VEKxxx

User's Guide

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Disclaimer

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IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions carefully. Save these instructions for future reference.

2. Follow all warnings and instructions marked on the product.

3. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

4. Do not use this product near water.

5. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.

6. Slots and openings in the cabinet and the back or bottom are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.

7. This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.

8. This product is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.

9. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

10. If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed 15 amperes.

11. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

12. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to qualified service personnel.

13. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

    a. When the power cord or plug is damaged or frayed

    b. If liquid has been spilled into the product

    c. If the product has been exposed to rain or water

    d. If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition.

    e. If the product has been dropped or the cabinet has been damaged

    f. If the product exhibits a distinct change in performance, indicating a need for service

14. Replace battery with the same type as the product's battery we recommend. Use of another battery may present a risk of fire or explosion. Refer battery replacement to a qualified serviceman.

15. Warning! Battery may explode if not handled properly. Do not recharge, disassemble or dispose of in fire. Keep away from children and dispose of used battery promptly.

16. Use only the proper type of power supply cord set (provided in your keyboard/manual accessories box) for this unit. It should be a detachable type: UL listed/CSA certified, type SVT/SJT, rated 6A 125V minimum, VDE approved or its equivalent. Maximum length is 15 feet (4.6 meters).

CD-ROM Safety Warning

DANGER
INVISIBLE RADIATION WHEN OPEN.
AVOID EXPOSURE TO BEAM.

VORSICHT
UNSICHTBARE LASERSTRAHLUNG WENN GEÖFFNET.
NICHT IN DEN STRAHL SEHEN.

ATTENTION
RADIATION DU FAISCEAU LASER INVISIBLE. EN CAS
D'OUVERTURE. EVITER TOUTE EXPOSITION AUX RAYONS.

VARO
AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE
LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEEN.

VARNING!
OSYNLING LASERSTRÄLNING NÄR DENNA DEL ÄR ÖPPNAD.
BETRAKTA EJ STRÄLEN.

VARNING
OSYNLING LASERSTRÄLNING NÄR DENNA DEL ÄR ÖPPNAD.
STIRRA EJ IN I STRÄLEN.

ADVARSEL
LASERSTRÄLING VED ÄBNING. SE IKKE IND I STRÄLEN.

CLASS 1 LASER PRODUCT
APPAREIL A LASER DE CLASSE 1
LASER KLASSE 1
LOUKAN 1 LASERLAITE
PRODUIT LASER
CATEGORIE 1

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Caution on Lithium Batteries

CAUTION
Danger of explosion if battery is incorrectly replaced. Replace only
with the same or equivalent type recommended by the manufacturer.
Discard used batteries according to the manufacturer's instructions.

ADVARSEL!
Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Léver det brugte batteri tilbage til leverandøren.

ADVARSEL
Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende
type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

VARNING
Explosionsfara vid felaktigt batteribyte.
Anvãnd samma batterityp eller en ekvivalent typ som
rekommenderas av apparattillverkaren.
Kassera anvãnt batteri enligt fabrikantens instruktion.

VAROITUS
Päristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

VORSICHT!
Explosionsgefahr bei unsachgemäßen Austausch der Batterie Ersatz
nur durch denselben oder einem vom Hersteller empfohlenem
ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des
Herstellers.

FCC Class B Radio Frequency Interference Statement

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/television technician for help.

Notice 1:

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2:

Shielded interface cables, if any, must be used in order to comply with the emission limits.

About this Manual

Purpose

This user's guide aims to give you all the necessary information to enable you to operate the system properly.

Manual Structure

This user's guide consists of two chapters.

Chapter 1   System Board

This chapter describes the system board and all its major components. It contains the system board layout, jumper settings, cache and memory configurations, and information on other internal devices.

Chapter 2   BIOS Utility

This chapter gives information about the system BIOS and tells how to configure the system by changing the settings of the BIOS parameters.

Conventions

The following are the conventions used in this manual:

Text entered by user   Represents text input by the user.

| Screen messages | Denotes actual messages that appear on the screen. |

`ALT`, `ENTER`, `DEL`, etc.   Represent the actual keys that you have to press on the keyboard.

NOTE
Gives bits and pieces of additional information related to the current topic.

WARNING
Alerts you to any damage that might result from doing or not doing specific actions.

CAUTION
Gives precautionary measures to avoid possible hardware or software problems.

IMPORTANT
Reminds you to do specific actions relevant to the accomplishment of procedures.

TIP
Tells how to accomplish a procedure with minimum steps through little shortcuts.

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Chapter 1   System Board

Chapter 2   BIOS Utility

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System Board

The VEKxxx is an all-in-one high-performance system board that utilizes the new Intel Pentium II processor with MMX (MultiMedia eXtensions) technology. The MMX feature enables the system to handle multimedia functions and enhance the performance of 32-bit applications. The Pentium II comes in a card design with 512-KB second-level cache already integrated. The physical elimination of the second-level cache in the system board design has given the system board manufacturers more flexibility in enhancing system performance by improving the system architecture.

To fully support multimedia applications, a 3D video controller, a Sound Blaster-compatible audio controller, 4-MB or 8-MB SGRAM, and a 100 Base-TX/10 Base-T Ethernet controller are incorporated on the board. The system board memory is upgradable to 384 MB via three 168-pin double in-line memory module (DIMM) sockets. The onboard riser card slot allows you to install add-on cards in case you want to add more functions to your system.

Aside from the standard I/O interfaces such as two UART 16C550 serial ports, a parallel port with SPP (Standard Parallel Port)/ECP (Extended Capabilities Port)/EPP (Enhanced Parallel Port) feature, PS/2 keyboard and mouse ports, the board also includes a USB (Universal Serial Bus) interface and several audio, video, and network connectors. These extra interfaces enable the system to support additional peripherals.

Special features such as Plug-and-Play support, Power Management, Wireless Communication, Hardware Monitoring, Wake-on LAN, and Wake-on Ring-in functions are also supported. These functions are individually discussed in this chapter.

The system is fully compatible with MS-DOS V6.X, OS/2, UNIX, Windows NT and Windows 95 operating systems.

1.1 Major Components

The system board has the following major components:

- A CPU connector that supports Pentium II processor running at 266 or 300 MHz

- 512-KB PBSRAM (Pipelined-burst SRAM) second-level cache (incorporated in the CPU card)

- Three DIMM sockets that accept 8-, 16-, 32-, 64-, and 128-MB Standard and/or Extended Data Output (EDO) DRAMs, with or without Parity Check or Error Control Coding (ECC) feature. These sockets allow memory upgrade of up to 384 MB

- PCI local bus IDE controller

- 256K Flash BIOS ROM

- LAN controller with 100Base-TX/10Base-T solution

- Creative audio controller

- AGP-compliant 3D video graphics accelerator with 4- or 8-MB SGRAM

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

- USB interface

- External ports
    - PS/2 keyboard and mouse ports
    - Two buffered high-speed serial ports
    - One SPP/ECP/EPP high-speed parallel port
    - Ethernet port

- One riser card slot for future expansion

- LPX form factor

1.2   Layout

Figure 1-1 shows the locations of the system board   major components.
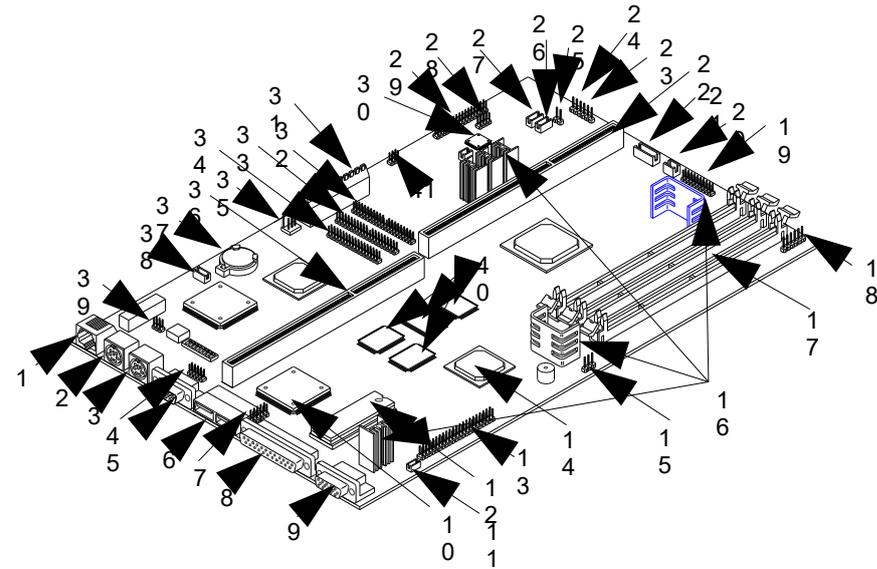
1	*Ethernet port*	*22*	*CPU card connector*
2	*PS/2keyboard port*	*23*	*HDD LED connector*
3	*PS/2 mouse port*	*24*	*Power button connector*
4	*USB interface*	*25*	*Audio in connector for add-on card (optional)*
5	*COM2 port*	*26*	*Line-in connector*
6	*USB ports*	*27*	*CD-in connector*
7	*USB interface*	*28*	*Wavetable connector*
8	*Parallel port*	*29*	*AIO board connector*
9	*VGA port*	*30*	*Audio controller*
10	*Ultra I/O controller*	*31*	*Power connector*
11	*Fax/modem/audio connector*	*32*	*HDD1 connector*
12	*System BIOS chip*	*33*	*HDD2 connector*
13	*ATI Multimedia Channel connector*	*34*	*FDD connector*
14	*3D video controller*	*35*	*Software shutdown connector*
15	*Ring-in connector*	*36*	*Riser card slot*
16	*Voltage regulator with heatsink*	*37*	*RTC Battery*
17	*DIMM sockets*	*38*	*Wake-on LAN connector*
18	*IrDA connector*	*39*	*ACT/Speed/LI LED connector*
19	*Multifunction connector*	*40*	*Video memory (SGRAM)*
20	*Two-pin fan connector*	*41*	*Appears off connector*
21	*Five-pin fan connector*		

Figure 1-1   System Board Layout

1.3 Jumpers and Connectors

1.3.1 Jumper and Connector Locations

Figure 1-2 shows the jumper and connector locations on the system board.
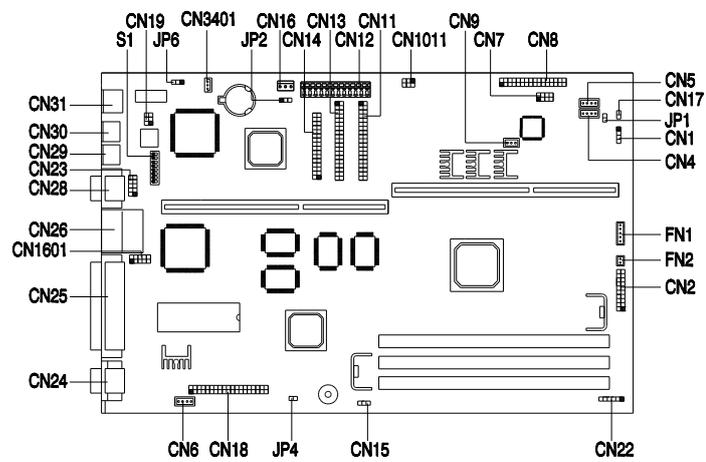
Figure 1-2   System Board Jumper and Connector Locations

The blackened pin of a jumper or a connector represents pin 1.

1.3.2   Jumper Settings

The following tables list the system board jumpers with their corresponding settings and functions.

Table 1-1   Jumper Settings

Jumper	Setting	Function
S1 Settings		
SW1	On Off *	**Bus Frequency Select** 60 MHz 66 MHz
SW2	On * Off	**Password Check** Bypass password Check password
SW3	On * Off	**BIOS Logo** Acer OEM

Table 1-2   Core/Bus Frequency Ratio

S1				Core/Bus
SW5	**SW6**	**SW7**	**SW8**	**Frequency Ratio**
On	On	On	On	2
Off *	On *	On *	On *	4
On	Off	Off	On	7/2
Off	On	Off	On	9/2
Off	Off	Off	Off	Reserved

1.3.3 Connector Functions

Table 1-3 lists the different connectors on the system board and their respective functions.

Table 1-3   Onboard Connectors

Connector	Function
CN1	HDD LED connector
CN2	Multifunction connector
CN4	Line-in connector
CN5	CD-in connector
CN6	Fax/modem/audio connector
CN7	Wavetable connector
CN8	AIO board connector
CN9	Volume control connector
CN11	HDD1 connector
CN12	Power connector
CN13	HDD2 connector
CN14	FDD connector
CN15	Ring-in connector
CN16	Software Shutdown connector
CN17	Power button connector
CN18	ATI/AMC connector
CN19	LAN (ACT/Speed/LI) LED connector
CN22	IrDA connector
CN23	USB connector
CN24	VGA port
CN25	Parallel port
CN26/CN27	USB ports
CN28	COM1 port
CN29	PS/2 mouse port
CN30	PS/2 keyboard port

Table 1-3   Onboard Connectors (continued)

Connector	Function
CN31	Ethernet port
CN1011	Appears-off connector
CN1301	COM2 connector
CN3401	Wake-on LAN connector
FN1	Five-pin fan connector
FN2	Two-pin fan connector

1.3.4   Front-panel Connectors

The following figure shows the pin orientation of the front-panel connectors available on the system board:
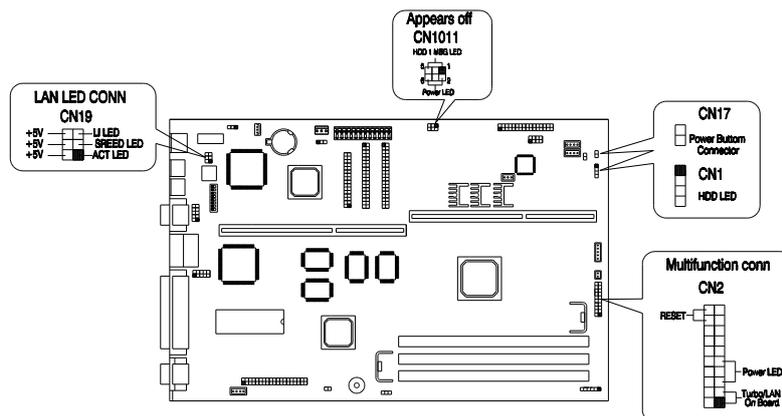
Figure 1-3   Front-panel Connectors

1.4 Installation Precautions

Before you install any system component, we recommend that you read the following sections. These sections contain important ESD precautions, pre- and post installation instructions.

1.4.1 ESD Precautions

Electrostatic discharge (ESD) can damage your processor, disk drives, expansion boards, and other components. Always observe the following precautions before you install a system component.

1. Do not remove a component from its protective packaging until you are ready to install it.

2. Wear a wrist grounding strap and attach it to a metal part of the system unit before handling components. If a wrist strap is not available, maintain contact with the system unit throughout any procedure requiring ESD protection.

1.4.2 Pre-installation Instructions

Always observe the following before you install a system component:

1. Turn off the system power and all the peripherals connected to the unit before opening it.

2. Open the system according to the instructions in the housing installation manual.

3. Follow the ESD precautions in section 1.4.1 before handling a system component.

4. Remove any expansion boards or peripherals that block access to the DIMM sockets or CPU socket.

5. See the following sections for specific instructions on the component you wish to install.

Do not attempt the procedures described in the following sections unless you are a qualified service technician.

1.4.3 Post-installation Instructions

Observe the following after installing a system component:

1. See to it that the components are installed according to the step-by-step instructions in their respective sections.

2. Make sure you have set all the required jumpers. See section 1.3.2. for the correct jumper settings.

3. Replace any expansion boards or peripherals that you removed earlier.

4. Replace the system cover.

5. Connect the necessary cables and turn on the system.

1.5 Memory Configurations

The system board comes with three 168-pin DIMM sockets that allows you to expand memory to a maximum of 384 MB. The DIMM sockets support SDRAMs and EDO DRAMs with 8-, 16-, 32-, 64-, and 128-MB capacities, and 60 ns (or less) access time. Parity Checking and Error Control Coding features are also supported.

Table 1-4 lists the possible memory configurations.

Table 1-4   Memory Configurations

DIMM1	DIMM2	DIMM3	Total Memory
8 MB			8 MB
8 MB	8 MB		16 MB
8 MB	8 MB	8 MB	24 MB
8 MB	16 MB		24 MB
8 MB	16 MB	8 MB	32 MB
8 MB	16 MB	16 MB	40 MB
8 MB	32 MB		40 MB
8 MB	32 MB	8 MB	48 MB
8 MB	32 MB	16 MB	56 MB
8 MB	32 MB	32 MB	72 MB
8 MB	64 MB		72 MB
8 MB	64 MB	8 MB	80 MB
8 MB	64 MB	16 MB	88 MB
8 MB	64 MB	32 MB	104 MB
8 MB	64 MB	64 MB	136 MB
8 MB	128 MB		136 MB
8 MB	128 MB	8 MB	144 MB

Table 1-4   Memory Configurations (continued)

DIMM1	DIMM2	DIMM3	Total Memory
8 MB	128 MB	16 MB	152 MB
8 MB	128 MB	32 MB	168 MB
8 MB	128 MB	64 MB	200 MB
8 MB	128 MB	128 MB	264 MB
16 MB			16 MB
16 MB	8 MB		24 MB
16 MB	8 MB	8 MB	32 MB
16 MB	16 MB		32 MB
16 MB	16 MB	8 MB	40 MB
16 MB	16 MB	16 MB	48 MB
16 MB	32 MB		48 MB
16 MB	32 MB	8 MB	56 MB
16 MB	32 MB	16 MB	64 MB
16 MB	32 MB	32 MB	80 MB
16 MB	64 MB		80 MB
16 MB	64 MB	8 MB	88 MB
16 MB	64 MB	16 MB	96 MB
16 MB	64 MB	32 MB	112 MB
16 MB	64 MB	64 MB	144 MB
16 MB	128 MB		144 MB
16 MB	128 MB	8 MB	152 MB
16 MB	128 MB	16 MB	160 MB
16 MB	128 MB	32 MB	176 MB
16 MB	128 MB	64 MB	208 MB
16 MB	128 MB	128 MB	272 MB
32 MB			32 MB
32 MB	8 MB		40 MB
32 MB	8 MB	8 MB	48 MB
32 MB	16 MB		48 MB
32 MB	16 MB	8 MB	56 MB
32 MB	16 MB	16 MB	64 MB
32 MB	32 MB		64 MB
32 MB	32 MB	8 MB	72 MB

Table 1-4   Memory Configurations (continued)

DIMM1	DIMM2	DIMM3	Total Memory
32 MB	32 MB	16 MB	80 MB
32 MB	32 MB	32 MB	96 MB
32 MB	64 MB		96 MB
32 MB	64 MB	8 MB	104 MB
32 MB	64 MB	16 MB	112 MB
32 MB	64 MB	32 MB	128 MB
32 MB	64 MB	64 MB	160 MB
32 MB	128 MB		160 MB
32 MB	128 MB	8 MB	168 MB
32 MB	128 MB	16 MB	176 MB
32 MB	128 MB	32 MB	192 MB
32 MB	128 MB	64 MB	224 MB
32 MB	128 MB	128 MB	288 MB
64 MB			64 MB
64 MB	8 MB		72 MB
64 MB	8 MB	8 MB	80 MB
64 MB	16 MB		80 MB
64 MB	16 MB	8 MB	88 MB
64 MB	16 MB	16 MB	96 MB
64 MB	32 MB		96 MB
64 MB	32 MB	8 MB	104 MB
64 MB	32 MB	16 MB	112 MB
64 MB	32 MB	32 MB	128 MB
64 MB	64 MB		128 MB
64 MB	64 MB	8 MB	136 MB
64 MB	64 MB	16 MB	144 MB
64 MB	64 MB	32 MB	160 MB
64 MB	64 MB	64 MB	192 MB
64 MB	128 MB		192 MB
64 MB	128 MB	8 MB	200 MB
64 MB	128 MB	16 MB	208 MB

Table 1-4   Memory Configurations (continued)

DIMM1	DIMM2	DIMM3	Total Memory
64 MB	128 MB	32 MB	224 MB
64 MB	128 MB	64 MB	256 MB
64 MB	128 MB	128 MB	320 MB
128 MB			128 MB
128 MB	8 MB		136 MB
128 MB	8 MB	8 MB	144 MB
128 MB	16 MB		144 MB
128 MB	16 MB	8 MB	152 MB
128 MB	16 MB	16 MB	160 MB
128 MB	32 MB		160 MB
128 MB	32 MB	8 MB	168 MB
128 MB	32 MB	16 MB	176 MB
128 MB	32 MB	32 MB	192 MB
128 MB	64 MB		192 MB
128 MB	64 MB	8 MB	200 MB
128 MB	64 MB	16 MB	208 MB

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128 MB	64 MB	32 MB	224 MB
128 MB	64 MB	64 MB	256 MB
128 MB	128 MB		256 MB
128 MB	128 MB	8 MB	264 MB
128 MB	128 MB	16 MB	272 MB
128 MB	128 MB	32 MB	288 MB
128 MB	128 MB	64 MB	320 MB
128 MB	128 MB	128 MB	384 MB

Every time you change your system hardware configuration such as memory size, CPU type, hard disk type, etc., you must reload the BIOS default settings. To do this, enter the BIOS Setup, go to the Exit Setup Utility screen and select Load Default Settings. *This will enable BIOS to automatically detect the changes in system configuration; otherwise, BIOS will keep the previous CMOS settings. For more details on BIOS, see Chapter 2.*

1.5.1 Installing a DIMM

Follow these steps to install a DIMM:

1. Align pin 1 of the DIMM with pin 1 of the socket. Pin 1 is labeled 1 on both of the DIMM and the socket.

2. Gently push the DIMM until the holding clips lock the DIMM into a vertical position.
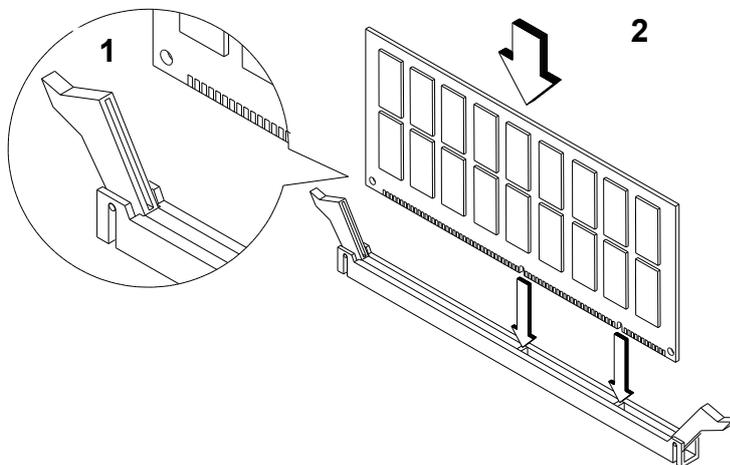
Figure 1-4   Installing a DIMM

> *Be careful when inserting DIMMs. Forcing a DIMM in or out of a socket can damage the socket or the DIMM (or both).*

1.5.2   Removing a DIMM

To remove a DIMM:

1. Press the holding clips on both sides of the socket outward to release the DIMM.

2. Gently pull the DIMM out of the socket.
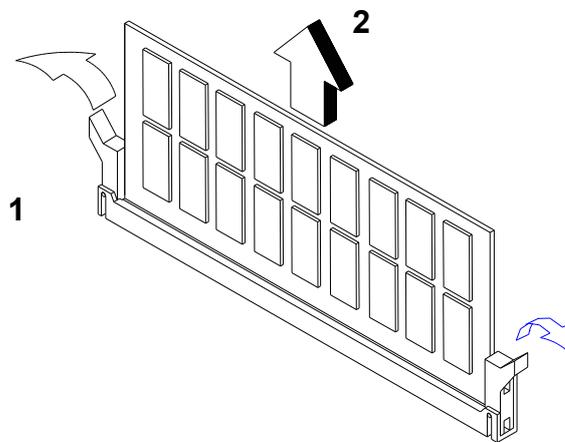
Figure 1-5   *Removing a DIMM*

1.5.3   Reconfiguring the System

The system automatically detects the amount of memory installed. Run Setup to view the new value for total system memory and make a note of it.

1.6   Pentium II Processor

The board supports the Pentium II processor - a module that consists of a Pentium Pro technology-based CPU and a second-level cache. It utilizes the new enclosed packaging technology called S.E.C (single-edge contact) cartridge, that allows the second-level cache to remain tightly coupled to the processor. It is capable of increasing the performance of 32-bit software and multimedia applications

The Pentium II processor also supports the following features:

- 64-bit Pentium Pro technology-based CPU running at 266 or 300 MHz

- MMX technology support for multimedia functions

- 32-KB internal cache size

- 512-KB write-back second-level cache size

1.6.1   Removing a Pentium II Processor

Observe the ESD precautions when installing or removing a system component.

You need to remove the previously installed processor in case you want to replace or upgrade your Pentium II processor.

Follow these steps to remove the Pentium II processor:

1. Press the latches on both sides of the processor to release it from the retention mechanism. You will hear a click sound once the latch is released.

2. Pull the processor to totally detach it from the CPU connector.
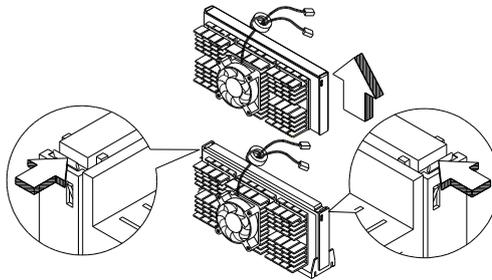
Figure 1-6   Removing a Pentium II Processor

1.6.2   Installing a Pentium II Processor

Observe the ESD precautions when installing or removing a system component.

Before you proceed, make sure that there is no processor installed in the CPU connector.

Follow these steps to install a Pentium II processor:

1. Place the retention mechanism over the CPU connector on the system board.   Secure it with the screws that came with the package.
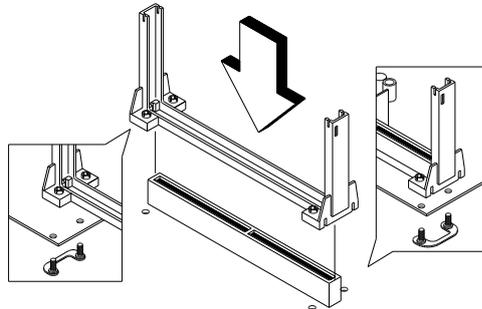
Figure 1-7   Installing the Retention Mechanism

2. Remove the Pentium II processor from its protective packaging. Make sure that the latches on the sides of the module are not pressed.

3. With the processor card golden fingers pointing downward, align the processor to the posts of the retention mechanism.

4. Lower the processor into to the CPU connector on the system board until the golden fingers touch the connector.
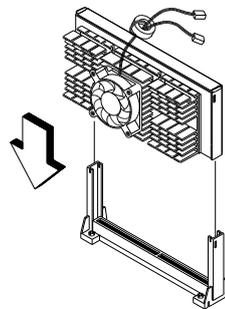
Figure 1-8   Installing a Pentium II Processor

5.   Press down the processor until the golden fingers completely fit into the connector and the latches on the sides lock the processor into place.
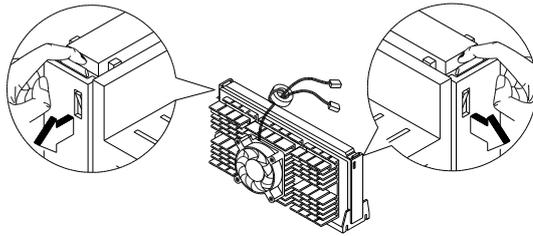
Figure 1-9   Locking Processor

Every time you change your system hardware configuration such as memory size, CPU type, hard disk type, etc., you must reload the BIOS default settings. To do this, enter the BIOS Setup, go to the Exit Setup Utility screen and select `Load Default Settings`. This will enable BIOS to automatically detect the changes in system configuration; otherwise, BIOS will keep the previous CMOS settings. For more details on BIOS, see Chapter 2.

1.7   IDE Hard Disk Support

The system board supports four IDE hard disks, or any other IDE devices, through the two onboard PCI IDE interfaces. See Figure 1-2 for the location of the IDE interfaces.

Follow the instructions in the housing installation manual on how to install a hard disk in the system. Connect the cables according to the IDE hard disk configuration in Table 1-5.

Table 1-5   *IDE Hard Disk Configuration*

IDE Connector	Master	Slave
HDD1	Hard disk 0	Hard disk 1
HDD2	Hard disk 2	Hard disk 3 / IDE CD-ROM drive

Every time you change your system hardware configuration such as memory size, CPU type, hard disk type, etc., you must reload the BIOS default settings. To do this, enter the BIOS Setup, go to the Exit Setup Utility screen and select `Load Default Settings`. *This will enable BIOS to automatically detect the changes in system configuration; otherwise, BIOS will keep the previous CMOS settings. For more details on BIOS, see Chapter 2.*

1.8   Video Function

The onboard video controller is capable of supporting 3D video applications and enhancing the video display at the same time. It also supports the Accelerated Graphics Port (AGP) bus. The AGP bus is the solution for 3D applications that require greater bandwidth. It is designed to speed up the VGA bus in order to meet the requirement of 3D applications.

The board may come with either 4-MB or 8-MB video memory. . Larger video memory allows you to display higher resolutions and more colors. An AMC feature connector is also incorporated in the board design for full hardware MPEG support.

1.8.1   Supported Video Resolutions

The following table lists the video resolutions supported by the onboard VGA:

Table 1-6   Supported Video Resolutions

Resolution	bpp	V-Freg. (Hz)	H-Freq. (KHz)
640 x 480	8/16/24/32	60	31.4
640 x 480	8/16/24/32	72	37.5
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
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
800 x 600	8/16/24/32	90	57.1
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

Table 1-6   Supported Video Resolutions (continued)

Resolution	bpp	V-Freg. (Hz)	H-Freq. (KHz)
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
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
1280 x 1024	8/16/24	43	50
1280 x 1024	8/16/24	47	50
1280 x 1024	8/16/24	60	64.0

1.9 Audio Function

The onboard 16-bit audio controller features an audio subsystem that is compatible with Sound Blaster, Sound Blaster Pro, Microsoft Sound, and MPU-401 standards. Other features supported by the audio controller are:

- Built-in frequency synthesizer (14.318 MHz)

- Full-duplex 16-bit record and playback

- Type F and Demand Mode Direct Memory Access (DMA)

- New Mixer architecture

- Complies with the following standards:

    - Plug-and-Play

    - MC PC96 and PC97

    - AMP 1.2

The board may also come with the following connectors for full audio function support:

- Standard Wavetable connector

- An audio I/O (AIO) connector

- CD-in connector

- Audio-in connector

> *You may disable the audio feature in the BIOS Utility.*

-

1.9.1   Installing an AIO Board (optional)

The AIO board allows you to connect external audio peripherals to your system.

To install an AIO board, simply plug in the AIO cable connector to the connector marked CN8 on the system board. See the following figure.

Refer to Figure 1-2 for the location of the connectors.

CN8
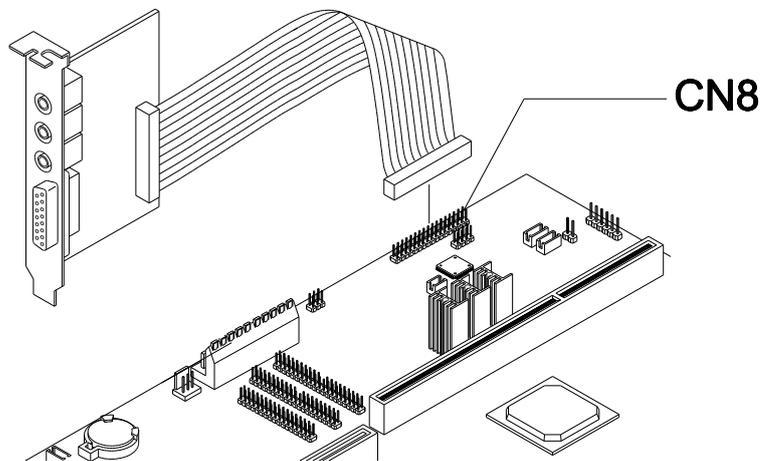
Figure 1-10   Installing an AIO Board

1.9.2   Connecting Audio Devices

The AIO board consists of the following ports:

- Microphone port

- Line-in port

- Line-out port

- MIDI/game port

These ports accommodate external audio devices. To connect an audio device, simply plug in the device's connector to its corresponding port on the AIO board.

Figure 1-11 shows the various devices that you can connect to the AIO board.
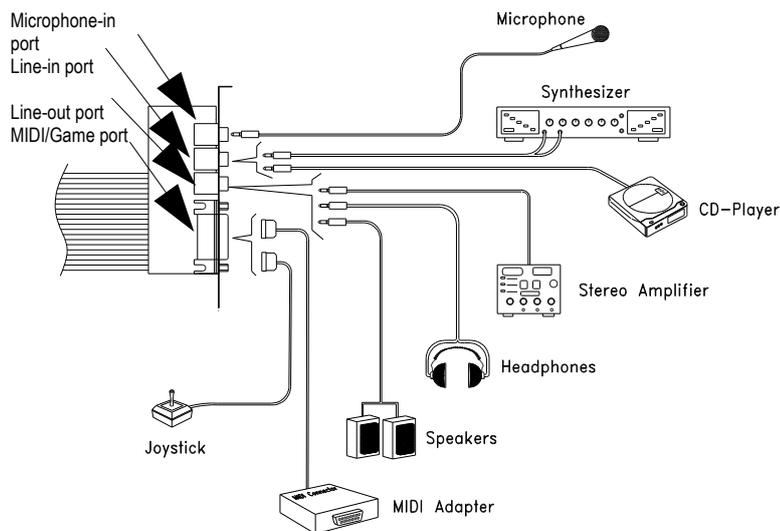
Figure 1-11   External Audio Devices

1.10   Expansion Card Installation

1.10.1   Installing the Riser Card

A riser card is a card that contains the PCI and ISA slots.   This enables you to add functions to your system to further enhance its performance.

To install a riser card:

1.   Locate the riser card slot on the system board.

2.   Gently insert a riser card into the slot.   Make sure that the card is properly seated into the slot.
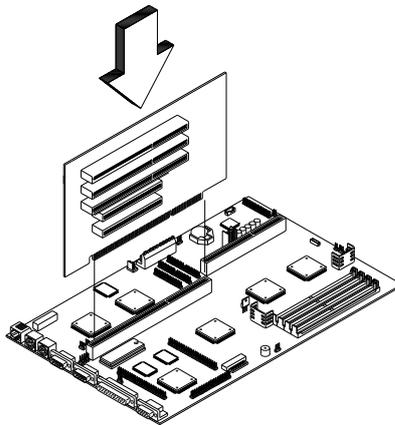
Figure 1-12   Installing a Riser Card

1.10.2 Installing a PCI Card

To install a PCI card:

1. Locate an empty PCI slot on the slot board.

2. Remove the bracket on the housing opposite to the empty PCI slot.

3. Insert a PCI card into the slot. Make sure that the card is properly seated.

4. Secure the card to the housing with a screw.

When you turn on the system, BIOS automatically detects and assigns resources to the PCI devices.
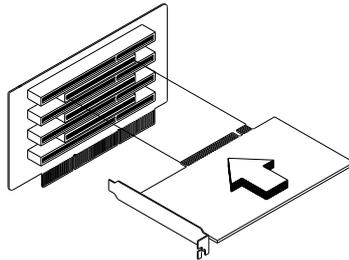
Figure 1-13   *Installing a PCI Card*

1.10.3   Installing ISA Cards

Both PnP and non-PnP ISA cards require specific IRQs.   When installing ISA cards, make sure that the IRQs required by these cards are not previously assigned to PCI devices to avoid resource conflicts.

Follow these steps when installing ISA cards:

1. Remove all PnP cards installed in the system, if any.

2. Enter BIOS Utility and set the Reset Resource Assignment parameter to `Yes` to clear the resource data assigned to the PnP devices. Refer to section 2.6.8.

3. Install non-PnP ISA cards.

4. Turn on the system.

5. Use Windows 95 or ICU to manually assign the appropriate IRQs to the cards. This ensures that BIOS will not use the resources assigned to the non-PnP ISA cards.

> *BIOS detects and configures only PnP cards.*

6. Turn off the system.

7. Locate the expansion slots and install the PnP ISA and PCI cards.

8. Turn on the system.   This time PnP BIOS automatically configures the PnP ISA and PCI cards with the available resources.
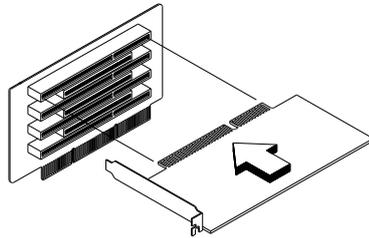
Figure 1-14   Installing an ISA Card

1.11   USB

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

See Figure 1-1 for the location of the USB interface on the system board.

1.12   Wireless Communication Support (optional)

The board comes with an infrared (IrDA) interface for Wireless Communication function (see Figure 1-2 for the location of the IrDA connector).   This function enables the system to communicate with SIR-aware peripherals without the aid of cables.

The supported Wireless Communication function complies with the IrDA specification, i.e., it is capable of supporting 115.2 kilobits per second (Kbps) data transfer rate at a maximum distance of one meter.

1.13 Hardware Monitor Function

The Hardware Monitor function allows you to check system resources, either locally or in a computer network, via software such as ADM (Advanced Desktop Management) or Intel LDCM (LAN Desk Client Manager)). ADM and Intel LDCM are desktop management programs that offer 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 independent.

To enable the Hardware Monitor function, you need to install either ADM or Intel LDCM. Contact your dealer for information on the availability of the software. Refer to the software documentation for more details on the Hardware Monitor function.

1.14 Wake-on Ring-in Function

The Wake-on Ring-in function 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. Refer to Figure 1-2 for the location of the Modem ring-in connector on the system board.

1.15 Wake-on LAN Function

The system board comes with a 100Base-TX/10Base-T Ethernet controller with Wake-on LAN support. This special feature allows the system to be activated via network access. Common network functions such as remote access, file sharing, etc. are also supported.

1.16 Error Messages

In the event that you receive an error message, do not continue using the computer. Note the message and take corrective action immediately. This section describes the different types of error messages and suggests corrective measures.

There are two general types of error messages:

- Software
- System

1.16.1 Software Error Messages

Software error messages are returned by your operating system or application. These messages typically appear after you boot the operating system or when you run your applications. If you receive this type of message, consult your application or operating system manual for help.

1.16.2 System Error Messages

A system error message indicates a problem with the computer itself. These messages normally appear during the power-on self-test, before the operating system prompt appears. Table 1-7 lists the system error messages in alphabetical order.

Table 1-7   System Error Messages

Error Message	Corrective Action
Memory Error at MMMM:SSSS:OOOOh (R:xxxxh, W:xxxxh)	Replace the DRAM chips or the DIMMs
System Management Memory Bad	Replace the DRAM chips or the DIMMs
Keyboard Interface Error	Check the keyboard interface circuit or change the keyboard.
Keyboard Error or Keyboard Not Connected	Reconnect or replace the keyboard.
Keyboard Locked	Unlock the keyboard.
Pointing Device Error	Reconnect or replace the pointing device.
Pointing Device Interface Error	Check the keyboard interface circuit.
Pointing Device IRQ Conflict	Enter SETUP and change the setting of IRQ12.
IDE Drive 0 Error IDE Drive 1 Error IDE Drive 2 Error IDE Drive 3 Error	Replace the disk drive or the hard disk drive controller. Check the HDD cable connections and CMOS setup configuration.
IDE Drive 0 (1, 2, 3) Auto Detection Failed	Replace the disk drive or the hard disk drive controller. Check the HDD cable connections and CMOS setup configuration.
Floppy Drive A Error Floppy Drive B Error	Replace the floppy drive.

Table 1-7   POST Error Messages (continued)

Error Message	Corrective Action
Floppy Disk Controller Error	Check the floppy drive cable and its connections. If the cable is good and properly connected, the floppy disk controller may be the problem. Change the floppy disk controller or disable the onboard controller by installing another add-on card with a controller.)
CPU Clock Mismatch	When the user changes the CPU frequency, this message will be shown once. Then the BIOS will adjust CPU clock automatically.
Serial Port 1 Conflict Serial Port 2 Conflict	Change the onboard serial port address in Setup or change the add-on card serial port address.
Parallel Port Conflict	Change onboard parallel port address in CMOS SETUP or set the parallel port address of add-on card to others.
Real Time Clock Error	Check RTC circuit or replace the RTC.
CMOS Battery Bad	Replace the onboard lithium battery
CMOS Checksum Error	Run Setup again and reconfigure the system.
NVRAM checksum Error	Run EISA configuration Utility (ECU) to restore the original EISA configuration data.
On Board xxx ... Conflict(s)	Try to reassign or disable on board device resources.
PCI Device Error	Check the PCI card. Replace if bad.
System Resource Conflict	Run Setup to reconfigure the system.
IRQ Setting Error	Run Setup to reconfigure the system.
Expansion ROM Allocation Fail	Change the I/O expansion ROM address.

1.16.3 Correcting Error Conditions

As a general rule, the "Press F1 to continue" error message is caused by a configuration problem which can be easily corrected. An equipment malfunction is more likely to cause a fatal error, i.e., an error that causes complete system failure.

Here are some corrective measures for error conditions:

1. Run Setup. You must know the correct configuration values for your system before you enter Setup, which is why you should write these values down when the system is correctly configured. An incorrect Setup configuration is a major cause of power-on error messages, especially for a new system.

2. Remove the system cover according to the directions in the system housing installation guide. Check that the system board and any expansion boards are set correctly.

3. Check that all connectors and boards are secure. Consult the system housing installation guide for assistance.

> *If you have purchased a new hard disk drive and cannot access it, it may be because your disk is not physically formatted. Physically format the disk using the FDISK and FORMAT commands.*

If you follow the corrective steps above and still receive an error message, the cause may be an equipment malfunction.

If you are sure that your configuration values are correct and your battery is in good condition, the problem may lie in a damaged or defective chip. Contact an authorized service center for assistance.

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.

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                       │
│                  Basic Configuration                       │
│                    System Security                         │
│                   Power Management                         │
│                                                            │
│                   Exit Setup Utility                       │
│                                                            │
│                                                            │
│                                                            │
│                                                            │
├──────────────────────────────────────────────────────────┤
│ ↓←→ = Move highlight bar, ↵  = Select, Esc = Exit          │
└──────────────────────────────────────────────────────────┘
```
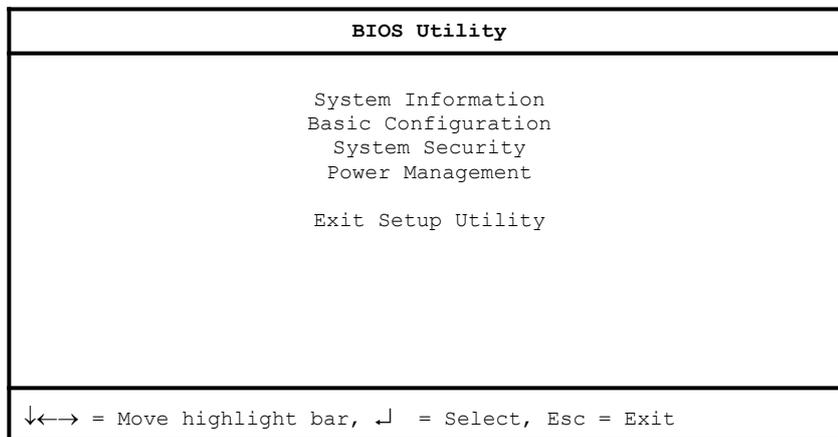
The system supports two BIOS Utility levels: Basic and Advanced. The above screen is the BIOS Utility Basic Level screen. This allows you to view and change only the basic configuration of your system.

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

```
┌─────────────────────────────────────────────────────────┐
│                      BIOS Utility                         │
├─────────────────────────────────────────────────────────┤
│                                                           │
│                    System Information                     │
│                    Basic Configuration                    │
│                      System Security                      │
│                      Power Management                     │
│                   *Advanced Configuration                 │
│                      Exit Setup Utility                   │
│                                                           │
│                                                           │
│                                                           │
│                                                           │
│                                                           │
│                                                           │
├─────────────────────────────────────────────────────────┤
│ ↓←→ = Move highlight bar, ↵  = Select, Esc = Exit         │
└─────────────────────────────────────────────────────────┘
```
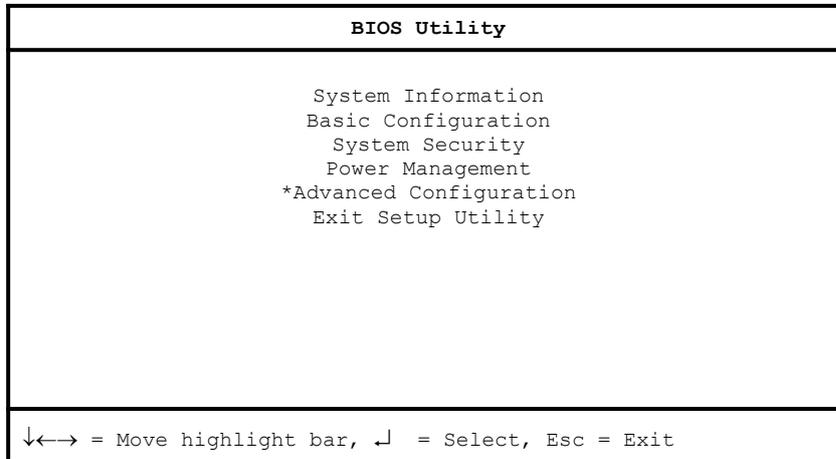
The asterisk (*) mark indicates that the parameter appears only when you are in the Advanced Level.

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.

2.2 System Information

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

```
┌──────────────────────────────────────────────────────────┐
│          System Information              Page 1/2         │
├──────────────────────────────────────────────────────────┤
│                                                          │
│  Processor..........................Pentium II           │
│  Processor Speed.....................233 MHz             │
│  L1 Cache Size.......................32 KB              │
│  L2 Cache...........................512 KB              │
│                                                          │
│  Floppy Drive A.....................1.44 MB, 3.5-inch    │
│  Floppy Drive B.....................None                 │
│  IDE Primary Channel Master.........None                 │
│  IDE Primary Channel Slave..........None                 │
│  IDE Secondary Channel Master.......None                 │
│  IDE Secondary  Channel Slave.......None                 │
│                                                          │
│  Total Memory.......................8 MB                 │
│    1st Bank.........................SDRAM                │
│    2nd Bank.........................None                 │
│    3rd Bank.........................None                 │
│                                                          │
├──────────────────────────────────────────────────────────┤
│   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......................3F8h, IRQ 4
  Serial Port 2......................2F8h, IRQ 3
  Parallel Port .....................378h, IRQ 7
  PS/2 Mouse.........................Installed
  Memory Parity Mode.................Disabled
  USB Host Controller................Disabled


  ➢Product Information




  ↓←→ = Move highlight bar, ↵  = Select, F1 = Help,
  PgDn/PgUp = Move Screen
```

The following sections explain the parameters.

2.2.1   Processor

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

2.2.2   Processor Speed

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

2.2.3   L1 Cache Size

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. For information on how to configure the system memory, see section 2.6.1.

2.2.4   L2 Cache

This parameter specifies the second-level cache memory size currently supported by the system. The second-level cache is already integrated in the Pentium II processor card. The available cache sizes are 256 KB and 512 KB. For information on how to configure the system memory, see section 2.6.2.

2.2.5   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 2.3.3.

2.2.6   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 2.3.3.

2.2.7   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 2.3.5.

2.2.8   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 2.3.5.

2.2.9   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 2.3.5.

2.2.10   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 2.3.5.

2.2.11   Total Memory

This parameter specifies the total amount of onboard 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 DIMM 1 socket. The `None` setting indicates that there is no DRAM installed. For the location of the DIMM sockets, refer to Figure 1-2.

2nd Bank

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

3rd Bank

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

2.2.12   Serial Port 1

This parameter shows the serial port 1 address and IRQ settings.

2.2.13   Serial Port 2

This parameter shows the serial port 2 address and IRQ settings.

2.2.14   Parallel Port

This parameter shows the parallel port address and IRQ settings.

2.2.15   PS/2 Mouse

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

2.2.16   Memory Parity Mode

This parameter specifies if the ECC and parity check features are enabled or disabled.   The parity check feature enables BIOS to detect data errors. The ECC feature enables BIOS not only to detect, but as well as correct data errors.   For information on how to enable or disable the ECC and parity check features, see section 2.6.5.

2.2.17   USB Host Controller

This parameter specifies whether the onboard USB controller is enabled or disabled.   For information on how to enable or disable USB, see section 2.6.7.

2.2.18   Product Information

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

```
┌─────────────────────────────────────────────────────────────┐
│           Product Information              Page 1/1          │
├─────────────────────────────────────────────────────────────┤
│                                                             │
│    Product Name..........................xxxxxxxxx          │
│    System S/N.............................xxxxxxxxx          │
│    Main Board ID..........................xxxxxxxxx          │
│    Main Board S/N.........................xxxxxxxxx          │
│    System BIOS Version....................vx.xx             │
│                                                             │
│                                                             │
│                                                             │
│                                                             │
│                                                             │
│                                                             │
├─────────────────────────────────────────────────────────────┤
│   ↓ = Move Highlight Bar,  → ← = Change Setting, F1 = Help   │
└─────────────────────────────────────────────────────────────┘
```

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

Product Name

This parameter specifies the official name of the system.

System S/N

This parameter specifies the system's serial number.

Main Board ID

This parameter specifies the system board's identification number.

Main Board S/N

This parameter specifies the system board's serial number.

System BIOS Version

This parameter specifies the version of the BIOS utility.

2.3 Basic Configuration

Select Basic Configuration to input configuration values such as date, time, and disk types.

The following screen shows the Basic Configuration menu.

```
                  Basic Configuration          Page 1/1

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

   Floppy Drive A ...........[xx-MB     xx-inch]
   Floppy Drive B ...........[xx-MB     xx-inch]

   LS-120 drive as...........[ Normal ]

   ➤IDE Primary Channel Master
   ➤IDE Primary Channel Slave
   ➤IDE Secondary Channel Master
   ➤IDE Secondary Channel Slave

   ➤Boot Options


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

2.3.1 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   1980 to 2099

2.3.2 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

2.3.3 Floppy Drives

To enter the configuration value for the first floppy drive (drive A), highlight the Floppy Drive A parameter. Press ➡ or ⬅ key to view the options and 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.

2.3.4   LS-120 Drive As

This parameter allows you not only to enable the LS-120 device installed in your system, but as well as 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.

2.3.5   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,  → ← = Change Setting, F1 = Help
```

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 the number of cylinders of your hard disk, and is automatically set depending on your Type parameter setting.

HEAD

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

SECTORS

This parameter specifies the number of sectors of your hard disk, 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, enhanced IDE feature works only under DOS and Windows 3.x, 95 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 to 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, Windows 95, 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` .

2.3.6   Boot Options

This option allows you to specify your preferred setting for bootup.

The following screen appears if you select Boot Options from the Basic Configuration menu:

```
┌─────────────────────────────────────────────────────────────┐
│          Boot Options                          Page 1/1      │
├─────────────────────────────────────────────────────────────┤
│                                                              │
│   Fast Boot..............................[Auto ]             │
│   Silent Boot............................[Enabled ]          │
│   Num Lock After Boot....................[Enabled ]          │
│   Memory Test............................[Disabled]          │
│   Configuration Table....................[Enabled ]          │
│                                                              │
│                                                              │
│   Boot Sequence                                              │
│      1st [Floppy Disk]                                       │
│      2nd [Hard Disk]                                         │
│      3rd [CD-ROM]                                            │
│                                                              │
│                                                              │
│   Boot from LanDesk Service Agent........[Disabled]          │
│                                                              │
├─────────────────────────────────────────────────────────────┤
│   ↓ = Move Highlight Bar,  → ← = Change Setting, F1 = Help   │
└─────────────────────────────────────────────────────────────┘
```

Fast Boot

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

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`.

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.

Boot Sequence

This parameter allows you to specify the boot search sequence. The default sequence is floppy disk, hard disk, then CD-ROM. To change the order of devices, simply press ⇥ or ⇤.

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`.

2.4   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...............[   None   ]                  │
│      Operation Mode................[   Normal      ]             │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
├─────────────────────────────────────────────────────────────────┤
│   ↓ = Move Highlight Bar,   → ← = Change Setting, F1 = Help      │
└─────────────────────────────────────────────────────────────────┘
```

2.4.1   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 (possible under DOS mode only).

Table 2-1 lists the drive control settings and their corresponding functions.

Table 2-1   Drive Control Settings

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

2.4.2   Setup Password

The Setup Password prevents unauthorized access to the BIOS utility.

Setting a Password

1.   Make sure that SW2 of S1 is set to On (bypass password).

> *You cannot enter the BIOS utility if a Setup password does not exist and SW2 of S1 is set to Off (password check enabled).*
>
> *By default, SW2 of S1 is set to On (bypass password).*

2.   Enter BIOS utility and select System Security.

3.	Highlight the Setup Password parameter and press the ⬅ or ➡ key. The password prompt appears:

[password prompt box with key icon]
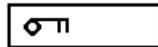
4.	Type a password. The password may consist of up to seven characters.

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

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

[password verification boxes with key icons]
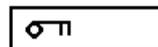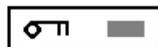
6.	Retype the password then press ENTER.

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

7.	Press ESC to exit the System Security screen and return to the main menu.

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

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

10.	After rebooting, turn off the system then open the housing.

11.	Set SW2 of S1 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.

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 ESC to exit the System Security screen and return to the main menu.

5. Press ESC 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 SW2 of S1 is set 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.*

2.4.3   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 SW2 of S1 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 do not appear; however, the keyboard will be locked after system boot and will remain locked until the correct password is entered.

2.5 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              Page 1/1           │
├──────────────────────────────────────────────────────────┤
│                                                          │
│   Power Management Mode ...............[Enabled ]        │
│     IDE Hard Disk Standby Timer ......[Off] Minute(s)    │
│     System Sleep Timer ...............[Off] Minute(s)    │
│       Sleep Mode .....................[----]            │
│                                                          │
│  Power Switch < 4 Sec.................[Power Off]        │
│  *ACPI BIOS...........................[Disabled]        │
│   System wake-up event                                  │
│                                                          │
│     Modem Ring Indicator...............[Enabled ]       │
│                                                          │
│                                                          │
│                                                          │
│                                                          │
├──────────────────────────────────────────────────────────┤
│   ↓ = 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 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 resume 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` and `Suspend` modes.

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

2.5.2   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.

2.5.3   ACPI BIOS

ACPI (Advanced Configuration and Power Interface) feature enables the operating system to monitor and control the amount of power supplied to each device attached to the system. When enabled, ACPI uses the OS (Operating System) to turn off the peripheral devices (such as a CD-ROM) that are not in use. The default setting is `Disabled.`

Windows 98 OS (code-named Memphis) supports the ACPI feature.

2.5.4   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.

2.6   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 peripheral, 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 parameters.

```
         Advanced Configuration          Page 1/1

  *Internal Cache.................... [Enabled ]
  *External Cache.................... [Enabled ]
  *Cache Scheme...................... [Write Back]

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

  *C8000h - DFFFh Shadow............. [Disabled]



  ➢*Onboard Peripheral Configuration
  ➢*PnP/PCI System Configuration




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

2.6.1   Internal Cache

This parameter enables or disables the internal cache memory. The default setting is `Enabled`.

2.6.2   External Cache

This parameter enables or disables the external cache memory. The default setting is `Enabled`.

2.6.3   Cache Scheme

This parameter sets the cache to `Write Through` or `Write Back` modes. `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.

2.6.4   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.*

2.6.5   Memory Parity Mode

This parameter allows you to enable or disable the ECC and parity check features. Select `Parity` to enable the parity check feature. Select `ECC` to enable the ECC feature. The ECC feature enables BIOS to detect and correct data errors.

Disable this parameter if you want to disregard the function.

2.6.6   C8000h - DFFFFh Shadow

Set the parameter to `Enabled` to shadow expansion card to ROM. For some legacy ISA LAN cards, you might need to disable the shadowing in order to work properly. In this case, we recommend that you set this parameter to `Disabled`.

2.6.7   Onboard Peripheral Configuration

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

```
┌─────────────────────────────────────────────────────────┐
│         Onboard Peripheral Configuration    Page 1/1     │
├─────────────────────────────────────────────────────────┤
│                                                          │
│   *Floppy Disk Controller.............[Enabled ]         │
│   *IDE Controller.....................[Both    ]         │
│   *PS/2 Mouse Controller..............[Enabled ]         │
│   *USB Host Controller................[Disabled]         │
│      *USB Legacy Mode.................[--------]          │
│   *Onboard Audio Chip.................[Enabled ]         │
│   *Onboard Ethernet Chip..............[Enabled ]         │
│                                                          │
│                                                          │
│   ➢*Onboard Serial/Parallel Port Settings                │
│                                                          │
│                                                          │
│                                                          │
├─────────────────────────────────────────────────────────┤
│   ↓ = Move Highlight Bar,  → ← = Change Setting, F1 = Help│
└─────────────────────────────────────────────────────────┘
```

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 controller; `Both` to enable both primary and secondary IDE controller; or `Disabled` to disable both 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. Select `Enabled` to activate the USB function of the system. Select `Disabled` to deactivate 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 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.

Onboard Ethernet Chip

This parameter lets you enable or disable the onboard network controller.

ONBOARD SERIAL/PARALLEL PORT SETTINGS

The Onboard Serial/Parallel Port option allows you to configure the onboard communication ports.

```
           Onboard Serial/Parallel Port Settings     Page 1/1

   *Serial Port 1......................[Enabled ]
     *Base Address.....................[3F8h]
     *IRQ..............................[ 4 ]
   *Serial Port 2......................[Enabled ]
     *Base Address.....................[2F8h]
     *IRQ..............................[ 3 ]
   *Parallel Port......................[Enabled ]
     *Base Address.....................[378h]
     *IRQ..............................[ 7 ]
     *Operation Mode...................[EPP]
      *ECP DMA Channel...............[ - ]




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

SERIAL PORT 1

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

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 4 and 11.

SERIAL PORT 2

This parameter allows you to enable or disable the serial port 2.

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 10.

> *The Base Address and IRQ parameters are configurable only if Serial Port parameters are enabled.*

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, 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 2-2 lists the different operation modes.

Table 2-2   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).

2.6.8 PnP/PCI System Configuration

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

```
           PnP/PCI System Configuration       Page 1/1

   *PCI IRQ Setting ...........[  Auto  ]
                               INTA    INTB    INTC    INTD
     *PCI Slot 1..............[--]    [--]    [--]    [--]
     *PCI Slot 2..............[--]    [--]    [--]    [--]
     *PCI Slot 3..............[--]    [--]    [--]    [--]
     *PCI Slot 4..............[--]    [--]    [--]    [--]


   *PCI IRQ Sharing.............[No ]
   *VGA Palette Snoop ..........[Disabled]
   *Graphics Aperture Size......[64] MB
   *Plug and Play OS............[Yes]
   *Reset Resource Assignments. .[No ]



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

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 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 specifies the system memory area reserved for Accelerated Graphics Port (AGP). AGP is a new bus design that enables the system to support 3D applications by speeding up the VGA bus and increasing the bandwidth.

We recommend you to leave this parameter to its default setting.

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).*
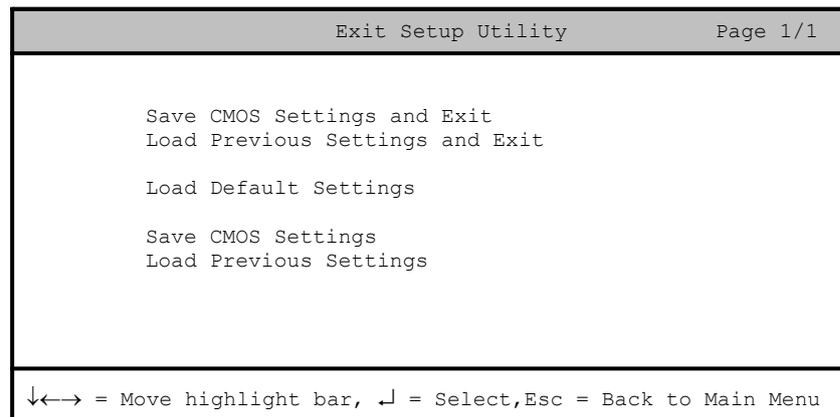
Reset Resource Assignments

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`.

Refer to section 1.10.3 for instructions on installing and configuring ISA cards.

2.7 Exit Setup Utility

To exit the BIOS utility, select Exit Setup Utility from the main menu. The following screen appears:

```
                 Exit Setup Utility           Page 1/1


         Save CMOS Settings and Exit
         Load Previous Settings and Exit

         Load Default Settings

         Save CMOS Settings
         Load Previous Settings




↓←→ = Move highlight bar, ↵ = Select,Esc = Back to Main Menu
```

2.7.1 Save CMOS Settings and Exit

Select this option if you want to save the current CMOS settings and exit the BIOS utility.

2.7.2 Load Previous Settings and Exit

Select this option to cancel the current changes made to the BIOS settings, reload the previous settings and exit the BIOS utility after reload.

2.7.3 Load Default Settings

This option loads the default settings for the optimized system configuration. Press [ESC] to return to the main menu.

2.7.4   Save CMOS Settings

Select this option to save the current BIOS settings, including your recent modifications. Press [ESC] to return to the main menu.

2.7.5   Load Previous Settings

This option cancels all modifications that you have made in the system configuration and reloads your previous settings. Press [ESC] to return to the main menu.