Chapter 3 BIOS Utility

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.

Before you run Setup, make sure that you have saved all open files. The system reboots immediately after you exit Setup.

3.1 Entering Setup

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

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

The Setup Utility main menu then appears:

Setup Utility

```
• System Information
• Product Information
• Disk Drives
• Onboard Peripherals
• Power Management
• Boot Options
• Date and Time
• System Security
• Advanced Options*

Load Default Settings
Abort Settings Change
```

The system supports two BIOS Utility levels: Basic and Advanced. The above screen is the BIOS Utility Basic Level screen. This allows you to view and change only the basic configuration of your system.

If you are an advanced user, you may want to check the detailed configuration of your system. Detailed system configurations are contained in the Advanced Level. To view the Advanced Level, press F8. The following screen shows the Setup Utility Advanced Level main menu.

Setup Utility

- System Information
- Product Information
- Disk Drives
- Onboard Peripherals
- Power Management
- Boot Options
- Date and Time
- System Security
- Advanced Options*

Load Default Settings
Abort Settings Change

The [F8] key works only when you are in the main menu. This means that you can activate the Advanced Level only when you are in the main menu.

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

- To select an option, move the highlight bar by pressing [↑] or [↓] then press [ENTER].
- Press [PGDN] to move to the next page or [PGUP] to return to the previous page.
- To change a parameter setting, press [←] or [→] until the desired setting is found.
- Press [ESC] to return to the main menu. If you are already in the main menu, press [ESC] again to exit Setup.

The parameters on the screens show default values. These values may not be the same as those in your system.
The grayed items on the screens have fixed settings and are not user-configurable.

3.2 System Information

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

```
                System Information                Page 1/1

  Processor ........................... Pentium II
  Processor Speed ..................... 266 MHz
  Internal Cache  ..................... 32 KB, Enabled
  External Cache ...................... 512 KB, Enabled
  Floppy Drive A ...................... 1.44 MB, 3.5-inch
  Floppy Drive B ...................... None

  IDE Primary Channel Master........... Hard Disk, xxxx MB
  IDE Primary Channel Slave........... None
  IDE Secondary Channel Master ....... IDE CD-ROM
  IDE Secondary Channel Slave ........ None

  Total Memory ........................ 64 MB
    1st Bank .......................... SDRAM, 32 MB
    2nd Bank .......................... SDRAM, 32 MB
```

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

3.2.1 Processor

The Processor parameter specifies the type of processor currently installed in your system. The system supports Pentium II and Celeron processors.

3.2.2 Processor Speed

The Processor Speed parameter specifies the speed of the processor currently installed in your system.

3.2.3 Internal Cache

This parameter specifies the first-level or the internal memory (i.e., the memory integrated into the CPU) size, and whether it is enabled or disabled.

3.2.4 External Cache

This parameter specifies the second-level cache memory size currently supported by the system.

3.2.5 Floppy Drive A

This parameter specifies the system's current floppy drive A settings. For information on how to configure the floppy drives, see section 3.4.1.

3.2.6 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 3.4.1.

3.2.7 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 the IDE devices, see section 3.4.2.

3.2.8 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 the IDE devices, see section 3.4.2.

3.2.9 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 the IDE devices, see section 3.4.2.

3.2.10 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 the IDE devices, see section 3.4.2.

3.2.11 Total Memory

This parameter specifies the total amount of onboard memory. The memory size is automatically detected by BIOS during the POST (Power-On Self Test). 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 the DIMM 1 socket. A None setting indicates that there is no DRAM installed. For the location of the DIMM sockets, refer to Figure 2-1.

2nd Bank

This parameter indicates the type of DRAM installed in the DIMM 2 socket. A None setting indicates that there is no DRAM installed. For the location of the DIMM sockets, refer to Figure 2-1.

3.3 Product Information

The screen below appears if you select Product Information from the main menu.

```
Product Information

Product Name ........................... xxxxxxxxx
System S/N ............................ xxxxxxxxx
Main Board ID ......................... xxxxxxxxx
Main Board S/N ........................ xxxxxxxxx
System BIOS Version ................... V3.2
DMI BIOS Version ...................... 2.1
```

The Product Information menu contains the general data about the system, such as the product name, serial number, BIOS version, etc. This information is necessary for troubleshooting (may be required when asking for technical support).

3.3.1 Product Name

This parameter specifies the official name of your system.

3.3.2 System S/N

This parameter specifies your system's serial number.

3.3.3 Main Board ID

This parameter specifies your system board's identification number.

3.3.4 Main Board S/N

This parameter specifies your system board's serial number.

3.3.5 System BIOS Version

This parameter specifies the version of your system's BIOS utility.

3.3.6 DMI BIOS Version

The Desktop Management Interface (DMI) BIOS allows you to check your system hardware components without actually opening your system. Hardware checking is done via software during start up. This parameter specifies the version of the DMI BIOS utility installed in your system.

3.4 Disk Drives

Select Disk Drives from the main menu to configure the drives installed in your system. The following screen shows the Disk Drives menu:

```
Disk Drives

Floppy Drive A ........... [xx-MB xx-inch]
Floppy Drive B ........... [None ]

• IDE Primary Channel Master
• IDE Primary Channel Slave
• IDE Secondary Channel Master
• IDE Secondary Channel Slave
```

3.4.1 Floppy Drives

To enter the configuration value for the first floppy drive (drive A), highlight the Floppy Drive A parameter. Press → or ← to view the options and select the appropriate value. Possible settings for the Floppy Drive parameters are:

- [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.

3.4.2 IDE Drives

To configure the IDE drives connected to your system, select the parameter that represents the channel and port where the desired hard disk to configure is connected. The options are:

IDE Primary Channel Master

This parameter lets you configure the hard disk drive connected to the master port of IDE channel 1.

IDE Primary Channel Slave

This parameter lets you configure the hard disk drive connected to the slave port of IDE channel 1.

IDE Secondary Channel Master

This parameter lets you configure the hard disk drive connected to the master port of IDE channel 2.

IDE Secondary Channel Slave

This parameter lets you configure the hard disk drive connected to the slave port of IDE channel 2.

The following screen appears if you select any of the IDE drive parameters:

```
                    IDE Primary/Secondary
                     Channel Master/Slave

    Type........................... [ Auto ]
      Cylinder..................... [ XXXX ]
      Head......................... [ XXXX ]
      Sector....................... [ XXXX ]
      Size......................... [ XXXX ] MB


    Hard Disk Size > 504MB......... [ Auto ]
   *Hard Disk Block Mode........... [ Auto ]
   *Advanced PIO Mode.............. [ Auto ]
   *Hard Disk 32 Bit Access........ [Enabled]
   *DMA Transfer Mode.............. [ Auto ]
   *CD-ROM Drive DMA Mode.......... [Disabled]
```

Type

This parameter lets you specify the type of hard disk installed in your system. If you want BIOS to automatically configure your hard disk, select Auto. If you know your hard disk type, you can enter the setting manually.
Setting this parameter also sets the Cylinder, Head, Sector, and Size parameters.

Cylinders

This parameter specifies your hard disk's number of cylinders, and is automatically set depending on your Type parameter setting.

Heads

This parameter specifies your hard disk's number of heads, and is automatically set depending on your Type parameter setting.

Sectors

This parameter specifies your hard disk's number of sectors, and is automatically set depending on your Type parameter setting.

Size

This parameter specifies the size of your hard disk in MB.

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, this enhanced IDE feature works only under a DOS or Windows 3.x/95/98 environment. Other operating systems require this parameter to be set to Disabled.

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.

This parameter appears only when you are in the Advanced Level.

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 in better hard disk performance. To disregard the feature, change the setting to Disabled.

This parameter appears only when you are in the Advanced Level.

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/95/98, and Novell NetWare. If your software or hard disk does not support this function, set this parameter to Disabled.

This parameter appears only when you are in the Advanced Level.

DMA Transfer Mode

The Ultra DMA and Multi-DMA modes enhance hard disk performance by increasing the transfer rate. However, besides enabling these features in the BIOS Setup, both the Ultra DMA and Multi-DMA modes require the DMA driver to be loaded. By setting this parameter to `Auto`, BIOS automatically sets the appropriate DMA mode for your hard disk.

This parameter appears only when you are in the Advanced Level.

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`.

This parameter appears only when you are in the Advanced Level.

3.5 Onboard Peripherals

The Onboard Peripherals menu allows you to configure the onboard devices. Selecting this option from the main menu displays the following screen:

```
                    Onboard Peripherals

   Serial Port 1 .......................[Enabled ]
      Base Address .....................[3F8h]
      IRQ ..............................[ 4 ]

   Parallel Port .......................[Enabled ]
      Base Address .....................[378h]
      IRQ ..............................[ 7 ]
      Operation Mode ...................[Bi-Directional]
        ECP DMA Channel ................[ - ]

   •   Onboard Device Settings
```

3.5.1 Serial Port 1

This parameter allows you to enable or disable serial port 1.

Base Address

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

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

IRQ

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

The Base Address and IRQ parameters are configurable only if the Serial Port parameter is enabled.

3.5.2 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 the Parallel Port is enabled.

If you install an add-on card that has a parallel port whose address conflicts with the parallel port on board, a warning message appears on the screen.

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 3-1 lists the different operation modes.

Table 3-1 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).

3.5.3 Onboard Device Settings

The Onboard Device Settings menu allows you to configure the device controllers available on board. Selecting this option from the Onboard Peripherals menu displays the following screen:

```
                    Onboard Device Settings

   Floppy Disk Controller ..............[Enabled ]
   IDE Controller ......................[Both ]
   PS/2 Mouse Controller ...............[Enabled ]
   USB Host Controller .................[Enabled ]
     USB Legacy Mode ...................[Disabled]
   Onboard Audio Chip ..................[Enabled ]
   Onboard Ethernet Chip ...............[Enabled ]
```

Floppy Disk Controller

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

IDE Controller

Set this parameter to `Primary` to enable only the primary IDE channel; `Secondary` to enable only the secondary IDE channel; `Both` to enable both primary and secondary IDE channels; or `Disabled` to disable the onboard IDE controllers.

PS/2 Mouse Controller

This parameter enables or disables the onboard PS/2 mouse controller.

USB Host Controller

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 deactivates the function.

USB Legacy Mode

This function, when enabled, lets you use a USB keyboard in a DOS environment. Set this to `Disabled` to deactivate the USB keyboard function in DOS. This parameter is configurable only if the USB Host Controller parameter is enabled.

Onboard Audio Chip

This parameter lets you enable or disable the onboard audio controller. If you install an audio card into your system, you must disable this parameter for the card to work properly.

Onboard Ethernet Chip

This parameter lets you enable or disable the onboard ethernet controller. If you install an ethernet card into your system, you must disable this parameter for the card to work properly.

3.6 Power Management

The Power Management menu lets you configure the system power-management feature.
The following screen shows the Power Management parameters and their default settings:

```
                    Power Management

Power Management Mode ...............[Enabled ]
   IDE Hard Disk Standby Timer  ......[Off]
   System Sleep Timer  ...............[Off]
     Sleep Mode  ......................[----]

Power Switch < 4 Sec.................[Suspend]

Schedule Resume from Suspend.........[Disabled]
  Resume Time........................[--:--:--]

System Wake-Up Event
  Modem Ring Indicator...............[Enabled]
```

3.6.1 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 it to Disabled deactivates the power-management feature and its 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 automatically puts the system into power-saving mode after a specified period of inactivity. Any keyboard or mouse action, or any activity detected from the IRQ channels, resumes system operation.

Sleep Mode

This parameter lets you specify the power-saving mode that the system will enter after a specified period of inactivity. The options are Standby or Suspend mode.

This parameter becomes configurable only if the System Sleep Timer is enabled. Any keyboard or mouse action, or any enabled monitored activity occurring through the IRQ channels, resumes system operation.

3.6.2 Power Switch < 4 sec.

When set to `Power Off`, the system automatically turns off when the power switch is pressed. When set to `Suspend`, the system enters the suspend mode.

3.6.3 Schedule Resume from Suspend

This parameter allows you to set a certain time to wake-up your system from suspend mode. The default setting is `Disabled`.

Resume Time

If Schedule Resume from Suspend is enabled, the system will resume operation at the time indicated here.

3.6.4 System Wake-Up Event

This parameter lets you specify the activity that will resume the system to normal operation.

Modem Ring Indicator

When `Enabled`, any fax/modem activity wakes the system from Sleep mode.

3.7 Boot Options

This option allows you to specify your preferred settings for bootup.
The following screen appears if you select Boot Options from the main menu:

```
                    Boot Options
```

```
Boot Sequence
  1st [Floppy Disk]
  2nd [Hard Disk]
  3rd [CD-ROM]

First Hard Disk Drive .................[IDE]
Primary Display Adapter ...............[Auto]

Fast Boot .............................[Auto ]
Silent Boot ...........................[Enabled ]
Num Lock After Boot ...................[Enabled ]
Memory Test ...........................[Disabled]
*Configuration Table ..................[Enabled ]
*Boot from LANDesk Service Agent .......[Disabled]
```

The parameters marked with '' will only appear if you access the advanced configuration level in the Main Menu. Please refer to section 3.1 for more information.*

3.7.1 Boot Sequence

This parameter allows you to specify the boot search sequence. To change the order of devices, simply press → or ←.

3.7.2 First Hard Disk Drive

This parameter specifies whether the BIOS utility will boot from an IDE hard disk drive or a SCSI hard disk drive. The system will automatically boot from an IDE hard disk if your system does not have a SCSI hard disk drive. The default setting is IDE.

3.7.3 Primary Display Adapter

Setting this parameter to Onboard enables the onboard video controller. Normally, the onboard video controller is considered as the primary display adapter. If you installed a video card into your system, set this parameter to Auto. BIOS will automatically disable the onboard video controller and consider the video card as the primary display adapter.

3.7.4 Fast Boot

Setting this parameter to **Auto** allows the system to boot faster by skipping some POST routines. Select **Disabled** to return to the normal booting process.

3.7.5 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. Then, the screen displays the operating system prompt (as in DOS) or logo (as in Windows 95). If any error occurs 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 F9 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.

3.7.6 Num Lock After Boot

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

3.7.7 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**.

3.7.8 Configuration Table

This parameter allows you to enable or disable the appearance of the configuration table after POST but before booting. The configuration table gives a summary of the hardware devices and settings that BIOS detected during POST.

3.7.9 Boot from LanDesk Service Agent

The LanDesk Service Agent is a pre-boot agent that enables the system to be booted from a remote management server. It allows the Configuration Manager to take control of the system configuration before the system's operating system boots. You may find remote booting useful when installing, repairing, or upgrading the system's OS and other installed applications.

Set this parameter to Enabled to allow the system to boot from LanDesk Service Agent. Otherwise, select disabled.

3.8 Date and Time

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

```
Date and Time

Date ..................... [WWW MM DD, YYYY]
Time ..................... [HH:MM:SS]
```

3.8.1 Date

Highlight the items of 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 1980 to 2079

3.8.2 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

3.9 System Security

The Setup program has a number of security features to prevent unauthorized access to the system and its data.
The following screen appears if you select System Security from the main menu:

```
System Security

Setup Password ................. [   None   ]
Power-on Password .............. [   None   ]
```

3.9.1 Setup Password

The Setup Password prevents unauthorized access to the BIOS utility.

Setting a Password

1. Make sure that switch no. 2 of SW1 is set to Off (bypass password).

You cannot enter the BIOS utility if a Setup password does not exist and switch no. 2 of SW1 is set to On (password check enabled).

By default, switch no. 2 of SW1 is set to Off (bypass password).

2. Enter the BIOS utility and select System Security.

3. Highlight the Setup Password parameter and press ← or →. The following screen appears:

```
Setup Password

Enter your new Password twice.  Password
may be up to 7 characters long.


Enter Password ................. [XXXXXXX]
Enter Password again ........... [XXXXXXX]


Set or Change Password
```

4. Type a password. The password may consist of up to seven characters. Then press [ENTER].

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

5. Retype the password then press [ENTER].

6. The Set or Change Password option will be highlighted. Press [ENTER] to set the new password.

7. Press [ESC] to return to the System Security screen.

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

9. Press [ESC] to exit the BIOS utility. A dialog box appears asking if you want to save the CMOS data.

10. Select Yes to save the changes and reboot the system.

11. After rebooting, turn off the system and then open the housing.

12. Set switch no. 2 of SW1 to On 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 and press ← or → to remove the old password.
3. Press ← or → again, and the Setup Password screen appears.
4. Enter a new password.
5. Enter the new password again.
6. The Set or Change Password option will be highlighted. Press ENTER to set the new password.
7. Press ESC to return to the System Security screen.
8. Press ESC to return to the main menu.
9. Press ESC to exit the BIOS utility. A dialog box appears asking if you want to save the CMOS data.
10. Select Yes to save the changes.

To remove the password, simply select the Setup Password parameter from the System Security menu and press ← or → to set it to None.

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 set switch no. 2 of SW1 to Off 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.*

3.9.2 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 switch no. 2 of SW1 is set to On 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 Keyboard Lock, the password prompt does not appear; however, your system will not respond to any keyboard or mouse input until you enter the correct password.
The default setting is Normal.

3.10 Advanced Options

The Advanced Options selection is available only in the Advanced Level.

The Advanced Options menu allows you to configure the system memory, onboard peripherals, and PCI device settings.

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

The following screen shows the Advanced Options parameters:

Advanced Options
• *Memory/Cache Options • *PnP/PCI Options

3.10.1 Memory/Cache Options

Selecting Memory/Cache Options from the Advanced Options menu displays the following screen:

```
                    Memory/Cache Options

   *Internal Cache (CPU Cache) .........[Enabled ]
   *External Cache  ....................[Enabled ]
      *Cache Scheme ....................[Write-back]

   *Memory at 15MB-16MB Reserved for  ..[System]
   *Memory Parity Mode .................[Disable]
```

This menu lets you configure the system memory.

Internal Cache (CPU Cache)

This parameter enables or disables the primary cache memory, i.e., the CPU memory. The default setting is Enabled.

External Cache

This parameter enables or disables the secondary cache memory.
The default setting is **Enabled**.

Cache Scheme

This parameter display the cache scheme in Write-back 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.

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.

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

Memory Parity Mode

This parameter allows you to enable or disable the ECC (Error Checking and Correction) feature. The ECC feature enables BIOS to detect and correct data errors. Disable this parameter if you want to disregard the function.

3.10.2 PnP/PCI Options

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

```
                    PnP/PCI Options

   *PCI IRQ Setting  ..........[  Auto  ]
                               INTA   INTB   INTC   INTD
      *PCI Slot 1 .............[--]   [--]   [--]   [--]
      *PCI Slot 2 .............[--]   [--]   [--]   [--]
      *PCI Slot 3 .............[--]   [--]   [--]   [--]

   *PCI IRQ Sharing ............ [Yes]
   *VGA Palette Snoop  ......... [Disabled]
   *Plug and Play OS ........... [Yes]
   *Reset Resource Assignments . [No ]
```

PCI IRQ Setting

Select **Auto** to let BIOS automatically configure the plug-and-play (PnP) devices installed in your system. Otherwise, select **Manual.**

Refer to your manual for technical information about the PCI card.

PCI Slots

When you set the PCI IRQ Setting parameter to Auto, these parameters specify the auto-assigned interrupt for each of the PCI devices. If you set the PCI IRQ Setting parameter to Manual, you need to specify the interrupt that you want to assign for each PCI device installed in your system.

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 has been updated. This allows the 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.

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 (or higher).*

Reset Resource Assignments

Set this parameter to Yes to avoid IRQ conflicts 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.
Refer to section 4.3.2 for instructions on installing and configuring ISA cards.

3.11 Load Default Settings

You need to reload the BIOS default settings every time you make changes to your system hardware configuration (such as memory size, CPU type, hard disk type, etc.); otherwise, BIOS will keep the previous CMOS settings. Selecting this option displays the following dialog box:

```
Do you want to load default settings?

[Yes]                [No]
```

Choosing **Yes** enables BIOS to automatically detect the hardware changes that you have made in your system. This option also allows you to restore the default settings.
Choosing **No** returns you to the main menu without loading the default settings.

3.12 Abort Settings Change

Selecting the Abort Settings Change option from the main menu displays the following dialog box:

```
Do you want to abort settings change?

[Yes]                [No]
```

Choosing **Yes** discards all the changes that you have made and reverts the parameters to their previously saved settings.
Choosing **No** returns you to the main menu. BIOS retains all changes that you have made.

3.13 Exiting Setup

To exit the BIOS utility, simply press ESC. The following dialog box appears:

```
Do you really want to exit SETUP?

[Yes]                [No]
```

Select **Yes** to exit Setup. Select **No** to return to the main menu. If you have made changes in the parameter settings, the following dialog box appears:

```
Settings have been changed.
Do you want to save CMOS settings?

[Yes]                [No]
```

Select **Yes** to save your changes before you exit Setup. Select **No** to discard all changes and exit Setup.