V38X System

User's Guide

Copyright

Disclaimer

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Pentium is a trademark of Intel Corporation.

Other brand and product names are trademarks and/or registered trademarks of their respective holders.

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

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.

a, e, s, 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

1.1   Features

This high-performance system board is built on an ATX baseboard utilizing an Intel Pentium$^{®}$ P54C/P55C processor running at 75 MHz to 233 MHz, Cyrix 6x86/6x86MX, and AMD K5/K6. It has four PCI and three ISA slots (with one PCI- and ISA-shared slot) for future expansion. The onboard three DIMMs sockets allow memory upgrade to a maximum of 256 MB. To further enhance system performance, the board also comes with 256-MB/512-MB pipelined-burst second-level cache.

Onboard I/O interfaces comprise of an UART NS16C550 serial port, a parallel port with Enhanced Parallel Port (EPP)/Extended Capabilities Port (ECP) feature, PS/2 keyboard and mouse ports, and a Universal Serial Bus (USB) interface. The USB interface allows the system to support additional peripherals.

The system supports the power-management function that conforms to the power-saving standards of the U.S. Environmental Protection Agency (EPA) Energy Star program.. It also offers the Plug-and-Play feature. This feature saves the user from configuration troubles, thus making the system more user-friendly.

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

1.2 System Board Layout

The system board has the following features and components:

- A ZIF (zero insertion force) socket that supports Intel Pentium CPU P54C/P55C processor (75MHz~233MHz), Cyrix 6x86/6x86MX, and AMD K5/K6.

- 256-MB maximum system memory

- Three DIMM sockets that accept 16-, 32-, 64- and 128-MB DIMMs

- 256-KB/512-KB pipelined-burst second-level cache

- Integrates an enhanced PCI local bus IDE controller

- PCI 2.1 compliant

- 2 MBit Flash ROM for system BIOS

- Four PCI- and three ISA-expansion slots (one PCI- and ISA-shared slot)

- Dual NS16C550 buffered serial ports and one ECP/EPP parallel port

- USB interface that enables the system to support more peripherals

- Two fast IDE channels support Ultra 33 Synchronous DMA mode and PIO mode 4

- IrDA Interface reserved

- PS/2 mouse and keyboard interface

- Power-management function

Figure 1-1 shows the board layout and the locations of the important components.
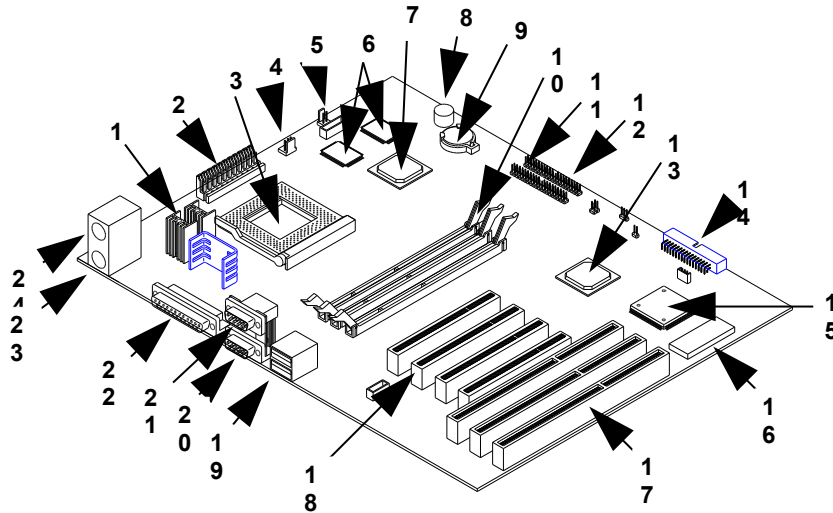
1	*Voltage Regulator with Heatsink*	*13*	*System Chipset PIIX4 82371AB*
2	*Power Connector*	*14*	*FDD Connector*
3	*CPU socket*	*15*	*Ultra I/O Chipset*
4	*Standby Power Connector*	*16*	*System BIOS Chip*
5	*Fan Connectors*	*17*	*ISA slots*
6	*256/512-KB pipelined-burst cache*	*18*	*PCI slots*
7	*System Chipset MTXC 82439TX*	*19*	*USB ports*
8	*Buzzer*	*20*	*COM 2 port*
9	*RTC battery*	*21*	*COM 1 port*
10	*DIMM sockets*	*22*	*Parallel port*
11	*IDE 2 connector*	*23*	*PS/2 keyboard connector*
12	*IDE 1 connector*	*24*	*PS/2 mouse connector*

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.*

1.3   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 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 1.3 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 Upgrading the CPU

1.5.1 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. Pull up the socket lever. The CPU pins will be automatically released from the socket holes.

4. Detach the CPU from the socket.

1.5.2 Installing the Upgrade CPU

Observe the ESD precautions when installing components. See section 1.3.

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.

STEP 1

hole 1

STEP 2

notched corner

STEP 3
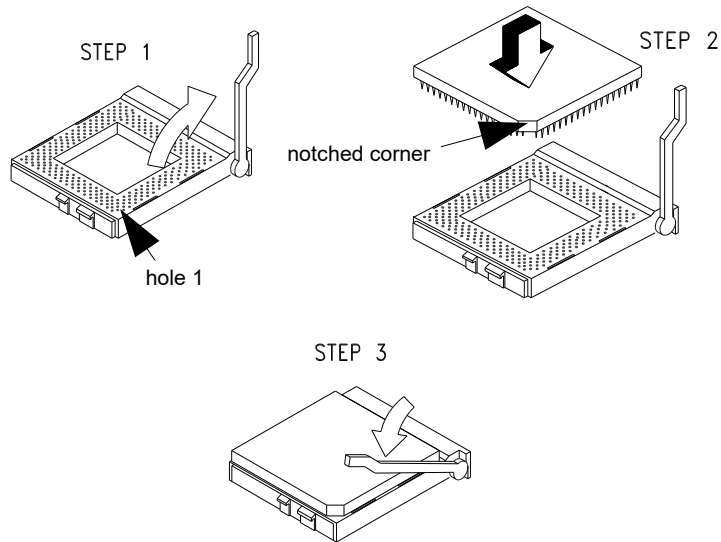
Figure 1-2   Installing a CPU

4. Attach the heatsink and fan to the CPU.
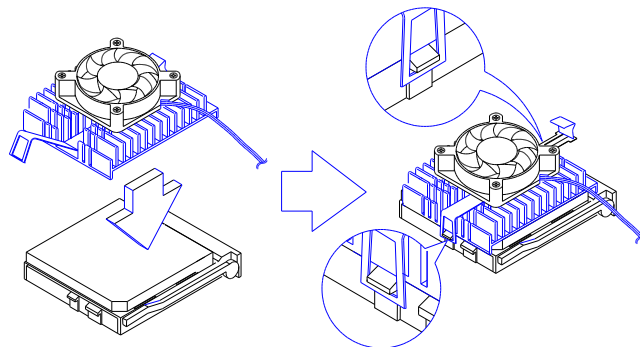
Figure 1-3   Attaching the Heatsink and Fan to the CPU

5. Plug in the fan cable to the fan connector on the system board.

1.6 Jumpers and Connectors

Figure 1-4 shows the jumper and connector locations.
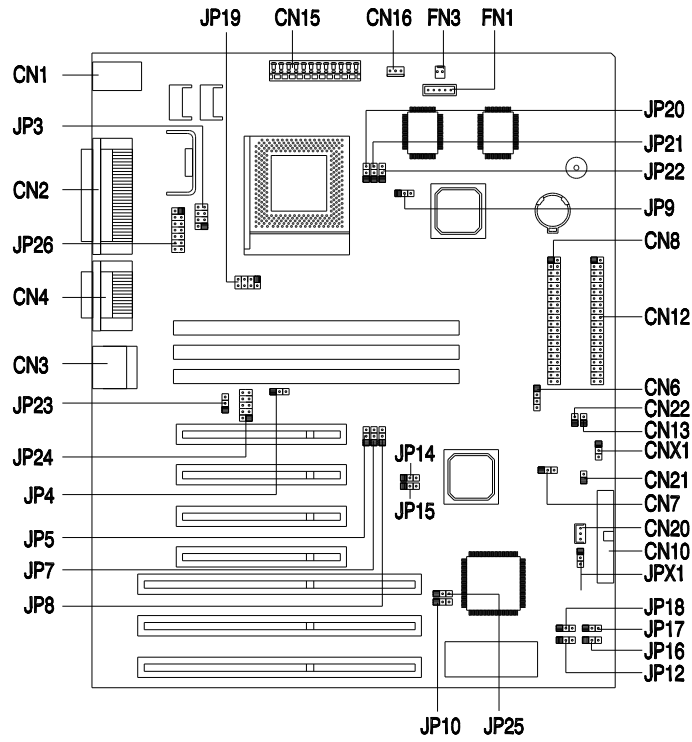
Figure 1-4   Jumper and Connector Locations

The shaded pin indicates pin 1.

The following tables list the jumper settings and their corresponding functions:

Table 1-1   System Jumper Settings

Jumper	Setting	Function
JP4 H/W Monitoring	1-2 2-3*	Disable Enable
JP10 Password	1-2 2-3*	Check Password Bypass password
JP12 Flash Function	1-2 2-3*	Disable Enable
JP16 Flash Power	1-2 2-3*	+12V (Intel, MX) +5V (ATMEL,SST)
JP23 H/W Monitor Vio	1-2 2-3*	VRE, K5 Type CPU Others
JP25 Acer/OEM BIOS	1-2 2-3*	OEM Acer
JPX1 LAN Card Selection	1-2 2-3*	Active High Active Low

Table 1-2   Intel P55C/P54C CPU Clock and Voltage Jumper Setting

CPU Clock Jumper Setting							
CPU Freq. (MHz)	Host Bus Freq. (MHz)	Core/Bus Clock Ratio	Host Clock Jumpers			Clock Ratio Jumpers	
			JP5	JP7/JP14	JP8/JP15	JP20	JP21
P55C/233	66	7/2	1-2	1-2	1-2	1-2	1-2
P55C/200	66	3/1	1-2	1-2	1-2	1-2	2-3
P55C/166	66	5/2	1-2	1-2	1-2	2-3	2-3
P54C/200	66	3/1	1-2	1-2	1-2	1-2	2-3
P54C/166	66	5/2	1-2	1-2	1-2	2-3	2-3

*   Default Setting

Table 1-2   *Intel P55C/P54C CPU Clock and Voltage Jumper Setting*

CPU Clock Jumper Setting							
CPU Freq. (MHz)	**Host Bus Freq. (MHz)**	**Core/Bus Clock Ratio**	**Host Clock Jumpers**			**Clock Ratio Jumpers**	
			JP5	**JP7/JP14**	**JP8/JP15**	**JP20**	**JP21**
P54C/150	60	5/2	1-2	1-2	2-3	2-3	2-3
P54C/133	66	2/1	1-2	1-2	1-2	2-3	1-2
P54C/120	60	2/1	1-2	1-2	2-3	2-3	1-2
P54C/100	66	3/2	1-2	1-2	1-2	1-2	1-2
P54C/90	60	3/2	1-2	1-2	2-3	1-2	1-2
CPU Voltage Jumper Setting							
CPU Type	**Core Voltage**			**H/W Monitor Voltage**			
	JP19	**JP3**	**JP26**	**JP24**	**JP23**		
P55C	OPEN	CLOSE	9-10 (2.8V)	1-2(2.8V)	2-3(3.3V)		
P54C (STD)	CLOSE	OPEN	3-4 (3.3V)	--	2-3(3.3V)		
P54C (VRE)	CLOSE	OPEN	1-2 (3.5V)	--	1-2 (3.5V)		

Table 1-3   *AMD K6/K5 CPU Clock and Voltage Jumper Setting*

CPU Clock Jumper Setting								
CPU Freq. (MHz)	**Host Bus Freq. (MHz)**	**Core/Bus Clock Ratio**	**Host Clock Jumpers**			**Clock Ratio Jumpers**		
			JP5	**JP7/ JP14**	**JP8/ JP15**	**JP20**	**JP21**	**JP22**
K6/PR233	66	7/2	1-2	1-2	1-2	1-2	1-2	1-2
K6/PR200	66	3/1	1-2	1-2	1-2	1-2	2-3	1-2
K6/PR166	66	5/2	1-2	1-2	1-2	2-3	2-3	1-2
K5/PR166	66	5/2	1-2	1-2	1-2	2-3	2-3	--
K5/PR133	66	2/1	1-2	1-2	1-2	2-3	1-2	--
K5/PR120	60	2/1	1-2	1-2	2-3	2-3	1-2	--

Table 1-3   AMD K6/K5 CPU Clock and Voltage Jumper Setting

CPU Clock Jumper Setting								
CPU Freq. (MHz)	Host Bus Freq. (MHz)	Core/Bus Clock Ratio	Host Clock Jumpers			Clock Ratio Jumpers		
			JP5	JP7/ JP14	JP8/ JP15	JP20	JP21	JP22
K5/PR100	66	3/2	1-2	1-2	1-2	1-2	1-2	--
K5/PR90	60	3/2	1-2	1-2	2-3	1-2	1-2	--
CPU Voltage Jumper Setting								
CPU Type	Core Voltage				H/W Monitor Voltage			
	JP19	JP3	JP26		JP24		JP23	
K5 (Y=B)[1]	CLOSE	OPEN	1-2(3.5V)		--		1-2(3.5V)	
K5 (Y=C)[1]	CLOSE	OPEN	3-4 (3.3V)		--		2-3(3.3V)	
K6/PR2-233	OPEN	CLOSE	5-6(3.2V)		5-6(3.2V)		2-3(3.3V)	
K6/PR2-200,166	OPEN	CLOSE	7-8(2.9V)		3-4 (2.9V)		2-3(3.3V)	

Table 1-4   Cyrix /IBM 6X86, 6X86L CPU Clock and Voltage Jumper Setting

CPU Clock Jumper Setting							
CPU Freq. (MHz)	Host Bus Freq. (MHz)	Core/Bus Clock Ratio	Host Clock Jumpers			Clock Ratio Jumpers	
			JP5	JP7/JP14	JP8/JP15	JP20	JP21
6X86-P200+	75	2/1	2-3	2-3	1-2	2-3	1-2
6X86-P166+	66	2/1	1-2	1-2	1-2	2-3	1-2
6X86-P150+	60	2/1	1-2	1-2	2-3	2-3	1-2

Table 1-4   *Cyrix /IBM 6X86, 6X86L CPU Clock and Voltage*
Jumper Setting

CPU Voltage Jumper Setting					
CPU Type	**Core Voltage**			**H/W Monitor Voltage**	
	JP19	**JP3**	**JP26**	**JP24**	**JP23**
6X86	CLOSE	OPEN	1-2(3.5V)	--	1-2(3.5V)
6X86L	OPEN	CLOSE	9-10(2.8V)	1-2(2.8V)	2-3(3.3V)

Table 1-5   *Onboard Connectors*

Connector	**Function**
CN1	Mouse and Keyboard connector
CN2	Parallel connector
CN3	USB connector
CN4	COM1 and COM2 connector
CN6	HDD LED connector
CN7	Modem Ring -in connector
CN8	Secondary IDE connector
CN9	IRDA connector (Reserved)
CN10	FDD connector
CN12	Primary IDE connector
CN13	Power Switch connector
CN15	Power connector
CN16	Standby Power connector
CN21	Reset LED connector
CN22	Turbo LED connector

1.7   Installing Memory

The system memory is expandable to 256 MB by adding DIMMs (Dual In-line Memory Modules). See Figure 1-1 for the location of the DIMM sockets. Section 1.7.1 tells how to install DIMMs.

The first two 168-pin DIMM sockets on the system board accept 16-, 32-, 64- and 128-MB DIMMs, with 16 MBit and 64 MBit SDRAM technology support. DIMM3 (Single Side) can only accept 16MB and 64MB DIMMs. Table 1-5 lists the possible memory configurations.

Table 1-10   Memory Configurations

DIMM 1 (Double Side)	DIMM 2 (Double Side)	DIMM 3 (Single Side)	Total Memory
16 MB			16 MB
32 MB			32 MB
16 MB	16 MB		32 MB
16 MB		16 MB	32 MB
32 MB	16 MB		48 MB
32 MB		16 MB	48 MB
64 MB			64 MB
32 MB	32 MB		64 MB
64 MB	16 MB		80 MB
64 MB		16 MB	80 MB
32 MB	32 MB	16 MB	80 MB
64 MB	32 MB		96 MB
64 MB	16 MB	16 MB	96 MB
64 MB	32 MB	16 MB	112 MB
64 MB	64 MB		128 MB
64 MB	64 MB	16 MB	144 MB
128 MB	32 MB		160 MB

128 MB	32 MB	16 MB	176 MB

Table 1-10   Memory Configurations

DIMM 1 (Double Side)	DIMM 2 (Double Side)	DIMM 3 (Single Side)	Total Memory
128 MB	64 MB		192 MB
128 MB	128 MB		256 MB

The DIMM modules on DIMM1 and DIMM2 sockets are exchangeable. Only 16MB and 64MB DIMMs can be use on DIMM3 (Single Side).

1.7.1   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.
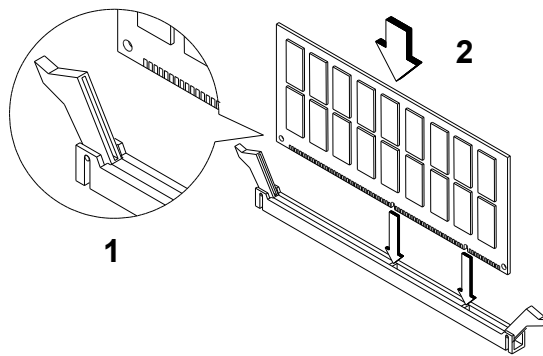
Figure 1-5   Installing a DIMM

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

1.7.2   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.
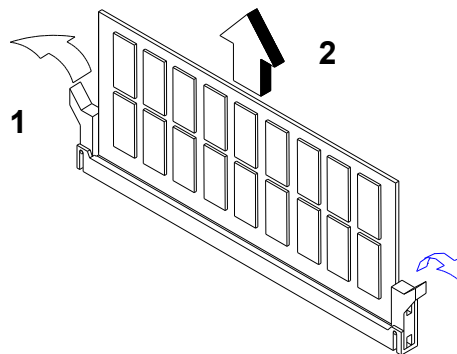
Figure 1-6   Removing a DIMM

1.7.3 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.

1.8   Second-level Cache

The board may come with either 256 or 512-KB pipelined-burst second-level cache. Refer to the following table for the possible cache configurations.

Table 1-11   Second-level Cache Configurations

Cache Size	Data RAM (9 ns)	Location	Tag RAM (15 ns - U39)	Cacheable Memory
256 KB	32K x 32 x 2 pcs.	U22, U23	32K x 8 x 1 pc	64 MB
512 KB	64K x 32 x 2 pcs.	U22, U23	32K x 8 x 1 pc	64 MB

1.9 Installing Expansion Cards

1.9.1 Installing the PCI Card

To install PCI cards:

1. Locate the PCI slot(s) on the mainboard.

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.
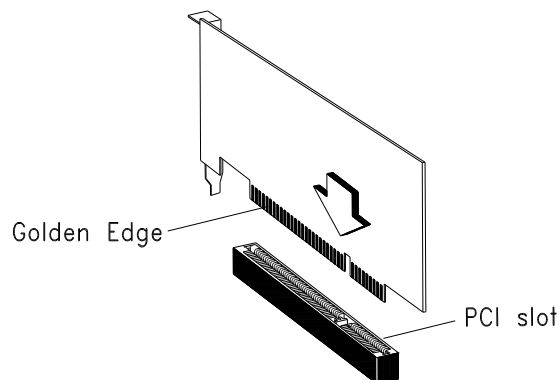
Figure 1-7   Installing a PCI Card

1.9.2 Installing the 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. Install non-PnP ISA cards.

3. Turn on the system.

4. 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.*

5. Turn off the system.

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

7. Turn on the system. This time PnP BIOS automatically configures the PnP ISA and PCI cards with the available resources.

Golden Edge

ISA slot
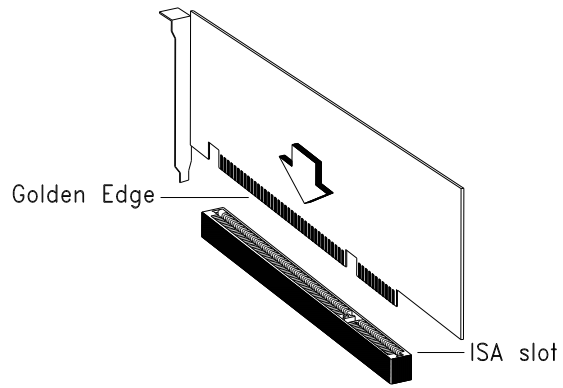
Figure 1-8   Installing an ISA Card

1.10   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 1.6 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.

1.11　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　Hardware Monitor Function

The Hardware Monitor function of the system board allows you to check the 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.

1.13   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

1.13.1   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.

1.13.2   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 1-12   System Error Messages

Error Message	Corrective Action
Bad CMOS Battery	Replace battery. Contact your dealer.
CMOS Checksum Error	Run Setup.
DRAM Configuration Error	Check and modify DRAM configuration to agree with Table 1-10.
Equipment Configuration Error	Run Setup.
Floppy Drive Controller Error	Check and connect the cable to the floppy drive or controller.
Floppy Drive Error	Floppy may be bad. If not, check the floppy drive and replace if necessary.
Hard Disk Controller Error	Check and connect the cable to the hard disk drive or controller.
Hard Disk 0 Error	Check all cable connections. Check the hard disk and replace if necessary.
Hard Disk 1 Error	Check all cable connections. Check the hard disk and replace if necessary.
Hard Disk 0 Extended Type Error	Run Setup.
Hard Disk 1 Extended Type Error	Run Setup.
I/O Parity Error	Contact your dealer.
Keyboard Error or No Keyboard Connected	Check and connect the keyboard to the system unit.

Table 1-12   System Error Messages

Error Message	Corrective Action
Keyboard Interface Error	Contact your dealer.
Keyboard Locked	Unlock the keyboard.
Memory Error	Check DIMMs on the system board. Contact your dealer.
Memory Size Mismatch	Run Setup.
Serial 1 Conflict	Run Setup. Disable Onboard Serial 1.
Serial 2 Conflict	Run Setup. Disable Onboard Serial 2.
Parallel Port Conflict	Run Setup. Disable Onboard Parallel Port.
Pointing Device Error	Check or connect the pointing device. Contact your dealer.
Pointing Device Interface Error	Contact your dealer.
Press F1 key to continue or Ctrl-Alt-Esc for Setup	Press F1 or CTRL ALT ESC.
Press Esc to turn off NMI, any key to reboot	Press ESC to disregard NMI error. Press any key to reboot the system.
Protected Mode Test Fail	Contact your dealer.
RAM BIOS Error	Contact your dealer.
Real Time Clock Error	Run Setup.
Shadow RAM Fail	Contact your dealer.
System Memory Address Error	Check DIMMs on system board or contact your dealer.

1.13.3   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.   If you cannot access a new disk, it may be because your disk is not physically formatted. Physically format the disk using the FDISK and FORMAT commands.

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

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 appears:

```
┌─────────────────────────────────────────────────────────┐
│                      BIOS Utility                        │
├─────────────────────────────────────────────────────────┤
│                                                          │
│                   System Information                     │
│                  Basic Configuration                     │
│                    System Security                       │
│                   Power Management                       │
│                   Exit Setup Utility                     │
│                                                          │
│                                                          │
│                                                          │
│                                                          │
│                                                          │
├─────────────────────────────────────────────────────────┤
│ ↓←→ = Move highlight bar, ↵ = Select, Esc = Exit         │
└─────────────────────────────────────────────────────────┘
```
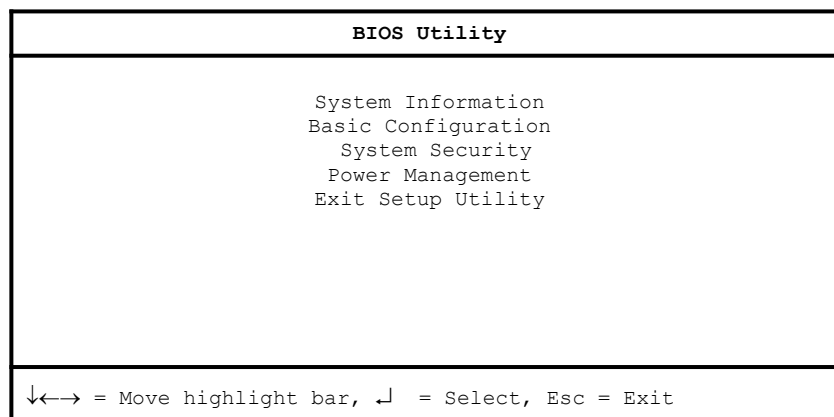
The Main Menu screen displays the basic configuration level. This level of configuration allows you to change the basic parameters of your system like the following:

- Changing the system date or time

- Setting power-saving modes and timers

- Setting system password

- Changing system boot drive

- Others

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.

2.1.1   Advanced Configuration Level

To access the advance configuration level, you must press ⬚F8. The Advance Configuration options appears.

```
┌─────────────────────────────────────────────────────────┐
│                      BIOS Utility                        │
├─────────────────────────────────────────────────────────┤
│                                                          │
│                  System Information                      │
│                  Basic Configuration                    │
│                   System Security                       │
│                   Power Management                      │
│                 Advanced Configuration                  │
│                   Exit Setup Utility                    │
│                                                          │
│                                                          │
│                                                          │
│                                                          │
├─────────────────────────────────────────────────────────┤
│ ↓←→ = Move highlight bar, ↵  = Select, Esc = Exit        │
└─────────────────────────────────────────────────────────┘
```
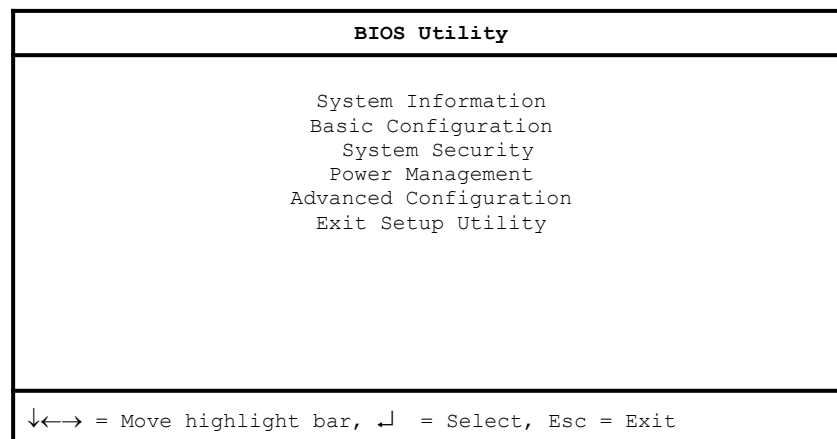
The Advance Configuration level can only be access by pressing ⬚F8 in the Main Menu.

The advanced configuration settings of your system BIOS is preset. Do not change any settings in the Advanced Configuration level if you are not a qualified technician.

2.2 System Information

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

```
        System Information              Page 1/2

 Processor..........................Pentium
 Processor Speed....................200 MHz
 L1 Cache Size......................32 KB, Enabled
 L2 Cache Size......................512 KB, Enabled

 Floppy Drive A.....................1.44 MB, 3.5-inch
 Floppy Drive B.....................None
 IDE Primary Channel Master.........Hard Disk, xxx MB
 IDE Primary Channel Slave..........CD-ROM
 IDE Secondary Channel Master.......None
 IDE Secondary  Channel Slave.......None

 Total Memory.......................xxx 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
   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 Intel Pentium, AMD and Cyrix processors.

2.2.2   Processor Speed

The Processor Speed parameter specifies the speed of the processor currently installed in your system. The system can support Pentium processors running at 166, 200, and 233 MHz.

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 Size

This parameter specifies the second-level cache memory size currently supported by the system.   The available cache sizes are 256 KB or 512 KB (manufacturing setting).   The board may also come without L2 cache. 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 2.3.2.

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 2.3.2.

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 drives, see section 2.3.4.

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 drives, see section 2.3.4.

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 drives, see section 2.3.4.

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 drives, see section 2.3.4.

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/2nd Bank/3rd Bank

The 1st Bank, 2nd Bank, and 3rd Bank parameters indicate the type of DRAM installed in DIMM sockets 1, 2, and 3.   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   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.

2.2.17   Product Information

The Product Information 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).

The following figure shows how the Product Information screen appears.

```
┌────────────────────────────────────────────────────────────┐
│ ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓ │
│          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           │
│                                                            │
│                                                            │
│                                                            │
│ ─────────────────────────────────────────────────────────── │
│   PgDn/PgUp = Move Screen, Esc  =  Back to Main Menu       │
└────────────────────────────────────────────────────────────┘
```

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 Option                                                │
│                                                               │
├─────────────────────────────────────────────────────────────┤
│   ↓ = Move Highlight Bar, ← → = Change Setting, F1 = Help    │
└─────────────────────────────────────────────────────────────┘
```

2.3.1 Date and Time

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

Date

Highlight the items on the Date parameter and press ➡ or ⬅ to set the date following the 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

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

2.3.2   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.

2.3.3   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.

2.3.4 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
```

The above parameters marked with '' will only appear if you access the advanced configuration level in the Main Menu. Please refer to section 2.1.1 for more information.*

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.

Enhanced IDE Features

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 enhances hard disk performance by increasing the transfer rate. However, besides enabling these features in the BIOS Setup, both 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.

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` .

2.3.5 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]

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

   First Hard Disk Drive................[IDE ]
  *Configuration Table ................[Disabled]


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

Fast Boot

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

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`.

Boot Sequence

This parameter allows you to specify the boot search sequence during POST.

- 1st. The system checks this drive first.

- 2nd. The system then check this drive if it can not boot from the 1st specified drive.

- 3rd. If 1st and 2nd search failed then boot from this drive.

The BIOS will display an error message if the drive(s) specified is not bootable.

First Hard Disk Drive

If you have a SCSI drive installed, setting this parameter to `SCSI` allow the system to initialize the SCSI drive before the IDE drive. When set to `IDE`, the system will initialize the IDE drive first. The default setting is `IDE`.

Configuration Table

This option displays the configuration table during boot-up. The configuration table shows a summary of information concerning your system hardware configuration. The default setting is `Disabled`.

2.4 System Security

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

The following screen appears if you select System Security from the Main menu:

```
┌─────────────────────────────────────────────────────────────┐
│            System Security              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 (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

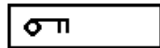1.   Make sure that JP10 is set to 2-3 (bypass password).

> *You cannot enter the BIOS utility if a Setup password does not exist and JP10 is set to 1-2 (password check enabled).*
>
> *By default, JP10 is set to 2-3 (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:

    [🔑]

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.

    [🔑 ▬]   [🔑]

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. While rebooting, turn off the system then open the housing.

11. Set JP10 to 1-2 to enable the password function.

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

Changing or Removing the Setup Password

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

1. Enter the BIOS utility and select System Security.

2. Highlight the Setup Password parameter.

3. Press ⬅ or ➡ to display the password prompt and key in a new password.

    or

    Press ⬅ or ➡ and select None to remove the existing password.

4. Press 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 JP10 is set to 2-3 to bypass the password function.

3. Turn on the system and enter the BIOS utility. This time, the system does not require you to type in a password.

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

2.4.3   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 to set JP10 to 1-2 *to enable the Power On password.*

Operation Mode

This function lets you enable or disable the password prompt display. When set to Normal, the password prompt appears before system boot. When set to 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 ]              │
│     System Sleep Timer..................[OFF]               │
│        Sleep Mode.......................[ ----- ]          │
│                                                             │
│   Power Switch < 4 sec. ................[Power Off]        │
│  *ACPI BIOS.............................[Enabled]          │
│                                                             │
│   System Wake-up event                                     │
│     Modem Ring Indicator................[Enabled ]         │
│                                                             │
├─────────────────────────────────────────────────────────────┤
│  ↓ = Move Highlight Bar,  → ← = Change Setting, F1 = Help   │
└─────────────────────────────────────────────────────────────┘
```

The above parameters marked with '' will only appear if you access the advanced configuration level in the Main Menu. Please refer to section 2.1.1 for more information.*

2.5.1 Power Management Mode

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

IDE Hard Disk Standby Timer

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

System Sleep Timer

This parameter sets the system to the lowest power-saving mode after a specified period of inactivity. Any keyboard or mouse action or any activity detected from the IRQ channels resume system operation.

<u>**SLEEP MODE**</u>

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 Mode. 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) enables the operating system to control the amount of power given to each device attached to the computer. Using the OS (Operating System), ACPI can turn off peripheral devices , such as a CD-ROM drivers, when they're not in use. The default setting is Enabled.

2.5.4   System Wake-up Event

The system wake-up event allows the system to resume operation when the modem ring indicator is enabled.

Modem Ring Indicator

When `Enabled` any fax/modem activity wake-up the system from suspend mode. The default setting is `Enabled`.

2.6   Advanced Configuration

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

> *To avoid damaging the system, do not change any settings in the Advanced Configuration if you are not a qualified technician.*

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]

   C8000h-DFFFF 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 first-level or internal memory, that is, the memory integrated into the CPU. The default setting is Enabled.

2.6.2 External Cache

This parameter enables or disables the external cache memory. The external cache is incorporated in the CPU module.

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.

2.6.4 C8000h - DFFFF Shadow

The system reserves a portion of random access memory (RAM) for the shadow RAM function. This parameter allows you to shadow the C8000h-DFFFF address range, enabling I/O ROM functions to run directly from the shadow RAM for faster operation. When you set this parameter to `Disabled`, the functions run normally from ROM.

2.6.5 Onboard Peripheral Configuration

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

```
          Onboard Peripheral Configuration    Page 1/1

    Floppy Disk Controller..............[Enabled ]
    IDE Controller......................[Both    ]
    PS/2 Mouse Controller...............[Enabled ]
    USB Host Controller.................[Enabled ]
       USB Legacy Mode..................[Disabled]


    ➢ Onboard Serial/Parallel Port Settings




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

Floppy Disk Controller

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

IDE Controller

Set this parameter to Primary to enable only the primary IDE controller; Both to enable both primary and secondary IDE controller; or Disabled to disable all IDE controllers.

PS/2 Mouse Controller

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

USB Host Controller

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

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 Serial/Parallel Port Settings

The Onboard Serial/Parallel Port Settings menu allows you to configure the onboard communication ports and the onboard devices. Selecting this option from the Onboard Peripheral Configuration menu displays the following screen:

```
┌─────────────────────────────────────────────────────────────┐
│      Onboard Serial/Parallel Port Settings      Page 1/1     │
├─────────────────────────────────────────────────────────────┤
│                                                              │
│    Serial Port 1.......................[Enabled ]            │
│      Base Address......................[3F8h]                │
│      IRQ..............................[ 4 ]                   │
│    Serial Port 2.......................[Enabled ]            │
│      Base Address......................[3F8h]                │
│      IRQ..............................[ 4 ]                   │
│    Parallel Port.......................[Enabled ]            │
│      Base Address......................[3BCh]                │
│      IRQ..............................[ 7 ]                   │
│      Operation Mode...................[ECP]                  │
│      ECP DMA Channel..................[ 3 ]                   │
│                                                              │
│                                                              │
│                                                              │
├─────────────────────────────────────────────────────────────┤
│  ↓ = Move Highlight Bar,  → ← = Change Setting, F1 = Help    │
└─────────────────────────────────────────────────────────────┘
```

This parameter allows you to enable or disable serial port 1 and/or 2.

Base Address

This function lets you set a logical base address for serial port 1 and 2. The options are:

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

IRQ

This function lets you assign an interrupt for serial port 1 and 2. The options for serial port 1 are IRQ 4 and 11. The option for serial port 2 are IRQ 3 and 10.

> *The Base Address and IRQ parameters are configurable only if Serial Port 1 and/or 2 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 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 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 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.............[Yes]
    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 on your system. Otherwise, select Manual.

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

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.*

Plug and Play OS

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

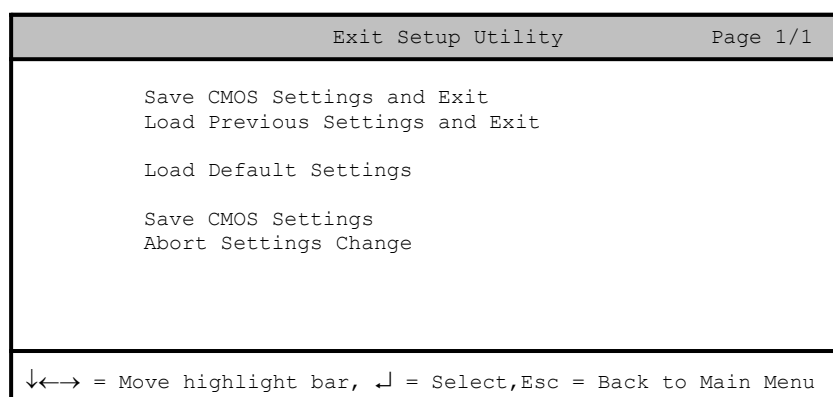> *Set this parameter to `Yes` only if your operating system is Windows 95.*

Reset Resource Assignments

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

2.7 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
        Abort Settings Change




↓←→ = 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   Abort Settings Change

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.