V65MA Motherboard

This file describes the system board and all its major components, including:

· Details about the system board layout

· Jumper and connector locations and functions

· Jumper settings

The V65MA system board supports the Intel Pentium II processor with MMX (MultiMedia eXtensions) technology and the Celeron processor. The Pentium II comes in a card design with 512-KB second-level cache already integrated. The Celeron processor is Intel's Pentium II cost-down solution. It
comes with 0- or 128-KB second-level cache. Both are capable of handling multimedia functions and enhancing the performance of 32-bit applications. The system memory is upgradeable to 256 MB via the two onboard 168-pin DIMM Double In-line Memory Module) sockets. These sockets accommodate 8-, 16-, 32- , 64- and 128-MB DIMMs.
The board also incorporates a 3-D video controller with AGP (Accelerated Graphics Port), 2- or 4-MB SGRAM (Synchronous Graphics Random Access Memory), and a 3-D audio controller to fully support multimedia functions. Onboard I/O (input/output) interfaces are comprised of a UART (Universal
Asynchronous Receiver-Transmitter) 16C550 serial port, a parallel port with SPP Standard Parallel Port)/ECP (Extended Capabilities Port)/EPP (Enhanced Parallel Port) support, and PS/2 keyboard and mouse ports. Two USB (Universal Serial Bus) ports, one VGA (Video Graphics Accelerator) port, one Feature connector, one mono Microphone-in port, one stereo Line-in port, one Line-out port, and one Game/MIDI (Musical Instrument Digital Interface) port are also added to the board design to enable the system to support additional peripherals.

For expansion, the board comes with two ISA (Industry Standard Architecture) slots and two PCI (Peripheral Component Interface) slots.

Special features such as PnP (Plug-and-Play) support, Power Management, Wireless Communication, Hardware Monitoring, Modem Ring-in, and Wake-on LAN (Local Area Network) functions are also supported. These functions are

individually discussed in this chapter. The system is fully compatible with MS-DOS V6.X, OS/2, SCO UNIX, Windows NT, and Windows 95/98 operating systems.

Major Components

The system board has the following major components:

· A CPU (Central Processing Unit) connector that supports either of the following:

· Pentium II processor running at 266, 300, or 333 MHz

· Celeron processor running at 266, 300, 333, 366, or 400 MHz

· Supports 0-, 128-KB (Celeron processor), or 512-KB (Pentium II) SRAM (Synchronous Random Access Memory) second-level cache

· Two DIMM sockets that accept 8-, 16-, 32-, 64-, and 128-MB Standard DRAMs. These sockets allow memory upgrade of up to 256 MB

· PCI local bus IDE (Integrated Device Electronics) controller

· 3-D audio controller

· AGP-compliant 3-D video graphics accelerator with 2- or 4-MB SGRAM

· One Feature connector

· One Wake-on LAN connector

· One Modem ring-in connector

· One Modem connector

· One reserved IrDA (Infrared Data Association) connector

· Two PCI enhanced IDE interfaces that support up to four IDE devices

· External ports

· PS/2 keyboard and mouse ports

· One buffered high-speed serial port

· One SPP/ECP/EPP high-speed parallel port

· Two USB ports

· One standard VGA port

· One mono Microphone-in port

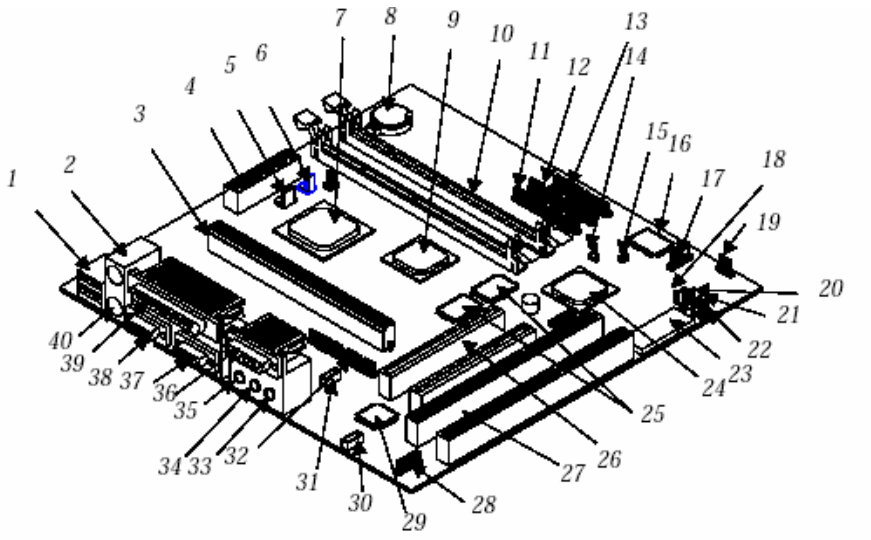
· One stereo Line-in port

· One stereo Line-out port

· One Game/MIDI port

· Two ISA and two PCI slots (one PCI-/ISA-shared)

This diagram shows the locations of the major components on the system board.

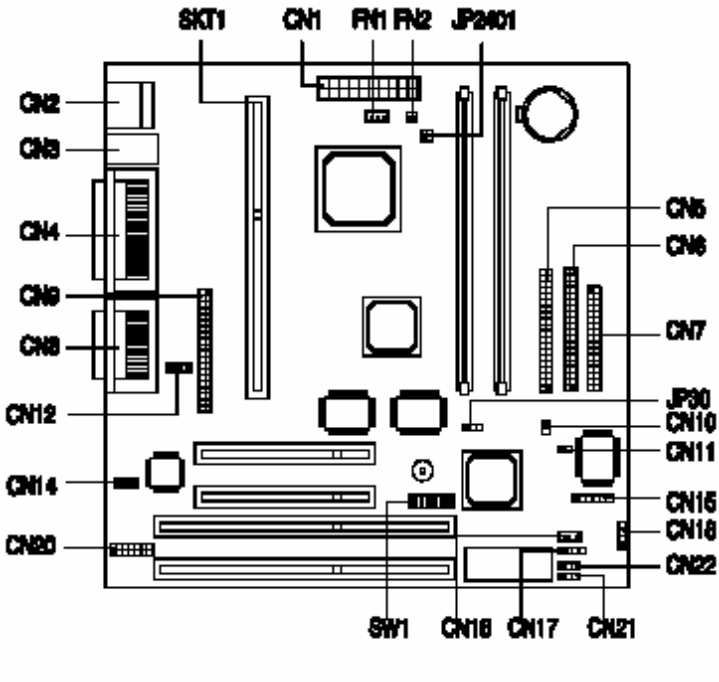


1 USB ports
2 PS/2 mouse port
3 CPU card connector
4 Power connector
5 3-pin fan connector
6 2-pin fan connector
7 PCI, AGP, memory controller
8 Battery
9 3-D AGP video controller
10 DIMM sockets
11 IDE1 connector
12 IDE2 connector
13 FDD connector
14 Power switch connector
15 Reset connector
16 Ultra I/O controller
17 IrDA connector
18 Wake-on LAN connector
19 HDD LED connector
20 Modem ring-in connector
21 3-pin power LED connector

22 Turbo LED connector
23 System BIOS chip
24 PCI-to-ISA bridge controller
25 Video memory
26 PCI slots
27 ISA slots
28 Audio feature connector
29 3-D audio controller
30 CD line-in connector
31 Fax/modem connector
32 ATI multimedia feature connector
33 Microphone-in port
34 Line-in port
35 Line-out port
36 Game/MIDI port
37 VGA port
38 COM1 port
39 Parallel port
40 PS/2 keyboard port

Jumpers and Connectors

Locations



The shaded pin indicates pin 1.

Jumper Settings

To reconfigure the system, you need to set JP30 and SW1 switch jumpers. The following table lists the possible jumper settings:

Jumper	Setting	Function
JP30	1-2 * 2-3	**VGA IRQ Assignment** Disabled Enabled
SW1 Settings		
Switch No.	**Setting**	**Function**
1	On * Off	**Password** Bypass password Check password
2		Reserved
3 4 5 6 On Off Off On Off On On On Off On Off On Off Off On On Off Off Off On On On On Off		**CPU Frequency (MHz)** 233 266 300 333 366 400

Onboard Connectors

Connector	Function
CN1	20-pin power connector
CN2	USB ports
CN3	**Upper:** PS/2 mouse port **Lower:** PS/2 keyboard port
CN4	**Upper:** Parallel port **Lower:** VGA port (left) COM1 port (right)
CN5	Primary IDE connector
CN6	Secondary IDE connector
CN7	Floppy disk drive connector
CN8	**Upper:** Game/MIDI port **Lower:** (L-to-R) Stereo line-out port Stereo line-in port Mono microphone-in port
CN9	ATI feature connector
CN10	Power switch connector
CN11	Reset connector
CN12	Fax/modem connector
CN14	CD line-in connector
CN15	IrDA connector (reserved)
CN16	Wake-on LAN connector
CN17	Modem ring-in connector
CN18	HDD LED connector
CN20	Audio connector
CN21	Turbo LED connector
CN22	3-pin power LED connector
FN1	3-pin fan connector
FN2	2-pin fan connector
JP2401	Thermal sensor connector 1-2: SYS TMP 3-4: CPU TMP

IDE Hard Disk Support

The board comes with an enhanced PCI IDE controller that supports PIO mode 4 and Ultra DMA (Direct Memory Access) mode data transfers. In addition, two PCI IDE interfaces are mounted on the riser card to enable the system to support a maximum of four IDE hard disks, or any other IDE devices

IDE Connector	Master	Slave
IDE1 (CN5)	Hard disk 0	Hard disk 1
IDE2 (CN6)	Hard disk 2/ IDE CD-ROM drive	Hard disk 3

Video Function

The onboard video controller is capable not only of enhancing video display, but supporting 3-D video applications as well. The video controller features the Accelerated Graphics Port (AGP) design - the latest bus architecture that is considered to be the best solution for 3-D applications. AGP offers greater bandwidth; thus, it is capable of speeding up the VGA bus in order to meet the requirement of 3-D applications.

The board may come with 2-MB or 4-MB video memory. Larger video memory allows you to display higher resolutions and more colors.

Resolution	bpp	Vertical Freq. (Hz)	Horizontal Freq. (KHz)
640 x 480	8/16/24/32	60	31.5
640 x 480	8/16/24/32	72	37.4
640 x 480	8/16/24/32	75	37.5
640 x 480	8/16/24/32	85	43.3
640 x 480	8/16/24/32	90	48.0
640 x 480	8/16/24/32	100	52.9
640 x 480	8/16/24/32	120	63.7
640 x 480	8/16/24/32	160	84.1
640 x 480	8/16/24/32	200	100.2
800 x 600	8/16/24/32	48	33.8
800 x 600	8/16/24/32	56	35.2
800 x 600	8/16/24/32	60	37.8
800 x 600	8/16/24/32	70	44.5
800 x 600	8/16/24/32	72	48.0
800 x 600	8/16/24/32	75	46.9
800 x 600	8/16/24/32	85	53.7

Resolution	bpp	Vertical Freq. (Hz)	Horizontal Freq. (KHz)
800 x 600	8/16/24/32	100	62.5
800 x 600	8/16/24/32	120	76.0
800 x 600	8/16/24	160	99.6
800 x 600	8/16	200	125.9
1024 x 768	8/16/24/32	43	35.5
1024 x 768	8/16/24/32	60	48.4
1024 x 768	8/16/24/32	70	56.5
1024 x 768	8/16/24/32	72	58.2
1024 x 768	8/16/24/32	75	60.0
1024 x 768	8/16/24/32	85	68.7
1024 x 768	8/16/24/32	90	76.2
1024 x 768	8/16/24/32	100	79.0
1024 x 768	8/16/24	120	96.7
1024 x 768	8/16	140	113.3
1024 x 768	8	150	120.6
1152 x 864	8/16/24/32	43	45.9
1152 x 864	8/16/24/32	47	44.9
1152 x 864	8/16/24/32	60	54.9
1152 x 864	8/16/24/32	70	66.1
1152 x 864	8/16/24/32	75	75.1
1152 x 864	8/16/24/32	80	76.4
1152 x 864	8/16/24	85	77.1
1152 x 864	8/16	100	90.2
1152 x 864	8/16	120	108.6
1280 x 1024	8/16/24	43	50.0
1280 x 1024	8/16/24	47	50.0
1280 x 1024	8/16/24	60	64.0
1280 x 1024	8/16/24	70	74.6
1280 x 1024	8/16/24	74	77.9

Resolution	bpp	Vertical Freq. (Hz)	Horizontal Freq. (KHz)
1280 x 1024	8/16/24	75	80.0
1280 x 1024	8/16	85	91.2
1280 x 1024	8/16	90	96.2
1280 x 1024	8/16	100	106.7
1600 x 1200	8/16	52	68.0
1600 x 1200	8/16	58	75.0
1600 x 1200	8/16	60	76.2
1600 x 1200	8/16	66	82.7
1600 x 1200	8/16	72	89.7
1600 x 1200	8/16	75	93.8

Audio Function

The board provides a complete 3-D audio solution via the onboard 3-D audio controller and the following audio connectors:

· Mono microphone port

· Stereo line-in port

· Stereo line-out port

· Game/MIDI port

· CD-in connector

· Modem connector

These connectors enable the system to accommodate external audio devices.

USB

USB (Universal Serial Bus) is a new serial bus design that is capable of cascading low-/medium-speed peripherals (less than 12 Mbps) such as a keyboard, mouse, joystick, scanner, printer and modem/ISDN. With USB, complex cable connections at the back panel of your PC can be eliminated. The board comes with two USB ports (CN2).

Hardware Monitoring Function

The Hardware Monitoring function allows you to check the system resources, either locally or in a computer network, by using software such as Intel LDCM (LAN Desk Client Manager). Intel LDCM is a desktop management program that offers the SMART (System Monitoring Analysis and Reporting Technology) monitor function for checking local or network connected systems. In addition, it also enables the PC products and applications to be OS (operating system) independent.
To enable the Hardware Monitoring function, you need to install Intel LDCM. Contact your dealer for information on the availability of the software. Refer to the software documentation for more details on the Hardware Monitoring function.

Modem Ring-in Function

The Modem Ring-in function (CN17) enables the system to resume from suspend mode by monitoring the fax/modem (or any device of similar type) activities. Any signal or activity detected from the Modem ring-in connector automatically returns the system to normal operation.

Wake-on LAN Function

The system supports the Wake-on LAN feature via the onboard Wake-on LAN connector (CN16). This special feature allows the system to be activated via a network. Common network functions, such as remote access, file sharing, etc. are also supported.

System Memory

The system memory is upgradable to a maximum of 256 MB via two 168-pin DIMM sockets on board. These DIMM sockets accept DRAMs with 8-, 16-, 32-, 64-, and 128-MB capacities, 60 ns (nanoseconds) or less access time, and with ECC.

DIMM1	DIMM2	Total Memory
8 MB		8 MB
16 MB		16 MB
32 MB		32 MB
64 MB		64 MB
128 MB		128 MB
	8 MB	8 MB
	16 MB	16 MB
	32 MB	32 MB
	64 MB	64 MB
	128 MB	128 MB
8 MB	16 MB	24 MB
16 MB	32 MB	48 MB
32 MB	64 MB	96 MB
64 MB	128 MB	192 MB
8 MB	8 MB	16 MB
16 MB	16 MB	32 MB
32 MB	32 MB	64 MB
64 MB	64 MB	128 MB
128 MB	128 MB	256 MB

V65MA 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.

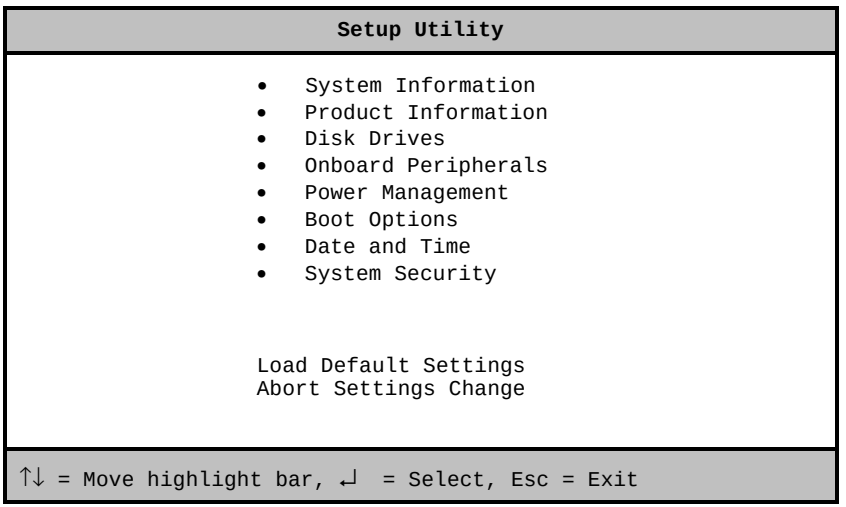
Before you run Setup, make sure that you have saved all open files. The system reboots immediately after you exit Setup.

Entering Setup

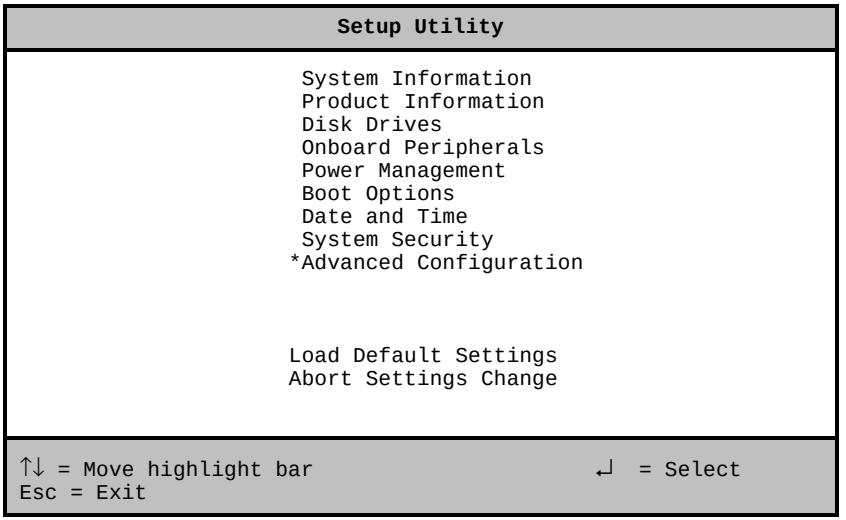
To enter Setup, press the key combination CTRL+ALT+ESC.

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:



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.



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.

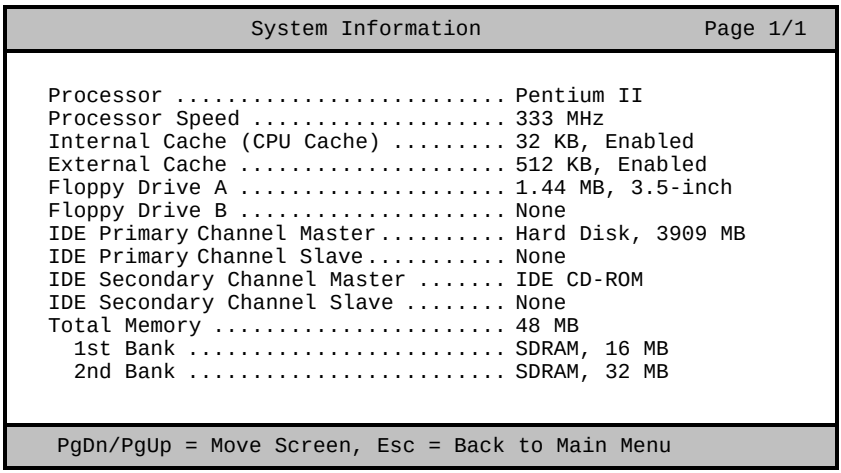
- To select an option, move the highlight bar by pressing ↑ or ↓ then press ENTER.
- Press PGDN to move to the next page or PGUP to return to the previous page.
- To change a parameter setting, press ← or → until the desired setting is found.
- Press ESC to return to the main menu. If you are already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

System Information

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



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

Processor

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

Processor Speed

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

Internal Cache (CPU 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.

External Cache

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

Floppy Drive A

This parameter specifies the system's current floppy drive A settings.

Floppy Drive B

This parameter specifies the system's current floppy drive B settings.

IDE Primary Channel Master

This parameter specifies the current configuration of the IDE device connected to the master port of the primary IDE channel.

IDE Primary Channel Slave

This parameter specifies the current configuration of the IDE device connected to the slave port of the primary IDE channel.

IDE Secondary Channel Master

This parameter specifies the current configuration of the IDE device connected to the master port of the secondary IDE channel.

IDE Secondary Channel Slave

This parameter specifies the current configuration of the IDE device connected to the slave port of the secondary IDE channel.

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

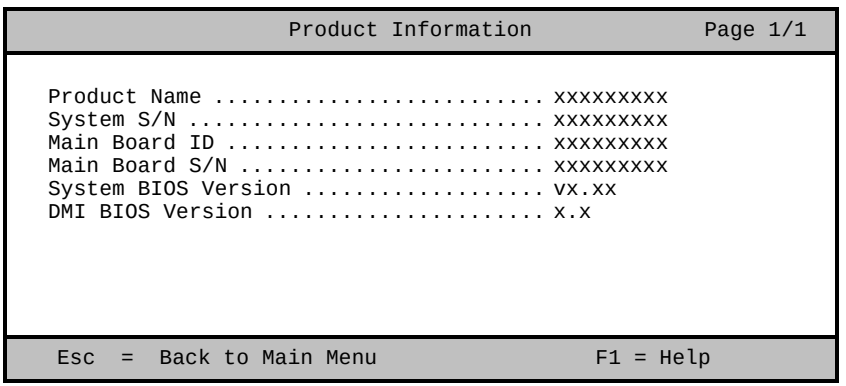
This parameter indicates the type of DRAM installed in the DIMM 1 socket. The None setting indicates that there is no DRAM installed.

2nd Bank

This parameter indicates the type of DRAM installed in the DIMM 2 socket. The None setting indicates that there is no DRAM installed.

Product Information

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



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).

Product Name

This parameter specifies the official name of your system.

System S/N

This parameter specifies your system's serial number.

Main Board ID

This parameter specifies your system board's identification number.

Main Board S/N

This parameter specifies your system board's serial number.

System BIOS Version

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

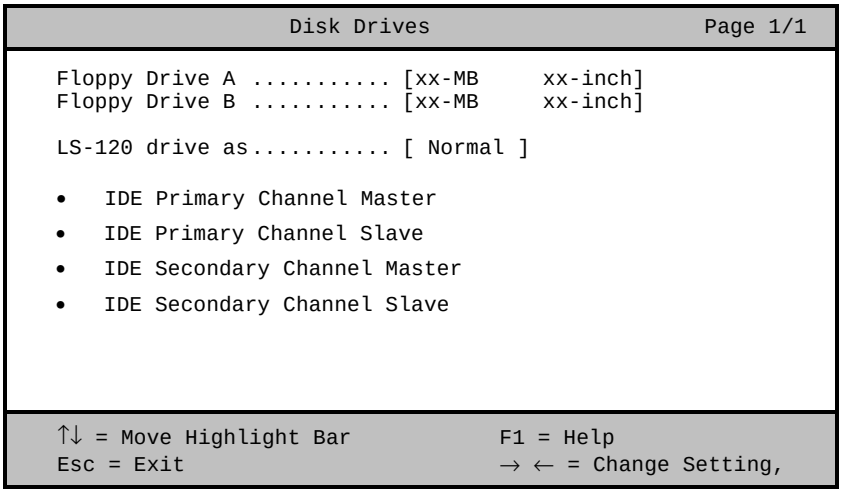
DMI BIOS Version

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.

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:



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.

LS-120 drive as

This parameter allows you not only to enable the LS-120 device installed in your system, but also to specify the function of the device. The setting affects how BIOS will detect the device.

Possible settings are:

- Normal In this setting, BIOS does not support the LS-120 drive. The drive needs the LS-120 device driver to operate.
- Drive A BIOS recognizes the LS-120 drive as drive A. If a standard diskette drive A exists, BIOS automatically identifies it as drive B. If a standard diskette drive B exists, it automatically becomes inaccessible.

  If two LS-120 drives exist, BIOS recognizes them as drive A and drive B, respectively.
- Drive B BIOS recognizes the LS-120 drive as drive B. If a standard diskette drive B exists, it becomes inaccessible.
- Hard Disk BIOS recognizes the LS-120 drive as a hard disk. In this setting, format the LS-120 drive as any other hard disk and assign it a drive letter C, D, E, and so on. See the documentation that came with the LS-120 drive for more information.

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              Page 1/1

   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]




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

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.

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.

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.

DMA Transfer Mode

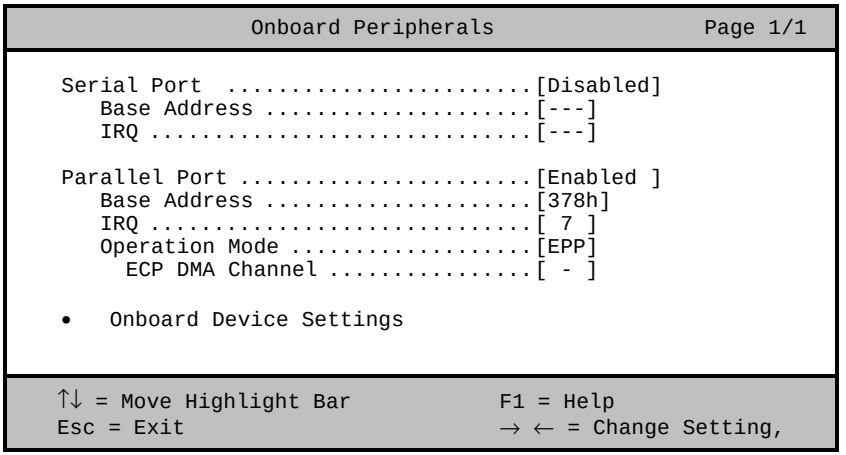
The Ultra DMA and Multi-DMA modes enhance hard disk performance by increasing the transfer rate. However, besides enabling these features in the BIOS Setup, both the Ultra DMA and Multi-DMA modes require the DMA driver to be loaded. By setting this parameter to Auto, BIOS automatically sets the appropriate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

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.

Onboard Peripherals

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



Serial Port

This parameter allows you to enable or disable the serial port. The default setting is Disabled.

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 11.

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

Parallel Port

This parameter allows you to enable or disable the parallel port. The default setting is EPP.

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.

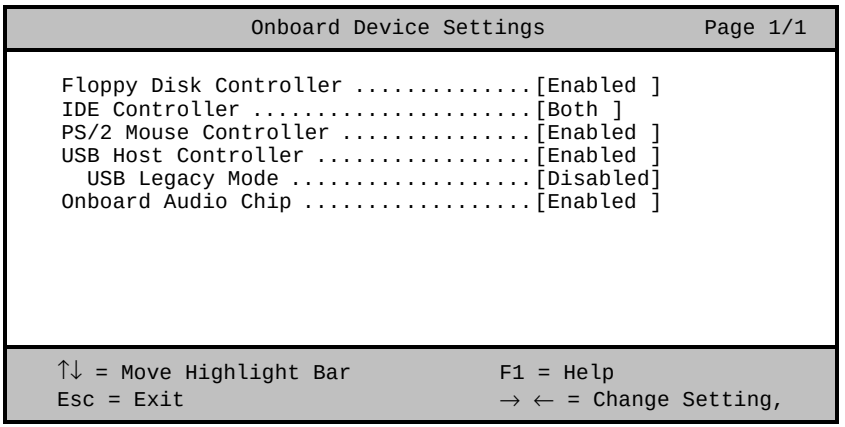
Setting	Function
Standard Parallel Port (SPP)	Allows normal speed one-way operation
Standard and Bidirectional	Allows normal speed operation in a two-way mode
Enhanced Parallel Port (EPP)	Allows bidirectional parallel port operation at maximum speed
Extended Capabilities Port (ECP)	Allows parallel port 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 Device Settings

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



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 environment. This parameter is configurable only if the USB Host Controller parameter is enabled.

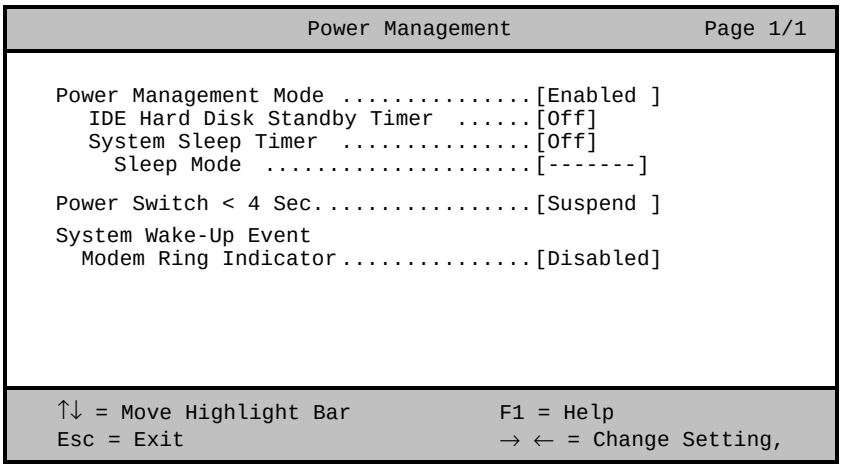
Onboard Audio Chip

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

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 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 you do not want your hard disk to enter the Standby mode.

System Sleep Timer

This parameter automatically puts the system to 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.

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.

System Wake-Up Event

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

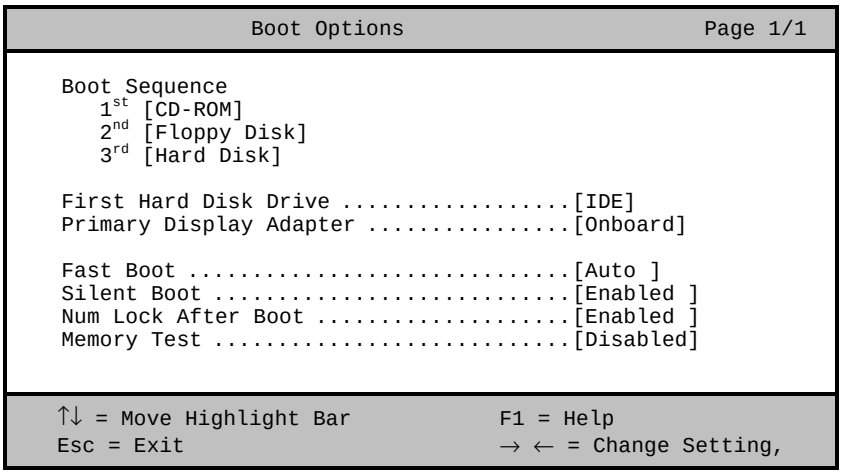
Modem Ring Indicator

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

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 Sequence

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

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.

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 consider the video card as the primary display adapter. If no video card is available, the onboard video controller becomes the primary display adapter.

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.

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 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 F9.

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

Num Lock After Boot

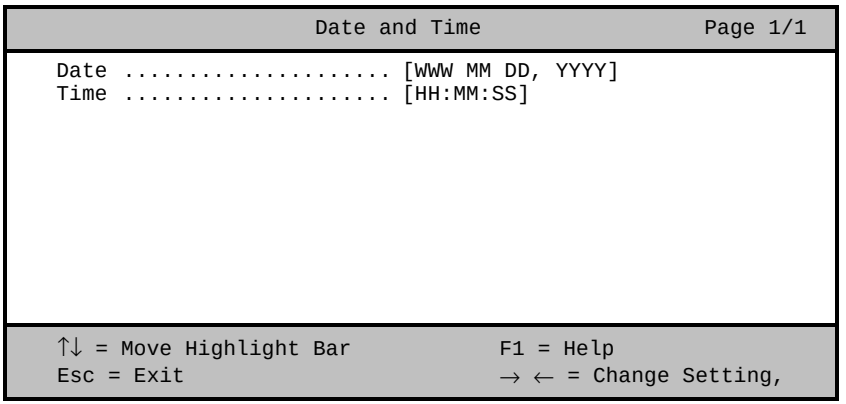
This parameter allows you to activate the Num Lock function upon booting. The default setting is Enabled.

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.

Date and Time

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



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 `1980` to `2079`

Time

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

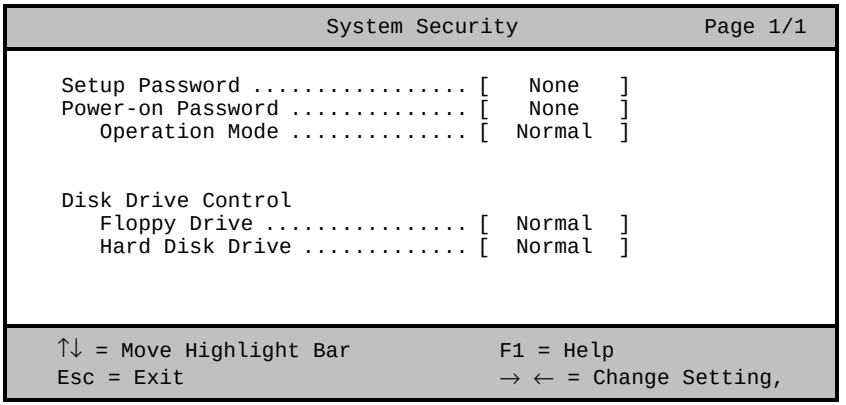
Valid values for hour, minute, and second are:

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

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:



Setup Password

The Setup Password prevents unauthorized access to the BIOS utility.

Setting a Password

1. Make sure that switch 1 of SW1 is set to On (bypass password).

You cannot enter the BIOS utility if a Setup password does not exist and switch 1 of SW1 is set to Off *(password check enabled).*

By default, switch 1 of SW1 is set to On *(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. After setting the password, highlight the Set or Change Password option.

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 then open the housing.

12. Set switch 1 of SW1 to Off 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 →. The Setup Password menu appears.

3. From the Setup Password menu, highlight the Set or Change Password option.

4. Enter a new password.

5. Press ESC to return to the System Security screen.

6. Press ESC to return to the main menu.

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

8. Select Yes to save the changes.

To remove the password, simply select the Setup Password parameter from the System Security menu and 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 1 of SW1 to On 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.*

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 1 of SW1 is set to Off *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.

Disk Drive Control

The Disk Drive Control parameters allow you to protect the floppy drive and hard disk data from being modified (possible under DOS mode only).

Floppy Drive	
Setting	**Description**
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
Hard Disk Drive	
Setting	**Description**
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

Advanced Configuration

The Advanced Configuration option is available only in the Advanced Level.

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

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 menu:

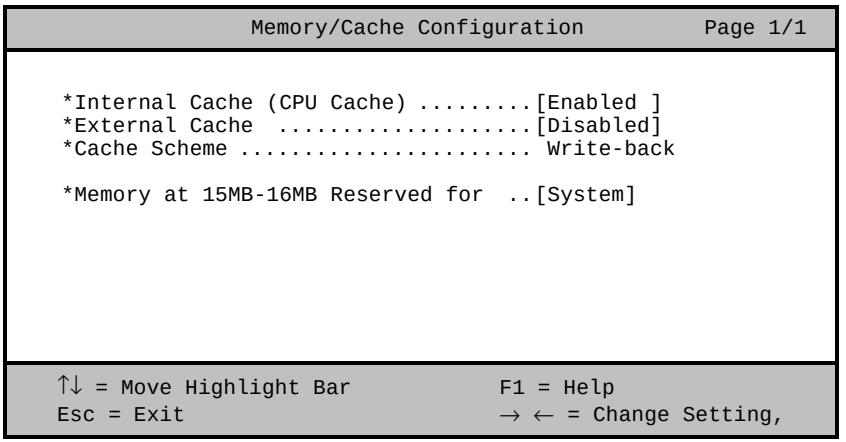
```
                Advanced Configuration                Page 1/1

        • *Memory/Cache Configuration
        • *PnP/PCI Configuration

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

Memory/Cache Configuration

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



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. In Pentium II, the external cache is already integrated in the CPU card.

The default setting is Enabled.

Cache Scheme

This parameter is non-configurable. Its setting is fixed at Write-back mode. Write-back mode 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.

PnP/PCI Configuration

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

```
                PnP/PCI Configuration                Page 1/1


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



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


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

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.

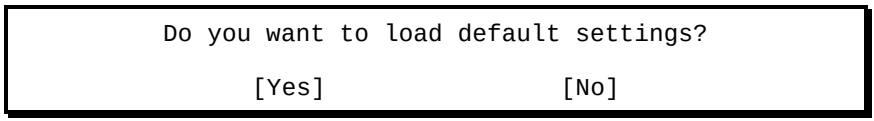
Set this parameter to Yes *only if your operating system is Windows 95 (or higher).*

Reset Resource Assignments

Set this parameter to Yes to avoid IRQ 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.

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:

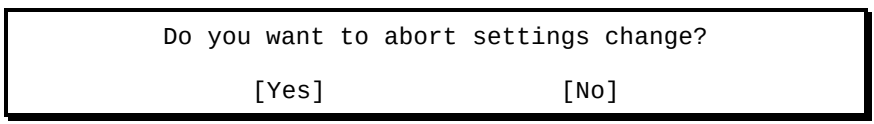


Choosing Yes enables BIOS to automatically detect the hardware changes that you have made in your system. This option also allows you to restore the default settings.

Choosing No returns you to the main menu without loading the default settings.

Abort Settings Change

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

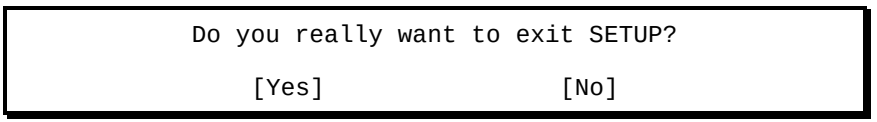


Choosing Yes discards all the changes that you have made and reverts the parameters to their previously saved settings.

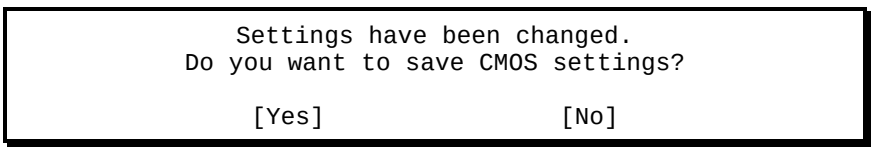
Choosing No returns you to the main menu. BIOS retains all changes that you have made.

Exiting Setup

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



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:



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