

Chapter 6
SCSI BIOS Setup

This chapter will guide you through the use of the *SpeedMaster* board's onboard SCSI BIOS Setup Utility.

6-1 Using the SCSI BIOS Setup Utility

Your *SpeedMaster* provides a ROM BIOS resident, menu-driven SCSI BIOS Setup Utility as a convenient means for configuring the *SpeedMaster* board and certain SCSI bus device parameters without having to open the computer.

Although running the bootable *Drivers Installation* diskette #1 should configure your *SpeedMaster* to work properly in your system, there may be the need to change certain options within the ROM BIOS setup. An onboard BIOS setup program is provided for making these changes.

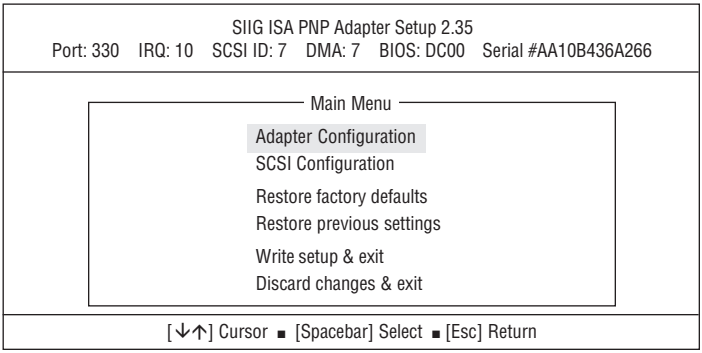
6-1.1 Starting the SCSI BIOS Setup

To enter the SCSI BIOS Setup Utility, turn ON or reboot your computer. During the boot routine, a brief message will appear on the screen prompting you to press <**Ctrl**><**A**>. At this time, press <**Ctrl**><**A**> to stop the boot process and run the BIOS Setup program.

At the first "Warning" message screen, press <**F9**> if you are using a Monochrome monitor to force a monochrome video mode. Otherwise press the <**Spacebar**>.

CAUTION
Exercise great caution when making any changes.

The following Main Menu of selectable options is displayed.



Use the following keys to navigate through the menu options:

- Use the up / down arrow keys to highlight an option
- Use the <**Spacebar**> to select the option
- Press <**Esc**> to return to previous menu-screen

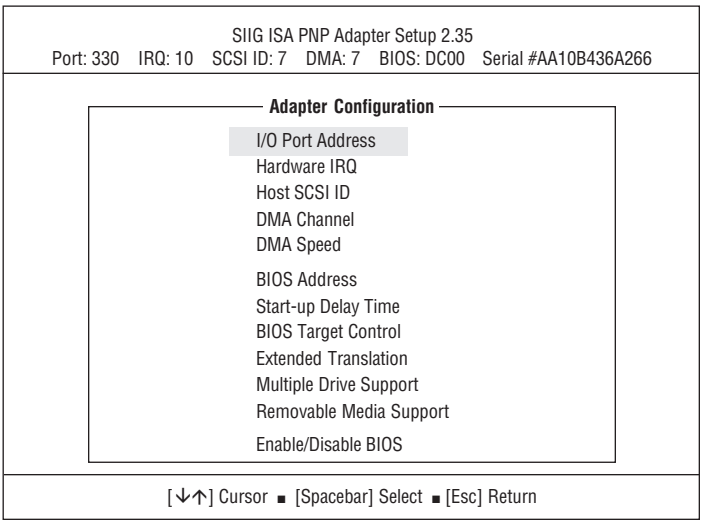
The next sections will describe how to use the various menu-option screens as you progress through the program.

6-1.2 Adapter Configuration

Selecting "Adapter Configuration" from the main menu presents a sub-menu of configuration options for controlling the *SpeedMaster* board.

NOTE

Plug-and-Play assigns the *SpeedMaster's* I/O port address, IRQ, and DMA at system bootup; it will override any changes set through the BIOS Setup.



I/O Port Address: Each add-in board installed in your system must have a unique I/O address. Selecting this option presents a list of supported I/O port addresses for your *SpeedMaster* board.

Hardware IRQ: Each add-in board installed in your system must have a unique I/O address. Selecting this option presents a list of supported IRQs.

Host SCSI ID: This option allows you to change the SCSI ID# of the *SpeedMaster* board. For most configurations, the SCSI ID should be set to 7 (the highest priority access number); however, it can be manually changed if there is a conflict.

DMA Channel: This option allows you to change the DMA (Direct Memory Access) channel, which is used by high-speed communications devices such as a sound cards, network and SCSI adapters. Each device should have a unique DMA channel (except in some cases where there is not simultaneous operation).

DMA Speed: The *SpeedMaster* uses DMA bus mastering to manage bursts of data transfers between the SCSI bus and your computer's memory. It supports DMA transfer rates up to 10 MBytes / sec. All true IBM-compatible computers support I / O rates of at least 5 MBytes / sec. ***Note: leave this setting at the default unless your computer documentation clearly states that it supports higher DMA transfer rates. Running at a faster speed can cause intermittent errors.***

BIOS Address: The SCSI BIOS address must be unique from any other address being used. This option allows you to change the BIOS address if there is a conflict. In most cases it is best to leave this as the value assigned.

Start-up Delay Time: This option allows you to control the number of seconds to pause to allow devices to "spin-up". Some devices take a long time to "warm up" (many drives initiate a self test mode which will delay responding to an inquiry) when the power is first turned on. If you have a fixed disk that does not show up in the BIOS scan of devices, increase this delay.

BIOS Target Control: By default, the SCSI BIOS will attempt to control all fixed disk drives attached to the SCSI bus. If there are particular drives that you do not want it to control, you can disable the drive's SCSI ID from this option list. If you exclude a particular fixed drive, you will need to load its driver for the operating system in order to use the drive.

Note: You do not need to use this to exclude CD-ROM's, WORM, or magneto-optical drives. The ROM BIOS will ignore these devices automatically.

Extended Translation: *This option only affects hard disk drives with capacities over 1 gigabyte.*

NOTE

This applies only to DOS / Windows systems. For all other operating systems, leave this setting in the default setting.

When *enabled*, the SCSI BIOS extended translation scheme lets you use drives with capacities up to 8 gigabytes. However, if the drive was previously partitioned for use under the normal translation (by a SCSI adapter that did not support Extended Translation), DO NOT enable this feature unless you repartition it (losing all data) with the Extended Translation *enabled.*

Multiple Drive Support: If you are using DOS 5.0 or later, this option enables the SCSI BIOS to control more than two hard disk drives without having to install special drivers. If it is not needed, disable this feature to save memory resources.

Enable: If you have more than two hard disk drives and use DOS 5.0 or later.

Disable: If you have an earlier version than DOS 5.0 or do not have more than two hard disk drives.

For all other operating systems, leave this function enabled.

Removable Media Support: Allows the SCSI BIOS to control removable-media drives, such as Iomega Bernoulli and Syquest drives, as if they were hard disk drives, without installing additional software drivers.

This feature can be used for system security. Removable disks configured as boot disks can be used to lock your system when they are removed. Insert this bootable cartridge before powering up, and remove it after powering down. Make sure no other boot drive is in your system.

Enable: The BIOS supports all removable-media drives.

Disable: Removable-media drives are not treated as hard disks. In this mode, software drivers are needed because the drives are not controlled by the BIOS.

NOTE

DO NOT remove media controlled by the SCSI BIOS while the system is powered on. Data will be lost! The BIOS does not support removability while the system is turned on. If you want to remove media while the system is powered, you must install device drivers.

Enable/Disable BIOS: The SCSI BIOS can be enabled and disabled by this option. Enabling the SCSI BIOS allows you to take advantage of the SCSI bus control features. This BIOS can manage SCSI hard disk drives without additional drivers. If disabled, the BIOS will not attempt to control any of the attached SCSI fixed disks.

Enable: Select if you have a hard disk drive.

Disable: Select if you are only running CD-ROM, tape backup, etc. with own device drivers —saves memory resources. If two SCSI controller cards exist, select "No" on one of the controller cards.

NOTE

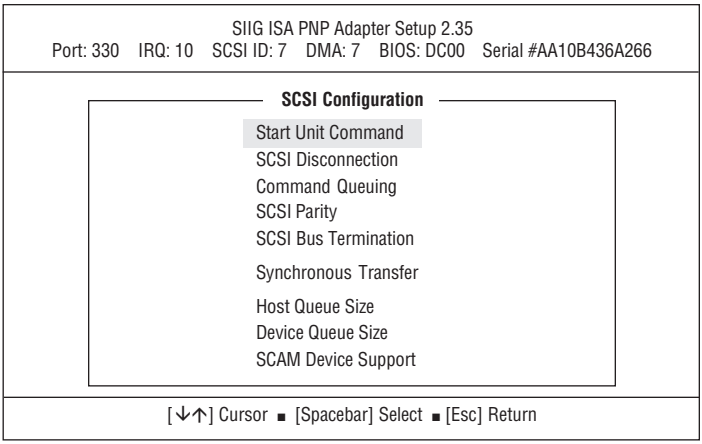
If you disable the BIOS with this function, THERE IS NO WAY TO ENABLE THE BIOS except by running the bootable *Drivers Installation* diskette #1.

SPECIAL NOTE

If any changes you make cause the *SpeedMaster* to become invisible or hang the system, you can recover by running the bootable *Drivers Installation* diskette #1.

6-1.3 SCSI Configuration

Selecting "SCSI Configuration" in the main menu presents a sub-menu of configuration options for controlling the devices on the SCSI Bus.



Start Unit Command: Some SCSI devices specifically require that a Start Unit command be sent to them before they can accept SCSI read / write commands. This gives them a chance to warm up and start their motor. (This is usually only required with older SCSI devices.)

SCSI Disconnection: SCSI targets can optionally release control of the SCSI bus while they perform an assigned task. This frees the bus, and lets other targets become available. Some targets, particularly older ones, do not support disconnection. If this is the case, deselect the appropriate device's ID.

Command Queuing: Most SCSI targets can accept more than one command at one time, some SCSI devices may not. Because DOS / Windows 3.1x is a single-tasking operating system, there is probably no need to enable *Command Queueing*. Some vendors will refer to command queueing as "tag queuing".

SCSI Parity: The *SpeedMaster* uses parity by default to ensure data integrity for all transfers. This has next to no affect on performance.

SCSI Bus Termination: This option allows you to control the SCSI termination on the *SpeedMaster* manually. This option is used in the rare case when one cable is installed and the *SpeedMaster* is not at one end of the cable. The choices are "Enabled", "Disabled" or "Automatic". Note that this option does not function on all PCI boards.

Synchronous Transfer: Some devices, particularly older ones, do not support the higher Synchronous Data Transfer Rate speed and may result in erratic behavior or a hang condition. For such devices, this option should be *disabled*. If a particular device has a known SDTR speed, set it here.

Host Queue Size: Specify the total size of the SCSI queue. The performance of your system may be improved by increasing the queue size.

Device Queue Size: Specify the size of the SCSI queue for each device. The performance of your system may be improved by increasing the queue size. Each SCSI device has an optimum queue size that can be found in the manufactures documentation for the device or by experimentation in your system.

SCAM Device Support: SCAM is a new method of automatically setting the SCSI ID of peripheral devices. This option will allow the *SpeedMaster* BIOS to automatically set the SCSI IDs on SCAM compliant devices. The devices must be SCAM-capable, meaning that their SCSI IDs can be set via SCAM software commands. If e*nable* is selected upon exiting this option, a menu of SCSI IDs are displayed to select devices that are NOT SCAM tolerant.

6-1.4 Restore Settings

Restore factory defaults: This will reset all configuration items back to the original settings the board was shipped from the factory. Note that the BIOS address, hardware IRQ and I/O port address are unaffected. You will be asked if you really want to do this before losing your current configuration.

Restore previous settings: If you have made a number of changes, and wish to revert back to the settings when you first started, select this option.

6-1.5 Exit Setup

Write setup and exit: This will save all changes made in the SCSI BIOS EEPROM and reset the computer.

Discard changes and exit: This will disregard any changes made and reset the computer.