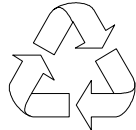


V59LT System

User's Guide



100% Recycled Paper

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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 ÅBNING. 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

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.

WARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt 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.

 , , , 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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System Board

1.1 Features

The V59LT is a high-performance system board with a 64-bit architecture. It supports the Intel P54C and P55C CPUs running at 100/120/133/150/166/200 MHz. It also supports 6x86L/6x86MX Cyrix/IBM and AMD K6 CPUs. The system board utilizes the Peripheral Component Interconnect (PCI) local bus architecture that maximizes the system performance by enabling high-speed peripherals to match the speed of the microprocessor with its 120 MB or 132 MB per second transfer rate in burst mode.

The system is an all-in-one Pentium-based system designed to support both CRT(Cathode Ray Tube)- and LCD(Liquid Crystal Display)-based desktop systems. The multiple-LCD panel support feature allows you to save space. However, if you prefer to have a high-quality video display and space is not a problem to you, you may use a regular CRT monitor.

The system offers a complete multimedia solution by integrating the video, a Sound Blaster Pro-compatible audio, and network controllers into its board design. The onboard 3D VGA controller allows the system to support 3D applications. It has a built-in LVDS (low-voltage differential signaling) interface for LCD support. The audio controller provides a Sound Blaster- and Microsoft Sound System-compatible audio interface. An AIO (audio I/O) board may be installed to enable the system to accommodate external audio devices such as speakers, microphones, mixers, etc. The integrated network controller supports the 10Base-T/100Base-TX protocols and the Wake-on LAN function that enables system boot via network access.

The system memory is expandable to 256MB via two onboard 168-pin DIMM (dual in-line memory module) sockets. To further enhance system performance, the board comes with a 512-KB pipelined-burst second-level cache and 2-MB (or 4-MB) of video memory.

Standard onboard I/O interfaces are comprised of two UART 16C550 serial ports, a parallel port with an Enhanced Parallel Port (EPP)/Extended Capabilities Port (ECP) feature, PS/2 keyboard and mouse ports, and a VGA port. LCD connectors, Universal Serial Bus (USB), video, audio and network interfaces are also added to the design to enable the system to support more peripherals.

As added enhancements, the board also incorporates Plug-and-Play (PnP), Wireless Communication, Hardware Monitor and Wake-on Ring-in, Power Management, and Software Shutdown features.

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

1.2 Major Components

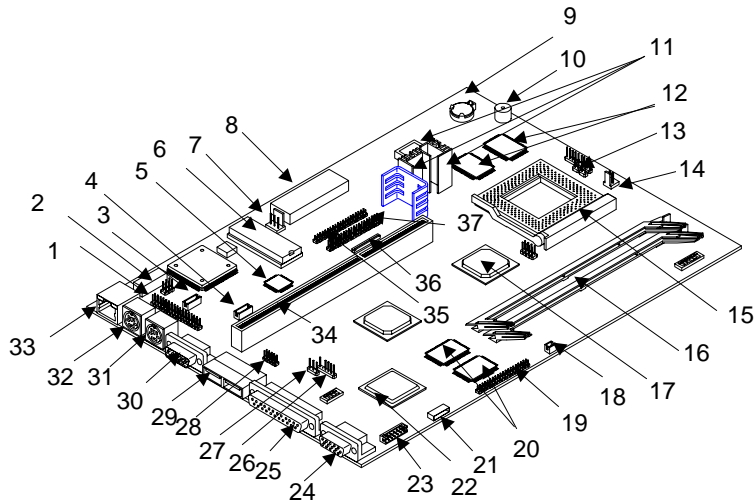
The system board has the following major components:

- A ZIF (zero insertion force) socket that supports 3.3V Intel Pentium processor (P54C/P55C) and AMD K6 running at 120, 133, 150, 160, 200, 233, or 266 MHz (with 60 or 66 external clock)
- Two 168-pin DIMM sockets that accept 4-, 8-, 16-, 32-, and 64-MB Standard or EDO DRAMs, with ECC/Parity mode; allows 128-MB maximum system memory
- 512-KB pipelined-burst second-level cache
- 256-KB Flash ROM
- Onboard 2-MB or 4-MB video memory
- Enhanced PCI local bus IDE controller
- Onboard 3D VGA controller with built-in LCD interface

-
- Onboard Sound Blaster and Windows Sound System compatible audio controller
 - Onboard 10Base-T/100Base-TX full-duplex Ethernet controller with LAN boot and Wake-on LAN features
 - Host/.hub controller for USB that is auto-configurable and requires no termination; supports hot plugging and port consolidation
 - APM-compliant DMI BIOS
 - Ultra I/O controller
 - One riser card slot for future expansion
 - I/O interfaces
 - Dual-16C550 buffered serial ports
 - One SPP/ECP/EPP parallel port
 - VGA CRT port
 - LCD interfaces for DSTN (dual-scan super twisted nematic), TFT (thin-film transistor), and Super TFT displays
 - Audio interface (CD-in)
 - Fax/modem interfaces (such as Modem, Modem Wake, Modem Ring-in, and Fax/modem connectors)
 - Fast Ethernet interface
 - USB ports
 - IrDA connector for wireless communication
 - PS/2 mouse and keyboard ports

1.3 Layout

Figure 1-1 shows the board layout and the locations of the important components.



- | | | | |
|----|--|----|-------------------------|
| 1 | Audio I/O connector | 20 | Video memory |
| 2 | LAN LED connector | 21 | LVDS interface |
| 3 | Fax/modem connector | 22 | 3D video controller |
| 4 | CD-in connector | 23 | LCD power connector |
| 5 | Audio controller | 24 | VGA CRT port |
| 6 | System BIOS chip | 25 | Parallel port |
| 7 | Standby power connector | 26 | IrDA connector |
| 8 | Power connector | 27 | Modem Ring-in connector |
| 9 | Battery | 28 | USB connector |
| 10 | Buzzer | 29 | USB ports or COM2 port |
| 11 | Voltage regulators with heatsink | 30 | COM1 port |
| 12 | 512-KB pipelined-burst cache | 31 | PS/2 mouse port |
| 13 | HDD LED/System power LED/ Standby LED /System reset button connector | 32 | PS/2 keyboard port |
| 14 | CPU fan or H/W monitoring connector | 33 | Ethernet port |
| 15 | CPU socket | 34 | Riser card slot |
| 16 | DIMM sockets | 35 | CD-ROM connector |
| 17 | Ultra I/O controller | 36 | FDD connector |
| 18 | 12.1-inch DSTN contrast connector | 37 | IDE connector |
| 19 | TTL LCD interface | | |

Figure 1-1 System Board Layout



The heatsink becomes very hot when the system is ON. NEVER touch the heatsink with any metal or with your hands.

1.4 Jumpers and Connectors

1.4.1 Jumper and Connector Locations

Figure 1-2 shows the jumper and connector locations.

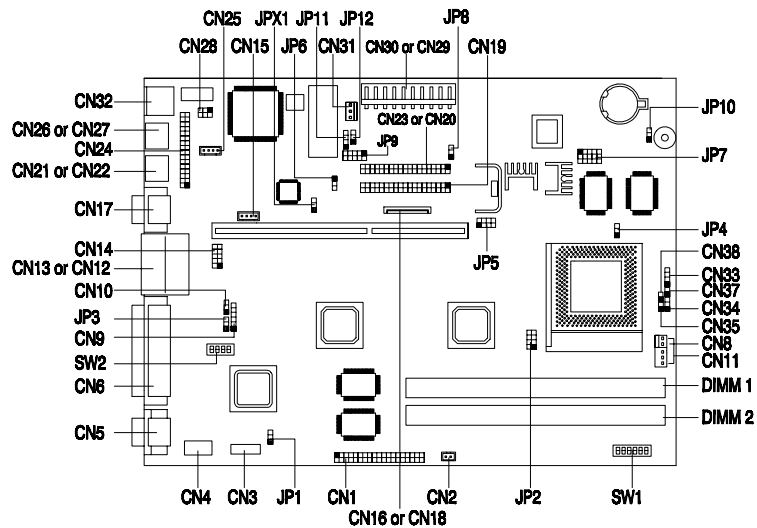


Figure 1-2 Jumper and Connector Locations



The shaded pin indicates pin 1.

1.4.2 Jumper Settings

The following table lists the jumper settings and their corresponding functions:

Table 1-1 Jumper Settings

Jumper	Setting	Function
JP1	1-2 2-3	Panel Select 5V panel (13.3-inch S-TFT) 3.3V panel (12.1-inch DSTN and 12.1-inch TFT)
JP2, JP5	Closed, Open Open, Closed	CPU Voltage Type Selection Single-voltage CPU Dual-voltage CPU
JP3	1-2 2-3 *	Boot Option Boot Block boot Normal boot
JP4	1-2 2-3 *	Burst Mode Linear burst Interleaved burst
JP6	1-2 2-3 *	IDE Channel 2 Device Assignment Slave Master
JP7	A B C D E 1 1 0 0 0 0 1 0 1 0 1 1 0 1 0 0 1 1 1 0 1 1 1 1 0 0 1 0 0 1	CPU Core Voltage Select Vout Select 2.1V 2.8V 2.9V 3.2V 3.3 3.5V
JP8	1-2 2-3	H/W Monitor for CPU I/O Voltage 3.3V 3.52V

* Default

Table 1-1 Jumper Settings (continued)

Jumper	Setting	Function																																																						
JP9	1-2 3-4 5-6 7-8 9-10	H/W Monitor for CPU Core Voltage 2.8V 2.9V 3.2V 2.1V 1.8V																																																						
JP10	1-2 * 2-3	CMOS Data Normal Clear CMOS																																																						
JP12	1-2 * 2-3	H/W Monitor Function Enabled Disabled																																																						
JPX1	1-2 2-3 *	Audio ROM Write Control Enabled Disabled																																																						
SW1	<table border="1"> <thead> <tr> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td>On</td> <td>Off</td> <td>On</td> </tr> <tr> <td>Off</td> <td>Off</td> <td>Off</td> </tr> <tr> <td>Off</td> <td>On</td> <td>On</td> </tr> <tr> <td>On</td> <td>Off</td> <td>On</td> </tr> <tr> <td>On</td> <td>On</td> <td>Off</td> </tr> </tbody> </table>	1	2	3	On	Off	On	Off	Off	Off	Off	On	On	On	Off	On	On	On	Off	Host Clock/PCI Clock 60 MHz/30 MHz 66 MHz/33 MHz 75 MHz/30 MHz 83 MHz/33 MHz 60 MHz/30 MHz (if U3 is ICS9148)																																				
1	2	3																																																						
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3.0	3.0	3.0																																																						
2.5	2.5	2.5																																																						

* Default

Table 1-1 Jumper Settings (continued)

Jumper	Setting			Function
SW2	1	2	3	LCD Panel Select
	Off	Off	On	12.1-inch DSTN
	On	Off	Off	12.1-inch TFT
	Off	On	Off	13.3-inch S-TFT
	On	On	Off	15.5 SCC
	Off	Off	Off	CRT

1.4.3 Onboard Connectors

Table 1-2 lists the onboard connectors.

Table 1-2 Onboard Connectors

Connector	Function
CN1	12.1-inch DSTN/12.1-inch TFT LCD connector
CN2	12.1-inch DSTN contrast connector
CN3	13.3-inch STFT LVDS connector
CN4	LCD power connector
CN5	VGA CRT port
CN6	Parallel port
CN8	CPU fan connector
CN9	IrDA connector
CN10	Modem Ring-in connector
CN11	2-pin Fan power connector/ 5-pin H/W Monitoring function connector
CN12/CN13	Serial port/USB port
CN14	9-pin header USB port
CN15	CD-ROM line-in connector
CN16/CN18	FDD connector (34-pin header or FPC connector)
CN17	Serial port

Table 1-2 Onboard Connectors (continued)

Connector	Function
CN19	IDE channel 1 connector
CN20/CN23	IDE channel 2 connector (40-pin header or 50-pin 2.0-mm pitch header)
CN21/CN22	PS/2 mouse port (mini-DIN or 6-pin header)
CN24	Audio I/O and joystick interface
CN25	Fax/modem line-in/speaker-out connector
CN26/CN27	PS/2 keyboard connector (mini-DIN or 6-pin header)
CN28	LAN signal connector
CN29/CN30	Power supply connector
CN31	Power supply switch connector
CN32	RJ-45 Ethernet port
CN33	HDD LED connector
CN34	System power LED connector
CN35	Standby LED connector
CN37	System power button connector
CN38	System reset button connector

1.4.4 Front-panel Connectors

The following figure shows the pin orientation of the front-panel connectors available on the system board:

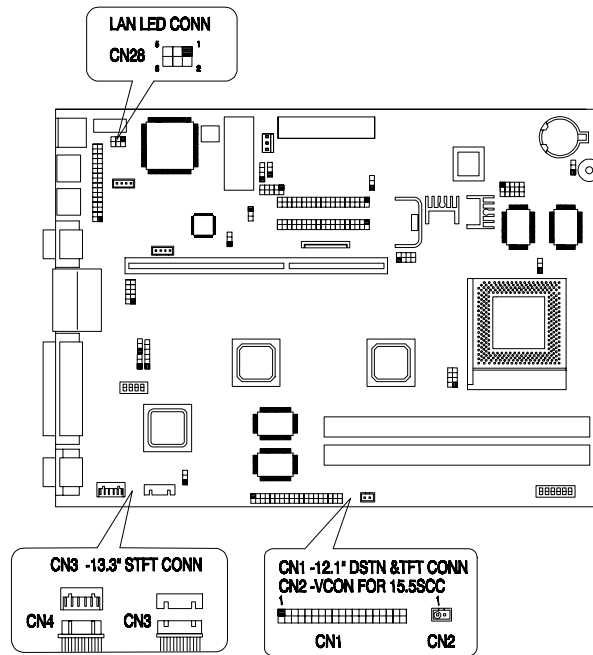


Figure 1-3 Front-panel Connectors

1.5 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.

1.5.1 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.

1.5.2 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 1.5.1 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.

1.5.3 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 1.4.2 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.

1.6 Memory Configuration

The system memory is upgradable to a maximum of 128 MB via three 168-pin DIMM sockets onboard. These DIMM sockets accept 16-, 32-, 64-, and 128-MB, 3.3V SDRAMs. See Figure 1-1 for the location of the DIMM sockets. Section 1.6.1 tells how to install DIMMs.

Table 1-3 lists the possible memory configurations.

Table 1-3 Memory Configurations

DIMM 1	DIMM 2	Total Memory
8MB	--	8 MB
8MB	8MB	16 MB
8MB	16 MB	24 MB
8MB	32 MB	40 MB
8MB	64 MB	72 MB
8MB	128 MB	136 MB
16 MB	--	16 MB
16 MB	8MB	24 MB
16 MB	16 MB	32 MB
16 MB	32 MB	48 MB
16 MB	64 MB	80 MB
16 MB	128 MB	144 MB
32 MB	--	32 MB
32 MB	8MB	40 MB
32 MB	16 MB	48 MB
32 MB	32 MB	64 MB

Table 1-3 Memory Configurations (continued)

DIMM 1	DIMM 2	Total Memory
32 MB	64 MB	96 MB
32 MB	128 MB	160 MB
64 MB	--	64 MB
64 MB	8MB	72 MB
64 MB	16 MB	80 MB
64 MB	32 MB	96 MB
64 MB	64 MB	128 MB
64 MB	128 MB	192 MB
128 MB	--	128 MB
128 MB	8MB	136 MB
128 MB	16 MB	144 MB
128 MB	32 MB	160 MB
128 MB	64 MB	192 MB
128 MB	128 MB	256 MB

1.6.1 Installing a DIMM



Observe the ESD precautions when installing components. See section 1.5.

Follow these steps to install a DIMM:

1. Carefully slip a DIMM at a 25° angle into a socket making sure that the pin 1 of the DIMM matches pin 1 of the socket. Pin 1 is labeled 1 on both the DIMM and the socket.
2. Gently push the DIMM into the socket until it is properly seated.
3. Push the holding clip to lock the DIMM into position.

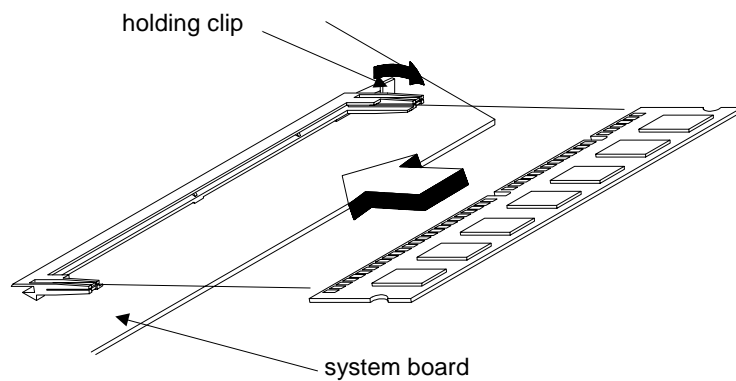


Figure 1-4 Installing a DIMM

1.6.2 Removing a DIMM

To remove a DIMM:

1. Push the holding clip of the socket outward to release the DIMM.
2. Gently pull the DIMM out of the socket.

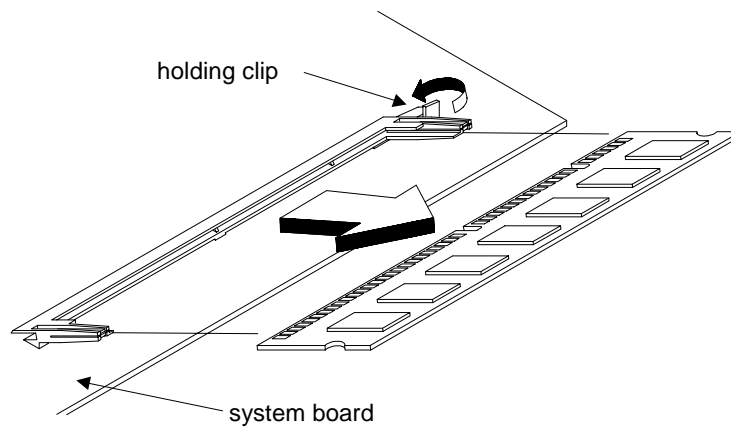


Figure 1-5 Removing a DIMM

1.6.3 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.

1.7 CPU Upgrade

1.7.1 Removing the CPU

In case you want to replace or upgrade your CPU, you need to remove the previously installed CPU first.

Follow these steps to remove the CPU:

1. Locate the CPU socket with CPU mounted on the system board.
2. Detach the fan cable connector.
3. Remove the fan and heatsink attached to the CPU.

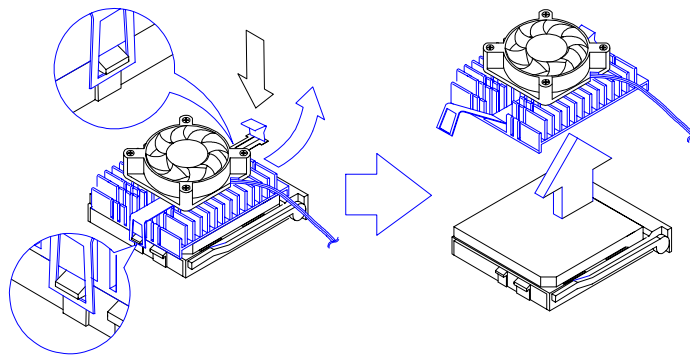


Figure 1-6 Removing the Fan and Heatsink

4. Pull up the socket lever. The CPU pins will be automatically released from the socket holes.
5. Detach the CPU from the socket.

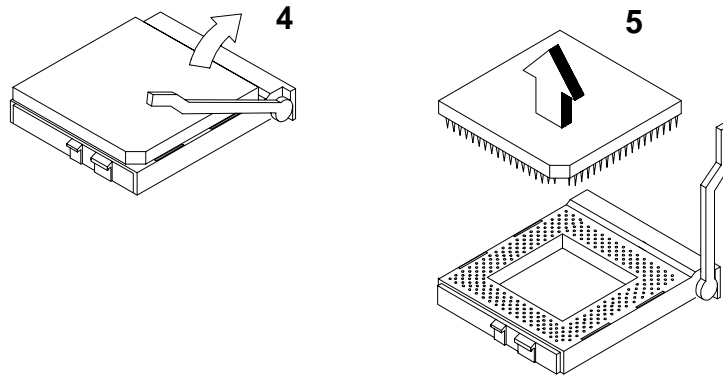


Figure 1-7 Removing the CPU

1.7.2 Installing the Upgrade CPU



Observe the ESD precautions when installing components. See section 1.5.1.

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

Follow these steps to install the upgrade CPU:

1. Pull up the socket lever.
2. Insert the CPU, making sure that pin 1 (indicated by a notched corner) of the CPU connects to hole 1 of the socket.
3. Pull down the socket lever to lock the CPU into the socket.

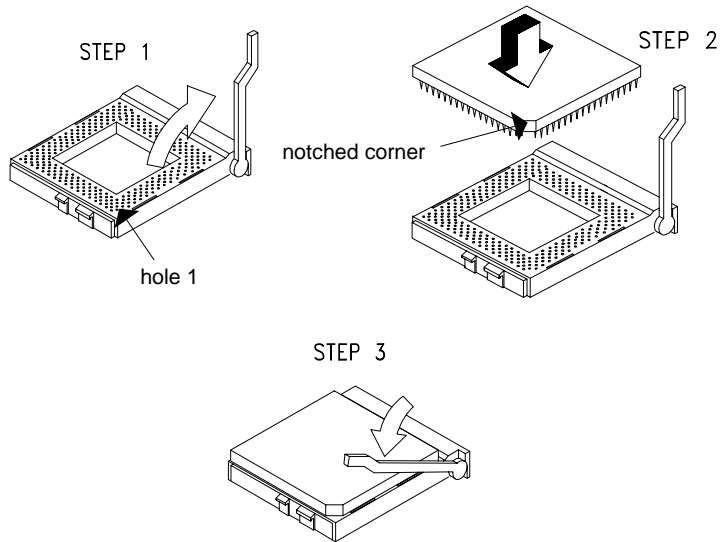


Figure 1-8 Installing a CPU

5. Place the heatsink with fan on top of the CPU and attach the spring clips to the socket flanges.

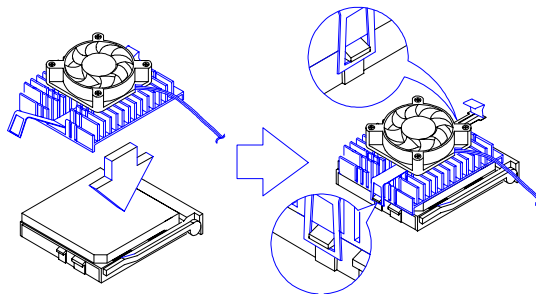


Figure 1-9 Attaching the Heatsink and Fan to the CPU

6. Plug the fan cable to the fan connector on the system board.

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.

In addition, the VGA has a built-in LVDS interface, allowing the system to support LCDs. For more details on this feature, see section 1.16.

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

1.8.1 Supported Video Resolutions

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

Table 1-4 Supported Video Resolutions

Resolution	bpp	V-Freq. (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
640 x 480	8/16/24/32	200	100.2
800 x 600	8/16/24/32	48	33.8

Table 1-4 Supported Video Resolutions (continued)

Resolution	bpp	V-Freq. (Hz)	H-Freq. (KHz)
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
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

Table 1-4 Supported Video Resolutions (continued)

Resolution	bpp	V-Freq. (Hz)	H-Freq. (KHz)
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	108.7
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 and Microsoft Sound System standards.

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

- An audio I/O (AIO) connector
- CD-in connector
- CD-ROM 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 CN24 on the system board. See the following figure.

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

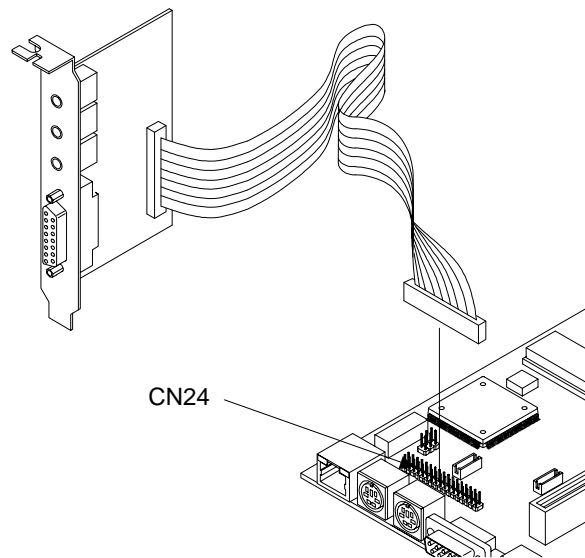


Figure 1-10 Installing an AIO Board

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.

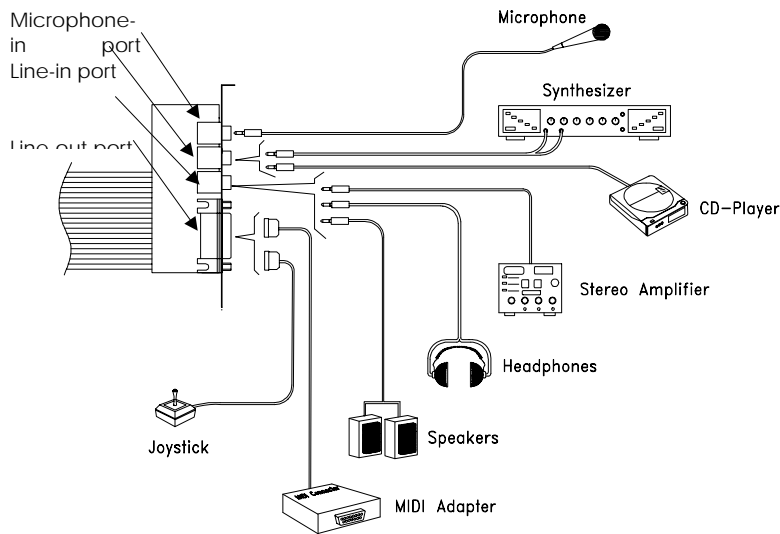


Figure 1-11 External Audio Devices

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.

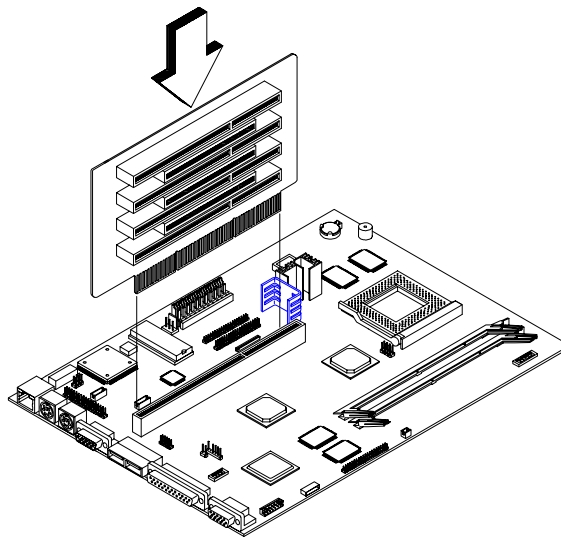


Figure 1-12 Installing a Riser Card

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.

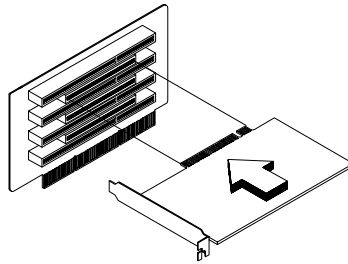


Figure 1-13 Installing a PCI Card

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 2.6.7.
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.

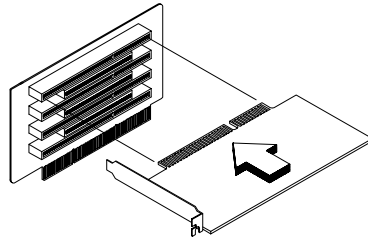


Figure 1-14 Installing an ISA Card

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 10Base-T/100Base-TX 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 LCD Panel Support

The board comes with LCD connectors that allow you to use 18-bit flat LCD panels for display, in case you do not want to use a regular CRT display. These connectors can accommodate 12.1-inch TFT/DSTN, 13.3-inch S-TFT LCD panels.

For full multiple-LCD panel support, the board utilizes a 3D video controller with built-in LVDS and NS LVDS interface. For more details on the onboard video controller, see section 1.8.

1.17 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

1.17.1 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.

1.17.2 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 1-5 lists the system error messages in alphabetical order.

Table 1-5 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.

Table 1-5 POST Error Messages (continued)

Error Message	Corrective Action
Floppy Drive A Error Floppy Drive B Error	Replace the floppy drive.
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.

1.17.3 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.

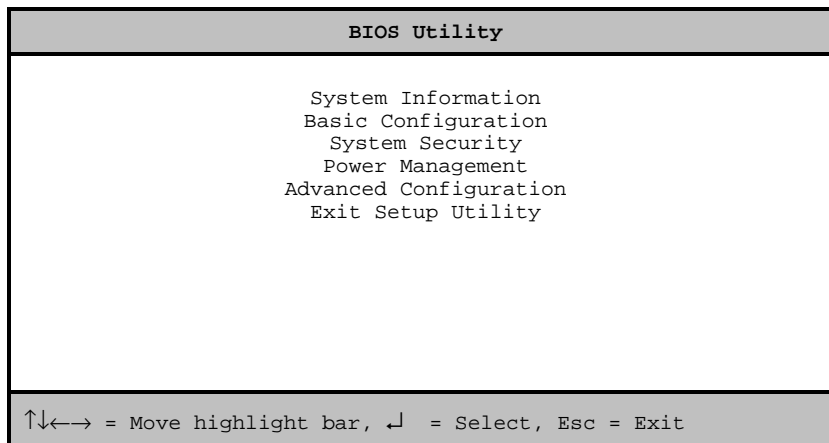
2.1 Entering Setup

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:



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..... MMX (R) Pentium
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..... 16 MB
  1st Bank..... SDRAM
  2nd 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.

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

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. For the location of the DIMM sockets, refer to Figure 1-1.

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 ..... xxxxxxxxxx
System S/N ..... xxxxxxxxxx
Main Board ID ..... xxxxxxxxxx
Main Board S/N ..... xxxxxxxxxx
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 specify the function of the device as well. 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.

SECTOR

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, this enhanced IDE feature works only under DOS and Windows 3.x, 95 environments. 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, 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 settings for bootup.

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

```
Boot Options                                     Page 1/1

Fast Boot .....[Disabled]
Silent Boot .....[Enabled ]
Num Lock After Boot .....[Enabled ]
Memory Test .....[Disabled]
Boot from LanDesk Service Agent .....[Disabled]

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

Update BIOS with Boot Block .....[Disabled]
Configuration Table .....[Enabled ]

↑↓ = 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 **F9** after you hear a beep that indicates the activation of the keyboard.

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

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*.

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`.

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 .

Update BIOS with Boot Block

Set this parameter to `Enabled` if you want to replace the existing BIOS in the Flash ROM. Then insert the floppy disk containing the new BIOS in the floppy drive. When you reset the system, it will automatically read the BIOS file contained in the floppy disk (i.e., the first file in the disk) and replace your current BIOS in the Flash ROM.

If the update is successful, the system will automatically set this parameter to `Disabled` and shut down the system.

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.

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 you 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

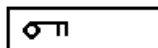
Hard Disk Drive	
Setting	Description
Normal	Hard disk drive functions normally
Write Protect All Sectors	Disables the write function on all sectors
Write Protect Boot Sector	Disables the write function only on the boot sector

2.4.2 Setup Password

The Setup Password prevents unauthorized access to the BIOS utility.

Setting a Password

1. Enter BIOS utility and select System Security.
2. Highlight the Setup Password parameter and press the  or  key. The password prompt appears:



3. 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.

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



5. Retype the password then press **ENTER**.

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

6. Press **ESC** to exit the System Security screen and 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 and reboot the system.
9. While rebooting, turn off the system then open the housing.



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



Changing or Removing the Setup Password

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

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




or

Press  or  and select **None** to remove the existing password.

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

Bypassing the Setup Password

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

1. Turn off the system power.
2. Remove the housing cover and locate jumper **JP10** on the system board.
3. Using a jumper cap, short pins 1–2 for a few seconds.
4. Reset the jumper to normal setting, i.e. pins 2–3 shorted.
5. Replace the housing cover then turn on the system power.
6. Press ++ to enter BIOS Setup and specify a new password, if needed. For details on how to set a password, see the section *Setting 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.

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, if the correct password is not entered before booting, the keyboard will remain locked after system boot.

2.5 Power Management

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

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

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 it 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 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* and *Suspend* modes.

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.

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 Schedule Resume from Suspend

Enabling this parameter lets you to specify when to resume the system from Suspend mode. To deactivate the function, set the parameter to *Disabled*.

The default setting is Disabled.

Resume Time

This parameter is configurable only if the Schedule Resume from Suspend parameter is set to Enabled. When configurable, it allows you to specify the exact time, in hour:minute:second format, to resume the system from Suspend mode.

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]	
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 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.

2.6.4 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.

2.6.5 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`.

2.6.6 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 the both primary and secondary IDE controllers; 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/IrDA Port ..... [Enabled ]
  Base Address ..... [2F8h]
  IRQ ..... [ 3 ]
  Operation Mode ..... [IrDA]
Parallel Port ..... [Enabled ]
  Base Address ..... [378h]
  IRQ ..... [ 7 ]
  Operation Mode ..... [Bi-directional]
  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.



The Base Address and IRQ parameters are configurable only if Serial Port 1 parameter is enabled.

SERIAL PORT 2/IRDA PORT

This parameter reads as Serial Port 2 if the system board does not support IrDA interface. It allows you to enable or disable the serial port 2.

However, if the system board comes with an IrDA interface, this parameter reads as IrDA Port because the serial 2 port is automatically assigned as the IrDA port. This allows you to enable or disable the IrDA port.

Base Address

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

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

IRQ

This function lets you assign an interrupt for serial port 2 or IrDA port. The options are IRQ 3 and 10.



The Base Address and IRQ parameters are configurable only if Serial Port 2/IrDA Port parameter is enabled.

PARALLEL PORT

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

Base Address

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

- 3BCh
- 378h
- 278h

IRQ

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



The Base Address and IRQ parameters are configurable only if the Parallel Port parameter 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).

2.6.7 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 IRQ Sharing	[No]				
VGA Palette Snoop	[Disabled]				
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.



The number of PCI slot parameter that will appear in this screen depends on the number of slots available on the riser card currently installed in the 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.

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).*

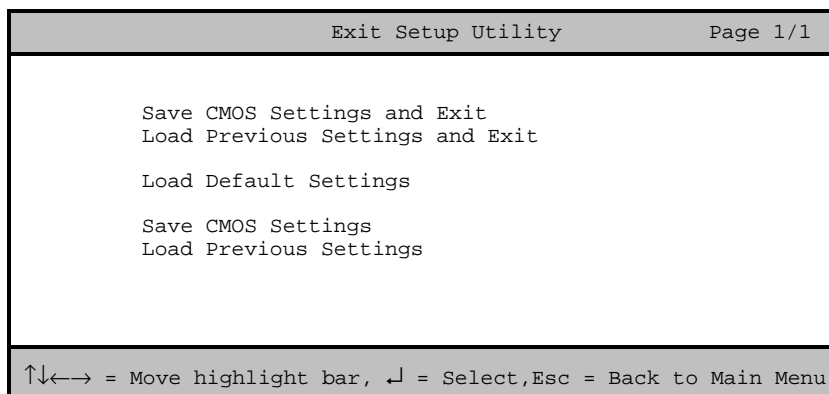
Reset Resource Assignments

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:



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.