enabled 256 milliseconds Enabled Enabled
SCSI Channel B Configuration: Host Adapter SCSI ID SCSI Bus Parity Check SCSI Selection Timeout SCSI Bus Reset at Power-on SCSI Bus Termination	7 Enabled 256 milliseconds Enabled Enabled	7 Enabled 256 milliseconds Enabled Enabled	7 Enabled 256 milliseconds Enabled Enabled
Primary Channel Selection:	A	A	A

Table 9 - AHA2742 BIOS settings - Note that these only apply to the Primary Card

Setting	First (Primary) Card
Support Removable Disks as Fixed Disk:	Boot Device Only
Extended Translation for Drives > 1 Gbyte:	Enabled
Support More than two drives:	Disabled

Table 10 - SCSI Device settings (These apply to all cards fitted)

Channel A Device ID:	#0	#1	#2	#3	#4	#5	#6	#7
Enable Disconnection	yes	yes	yes	yes	yes	yes	yes	yes
Initiate Sync Negotiation	yes	yes	yes	yes	yes	yes	yes	yes
Maximum Sync Xfer Rate	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Include in BIOS Scan	yes	yes	yes	yes	yes	yes	yes	yes
Error if Device Not Found	no	no	no	no	no	no	no	no
Send Start Unit Command	no	no	no	no	no	no	no	no
Channel B Device ID:	#0	#1	#2	#3	#4	#5	#6	#7
Enable Disconnection	yes	yes	yes	yes	yes	yes	yes	yes
Initiate Sync Negotiation	yes	yes	yes	yes	yes	yes	yes	yes
Maximum Sync Xfer Rate	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Include in BIOS Scan	yes	yes	yes	yes	yes	yes	yes	yes
Error if Device Not Found	no	no	no	no	no	no	no	no
Send Start Unit Command	no	no	no	no	no	no	no	no

10 Card Settings for Lightworks V.I.P

Table 11 - 'Adapter' settings

Setting	Primary Card
Host Adapter Interface Definitions:	
Interrupt Level	IRQ 9
Bus Release Time	44 BCLKS
Data FIFO Threshold	100%
Host Adapter BIOS Base Address	CC000H
SCSI Channel A Configuration:	
Host Adapter SCSI ID	7
SCSI Bus Parity Check	Enabled
SCSI Selection Timeout	256 milliseconds
SCSI Bus Reset at Power-on	Enabled
SCSI Bus Termination	Enabled
SCSI Channel B Configuration:	
Host Adapter SCSI ID	7
SCSI Bus Parity Check	Enabled
SCSI Selection Timeout	256 milliseconds
SCSI Bus Reset at Power-on	Enabled
SCSI Bus Termination	Enabled
Primary Channel Selection:	B

Table 12 - AHA2742 BIOS settings

Setting	Primary Card
Support Removable Disks as Fixed Disk:	Boot Device Only
Extended Translation for Drives > 1 Gbyte:	Enabled
Support More than two drives:	Disabled

Table 13 - SCSI Device settings

Channel A Device ID:	#0	#1	#2	#3	#4	#5	#6	#7
Enable Disconnection	yes	yes	yes	yes	yes	yes	yes	yes
Initiate Sync Negotiation	yes	yes	yes	yes	yes	yes	yes	yes
Maximum Sync Xfer Rate	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Include in BIOS Scan	yes	yes	yes	yes	yes	yes	yes	yes
Error if Device Not Found	no	no	no	no	no	no	no	no
Send Start Unit Command	no	no	no	no	no	no	no	no
Channel B Device ID:	#0	#1	#2	#3	#4	#5	#6	#7
Enable Disconnection	yes	yes	yes	yes	yes	yes	yes	yes
Initiate Sync Negotiation	yes	yes	yes	yes	yes	yes	yes	yes
Maximum Sync Xfer Rate	8.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Include in BIOS Scan	yes	yes	yes	yes	yes	yes	yes	yes
Error if Device Not Found	no	no	no	no	no	no	no	no
Send Start Unit Command	no	no	no	no	no	no	no	no

Part No.