

AMI BIOS Setup

The mainboard comes with an AMI BIOS chip that contains the ROM Setup information of your system. This chip serves as an interface between the processor and the rest of the mainboard's components. This chapter explains the information contained in the Setup program and tells you how to modify the settings according to your system configuration.

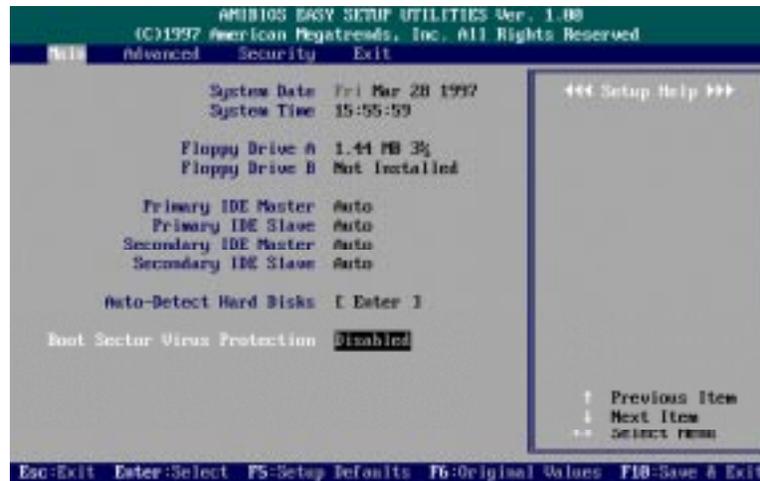
A Setup program, built into the system BIOS, is stored in the CMOS RAM that allows the configuration settings to be changed. This program is executed when the user changes system configuration; the user changes system backup battery; or the system detects a configuration error and asks the user to run the Setup program. As power-on RAM testing, the message Hit DEL if you want to run SETUP appears. Use the arrow keys to select and press Enter to run the selected program.

Use the Tab key to select a windows group, and the left and right arrow keys to choose an item, then press Enter. Use the up and down arrows keys to modify an item and select values, then press Enter. After completing your changes, press ESC to leave the current operation and return to the previous level.

You also may use a mouse to point at an item in a Windows group that you wish to modify and double-click the left mouse button. When the items that you wish to modify appears, use the cursor to select the values and then press the left mouse button to complete the changes.

Use the cursor to press the exit box in the Windows group's upper left corner to leave the current operation and return to the previous level.

Main Setup



The Main Setup screen is displayed above. Each item may have one or more option settings. It allows you to change the system Date and Time, IDE hard disk, floppy disk drive types for drive A: and B:.

Hard Disk Configurations

TYPE:

Select from 1 to 45 to fill remaining fields with predefined values of disk drives. Select User to fill the remaining fields. Select Auto to detect the HDD type automatically.

SIZE:

The hard disk size. The unit is Mega Bytes.

CYLS:

The cylinder number of the hard disk.

HEAD:

The read/write head number of hard disk. The range is from 1 to 16.

PRECOMP:

The cylinder number at which the disk drive changes the write timing.

LANDZ:

The cylinder number that the disk drive heads (read/write) are seated when the disk drive is parked.

SECTOR:

The sector number of each track defined on the hard disk. The range is from 1 to 64.

MODE:

Select Auto to detect the mode type automatically. If your hard disk supports the LBA mode, select LBA or Large. However, if your hard disk cylinder is more than 1024 and does not support the LBA function, you have to set at Large. Select Normal if your hard disk supporting cylinders is below 1024.

Auto-Detect Hard Disks

Allows the system BIOS to detect all hard disk parameters automatically.

Boot Sector Virus Protection

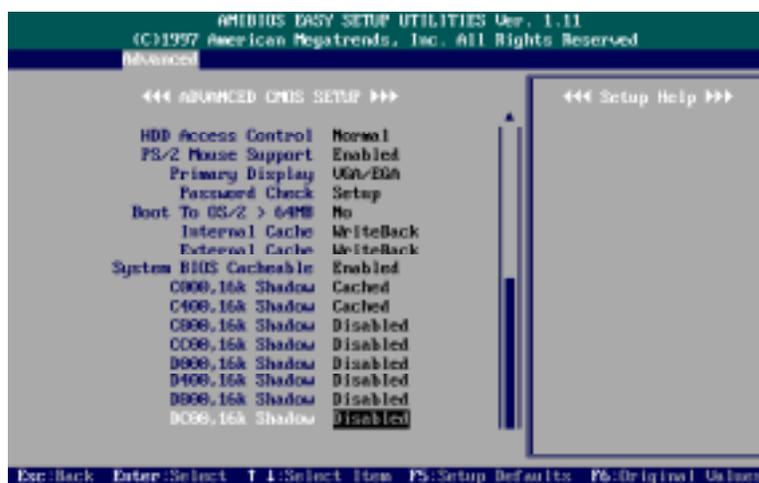
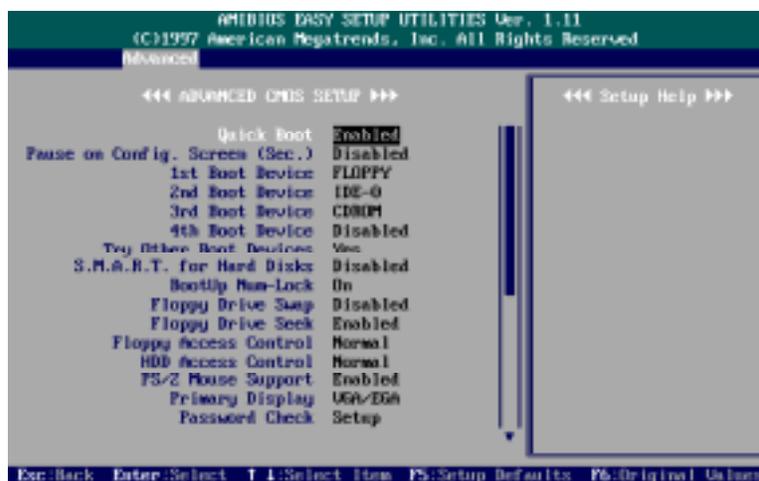
When Enabled, a warning will be given when any program or virus sends a Disk Format command or tries to write to the boot sector of a hard disk drive.

Advanced Setup



Advanced Setup options are displayed by choosing item from the AMI BIOS Setup main menu. All Advanced Setup options are described in this section.

Advanced CMOS Setup



Quick Boot

Set this option to Enabled to instruct AMI BIOS to boot quickly when the computer is powered on. This option replaces the old 1MB Memory Test Advanced Setup option.

The settings are Disabled or Enabled. The default setting is Disabled.

Pause on Config. Screen (Sec.)

This option specifies the length of the period of the configuration screen when the system boots up.

The settings are 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 (seconds), or Disabled. The default setting is Disabled.

1st Boot Device

This item allows you to select the first drive for booting up the system.

The settings are Disabled, IDE-0, IDE-1, IDE-2, IDE-3, IDE-3, FLOPPY, FLOPTICAL, SCSI, or NETWORK. The default setting is FLOPPY.

2nd Boot Device

This item allows you to select the second drive for booting up the system.

The settings are Disabled, IDE-0, or FLOPTICAL. The default setting is IDE-0.

3rd Boot Device

This item allows you to select the third drive for booting up the system.

The settings are Disabled, FLOPTICAL, CDROM. The default setting is CDROM.

4th Boot Device

This item allows you to select the fourth drive for booting up the system.

The settings are Disabled or FLOPTICAL. The default setting is Disabled.

Try Other Boot Devices

If you select Yes, the BIOS will try to boot up the system from other boot devices if all selected boot devices failed to boot. If No selected, the BIOS will try to boot up the system from only the selected devices.

The settings are Yes or No. The default setting is Yes.

S.M.A.R.T. for Hard Disks

“S.M.A.R.T” stands for “Self-Monitoring, Analysis and Reporting Technology”. To enable it will assist you in preventing some (but not all) system down time due to hard disk drive failure.

The settings are Disabled or Enabled. The default setting is Disabled.

BootUp Num-Lock

Set this option to Off to turn the Num Lock key off when the computer is booted so you can use the arrow keys on both the numeric keypad and the keyboard.

The settings are On or Off. The default setting is On.

Floppy Drive Swap

Set this option to Enabled to permit drives A: and B: to be swapped.

The settings are Disabled or Enabled. The default setting is Disabled.

Floppy Drive Seek

Set this option to Enabled to specify that floppy drive A: will perform a Seek operation at system boot.

The settings are Disabled or Enabled. The default setting is Enabled.

Floppy Access Control

It is effective only if the floppy diskette drive is accessed through BIOS INT40H function.

The settings are Normal or Read Only. The default setting is Normal.

HDD Access Control

It is effective only if the hard disk drive is accessed through BIOS INT40H function.

The settings are Normal or Read Only. The default setting is Normal.

PS/2 Mouse Support

When this option is set to Enabled, AMI BIOS supports a PS/2-type mouse.

The settings are Enabled or Disabled. The default setting is Enabled.

Primary Display

This option specifies the type of display monitor and adapter in the computer.

The settings are Absent, VGA/EGA, CGA40x25, CGA80x25, or Mono. The default setting is VGA/EGA.

Password Check

This option enables password checking every time the computer is powered on or every time AMI BIOS Setup is executed. If Always is chosen, a user password prompt appears every time the computer is turned on. If Setup is chosen, the password prompt appears if AMI BIOS is executed. The settings are Setup or Always. The default setting is Setup.

Boot To OS/2 > 64MB

This item allows you to enable the system BIOS to run with the IBM OS/2 operating system. The settings are Yes or No. The default setting is No.

Internal Cache

This option specifies the caching algorithm used for L1 internal cache memory. If Disabled is selected, L1 is disabled. If WriteThru is selected, use the write-through caching algorithm. If WriteBack is selected, use the write-back caching algorithm. The settings are Disabled, WriteBack, or WriteThru. The default setting is WriteBack.

External Cache

This feature allows you to disable the external cache function. The settings are Disabled or Write Back. The default setting is Write Back.

System BIOS Cacheable

Enable it to allow the contents of the F0000h system memory segment to be read from or written to the L2 cache memory. The contents of the F0000h memory segment are always copied from the BIOS ROM to system RAM for faster execution. The settings are Disabled or Enabled. The default setting is Enabled.

C000,16K Shadow; C400,16K Shadow;
C800,16K Shadow; CC00,16K Shadow;
D000,16K Shadow; D400,16K Shadow;
D800,16K Shadow; DC00,16K Shadow

These options control the location of the contents of the ROM beginning at the specified memory location. If no adapter ROM is using the named ROM area, this area is made available to the local bus.

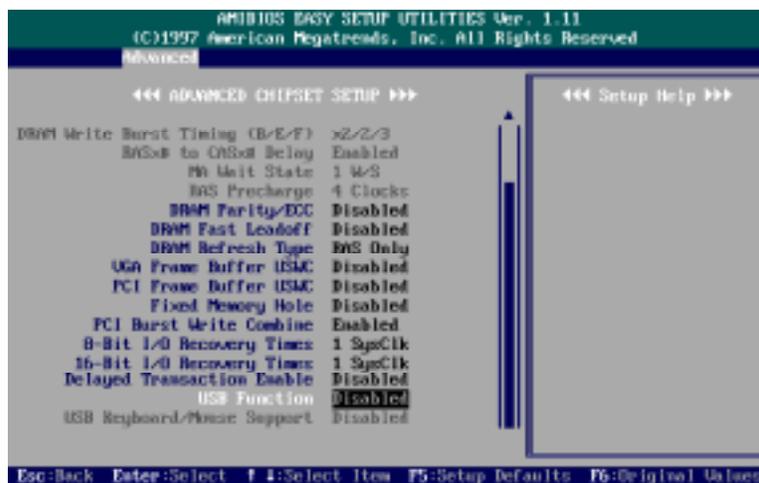
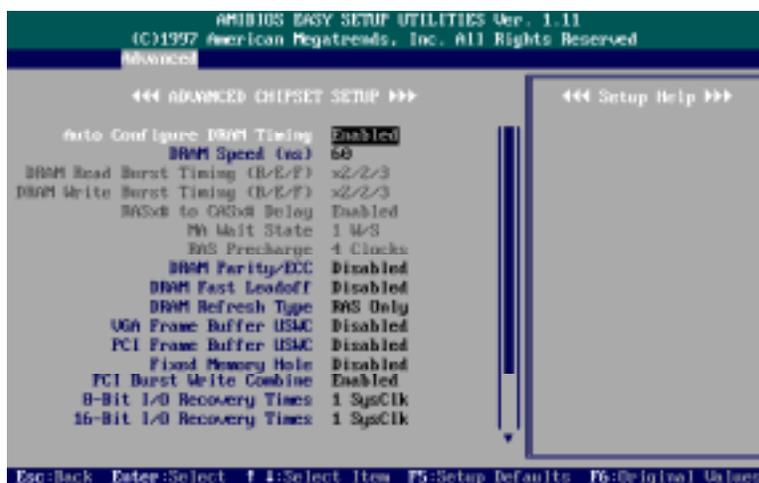
[Disabled] The video ROM is not copied to RAM. The contents of the video ROM cannot be read from or written to cache memory.

[Enabled] The contents of C0000h - DC00h are written to the same address in system memory (RAM) for faster execution.

[Cached] The contents of the named ROM area are written to the same address in system memory (RAM) for faster execution, if an adapter ROM will be using the named ROM area. Also, the contents of the RAM area can be read from and written to cache memory.

The settings are Disabled, Enabled, Cached. The default setting of “C000, 16K Shadow; C400, 16K Shadow” is Cached; the others are Disabled.

Advanced Chipset Setup



Auto Configure DRAM Timing

When set at Disabled, it allows you to configure the features that from the second one (DRAM Read Burst Timing) to the sixth one (RAS Precharge). The settings are Disabled, Enabled. The default setting is Enabled.

DRAM Speed

This item allows you to select the DRAM speed. The settings are Manual, 60ns, or 70ns. The default setting is 60ns.

DRAM Read Burst Timing (E/F)

When Auto Configure DRAM Timing set at Disabled, allows you to define the DRAM read burst timing. The settings are x3/4/4, x2/3/4, x2/2/3. The default setting is x2/2/3, depends on the CPU frequency and DRAM type.

DRAM Write Burst Timing (E/F)

When Auto Configure DRAM Timing set at Disabled, allows you to define the DRAM write burst timing. The settings are x4/4/4, x3/3/4, x3/3/3, or x2/2/3. The default setting is x2/2/3, depends on the CPU frequency and DRAM type.

RAS# to CAS# Delay

When Auto Configure DRAM Timing set at Disabled, allows you to define the delay time that from the DRAM RAS# active to CAS# active. The settings are Disabled or Enabled. The default setting is Enabled, depends on the CPU frequency and DRAM type.

MA Wait State

Allows you to select the memory address wait state. The settings are 0 W/S, or 1W/S. The default setting is 1 W/S.

RAS Precharge

Allows you to select the DRAM RAS# Precharge Time. The settings are 4 Clocks, or 3 Clocks ., The default setting is 4 Clocks.

DRAM Parity ECC

Allows you to select the DRAM data integrity mode: ECC (Error checking /generation and correction) or Parity (Parity generation and checking). The settings are Disabled, Parity, or ECC. The default setting is Disabled.

DRAM Fast Lead off

Allows you to define the ratio of the DRAM read/write leadoff timing, RAS# precharge time, and refresh RAS# assertion.

The settings are Disabled or Enabled. The default setting is Disabled.

DRAM Refresh Type

Allows you to select the DRAM refresh type: RAS only or CAS before RAS.

The settings are CAS/RAS or RAS Only. The default setting is RAS Only.

VGA Frame Buffer USWC

Allows you to enable or disable the VGA frame buffer cacheable. When set at Enabled, the VGA frame buffer A000-BFFF will set to USWC cache type and improve VGA performance.

The settings are Enabled or Disabled. The default setting is Disabled.

PCI Frame Buffer USWC

Allows you to enable or disable PCI VGA frame buffer cacheable. When set at Enabled, the PCI frame buffer address got from PCI configuration space (offset 10h) will set the USWC cache type and improve VGA performance.

The settings are Enabled or Disabled. The default setting is Disabled.

Fixed Memory Hole

When enabled, the memory hole at 15MB address will be relocated to the 15~16MB address range of the ISA cycle when the processor accesses the 15~16MB address area.

When Disabled, the memory hole at the 15MB address will be treated as a DRAM cycle when the processor accesses the 15~16MB address area.

The settings are Disabled, 512KB-640KB, or 15MB-16MB. The default setting is Disabled.

PCI Burst Write Combine

When enabled, allows the PCI cycle to achieve a higher performance.

The settings are Disabled or Enabled. The default setting is Disabled.

8-Bit I/O Recovery Times

This option specifies the length the delay (in SYSCLKs) inserted between consecutive 8-bit I/O operations.

The settings are Disabled, 1, 2, 3, 4, 5, 6, 7, and 8 SYSCLK. The default setting is 1 SYSCLK.

16-Bit I/O Recovery Times

This option specifies the length the delay (in SYSCLKs) inserted between consecutive 16-bit I/O operations.

The settings are Disabled, 1, 2, 3, and 4 SYSCLK. The default setting is 1 SYSCLK.

Delayed Transaction Enabled

Enable this feature to abort the current CPI master cycle and to accept the new PCI master request, it reaccepts the original PCI master and returns the PCI data phase to the original PCI master. It will enhance the system performance.

The options are Disabled or Enabled. The default setting is Disabled.

USB Function

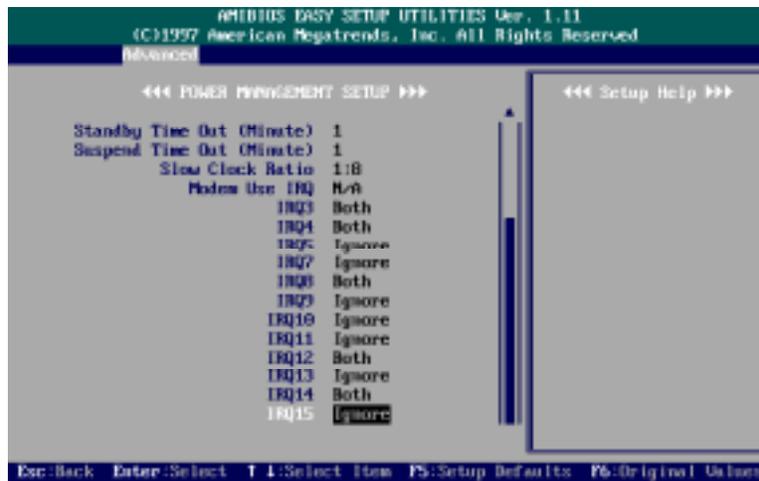
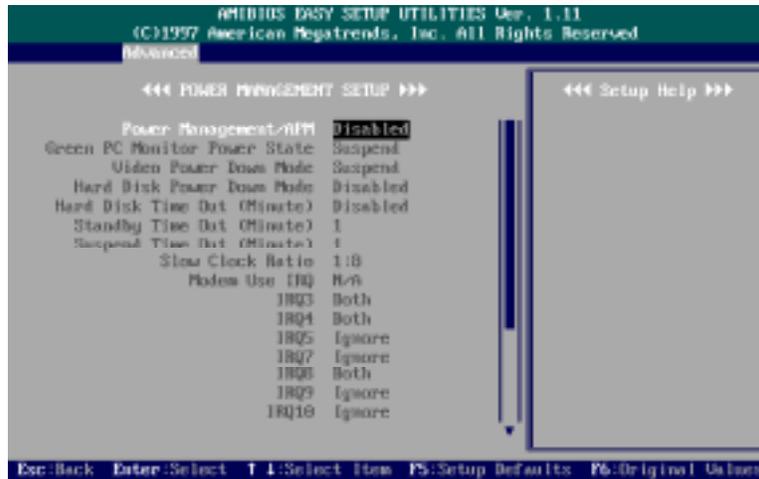
This option allows you to enable the Universal Serial Bus (USB) feature. The settings are Disabled or Enabled. The default setting is Disabled.

USB Keyboard/Mouse Support

If you use a USB keyboard/mouse, set at Enabled. Otherwise, keep it disabled. When enabled, allows the BIOS to detect and initiate the USB keyboard/mouse for making the keyfunctions of POST to work.

The settings are Disabled or Enabled. The default setting is Disabled.

Power Management Setup



Power Management/APM

Set this option to Enabled to enable the power management and APM (Advanced Power Management) features.

The settings are Enabled or Disabled. The default setting is Disabled.

Green PC Monitor Power State

Specifies the power management state that the Green PC-compliant video monitor enters after the specified period of system inactivity has expired. The settings are Suspend, Off, Blank, or Standby. The default setting is Suspend.

Video Power Down Mode

This option specifies the power management state that the video subsystem enters after the specified period of system inactivity has expired.

The settings are Disabled, Standby, or Suspend. The default setting is Suspend.

Hard Disk Power Down Mode

This option specifies the power management state that the hard disk drive enters after the specified period of system inactivity has expired.

The settings are Disabled, Standby, or Suspend. The default setting is Disabled.

Hard Disk Time Out (Minute)

This option specifies the length of a period of hard disk inactivity. When this period expires, the hard disk drive enters the power-conserving mode specified in the Hard Disk Power Down Mode option described above.

The settings are Disabled, 1 Min (minutes), and all one minute intervals up to and including 15 Min. The default setting is Disabled.

Standby Time Out (Minute)

This option specifies the length of the period of system inactivity when the computer is in Full-On mode before the computer is placed in Standby mode. In Standby mode, some power use is curtailed.

The settings are Disabled, 1 Min, 2 Min, and all one minute intervals up to and including 15 Min. The default setting is 1 Min.

Suspend Time Out (Minute)

This option specifies the length of the period of system inactivity when the computer is already in Standby mode before the computer is placed in Suspend mode. In Suspend mode, nearly all power use is curtailed.

The settings are Disabled, 1 Min, 2 Min, and all one minute intervals up to and including 15 Min. The default setting is 1 Min.

Slow Clock Ratio

This option specifies the speed at which the system clock runs in power saving modes. The settings are expressed as a ratio between the normal clock speed and the power down clock speed.

The settings are 1:1, 1:2 (half as fast as normal), 1:4 (the normal speed), 1:8, 1:16, 1:32, 1:64, or 1:128. The default setting is 1:8.

Modem Use IRQ

This feature allows you to select the IRQ# of the system that is the same IRQ# as the modem use.

The options are: NA (Default), 3, 4, 5, 7, 9, 10, 11.

IRQ 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15

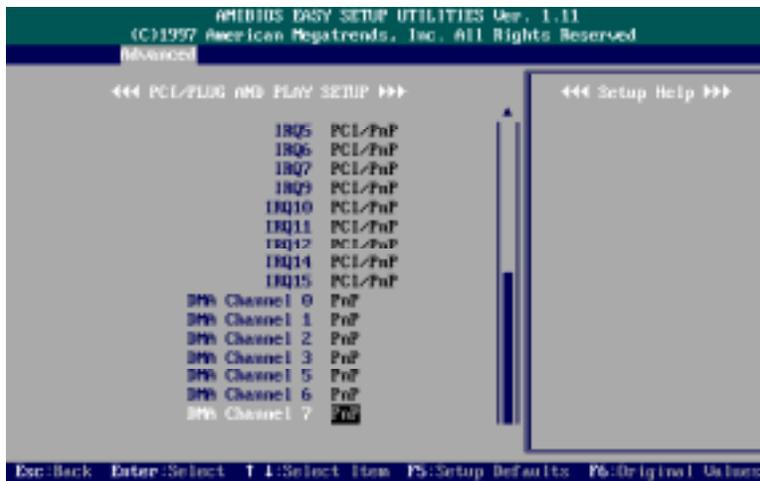
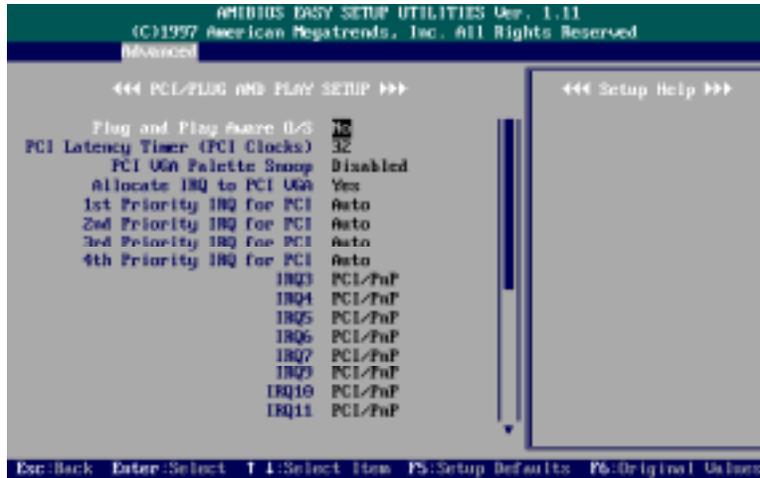
These options enable event monitoring. When the computer is in a power saving mode, activity on the named interrupt request line is monitored by AMI BIOS. When any activity occurs, the computer enters Full On mode. Each of these options can be set to Monitor or Ignore.

The settings are Ignore, Monitor, Wakeup, or Both.

The default settings for IRQ 3, 4, 12, 14, 15 is Both.

The default setting for IRQ 5, 7, 8, 9, 10, 11, 13 is Ignore.

Plug and Play Setup



Plug and Play Aware O/S

Set this option to Yes if the operating system installed in the computer is Plug and Play-aware. AMI BIOS only detects and enables PnP ISA adapter cards that are required for system boot. The Windows 95 operating system detects and enables all other PnP-aware adapter cards. Windows 95 is PnP-aware. Set this option to No if the operating system (such as DOS, OS/2, Windows 3.x) does not support PnP. You must set this option correctly or PnP-aware adapter cards installed in your computer will not be configured properly.

The settings are No or Yes. The default setting is No.

PCI Latency Timer (PCI Clocks)

This option sets latency of all PCI devices on the PCI bus. The settings are in units equal to PCI clocks.

The settings are 32, 64, 96, 128, 160, 192, 224, or 248. The default setting is 32.

PCI VGA Palette Snoop

This option must be set to Enabled if any ISA adapter card installed in the computer requires VGA palette snooping.

The settings are Disabled or Enabled. The default setting is Disabled.

Allocate IRQ to PCI VGA

When set at Yes, allows the system to keep the ESCD (Extended System Configuration Data).

The settings are No or Yes. The default setting is No.

IRQ3, 4, 5, 6, 7, 9, 10, 11, 12, 14, 15

These options specify the bus that the named interrupt request lines (IRQs) are used on. These options allow you to specify IRQs for use by legacy ISA adapter cards. These options determine if AMI BIOS should remove an IRQ from the pool of available IRQs passed to BIOS configurable devices. The available IRQ pool is determined by reading the ESCD NVRAM. If more IRQs must be removed from the pool, the end user can use these PCI/PnP Setup options to remove the IRQ by assigning the option to the ISA/EISA setting. Onboard I/O is configurable by AMI BIOS. The IRQs used by onboard I/O are configured as PCI/PnP.

The settings are PCI/PnP or ISA/EISA. The default setting is PCI/PnP, except that the default setting for IRQ12 is ISA/EISA.

DMA Channel 0, 1, 2, 3, 5, 6, 7

This option allows you to specify the bus type that the named DMA channels are used on.

The settings are PCI/PnP or ISA/EISA. The default setting is PCI/PnP.

Peripheral Setup



Peripheral Setup options are displayed by choosing the Peripheral Setup icon from the AMI BIOS Setup main menu. All Peripheral Setup options are described in this section.

Onboard FDC

This option enables the floppy drive controller on the mainboard. The settings are Auto, Enabled, or Disabled. The default setting is Auto.

Onboard Serial Port1

This option enables serial port 1 on the mainboard and specifies the base I/O port address for serial port 1. The settings are 3F8h, 2F8h, 3E8h, 2E8h, Auto, or Disabled. The default setting is Auto.

Onboard Serial Port2

This option enables serial port 2 on the mainboard and specifies the base I/O port address for serial port 2. The settings are 3F8h, 2F8h, 3E8h, 2E8h, Auto, or Disabled. The default setting is Auto.

Serial Port 2 Mode

This option allows you to set the mode that the second serial port is working in.

The settings are Normal or IrDA. The default setting is Normal.

IR Duplex Mode

This options allow you to select the IR transmission modes.

The settings are Full or Half. The default setting is Half.

IR Protocol

Allows you to select the IR protocol

The settings are 1.6us or 3/16. The default setting is 3/16.

Onboard Parallel Port

This option enables the parallel port on the mainboard and specifies the parallel port base I/O port address.

The settings are 378h, 278h, 3BCh, Auto, or Disabled. The default setting is Auto.

Parallel Port Mode

This option allows you to select the mode of the parallel port. The settings are Normal, Bi-Dir, EPP, or ECP. The default setting is Normal.

EPP Version

This option allows you to select the EPP version.

The settings are 1.9, 1.7. The default setting is 1.9.

Parallel Port IRQ

This option allows you to select the IRQ of the parallel port. The settings are 5 or 7. The default setting is 7.

Parallel Port DMA Channel

This option allows you to select the DMA channel of the parallel port. The settings are 0, 1, or 3. The default setting is 3.

PCI IDE BusMaster

Set this option to Enabled to specify that the IDE controller on the PCI local bus has bus mastering capability.

The settings are Disabled or Enabled. The default setting is Disabled.

OffBoard PCI IDE Card

The option specifies if an offboard PCI IDE controller adapter card is used in the computer. You must also specify the PCI slot on the mainboard where the offboard PCI IDE controller card is installed. If an offboard PCI IDE controller is used, the onboard IDE controller on the mainboard is automatically disabled.

The settings are Auto, Slot1, Slot2, Slot3, or Slot4. The default setting is Auto.

If Auto is selected, AMI BIOS automatically determines the correct setting for this option.

OffBoard PCI IDE Primary IRQ

This options allow you to select the IRQ if you use an offboard primary PCI IDE card.

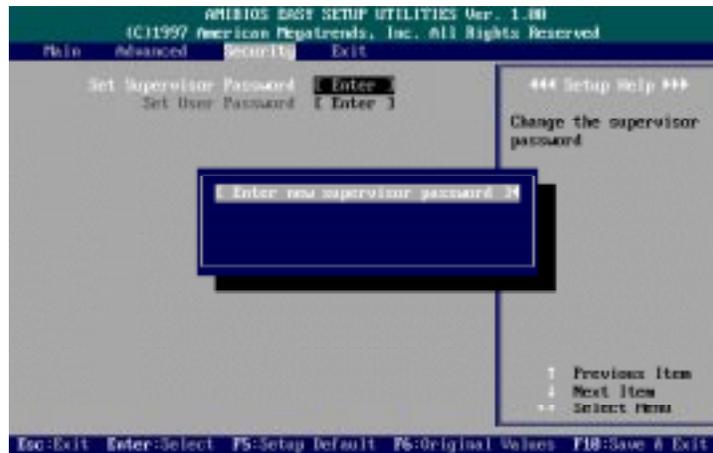
The settings are Disabled, INTA, INTB, INTC, INTD, Hardwired. The default setting is INTA.

OffBoard PCI IDE Secondary IRQ

This options allow you to select the IRQ if you use an offboard secondary PCI IDE card.

The settings are Disabled, INTA, INTB, INTC, INTD, Hardwired. The default setting is INTB.

Security Setup



Set Supervisor and User Passwords

You can set either a Supervisor password or a User password. If you do not use a password, just press **Enter** when the password prompt appears. The password check option is enabled in Advanced Setup by choosing either Always (the password prompt appears every time the system is powered on) or Setup (the password prompt appears only when AMI BIOS is run). You can enter a password by typing the password on the keyboard. When you select Supervisor or User, AMI BIOS prompts for a password. You must set the Supervisor password before you can set the User password. Enter a 1 to 6 character password. The password does not appear on the screen when typed.

Changing a Password

Enter the password and press **Enter**. After the new password is entered, retype the new password as prompted and press **Enter**. If the password confirmation is incorrect, an error message appears. If the new password is entered without error, press to return to the AMI BIOS Main Menu.

Clear Password

If you forget your password, turn off the system power first and remove the system unit cover. Locate Jumper CPS and cap it. Remove Jumper CPS and reset the system. At this point, you will not be asked for the password to enter Setup.

Exit Setup



Exit Saving Changes

This item allows you to write the current settings to CMOS and exit.

Exit Discarding Changes

This item allows you to exit without writing the current settings to CMOS.

Load Optimal Settings

This item is selected for settings which provide the best system performance.

Load Fail Safe Settings

This item is for settings that provide a more efficient computer. If the computer will not boot, select this option and try to diagnose the problem after the computer boots. These settings do not give optimal performance.

Load Original Values

This item recalls your last set of previous settings. This option is convenient if you change settings and decide you wish to return to the previous settings.