

Chapter 2

BIOS Utility

The BIOS Utility allows you to view your system's configuration settings.

Most systems are already configured by the manufacturer or the dealer. There is no need to run Setup when starting the computer unless you get a Run Setup message.

The Setup program loads configuration values into the battery-backed nonvolatile memory called CMOS RAM. This memory area is not part of the system RAM.



If you repeatedly receive Run Setup messages, the battery may be bad. In this case, the system cannot retain configuration values in CMOS. Ask a qualified technician for assistance.

2.1 Entering Setup

To enter Setup, press the key combination **CTRL**+**ALT**+**ESC**.



*You must press **CTRL**+**ALT**+**ESC** while the system is booting. This key combination does not work during any other time.*

The BIOS Utility main menu then appears:

BIOS Utility
System Information Product Information Disk Drives Power Management Startup Configuration Advanced Configuration System Security Date and Time Load Default Settings Abort Settings Change
↑↓←→ = Move highlight bar, ↵ = Select, Esc = Exit



The parameters on the screens show default values. These values may not be the same as those in your system.

2.2 System Information

The following screen appears if you select System Information from the main menu.

System Information		Page 1/2
Processor	Pentium	
Processor Speed	xxx MHz	
Bus Frequency	xx MHz	
Internal Cache	xx KB, Enabled	
External Cache	xxx KB, Enabled	
Floppy Drive A	x.xx MB, x.x-inch	
Floppy Drive B	None	
IDE Primary Channel Master	Hard Disk	
IDE Primary Channel Slave	None	
IDE Secondary Channel Master	CD-ROM	
IDE Secondary Channel Slave	None	
Total Memory	xx MB	
1st Bank	EDO	
2nd Bank	EDO	
3rd Bank	EDO	
4th Bank	EDO	
PgDn/PgUp = Move Screen, Esc = Back to Main Menu		

The System Information menu shows the current basic configuration of your system.

The command line at the bottom of the menu tells you how to move from one screen to another and return to the main menu.

Press **[PGDN]** to move to the next page or **[PGUP]** to return to the previous page.

Press **[ESC]** to return to the main menu.

The following screen shows page 2 of the System Information menu.

System Information		Page 2/2
Serial Port 1	Disabled	
Serial Port 2	2F8h, IRQ 3	
Parallel Port	378h, IRQ 7	
Pointing Device	Installed	
Memory Parity Mode	Disabled	
Onboard USB	Disabled	
PgDn/PgUp = Move Screen, Esc = Back to Main Menu		

The following sections explain the parameters.



The parameters in the System Information screens show default settings. These settings are non-configurable from these screens. Select other configuration options from the BIOS Utility main menu to change the settings.

2.2.1 Processor

The Processor parameter specifies the type of processor currently installed in your system. The system is designed to support the Intel Pentium II CPU.

2.2.2 Processor Speed

The Processor Speed parameter specifies the speed of the CPU currently installed in your system. The system supports Intel Pentium II CPUs running at 233, 266, or 300 MHz.

2.2.3 Bus Frequency

The Bus Frequency parameter specifies the system external clock. The bus frequency can be either 60 or 66 MHz.

2.2.4 Internal Cache

This parameter specifies the first-level or the internal memory size (i.e., the memory integrated into the CPU), and whether it is enabled or disabled. For information on how to configure the system memory, see section 2.7.3.

2.2.5 External Cache

This parameter specifies the second-level cache memory size currently supported by the system, and whether it is enabled or disabled. For information on how to configure the system memory, see section 2.7.3.

2.2.6 Floppy Drive A

This parameter specifies the type of drive designated as Floppy Drive A. For information on how to configure the floppy drives, see section 2.4.1.

2.2.7 Floppy Drive B

This parameter specifies the system's current floppy drive B settings. For information on how to configure the floppy drives, see section 2.4.1.

2.2.8 IDE Primary Channel Master

This parameter specifies the current configuration of the IDE device connected to the master port of the primary IDE channel. For information on how to configure IDE devices, see section 2.4.2.

2.2.9 IDE Primary Channel Slave

This parameter specifies the current configuration of the IDE device connected to the slave port of the primary IDE channel. For information on how to configure IDE devices, see section 2.4.2.

2.2.10 IDE Secondary Channel Master

This parameter specifies the current configuration of the IDE device connected to the master port of the secondary IDE channel. For information on how to configure IDE devices, see section 2.4.2.

2.2.11 IDE Secondary Channel Slave

This parameter specifies the current configuration of the IDE device connected to the slave port of the secondary IDE channel. For information on how to configure IDE devices, see section 2.4.2.

2.2.12 Total Memory

This parameter specifies the total system memory. The memory size is automatically detected by BIOS during the POST. If you install additional memory, the system automatically adjusts this parameter to display the new memory size.

1st Bank

This parameter indicates the type of DRAM installed in bank 1. The *None* setting indicates that there is no DRAM installed. For the location of bank 1, refer to Figure 1-2.

2nd Bank

This parameter indicates the type of DRAM installed in bank 2. The *None* setting indicates that there is no DRAM installed. For the location of bank 2, refer to Figure 1-2.

3rd Bank

This parameter indicates the type of DRAM installed in bank 3. The *None* setting indicates that there is no DRAM installed. For the location of bank 3, refer to Figure 1-2.

4th Bank

This parameter indicates the type of DRAM installed in bank 4. The *None* setting indicates that there is no DRAM installed. For the location of bank 4, refer to Figure 1-2.

2.2.13 Serial Port 1

This parameter indicates the serial port 1 address and IRQ setting.

2.2.14 Serial Port 2

This parameter indicates the serial port 2 address and IRQ setting.

2.2.15 Parallel Port

This parameter indicates the parallel port address and IRQ setting.

2.2.16 Pointing Device

The BIOS utility automatically detects if there is a mouse connected to the system. If there is, this parameter displays the *Installed* setting. Otherwise, this is set to *None*.

2.2.17 Memory Parity Mode

This parameter indicates the setting of the memory parity mode. It may be set to *Enabled* or *Disabled*.

2.2.18 Onboard USB

This parameter specifies whether the onboard USB controller is enabled or not. For information on how to enable or disable USB, see section 2.7.1.

2.3 Product Information

The Product Information contains general data about the system. It includes the product name, serial number, BIOS version, etc. These information are necessary for troubleshooting and may be required when asking for technical support.

The following screen shows the Product Information items.

Product Information		Page 1/1
Product Name	xxxxxxxxxx	
System S/N	xxxxxxxxxx	
Main Board ID	xxxxxxxxxx	
Main Board S/N	xxxxxxxxxx	
System BIOS Version	VX.XX	
System BIOS ID	xxx.xx xxx-xx	
BIOS Release Date	xx/xx/xx	
Esc = Back to Main Menu		

2.3.1 Product Name

This parameter specifies the official name of the system.

2.3.2 System S/N

This parameter specifies the system's serial number.

2.3.3 Main Board ID

This parameter specifies the system board's identification number.

2.3.4 Main Board S/N

This parameter specifies the system board's serial number.

2.3.5 System BIOS Version

This parameter specifies the version of the BIOS utility.

2.3.6 System BIOS ID

This parameter specifies the identification number of the BIOS utility.

2.3.7 BIOS Release Date

This parameter specifies the official date the BIOS version is released.

2.4 Disk Drives

The Disk Drives menu lets you configure the system hard disk and disk drive settings. If your hard disk supports the enhanced IDE features, you may set the functions using this menu.

The following screen shows the Disk Drives parameters and their default settings:

Disk Drives		Page 1/1
Floppy Drive A [xx-MB, xx-inch]	
Floppy Drive B [xx-MB, xx-inch]	
<ul style="list-style-type: none">▶ IDE Primary Channel Master▶ IDE Primary Channel Slave▶ IDE Secondary Channel Master▶ IDE Secondary Channel Slave		
↑↓ = Move Highlight Bar, → ← = Change Setting, F1 = Help		



The triangle mark that precede an item within a menu indicates that there is a detailed menu for that particular item. Select the item to display the menu.

From the Disk Drives screen, select the IDE Primary Channel Master, IDE Primary Channel Slave, the IDE Secondary Channel Master, or IDE Secondary Channel Slave items to display their respective menus.



Selecting the IDE Primary Channel Master item displays the following menu.

IDE Primary Channel Master		Page 1/1
Type.....	[Auto]	
Cylinder	[]	
Head	[]	
Sector	[]	
Size	[] MB	
Hard Disk Block Mode	[Disabled]	
Advanced PIO Mode	[Auto]	
Hard Disk Size > 504MB	[Disabled]	
Hard Disk 32 Bit Access	[Disabled]	
CD-ROM Drive DMA Mode	[Disabled]	

↑↓ = Move Highlight Bar, → ← = Change Setting, F1 = Help

The parameters for the IDE Primary Channel Slave, the IDE Secondary Channel Master, and IDE Secondary Channel Slave menus are the same as in the above screen.

2.4.1 Floppy Drives

To configure the first floppy drive (drive A), highlight the Floppy Drive A parameter. Press  or  key to view the options, then select the appropriate value.

Possible settings for the Floppy Drive parameters:



- [None]
- [360 KB, 5.25-inch]
- [1.2 MB, 5.25-inch]
- [720 KB, 3.5-inch]
- [1.44 MB, 3.5-inch]
- [2.88 MB, 3.5-inch]

Follow the same procedure to configure floppy drive B. Choose None if you do not have a second floppy drive.

2.4.2 IDE Drives

There are four IDE drive option items under the Disk Drives menu. Select the IDE Primary Channel Master item (or the IDE Secondary Channel Master) if you want to configure an IDE device set as master. Select the IDE Primary Channel Slave item (or the IDE Secondary Channel Slave) if you want to configure an IDE device set as slave.

To configure an IDE device designated as master:

1. Select the IDE Primary Channel Master (or the IDE Secondary Channel Master) option to display its menu.
2. Highlight the parameter Type, then press  or  to display the IDE drive types with their respective values for cylinder, head, sector, and size.

You may do any of the following:

- Select the type that corresponds to your IDE hard disk drive.
- If you do not know the exact type of your IDE device, select the `Auto` option to let the BIOS utility automatically detect the installed IDE drive type.
- You may save the values under the option `User`. The next time you boot the system, the BIOS utility does not have to auto-configure your IDE drive as it detects the saved disk information during POST.



We recommend that you copy the IDE disk drive values and keep them in a safe place in case you have to reconfigure the disk in the future.

- If you have installed an IDE hard disk that was previously formatted but does not use the disk native parameters or structure, i.e., the disk may be formatted according to the user-specified number of cylinders, heads, and sectors, select the `User` option. Then enter the appropriate drive information.
- If there is no device connected, choose `None`.

To configure an IDE device designated as slave:

1. Select the IDE Primary Channel Slave (or the IDE Secondary Channel Slave) option to display its menu.
2. Highlight the parameter Type, then press `→` or `←` to display the IDE drive types with their respective values for cylinder, head, sector, and size. Refer to the above procedure for configuring a master device.

Hard Disk Block Mode

This function enhances disk performance depending on the hard disk in use. If you set this parameter to *Auto*, the BIOS utility automatically detects if the installed hard disk drive supports the Block Mode function. If supported, it allows data transfer in block (multiple sectors) at a rate of 256 bytes per cycle. To disregard the feature, change the setting to *Disabled*.

Advanced PIO Mode

When set to *Auto*, the BIOS utility automatically detects if the installed hard disk supports the function. If supported, it allows for faster data recovery and read/write timing that reduces hard disk activity time. This results to better hard disk performance. To disregard the feature, change the setting to *Disabled*.

Hard Disk Size > 504 MB

When set to *Auto*, the BIOS utility automatically detects if the installed hard disk supports the function. If supported, it allows you to use a hard disk with a capacity of more than 504 MB. This is made possible through the Logical Block Address (LBA) mode translation. However, enhanced IDE feature works only under DOS and Windows 3.x, Windows 95 environments. Other operating systems require this parameter to be set to *Disabled*.

Hard Disk 32-bit Access

Enabling this parameter improves system performance by allowing the use of the 32-bit hard disk access. This enhanced IDE feature works only under DOS, Windows 3.x, Windows 95, and Novell NetWare. If your software or hard disk does not support this function, set this parameter to *Disabled*.

CD-ROM Drive DMA Mode

This parameter allows you to enable or disable the CD-ROM drive DMA mode. Set this parameter to *Enabled* to enable the DMA mode for the CD-ROM drive. This improves the system performance since it allows direct memory access to the CD-ROM. To deactivate the function, set the parameter to *Disabled*.

2.5 Power Management

The Power Management menu lets you configure the system power management features.

The following screen shows the Power Management parameters with their default settings:

Power Management	Page 1/1
Power Management Mode[Disabled] IDE Hard Disk Standby Timer[---] System Sleep Timer[---] Stop CPU Clock in Sleep State[---] Wakeup Event Modem Ring[Disabled]	
↑↓ = Move Highlight Bar, → ← = Change Setting, F1 = Help	

2.5.1 Power Management Mode

This parameter allows you to reduce power consumption. When this parameter is set to Enabled, you can configure the IDE hard disk and system timers. Setting to Disabled deactivates the power management feature and all the timers.

IDE Hard Disk Standby Timer

This parameter allows the hard disk to enter standby mode after inactivity of 1 to 15 minutes, depending on your setting. When you access the hard disk again, allow 3 to 5 seconds (depending on the hard disk) for the disk to return to normal speed. Set this parameter to **OFF** if your hard disk does not support this function.

System Sleep Timer

This parameter sets the system to the lowest power-saving mode. It automatically enters into the sleep or the suspend mode after a specified period of inactivity. Any keyboard or mouse action, or any modem activity (if the Modem Ring option is enabled - see section 2.5.2) detected resume system operation.

STOP CPU CLOCK IN SLEEP STATE

If you want to stop the CPU clock when the system enters the sleep or suspend mode, set this parameter to **Yes**. If not, then select **No**.

2.5.2 Wakeup Event

This parameter lets you specify the activity that will return the system to normal operating mode.

Modem Ring

Enable this item if you want to specify the modem activity as your system wakeup event. This means that any modem activity detected will wake up the system.

2.6 Startup Configuration

The Startup Configuration allows you to specify your preferred setting for bootup.

The following screen appears if you select the Startup Configuration option from the main menu:

Startup Configuration	Page 1/1
Fast POST Mode[Auto] Silent Boot[Enabled] Num Lock After Boot[Enabled] Memory Test[Disabled]	
Initialize SCSI Before IDE[Disabled] System Boot Drive[Drive A Then C] Boot From CD-ROM[Disabled] Boot from Onboard SCSI Device[Disabled]	
↑↓ = Move Highlight Bar, → ← = Change Setting, F1 = Help	

2.6.1 Fast POST Mode

This parameter allows the system to boot faster by skipping some POST routines. The default setting is Auto.

2.6.2 Silent Boot

This parameter enables or disables the Silent Boot function. When set to *Enabled*, BIOS is in graphical mode and displays only an identification logo during POST and while booting. After which the screen displays the operating system prompt (such as DOS) or logo (such as Windows 95). If any error occurred while booting, the system automatically switches to the text mode.

Even if your setting is *Enabled*, you may also switch to the text mode while booting by pressing **[F3]** after you hear a beep that indicates the activation of the keyboard.

When set to *Disabled*, BIOS is in the conventional text mode where you see the system initialization details on the screen.

2.6.3 Num Lock After Boot

This parameter allows you to activate the Num Lock function upon booting. The default setting is *Enabled*.

2.6.4 Memory Test

When set to *Enabled*, this parameter allows the system to perform a RAM test during the POST routine. When set to *Disabled*, the system detects only the memory size and bypasses the test routine. The default setting is *Disabled*.

2.6.5 Initialize SCSI Before IDE

Enabling this parameter allows SCSI devices installed in the system to be initialized before IDE devices. You may enable this parameter if you have a SCSI boot drive. When this parameter is disabled, the IDE drives are normally initialized first during POST.

2.6.6 System Boot Drive

This parameter allows you to specify the system search sequence. The selections are:

- Drive A then C: The system checks drive A first. If there is a diskette in the drive, the system boots from drive A. Otherwise, it boots from drive C.
- Drive C then A: The system checks drive C first. If there is a hard disk (drive C) installed, the system boots from drive C. Otherwise, it boots from drive A.
- C: The system always boots from drive C.
- A: The system always boots from drive A.

2.6.7 Boot From CD-ROM

When set to `Enabled`, the system checks for a bootable CD in the IDE CD-ROM drive. If a CD is present, the system boots from the CD-ROM; otherwise, it boots from the drive specified in the System Boot Drive parameter. When set to `Disabled`, the system boots from the drive specified in the System Boot Drive parameter.



Note that the CD-ROM drive mentioned above refers to an IDE CD-ROM drive. When setting the boot options for a SCSI CD-ROM drive, see section 2.6.8 for details on SCSI device boot parameters.

2.6.8 Boot from Onboard SCSI Device

Enabling this parameter allows you to boot the system from an onboard SCSI device. The system boots from the drive specified in the System Boot Drive parameter when this parameter is set to `Disabled`. This item is grayed and non-configurable when the Onboard SCSI parameter under the Onboard Devices Configuration menu is disabled.

2.7 Advanced Configuration

The Advanced Configuration option allows you to configure the advanced system memory functions.



Do not change any settings in the Advanced Configuration if you are not a qualified technician to avoid damaging the system.

The following screen shows the Advanced Configuration parameters.

Advanced Configuration
Onboard Devices Configuration PnP/PCI System Configuration Memory/Cache Configuration
↑↓ = Move Highlight Bar, → ← = Change Setting, F1 = Help

2.7.1 Onboard Devices Configuration

The Onboard Devices Configuration allows you to configure the onboard communication ports and the onboard devices. Selecting this option from the Advanced Configuration menu displays the following screen:

Onboard Devices Configuration		Page 1/2
Serial Port 1	[Disabled]	
Base Address	[--]	
IRQ	[--]	
Serial Port 2	[Enabled]	
Base Address	[2F8h]	
IRQ	[10]	
Parallel Port	[Enabled]	
Base Address	[378h]	
IRQ	[5]	
Operation Mode	[Standard]	
ECP DMA Channel	[-]	

↑↓ = Move Highlight Bar, → ← = Change Setting, F1 = Help
PgDn/PgUp = Move Screen

The following screen shows page 2 of the Onboard Devices Configuration menu.

Onboard Devices Configuration	Page 2/2
<pre> Onboard Floppy Disk Controller[Disabled] Onboard IDE Primary Channel[Enabled] Onboard IDE Secondary Channel[Enabled] Onboard PS/2 Mouse (IRQ 12)[Enabled] Onboard USB[Disabled] USB Legacy Mode[-----] Onboard SCSI[Disabled] </pre>	
↑↓ = Move Highlight Bar, → ← = Change Setting, F1 = Help PgDn/PgUp = Move Screen	

Serial Port 1

This parameter allows you to enable or disable the serial port 1. The Base Address and IRQ items are configurable only if this parameter is enabled.

BASE ADDRESS

This function lets you set a logical base address for serial port 1. The options are:

- 3F8h
- 2F8h
- 3E8h
- 2E8h

IRQ

This function lets you assign an interrupt for serial port 1. The options are IRQ 3 and 4.

Serial Port 2

This parameter allows you to enable or disable the serial port 2. The Base Address and IRQ items are configurable only if this parameter is enabled.

BASE ADDRESS

This function lets you set a logical base address for serial port 2. The options are:

- 3F8h
- 2F8h
- 3E8h
- 2E8h

IRQ

This function lets you assign an interrupt for serial port 2. The options are IRQ 3 and 4.



If you assign 3F8h to serial port 1, you may only assign 2F8h or 2E8h to serial port 2.

If you assign 2F8h to serial port 1, you may only assign 3F8h or 3E8h to serial port 2.

Parallel Port

This parameter allows you to enable or disable the parallel port.

BASE ADDRESS

This function lets you set a logical base address for the parallel port. The options are:

- 3BCh
- 378h
- 278h

IRQ

This function lets you assign an interrupt for the parallel port. The options are IRQ 5 and 7.



The Base Address and IRQ parameters are configurable only if Parallel Port is enabled.

If you install an add-on card that has a parallel port whose address conflicts with the parallel port onboard, the system automatically disables the onboard functions.

Check the parallel port address on the add-on card and change the address to one that does not conflict.

OPERATION MODE

This item allows you to set the operation mode of the parallel port. Table 2-1 lists the different operation modes.

Table 2-1 Parallel Port Operation Mode Settings

Setting	Function
Standard Parallel Port (SPP)	Allows normal speed one-way operation
Standard and Bidirectional	Allows normal speed operation in a two-way mode
Enhanced Parallel Port (EPP)	Allows bidirectional parallel port operation at maximum speed
Extended Capabilities Port (ECP)	Allows parallel port to operate in bidirectional mode and at a speed higher than the maximum data transfer rate

ECP DMA CHANNEL

This item becomes active only if you select Extended Capabilities Port (ECP) as the operation mode. It allows you to assign DMA channel 1 or DMA channel 3 for the ECP parallel port function (as required in Windows 95).

Onboard Floppy Disk Controller

This parameter lets you enable or disable the onboard floppy disk controller.

Onboard IDE Primary Channel

This parameter lets you enable or disable the primary IDE channel. When enabled, it allows you access the devices connected to the primary channel. When disabled, it deactivates the connected devices.

Onboard IDE Secondary Channel

This parameter lets you enable or disable the secondary IDE channel. When enabled, it allows you access the devices connected to the primary channel. When disabled, it deactivates the connected devices.

Onboard PS/2 Mouse (IRQ 12)

This parameter enables or disables the onboard PS/2 mouse. When enabled, it allows you to use the onboard PS/2 mouse assigned with IRQ12. When disabled, it deactivates the mouse and makes IRQ12 available for use of other devices.

Onboard USB

This parameter lets you enable or disable the USB controller on board. When enabled, it activates the USB function of the system. When disabled, it also deactivates the function.

USB LEGACY MODE

This function, when enabled, lets you use a USB keyboard in DOS environment. Set this to *Disabled* to deactivate the USB keyboard function in DOS environment.

Onboard SCSI

This parameter allows you to enable or disable the onboard SCSI controller.

2.7.2 PnP/PCI System Configuration

The PnP/PCI System Configuration allows you to specify the settings for your PCI devices. Selecting this option displays the following screen.

PnP/PCI System Configuration		Page 1/2		
PCI IRQ Setting[Auto]				
	INTA	INTB	INTC	INTD
PCI Slot 1	[--]	[--]	[--]	[--]
PCI Slot 2	[--]	[--]	[--]	[--]
PCI Slot 3	[--]	[--]	[--]	[--]
PCI Slot 4	[--]	[--]	[--]	[--]
Onboard SCSI	[--]			
Onboard AGP	[--]			
PCI Device Latency Timer ...[00]				
↑↓ = Move Highlight Bar, → ← = Change Setting, F1 = Help				

PnP/PCI System ConfigurationPage 2/2

PCI IRQ Sharing [No]

VGA Palette Snoop [Disabled]

Graphics Aperture Size [8] MB

Plug and Play OS [Yes]

Reset Resource Assignments [No]

↑↓ = Move Highlight Bar, → ← = Change Setting, F1 = Help

PCI IRQ Setting

This parameter allows for Auto or Manual configuration of PCI devices. If you use plug-and-play (PnP) devices, set this parameter to Auto. The system then automatically assigns IRQ to the PnP devices. If your PCI device is not a PnP, you can manually assign the interrupt for each device. Refer to your PCI card manual for more information.







When the PCI IRQ Setting is set to Auto, all the IRQ setting fields become gray and non-configurable.

PCI SLOTS

These parameters allow you to specify the appropriate interrupt for each of the PCI devices. You can assign IRQ3, IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11, IRQ12, IRQ14, or IRQ15 to the slots.



Make sure that the interrupt you assign in any of the PCI slots are not used by other devices to avoid conflicts.

Press  or  to move between fields. Press  or  to select options.

ONBOARD SCSI

This item allows you to manually assign the interrupt for the onboard SCSI hard disk when the PCI IRQ Setting parameter is set to *Manual*. This parameter is grayed and not user-configurable when the PCI IRQ Setting is set to *Auto* and when the Onboard SCSI parameter under the Onboard Devices Configuration screen is set to *Disabled*.

ONBOARD AGP

This item shows the assigned interrupt for the onboard accelerated graphics port (AGP) controller.

PCI Device Latency Timer

This parameter allows you to set the length of time for a PCI device to use the PCI bus.

A PCI master can burst indefinitely as long as the target can source/sink the data, and no other agent requests for the bus. If another PCI device requests for the use of the PCI bus, a PCI bus arbitration takes place, and the tenure of the device currently using the PCI bus cannot go over the PCI latency time set in BIOS. This setting depends on your application. For example, if you install a high bandwidth block I/O card, e.g., FDDI, the longer the latency time the better. This setting only affects the primary PCI components (PCI slots 1, 2, 3, and onboard LAN). The secondary PCI components (PCI slots 4, 5, and onboard SCSI1 and onboard SCSI2) are always set to 20 PCI clocks.

PCI IRQ Sharing

Setting this parameter to **Yes** allows you to assign the same IRQ to two different devices. To disable the feature, select **No**.



If there are no IRQs available to assign for the remaining device function, we recommend that you enable this parameter.

VGA Palette Snoop

This parameter permits you to use the palette snooping feature if you installed more than one VGA card in the system.

The VGA palette snoop function allows the control palette register (CPR) to manage and update the VGA RAM DAC (Digital Analog Converter, a color data storage) of each VGA card installed in the system. The snooping process lets the CPR send a signal to all the VGA cards so that they can update their individual RAM DACs. The signal goes through the cards continuously until all RAM DAC data have been updated. This allows display of multiple images on the screen.



Some VGA cards have required settings for this feature. Check your VGA card manual before setting this parameter.

Graphics Aperture Size

This parameter determines the effective size of the graphics aperture. Graphics aperture is the address range that the AGP video and the CPU use to manage graphical objects. The lowest setting is 8 MB and the highest is 256 MB.

Plug and Play OS

When this parameter is set to **Yes**, BIOS initializes only PnP boot devices such as SCSI cards. When set to **No**, BIOS initializes all PnP boot and non-boot devices such as sound cards.



*Set this parameter to **Yes** only if your operating system is Windows 95.*

Reset Resource Assignments

Set this parameter to **Yes** to avoid IRQ conflict when installing non-PnP or PnP ISA cards. This clears all resource assignments and allows BIOS to reassign resources to all installed PnP devices the next time the system boots. After clearing the resource data, the parameter resets to **No**.

2.7.3 Memory/Cache Configuration

The Memory/Cache Configuration allows you to specify the appropriate settings for your system memory. Selecting the option displays the following screen:

Memory/Cache Configuration	Page 1/1
Internal Cache (CPU Cache)[Enabled] Cache Scheme[Write Back]	
System BIOS Cacheable[Enabled] Video BIOS Cacheable[Enabled]	
Memory at 15MB-16MB Reserved for[System] Memory ECC Mode[ECC]	
Single Processor MP Table[Disabled]	
↑↓ = Move Highlight Bar, → ← = Change Setting, F1 = Help	

Internal Cache (CPU Cache)

This parameter enables or disables the first-level or internal memory. The default setting is *Enabled*.

Cache Scheme

This parameter allows you to select *Write back* or *Write through* for the cache mode. *Write back* updates the cache but not the memory when there is a write instruction. It updates the memory only when there is an inconsistency between the cache and the memory. *Write through* updates both the cache and the memory whenever there is a write instruction.

System BIOS Cacheable

Set this parameter to `Enabled` if you want the system BIOS to run directly from the cache memory, thus allowing your system to function faster. Set this to `Disabled` to run the system BIOS from RAM. The default is `Enabled`.

Video BIOS Cacheable

Set this parameter to `Enabled` if you want the video BIOS to run directly from the cache memory, thus allowing your system to function faster. Set this to `Disabled` to run the video BIOS from RAM. The default is `Enabled`.

Memory at 15MB-16MB Reserved For

To prevent memory address conflicts between the system and expansion boards, reserve this memory range for the use of either the system or an expansion board.

Memory ECC Mode

This parameter allows you to select the DRAM operating mode. Setting to `ECC` turns on the error check and correct (ECC) function. ECC automatically corrects any single-bit errors detected. For multiple-bit errors detected, ECC only issues an NMI to signal the operating system of the multiple-bit error detection. Setting to `Disabled` deactivates the function.

Single Processor MP Table

Enabling this parameter allows BIOS to create a multiprocessor (MP) table for Windows NT use. In a single-processor system running Windows NT, you may disable this parameter to enhance system performance. If you install another CPU for a dual (or multiprocessor) system, enable this parameter then re-install Windows NT.

In cases when this parameter is enabled before installing Windows NT in a single-processor system, you may upgrade to a multiprocessor system without reinstalling Windows NT.

2.8 System Security Setup

The Setup program has a number of security features to prevent unauthorized access to the system and its data.

The following screen appears if select System Security from the main menu.

System Security		Page 1/1
Disk Drive Control		
Floppy Drive	[Normal]
Hard Disk Drive	[Normal]
Setup Password.....	[None]
Power On Password.....	[Present]
Operation Mode.....	[Normal]

↑↓ = Move Highlight Bar, → ← = Change Setting, F1 = Help

2.8.1 Disk Drive Control

The disk drive control features allow you to control the floppy drive or the hard disk drive boot function to prevent loading operating systems or other programs from a certain drive while the other drives are operational.

Table 2-2 lists the drive control settings and their corresponding functions.

Table 2-2 Drive Control Settings

Setting	Description
Floppy Drive	
Normal	Floppy drive functions normally
Write Protect All Sectors	Disables the write function on all sectors
Write Protect Boot Sector	Disables the write function only on the boot sector
Disabled	Disables all floppy drive functions
Hard Disk Drive	
Normal	Hard disk drive functions normally
Write Protect All Sectors	Disables the write function on all sectors
Write Protect Boot Sector	Disables the write function only on the boot sector
Disabled	Disables all hard disk functions

2.8.2 Setup Password

The Setup Password prevents unauthorized access to the BIOS utility.

Setting a Password



1. Make sure that JP9 is set to 2-3 (bypass password).

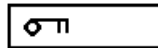


You cannot enter the BIOS utility if a Setup password does not exist and JP9 is set to 1-2 (password check enabled).

By default, JP9 is set to 2-3 (bypass password).

2. Enter BIOS utility and select System Security.


-
- Highlight the Setup Password parameter and press the  or  key. The password prompt appears:

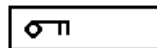
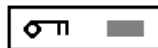


- Type a password. The password may consist of up to seven characters.





Be very careful when typing your password because the characters do not appear on the screen.

- Press . A prompt asks you to retype the password to verify your first entry.



- Retype the password then press .



After setting the password, the system automatically sets the Setup Password parameter to *Present*.

- Press  to exit the System Security screen and return to the main menu.
- Press  to exit the BIOS utility. A dialog box appears asking if you want to save the CMOS data.
- Select *Yes* to save the changes and reboot the system.
- While rebooting, turn off the system then open the housing.
- Set JP9 to 1-2 to enable the password function.



The next time you want to enter the BIOS utility, you must key-in your Setup password.



Changing or Removing the Setup Password

Should you want to change your setup password, do the following:

1. Enter the BIOS utility and select System Security.
2. Highlight the Setup Password parameter.
3. Press  or  to display the password prompt and key-in a new password.

or

Press  or  and select None to remove the existing password.

4. Press  to exit the System Security screen and return to the main menu.
5. Press  to exit the BIOS utility. A dialog box appears asking if you want to save the CMOS data.
6. Select Yes to save the changes.

Bypassing the Setup Password

If you forget your setup password, you can bypass the password security feature by hardware. Follow these steps to bypass the password:

1. Turn off and unplug the system.
2. Open the system housing and JP9 is set to 2-3 to bypass the password function.
3. Turn on the system and enter the BIOS utility. This time, the system does not require you to type in a password.



*You can either change the existing Setup password or remove it by selecting **None**. Refer to the previous section for the procedure.*

2.8.3 Power-on Password

The Power-on Password secures your system against unauthorized use. Once you set this password, you have to type it whenever you boot the system. To set this password, enter the BIOS utility, select System Security, then highlight the Power-on Password parameter. Follow the same procedure as in setting the Setup password.



Make sure to set JP9 to pins 1-2 to enable the Power-on password.

Operation Mode

This function lets you enable or disable the password prompt display. When set to *Normal*, the password prompt appears before system boot. When set to *Network*, the password prompt do not appear; however, the keyboard is locked after system boot and remains locked until the correct password is entered.



2.9 Date and Time

The real-time clock keeps the system date and time. After setting the date and time, you do not need to enter them every time you turn on the system. As long as the internal battery remains good (approximately seven years) and connected, the clock continues to keep the date and time accurately even when the power is off.

The following screen appears if you select Date and Time from the main menu.

Date and Time		Page 1/1
Date	[xxx xx xx, 199x]	
Time	[xx:xx:xx]	
↑↓ = Move Highlight Bar, → ← = Change Setting, F1 = Help		



2.9.1 Date

Highlight the items on the Date parameter and press  or  to set the date following the weekday-month-day-year format.

Valid values for weekday, month, day, and year are:

- Weekday Sun, Mon, Tue, Wed, Thu, Fri, Sat
- Month 1 to 12
- Day 1 to 31
- Year 00 to 99

2.9.2 Time

Highlight the items on the Time parameter and press  or  to set the time following the hour-minute-second format.

Valid values for hour, minute, and second are:

- Hour 00 to 23
- Minute 00 to 59
- Second 00 to 59

2.10 Load Setup Default Settings

Use this option to load the default settings for the optimized system configuration. When you load the default settings, some of the parameters are grayed-out with their fixed settings. These grayed parameters are not user-configurable.

The following dialog box appears when you select Load Setup Default Settings from the main menu.

Do you want to load default settings?

[Yes] [No]

Select **Yes** to load the default settings.

Select **No** to ignore the message and return to the BIOS utility.

2.11 Abort Settings Change

Use this option to disregard the your changes to the BIOS and reload your previous settings.

The following dialog box appears when you select Abort Settings Change from the main menu.

Do you want to abort settings change?

[Yes] [No]

Select **Yes** to disregard your changes and reload your previous settings. After reload, the main menu appears on screen.

Select **No** to ignore the message and return to the BIOS utility.

2.12 Leaving Setup

Examine the system configuration values. When you are satisfied that all the values are correct, write them down. Store the recorded values in a safe place. In the future, if the battery loses power or the CMOS chip is damaged, you will know what values to enter when you rerun Setup.

Press **ESC** to leave the system configuration setup. The following screen appears:

Do you really want to exit SETUP?	
[Yes]	[No]

Use the arrow keys to select your response. Select **Yes** to store the new data in CMOS. Select **No** to retain the old configuration values. Press **ENTER**.