

NEXTSTEP for Intel Processors

Title: Adaptec 1542C,F and 1540C,F ISA SCSI Adapters

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Product Vendor:

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Usage Commentary:

The Adaptec 1542C provides a standard ISA SCSI interface for NEXTSTEP for Intel Processors. The card requires minimal setup and has proven to be reliable.

The driver for the Adaptec1542C also supports the Adaptec 1540C, which provides identical SCSI functionality without an integrated floppy controller. NEXTSTEP Releases 3.1 and 3.2 do not officially support the floppy controller on the Adaptec1542C, so the lack of this feature on the Adaptec 1540C is a minor concern for NEXTSTEP users.

Adaptec has discontinued production of the 1542C in favor of the newer 1542CF. Except as noted, the contents of this document apply to the 1542CF as well as to the 1542C.

Release 3.3

See NeXTanswer document 1758_Adaptec_154x_family_and_compatible_Driver_Overview.rtf

Release 3.2

Update 1 of the Adaptec 154x SCSI driver is now available from NeXTanswers via anonymous FTP (ftp.next.com) or email (nextanswers@next.com). Request documents 1521_Adaptec154xDriver.pkg.compressed and 1520_Adaptec154xDriver.ReadMe.rtf. This update provides enhanced functionality and bug fixes. NeXT recommends upgrading to this driver.

Setup and Installation:

You must follow two separate setup procedures with the Adaptec 1542C. First, the card contains a block of switches labeled **sw1** to **sw8** along the top edge of the card. Follow the instructions provided with the card to set the switches to the following. This is done prior to actually plugging the card into the computer system.

Switch Block Settings:

sw1: off (software control termination)
sw2 to sw4: off (I/O Port 330)
sw5: on (disable integrated floppy controller)
sw6 to sw8: off (BIOS Address DC00)

Second, refer to section 4 of the Adaptec AHA-1540C/1542C Installation Guide for instructions on

"Running the Configuration Software," which usually is accomplished by typing Control-A when prompted by the card's firmware early in the boot process. Alternatively the configuration software may be accessed by running the DOS program "debug " and entering "g=dc00:8" at the "-" prompt.

Software Settings

Port Address: 330

Host Adapter Interrupt (IRQ) Channel: 11

Host Adapter DMA Channel: 5

Host Adapter SCSI ID: 7

SCSI Parity Checking: Enabled

DMA Transfer Rate: 5 MB/sec *

Host Adapter SCSI Termination: Enabled **

SCSI Device Configuration

Enable Sync Negotiation: no for all devices ***

Enable Disconnection: yes for all devices ****

Send Start Unit Command: no for all devices

Host Adapter BIOS (Configuration Utility Reserves BIOS Space): Enabled

System Boot (INT 19h) Controlled by Host Adapter BIOS: Enabled

Extended BIOS Translation for DOS Drives > 1 GByte: Disabled *****

Support Removable Disks Under BIOS as Fixed Disks: Disabled

Dynamically Scan SCSI Bus for BIOS Devices: Disabled

BIOS Support for More Than 2 Drives (MS-DOS(R) 5.0 and above): Disabled

Immediate Return On Seek Command: Enabled

* This is the default setting. If the cables attached to the card are of low signal quality (e.g. too long), lower the transfer rate to 3.3 MB per second. Conversely, you can increase the transfer rate on a reliable system to boost performance. Use either the lowest transfer rate or 5 MB per second during troubleshooting.

- ** If the card is not at the end of the cable chain, this should be "Disabled" instead.
- *** If your device supports synchronous transfer (most high performance SCSI peripherals do), you may enable this feature to boost performance. We recommend disabling synchronous transfer during trouble shooting.
- **** This is the default value. Some devices do not implement the disconnection protocol correctly. Disable for all devices if you suspect problems.
- ***** This should be enabled if the drive size is greater than 1 GB. For an explanation of extended BIOS translation, please refer to the Adaptec user's manual.

Known Problems:

Release 3.1:

- The Adaptec 1542CF is not supported under NEXTSTEP Release 3.1. (The 1542B and 1542C are supported.)

Release 3.2:

- The Adaptec 1542CF is capable of accessing hard drives with a capacity of greater than one gigabyte. Under Release 3.2, this is supported by a driver update. See "Usage Commentary."
- See also NeXTanswers document 1541_Adaptec_Driver_Related_Problems.rtf

Releases 3.1, 3.2, and 3.3:

- NEXTSTEP does not officially support the integrated floppy controller integrated on the 1542B/C/CF. Use the floppy controller on your system's motherboard or purchase a separate floppy controller to complete software installation.
- When installing NEXTSTEP onto an IDE hard disk drive, the CD-ROM drive's SCSI ID number should be zero.

- Some users have reported problems during the installation process if the CD-ROM drive's SCSI ID number is set to zero. NEXTSTEP will freeze after displaying the message "rootdev 608" when this problem is encountered. Setting the CD-ROM drive's SCSI ID to six has fixed the problem when nothing else seemed to work.

- Improper SCSI termination can cause strange, unreproducible errors. Be certain that the first and last devices on the SCSI bus (and only these two devices) are terminated. For more information on this topic, see NeXTanswers document 1109_SCSI_Setup.rtf.

- Avoid system configurations combining an Adaptec 154xB/C/CF and an ATI Ultra Pro EISA card. A hardware conflict exists which causes data corruption on SCSI hard disks.