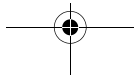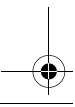# V80M
System Board

User's Guide

V80M System Board User's Guide
Part No.: 49.XXXXX.XXX
Draft Version: February, 1999

V80M System Board User's Guide

Model Number : _____
Serial Number: _____
Purchase Date: _____
Place of Purchase: _____

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Notices

FCC Notice

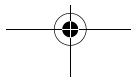This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio 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 device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

❑ Reorient or relocate the receiving antenna

❑ Increase the separation between the device and receiver

❑ Connect the device into an outlet on a circuit different from that to which the receiver is connected

❑ Consult the dealer or an experienced radio/television technician for help

Notice: Shield Cables

All connections to other computing devices must be made using shielded cables to maintain compliance with FCC regulations.

Notice: Peripheral Devices

Only peripherals (input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this equipment. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

Caution

Changes or modifications not expressly approved by the manufacturer could void the user's authority, which is granted by the Federal Communications Commission, to operate this computer.

Use Conditions

This part complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Notice: Canadian Users

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Remarque à l'intention des utilisateurs canadiens

Cet appareil numérique de la classe B respected toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Important Safety Instructions

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

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

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

3. Do not use this product near water.

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

5. 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.

6. 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.

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

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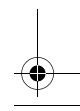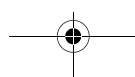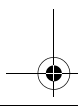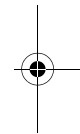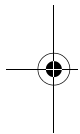
9. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

10. 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.

11. 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.

12. Replace the 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.

13. Warning! Batteries may explode if not handled properly. Do not disassemble or dispose of them in fire. Keep them away from children and dispose of used batteries promptly.

14. Use only the proper type of power supply cord set (provided in your accessories box) for this unit. It should be a detachable type: UL listed/ CSA certified, type SPT-2, rated 7A 125V minimum, VDE approved or its equivalent. Maximum length is 15 feet (4.6 meters).
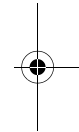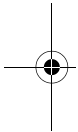
Year 2000 Compliance Statement

This product is Year 2000-compliant and carries the "NSTL Hardware Tested Year 2000 Compliant" logo. This product has been tested both by Acer's internal test labs and NSTL using NSTL's YMARK2000 certification test. These tests certify that this product will successfully make the year 2000 transition.

For more details, check the Acer Year 2000 Resource Center at http://www.acer.com.tw/service/y2k/

Laser Compliance Statement

The CD-ROM drive in this computer is a laser product. The CD-ROM drive's classification label (shown below) is located on the drive.

CLASS 1 LASER PRODUCT
CAUTION: INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.

APPAREIL A LASER DE CLASSE 1 PRODUIT
LASERATTENTION: RADIATION DU FAISCEAU LASER INVISIBLE EN CAS D'OUVERTURE. EVITTER TOUTE EXPOSITION AUX RAYONS.

LUOKAN 1 LASERLAITE LASER KLASSE 1
VORSICHT: UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHLL AUSSETZEN

PRODUCTO LÁSER DE LA CLASE I
ADVERTENCIA: RADIACIÓN LÁSER INVISIBLE AL SER ABIERTO. EVITE EXPONERSE A LOS RAYOS.

ADVARSEL: LASERSTRÅLING VEDÅBNING SE IKKE IND I STRÅLEN.

VARO! LAVATTAESSA OLET ALTTINA LASERSÅTEILYLLE.
VARNING: LASERSTRÅLNING NÅR DENNA DEL ÅR ÖPPNAD ÅLÅ TUIJOTA SÅTEESEENSTIRRA EJ IN I STRÅLEN

VARNING: LASERSTRÅLNING NAR DENNA DEL ÅR ÖPPNADSTIRRA EJ IN I STRÅLEN

ADVARSEL: LASERSTRÅLING NAR DEKSEL ÅPNESSTIRR IKKE INN I STRÅLEN
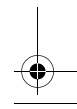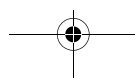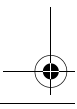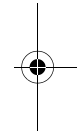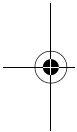
Lithium Battery Statement

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. 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
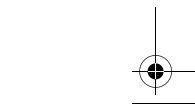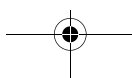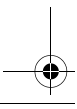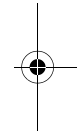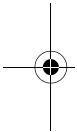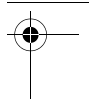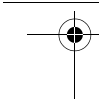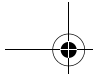
x   Notices
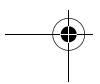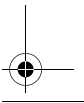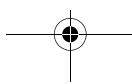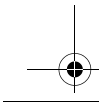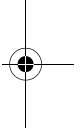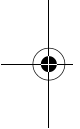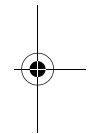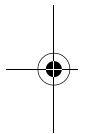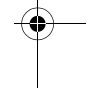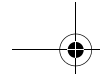
Hardware Information

Chapter 1
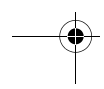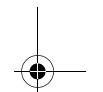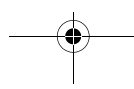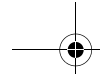
This system board is uniquely-designed to support not only the common features found in today's high-performance system boards, but the multimedia functions as well.

This chapter gives a detailed discussion of the board's components and features.
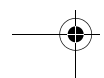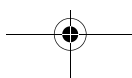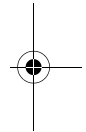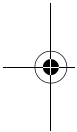
Features

This high-performance system board comes with the following components and features:

Components

❑ Intel Pentium II processor with MultiMedia eXtensions (MMX) technology, running at 350, 400, or 450 MHz and incorporates 256-KB or 512-KB second-level cache

❑ Two double in-line memory modules (DIMM) sockets that accept 32-, 64-, and 128-MB Synchronous Dynamic Random Access Memories (SDRAMs). These sockets allow memory upgrade of up to 256 MB

❑ Peripheral Component Interface (PCI) local bus Integrated Device Electronics (IDE) controller

❑ 3-D audio controller with audio coder-decoder (CODEC) '97

❑ One Wake-on LAN (WOL) connector

❑ One Modem ring-in connector

❑ One CD-in connector

❑ One Fax-voice modem connector

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

❑ External ports

  ❑ PS/2 keyboard and mouse ports

  ❑ Two buffered high-speed serial ports

  ❑ One parallel port that supports Standard Parallel Port (SPP)/Extended Capabilities Port (ECP)/Enhanced Parallel Port (EPP) modes

  ❑ Two Universal Serial Bus (USB) ports

  ❑ One Microphone-in port

  ❑ One Line-in port

  ❑ One Line-out port
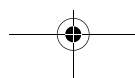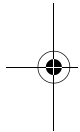
❑   One Game/Musical Instrument Digital Interface (MIDI) port

❑   One Industry Standard Architecture (ISA) slot, three PCI slots (one PCI-/ISA-shared), and one Accelerated Graphics Port (AGP) slot

Features

❑   Plug-and-Play

❑   System Management Mode (SMM) processor support

❑   Advanced Configuration and Power Interface (ACPI)-compliant BIOS

❑   Software Shutdown support for Windows 95/98

❑   Hardware Monitoring

❑   Power Management
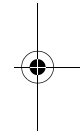
Board Layout

Your system board should look just like the following figure:
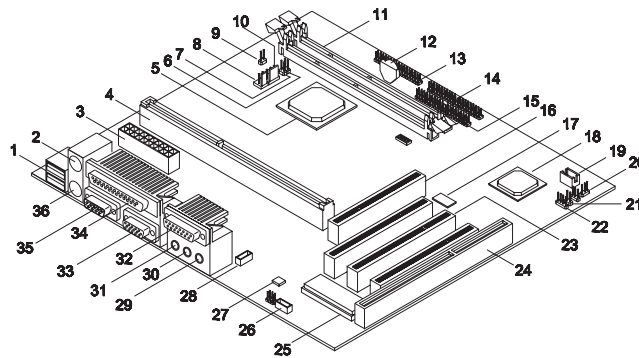
The following table lists the components that you will find on the system board:

No.	Component
1	USB ports
2	PS/2 mouse port
3	ATX power connector
4	CPU connector
5	PCI-AGP-Memory controller
6	System thermal detector connector
7	CPU thermal detector connector
8	2-pin CPU fan connector
9	Reset connector
10	3-pin CPU fan connector

No.	Component
11	DIMM sockets
12	Battery
13	Floppy disk drive connector
14	IDE 1 connector
15	IDE 2 connector
16	AGP slot
17	Audio controller
18	PCI-to-ISA bus controller
19	Wake-on LAN connector
20	Power/Suspend LED connector
21	Power button connector
22	Modem ring-in connector
23	PCI slots
24	ISA slot
25	System BIOS chip
26	Fax-modem connector
27	Audio CODEC '97
28	CD-in connector
29	Microphone-in port
30	Line-in port
31	Line-out port
32	MIDI port
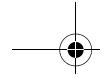
No.	Component
33	COM 1 port
34	Parallel/Printer port
35	COM 2 port
36	PS/2 keyboard port
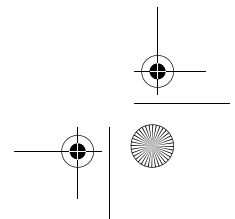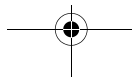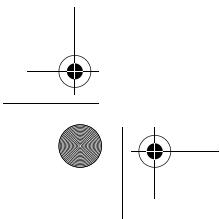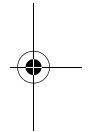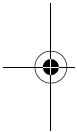
Jumpers and Connectors

Refer to the following figure for the location of the jumpers and connectors on the system board:
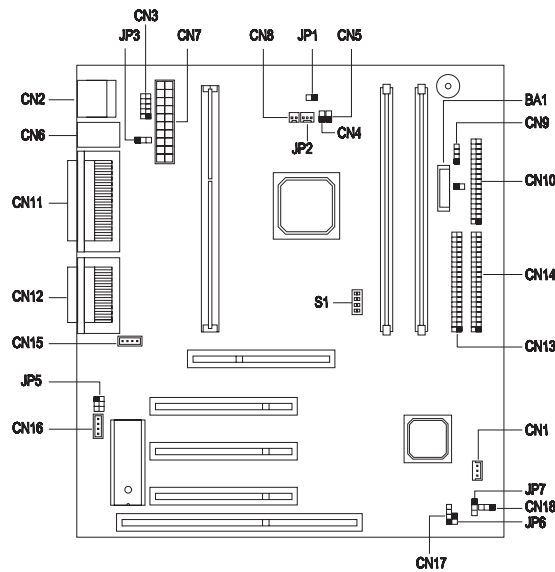
The following table lists the onboard jumpers, their respective functions and possible settings:

Jumper	Function and Settings
JP3	Keyboard Turn-on Function 1-2 Enabled 2-3 Disabled (default)
JP5	Audio Line Type 1-3, 2-4 Line out (default) 3-5, 4-6 Speaker out
JP7	Password Check 1-2 Disabled (default) 2-3 Enabled

Jumper	Function and Settings				
S1	CPU Core Clock Multiplier				
	Switch 1	Switch 2	Switch 3	Switch 4	Ratio
	On	On	On	On	2
	On	Off	On	On	3
	Off	On	On	On	4
	Off	Off	On	On	5
	On	On	Off	On	6
	On	Off	Off	On	7
	Off	On	Off	On	8
	Off	On	Off	Off	1.5
	On	On	On	Off	2.5
	On	Off	On	Off	3.5 (def)
	Off	On	On	Off	4.5
	Off	Off	On	Off	5.5
	On	On	Off	Off	6.5
	On	Off	Off	Off	7.5

The following table lists the onboard connectors and their respective functions:

Connector	Function
CN1	Wake-on LAN
CN2	USB
CN3	Reserved for USB daughtercard
CN4	CPU thermal detector
CN5	System thermal detector
CN6	Upper port: mouse; Lower port: keyboard
CN7	ATX power
CN8	2-pin CPU fan
CN9	Hard disk drive (HDD) light emitting diode (LED)
CN10	Floppy disk drive (FDD)
CN11	Upper: printer; Lower left: COM 2; Lower right: COM 1

10 Chapter 1
Hardware Information

Connector	Function
CN12	Upper: MIDI; Lower left: line-out ; Lower middle: line-in; Lower right: mic-in
CN13	IDE 2
CN14	IDE 1
CN15	CD input
CN16	Fax-voice-modem
CN17	Modem ring in
CN18	Power / suspend LED
JP1	Reset
JP2	3-pin CPU fan
JP6	Power button

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.

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.
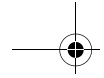
Preinstallation Instructions

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 on page 11 before handling a system component.

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

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

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

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 "Jumpers and Connectors" on page 8 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.
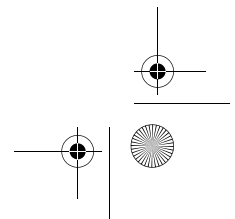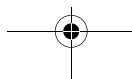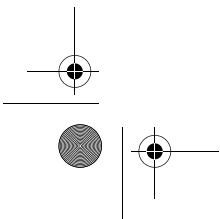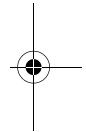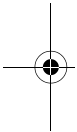
Upgrading the System Memory

The system memory is upgradeable to a maximum of 256 MB via two 168-pin DIMM sockets on board. These DIMM sockets accept PC-66/PC-100 compliant DIMMs with 32-, 64-, and 128-MB capacities. See "Board Layout" on page 5 for the location of the DIMM sockets. For instructions on how to install DIMMs, refer to "Installing a DIMM" on page 14.

Important! When installing DIMMs, make sure that you install only one type of DIMM. Do not combine PC-66 and PC-100 DIMMs.

The following table lists the possible memory configurations:

DIMM 1	DIMM 2	Total Memory
32 MB	None	32 MB
64 MB	None	64 MB
128 MB	None	128 MB
None	32 MB	32 MB
None	64 MB	64 MB
None	128 MB	128 MB
32 MB	32 MB	64 MB
32 MB	64 MB	96 MB
32 MB	128 MB	160 MB
64 MB	32 MB	96 MB
64 MB	64 MB	128 MB
64 MB	128 MB	192 MB
128 MB	32 MB	160 MB

DIMM 1	DIMM 2	Total Memory
128 MB	64 MB	192 MB
128 MB	128 MB	256 MB

Installing a DIMM

Installing a DIMM

1.   Open the clips on the socket.

2.   Align the DIMM with the socket.

3.   Press the DIMM into the socket until the clips lock into the DIMM.
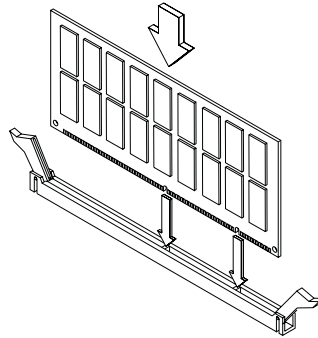
Note: The DIMM socket is slotted to ensure proper installation. If you insert a DIMM but it does not fit easily into the socket, you may have inserted it incorrectly. Turn the DIMM around and try to insert it again.

Removing 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.
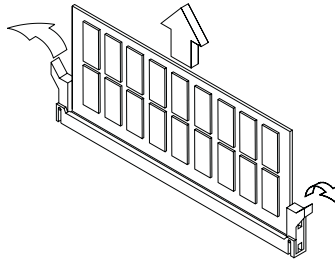
Reconfiguring the System

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.

Upgrading the CPU

Removing the Pentium II CPU

Note: Observe the ESD precautions on page 11 when installing or removing a system component.

Before you can replace or upgrade your processor, you need to remove the previously installed processor on the system board.

Follow these steps to remove the Pentium II CPU:

1. Disconnect the 3-pin and 2-pin fan/heatsink cables from the system board.

2. While slightly pulling either side of the retention mechanism, pull out the CPU.
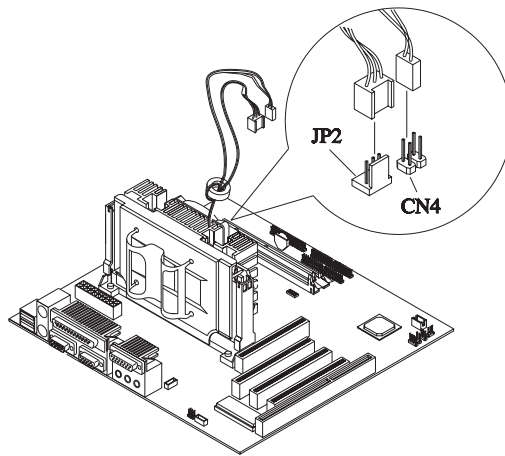
3.   Detach the fan/heatsink from the CPU. Use a tool to push the four fastener tabs as shown in the following figure:
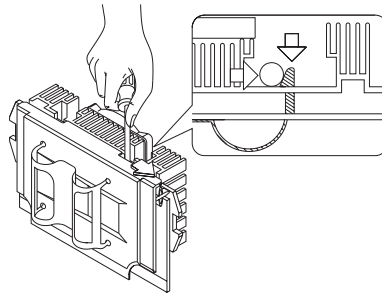
Installing a Pentium II CPU

Note: Observe the ESD precautions on page 11 when installing or removing a system component.

The Pentium II CPUs come in different packagings. The first generation Pentium II CPUs come in an almost fully-enclosed card package and use Slot-1 type connectors with 242 contact pins. This is called the SEC (Single-Edge Contact) type package.

The new Pentium II CPUs come in the SECC 2 (Single-Edge Cartridge Connector) type package in which the CPU is semi-exposed. Though it uses a Slot-2 type connector with 330 contact pins, this type is also compatible with Slot 1 connectors.

The steps for installing the CPU differ for each packaging. So before you proceed, do the following:

❑   Make sure that no CPU is installed in the CPU connector.

❑   Check your CPU packaging.

Installing the Retention Mechanism

Follow these steps to install the retention mechanism:

1.   Pull out the sides.
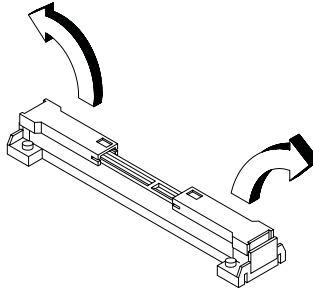
2.   Place the retention mechanism over the CPU connector on the system board and press it until it clicks into place.

3.   Press down the four plastic rivets to secure the retention mechanism. Make sure all four rivets are properly inserted into the holes on the system board.
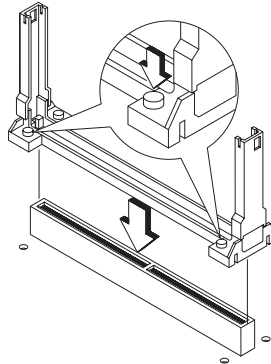
Installing a Pentium II CPU with SEC-type Package

Follow these steps to install a Pentium II CPU with SEC-type package:

1. Install the retention mechanism. See "Installing the Retention Mechanism" on page 18.

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

3. Remove the thermal tape protector at the back of the fan/ heatsink.
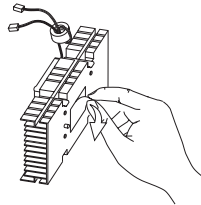
4. Insert the wide clip ends into the wide holes on the processor and the narrow clip ends into the narrow holes.
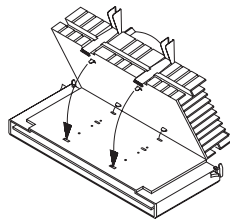
5. Using your fingers, push down the metal bracket until it clicks into the CPU cartridge.
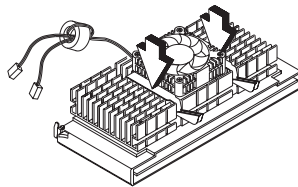
6.   Push down the metal bracket's handle to lock the metal bracket into place.
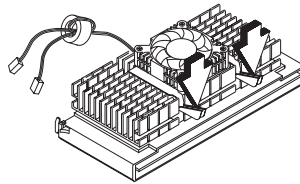
7.   With the processor card golden fingers pointing downward, align the processor to the posts of the retention mechanism.

8.   Lower the processor into to the CPU connector on the system board until the golden fingers touch the connector.

9.   Press down the processor until the golden fingers completely fit into the connector and the latches on the sides lock the processor into place.
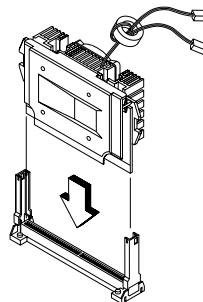
Check the sides of the retention mechanism. The latches should be properly inserted into the appropriate slots on the retention mechanism.

10. Connect the 3-pin and 2-pin fan/heatsink cables to **JP2** and **CN4** on the system board, respectively.

⊘ ▪▪▪
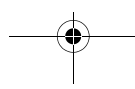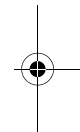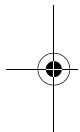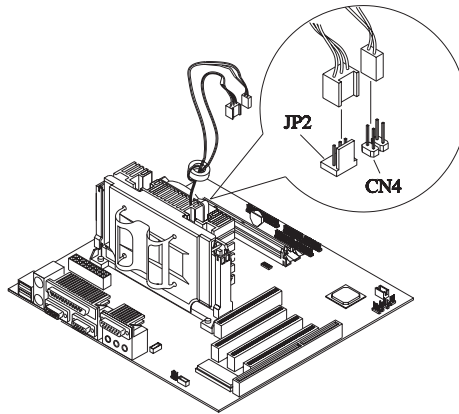
Caution: *The heatsink becomes very hot when the system is on. Never touch the heatsink with any metal or with your hands.*

Installing a Pentium II CPU with SECC 2-type Package

Follow these steps to install a Pentium II CPU with SECC 2-type package:

1. Install the retention mechanism. See "Installing the Retention Mechanism" on page 18.

2. Remove the processor card from its protective packaging.

3. Position the fan/heatsink fastener underneath the processor card.

4. Align the four tabs of the fastener with the four holes on the processor card.

5. Remove the thermal tape protector at the back of the fan/
heatsink.
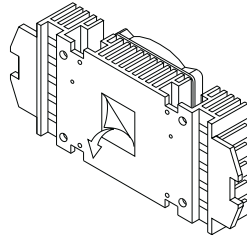
Note: *Align the holes on the fan/heatsink with the fastener tabs. To make
sure that the orientation of the fan/heatsink is correct, check if the black
circular cable connector holder is positioned on top of the processor.*

6. Press the fan/heatsink, processor card and fasteners together
to lock the fan/heatsink.

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

8. Lower the processor into to the CPU connector on the
system board until the golden fingers touch the connector.

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9. Press down the processor until the golden fingers completely fit into the connector and the latches on the sides lock the processor into place.

Check the sides of the retention mechanism. The latches should be properly inserted into the appropriate slots on the retention mechanism.

Note: If you find the processor card difficult to insert into the slot, do not force it. The orientation of the fan/heatsink may be incorrect.

10. Connect the 3-pin and 2-pin fan/heatsink cables to **JP2** and
     CN4 on the system board, respectively.
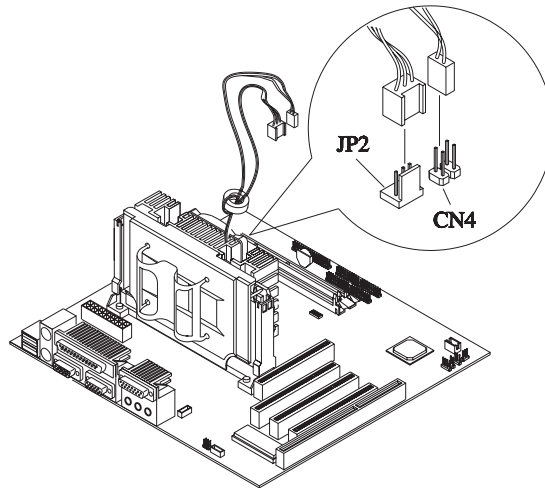
Caution: *The heatsink becomes very hot when the system is on. Never
touch the heatsink with any metal or with your hands.*

Floppy Disk / Hard Disk Support

The board comes with an enhanced PCI IDE controller that supports PIO mode 4 and Ultra DMA (Direct Memory Access) mode data transfers. Two PCI IDE interfaces are mounted on board to enable the system to support a maximum of four IDE hard disks, or any other IDE devices. See "Jumpers and Connectors" on page 8 for the location of the IDE interfaces.

Connect the cables according to the IDE hard disk configuration listed in the table below. Follow the instructions in the housing installation manual on how to install a hard disk in the system.

IDE Connector	Master	Slave
IDE 1 (CN14)	Hard disk 0	Hard disk 1
IDE 2 (CN13)	Hard disk 2/IDE CD-ROM	Hard disk 3

The onboard PCI-ISA bridge controller offers an interface for a 2-mode or 3-mode floppy disk drive. An LS-120 drive may also be connected to the system via the onboard FDD interface.
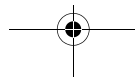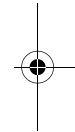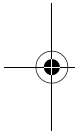
Audio Function

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

❑   Mono microphone port

❑   Stereo line-in port

❑   Stereo line-out port

❑   Game/MIDI port

These connectors enable the system to accommodate external audio
devices. To connect an audio device, simply plug in the device's
connector to its corresponding onboard audio port. See the following
figure:
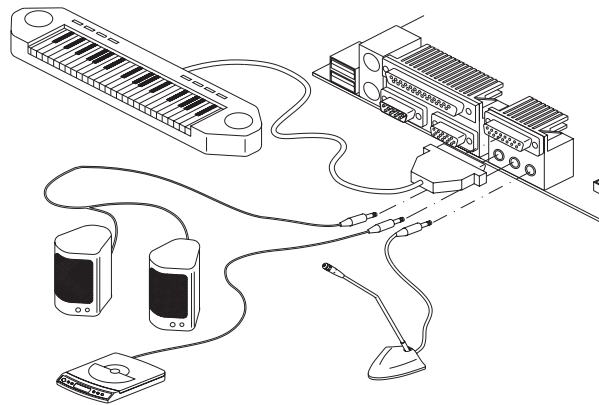
USB Support

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

The board comes with two USB ports (CN2). See "Jumpers and Connectors" on page 8 for the location of the ports.
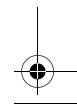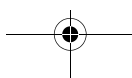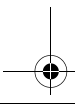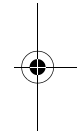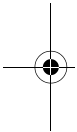
Modem Ring-in Function

The Modem 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 "Jumpers and Connectors" on page 8 for the location of the Modem ring-in connector (CN17) on the system board.

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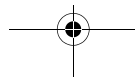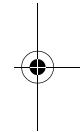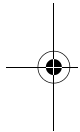
Hardware Monitoring Function

The Hardware Monitoring function allows you to check the system resources, either locally or in a computer network, by using software such as Intel LAN Desk Client Manager (LDCM). Advanced Desktop Manager (ADM) and Intel LDCM are desktop management programs that offer the System Monitoring Analysis and Reporting Technology (SMART) monitor function for checking local or network connected systems. In addition, it also enables the PC products and applications to be operating system (OS) independent.

To enable the Hardware Monitoring function, you need to install Intel LDCM. Contact your dealer for information on the availability of the software. Refer to the software documentation for more details on the Hardware Monitoring function.
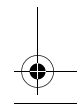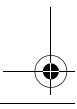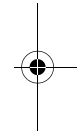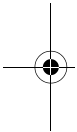
Installing Expansion Cards

Installing a PCI Card

To install a PCI card:

1. Turn off and unplug the system.

2. Locate an empty PCI slot on the system board.

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

4. Remove the PCI card from its protective packaging.

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

6. 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.
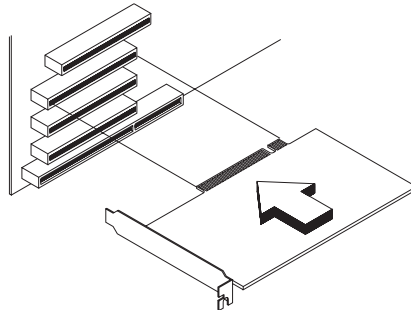
Installing an ISA Card

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

Follow these steps to install a non-PnP ISA card:

1. Turn off and unplug the system.

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

3. Enter BIOS Utility and set the Reset Resource Assignments parameter to Yes to clear the resource data assigned to the PnP devices. Refer to "PnP/PCI Options" on page 70.

4. Locate the empty ISA slot on the system board.

5. Remove the card from its packaging.

6. Install the non-PnP ISA card.

7. Turn on the system.

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

9. BIOS detects and configures only PnP cards.

10. Turn off and unplug the system again.

11. Locate the expansion slots and install the PCI cards.

12. Turn on the system. PnP BIOS automatically configures the PCI cards with the available resources.

Follow these steps to install a PnP ISA card:

1. Turn off and unplug the system.

2. Locate the empty ISA slot on the system board.

3. Remove the card from its packaging.

4. Install the PnP ISA card.

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Hardware Information

5. Turn on the system. BIOS automatically detects snd assigns resources to the PnP ISA cards.
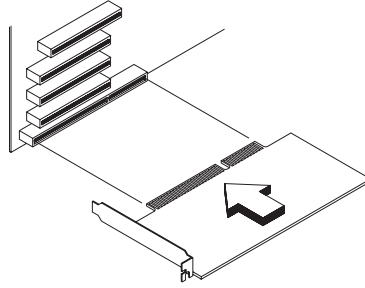
Installing an AGP Card

To install an AGP card:

1. Turn off and unplug the system.

2. Locate the AGP slot on the system board.

3. Remove the AGP card from its packaging.

4. Insert the AGP card into the slot. Make sure that the card is properly seated.

5. Secure the card to the housing with a screw.
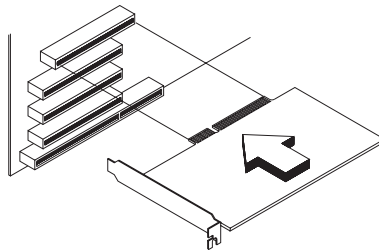
When you turn on the system, BIOS automatically detects and assigns resources to the newly installed device.

For more information about your AGP card, refer to the manual that came with the card.

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

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.

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.

The table below lists the system error messages.

Error Message	Corrective Action
Memory Error at MMMM:SSSS:OOOOh (R:xxxxh, W:xxxxh)	Replace the DIMMs.
System Management Memory Bad	Replace 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.

Error Message	Corrective Action
Pointing Device Error	Reconnect or replace the pointing device.
Pointing Device Interface Error	Check the pointing device interface circuit.
Pointing Device IRQ Conflict	Enter Setup and change the IRQ setting of the PS/2 mouse.
IDE Drive 0 Error IDE Drive 1 Error IDE Drive 2 Error IDE Drive 3 Error	Replace the disk drive or the HDD (hard disk drive) controller. Check the HDD cable connections and IDE settings in Setup.
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 IDE settings in Setup.
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 the CPU clock automatically.
Serial Port Conflict	Change the onboard serial port address in Setup or change the add-on card serial port address.
Parallel Port Conflict	Change the onboard parallel port address in CMOS Setup or the parallel port address of the add-on card.

Error Message	Corrective Action
Real-time Clock error	Check the RTC circuit or replace the battery.
CMOS Battery Bad	Replace the onboard lithium battery.
CMOS Checksum Error	Run Setup again and reconfigure the system.
Onboard XXX... Conflicts	Try to reassign or disable onboard device resources.
PCI Device Error	Check the PCI card. Replace it if bad.
System Resource Conflict	Run Setup to reconfigure the system.
IRQ Setting Error	Run Setup to reconfigure the system.
Expansion ROM Address Allocation Fail	Change the I/O expansion ROM address.

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.

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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.
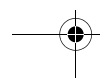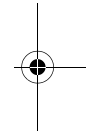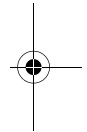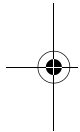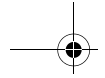
BIOS Information

Chapter 2
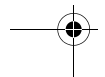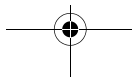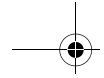
This chapter contains detailed discussion about the BIOS utility. You will need this information for reconfiguring your system or for resetting your system back to its original settings in case you have reconfigured it improperly.
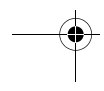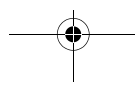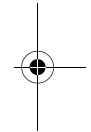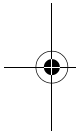
The BIOS Utility is a hardware configuration program built into your system's Basic Input/Output System (BIOS).

Since most systems are already properly configured and optimized, there is no need to run this utility. However, if you encounter configuration problems and get the "Run Setup" message, you will need to run this utility.

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

Note: 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.
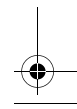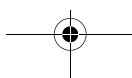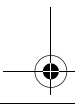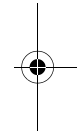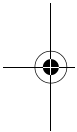
Entering Setup

To enter Setup, press the key combination **Ctrl-Alt-Esc**.

Important! *You must press Ctrl-Alt-Esc simultaneously while the system is booting. This key combination does not work during any other time.*

The Setup Utility main menu then appears:

Setup Utility
• System Information • Product Information • Disk Drives • Onboard Peripherals • Power Management • Boot Options • Date and Time • System Security Load Default Settings Abort Settings Change
↑↓ = Move Highlight Bar, ↵ = Select, Esc = Exit
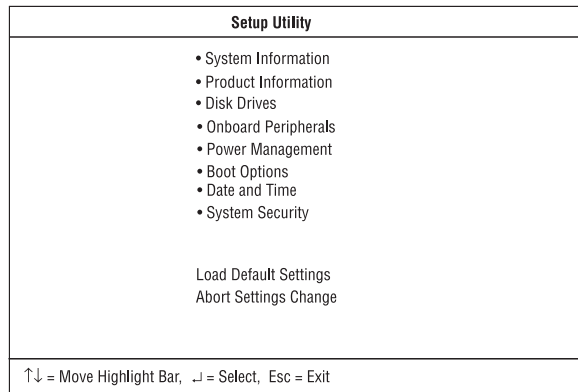
The system supports two BIOS Utility levels: Basic and Advanced. The above screen is the BIOS Utility Basic Level screen. This allows you to view and change only the basic configuration of your system.

If you are an advanced user, you may want to check the detailed configuration of your system. Detailed system configurations are contained in the Advanced Level. To view the Advanced Level, press **F8**.

The following screen shows the Setup Utility Advanced Level main menu:

```
┌─────────────────────────────────────────────────────────┐
│                    Setup Utility                         │
├─────────────────────────────────────────────────────────┤
│                • System Information                      │
│                • Product Information                     │
│                • Disk Drives                             │
│                • Onboard Peripherals                     │
│                • Power Management                        │
│                • Boot Options                            │
│                • Date and Time                           │
│                • System Security                         │
│                • Advanced Options *                      │
│                                                          │
│                  Load Default Settings                   │
│                  Abort Settings Change                   │
│                                                          │
├─────────────────────────────────────────────────────────┤
│ ↑↓ = Move Highlight Bar,  ↵ = Select,  Esc = Exit        │
└─────────────────────────────────────────────────────────┘
```

Note: The F8 key works only when you are in the main menu. This means that you can activate the Advanced Level only when you are in the main menu. Also, the items followed by an (*) are only visible in the Advanced Level.

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

❑ To select an option, move the highlight bar by pressing ↓ or ↑ then press **Enter**.

❑ Press **PgDn** to move to the next page or **PgUp** to return to the previous page.

❑ To change a parameter setting, press ← or → until the desired setting is found.

❑ Press **Esc** to return to the main menu. If you are already in the main menu, press **Esc** again to exit Setup.

The parameters on the screens show default values. These values may not be the same as those in your system.

The grayed items on the screens have fixed settings and are not user-configurable.

System Information

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

```
                        System Information                    Page 1/2

Processor.................................................Pentium II
Processor Speed.......................................350 MHz
Internal Cache Size....................................32 KB, Enabled
External Cache Size....................................512KB, Enabled
Floppy Drive A.........................................1.44 MB, 3.5-inch
Floppy Drive B.........................................None
IDE Primary Channel Master......................Hard Disk,  6180 MB
IDE Primary Channel Slave.........................None
IDE Secondary Channel Master...................None
IDE Secondary Channel Slave....................None
Total Memory...........................................64 MB
     1st Bank...........................................SDRAM, 32 MB
     2nd Bank..........................................SDRAM, 32 MB



PgDn/PgUp = Move Screen, Esc = Back to 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







PgDn/PgUp = Move Screen, Esc = Back to Main Menu
```

These pages show the current basic configuration of your system.

The following table describes the parameters found in the System Information pages:

Parameter	Description	Format
Processor	Specifies the type of processor currently installed in your system.	
Processor Speed	Specifies the speed of the processor currently installed in your system.	Speed i MHz
Internal Cache Size	Specifies the first-level or the internal memory (i.e., the memory integrated into the CPU) size, and whether it is enabled or disabled.	Cache size in KB
External Cache Size	Specifies the second-level cache memory size currently supported by the system.	Cache size in KB
Floppy Drive A	Shows the floppy drive A type.	Capacity dimension
Floppy Drive B	Shows the floppy drive B type.	Capacity dimension
IDE Primary Channel Master	Specifies the current configuration of the IDE device connected to the master port of the primary IDE channel.	Drive type, capacity
IDE Primary Channel Slave	Specifies the current configuration of the IDE device connected to the slave port of the primary IDE channel.	Drive type, capacity
IDE Secondary Channel Master	Specifies the current configuration of the IDE device connected to the master port of the secondary IDE channel.	Drive type, capacity

Parameter	Description	Format
IDE Secondary Channel Slave	Specifies the current configuration of the IDE device connected to the slave port of the secondary IDE channel.	Drive type, capacity
Total Memory	Specifies the total amount of onboard memory. The memor 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.	Memory size in MB
1st Bank	Indicates the type of DRAM installed in the DIMM 1 socket. The None setting indicates that there is no DRAM installed.	DIMM type, capacity in MB
2nd Bank	Indicates the type of DRAM installed in the DIMM 2 socket. The None setting indicates that there is no DRAM installed.	DIMM type, capacity in MB
Serial Port 1	Shows the serial port 1 address and IRQ settings.	Address, IRQ
Serial Port 2	Shows the serial port 2 address and IRQ settings.	Address, IRQ
Parallel Port	Shows the parallel port address and IRQ settings.	Address, IRQ
PS/2 Mouse	Indicates if there is a mouse connected to your system. This is automatically detected by BIOS.	Displays Installed if there is a mouse detected; otherwise, it displays None.

Product Information

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

```
                        Product Information
┌─────────────────────────────────────────────────────────────────┐
│ Product Name..................................................xxxxxxxxx │
│ System S/N....................................................xxxxxxxxx │
│ Main Board ID.................................................xxxxxxxxx │
│ Main Board S/N................................................xxxxxxxxx │
│ System BIOS Version...........................................vx.xx │
│ DMI BIOS Version..............................................x.xx.x │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│ Esc = Back to Main Menu              F1 = Help                    │
└─────────────────────────────────────────────────────────────────┘
```
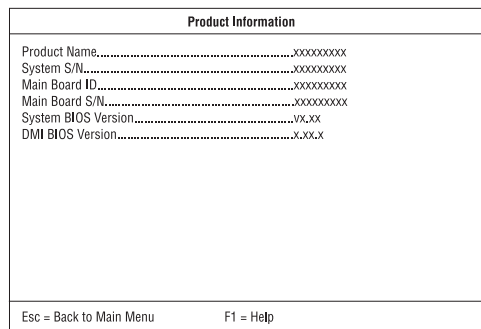
The Product Information menu contains the general data about the system, such as the product name, serial number, BIOS version, etc. This information is necessary for troubleshooting (may be required when asking for technical support).

The following table describes the parameters found in this menu:

Parameter	Description
Product Name	Displays the model name of your system
System S/N	Displays your system's serial number
Main Board ID	Displays the system board's identification number
Main Board S/N	Displays your system board's serial number
System BIOS Version	Specifies the version of your BIOS utility

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

Disk Drives

Select Disk Drives from the main menu to configure the drives installed in your system.

The following screen shows the Disk Drives menu:

```
                        Disk Drives
Floppy Drive A..................................................[xx-MB, xx-inch]
Floppy Drive B..................................................[    None    ]

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

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




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

The following table describes the parameters found in this menu. Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
Floppy Drive A / B	Allows you to configure your floppy drive	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
LS-120 drive as	Allows you to enable the LS-120 device installed in your system and to specify the function of the device. The setting affects how BIOS will detect the device.	**Normal** Drive A Drive B Hard Disk
IDE Primary Channel Master	Lets you configure the hard disk drive connected to the master port of IDE channel 1.	

Parameter	Description	Options
IDE Primary Channel Slave	Lets you configure the hard disk drive connected to the slave port of IDE channel 1.	
IDE Secondary Channel Master	Lets you configure the hard disk drive connected to the master port of IDE channel 2.	
IDE Secondary Channel Slave	Lets you configure the hard disk drive connected to the slave port of IDE channel 2.	

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

```
                    IDE Primary/Secondary
                    Channel Master/Slave

Type.................................................[ Auto ]
    Cylinder.......................................[ xxxx ]
    Head............................................[ xxxx ]
    Sector..........................................[ xxxx ]
    Size.............................................[ Xxxx ] MB

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

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

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The following table describes the parameters found in this menu.
Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
Type	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.	**Auto,** None, or User. The User setting allows you to enter your settings manually if you know your hard disk type. The Auto setting also sets the Cylinder, Head, Sector, and Size parameters.
Cylinder	Specifies your hard disk's number of cylinders, and is automatically set depending on your Type parameter setting.	
Head	Specifies your hard disk's number of heads, and is automatically set depending on your Type parameter setting.	
Sector	Specifies your hard disk's number of sectors, and is automatically set depending on your Type parameter setting.	
Size	Specifies the size of your hard disk, in MB, and is automatically set depending on your type parameter setting.	
Hard Disk Size > 504 MB	Enables your system to support hard disks with capacities more than 504 MB.	**Auto** or Disabled

Parameter	Description	Options
Hard Disk Block Mode	Enhances your hard disk performance by allowing data transfer in blocks (multiple sectors) at a rate of 256 bytes per cycle. This parameter appears only in the Advanced Level.	**Auto** or Disabled
Advanced PIO Mode	Improves your hard disk performance by allowing faster data recovery and read/write timing; thus, it reduces the hard disk's activity time. This parameter appears only in the Advanced Level.	**Auto** or Mode 0 to 4
Hard Disk 32-bit Access	Improves your hard disk performance by allowing the use of the 32-bit hard disk access. This parameter appears only in the Advanced Level.	**Enabled** or Disabled
DMA Transfer Mode	Lets you enable the Ultra DMA and Multi-DMA modes to enhance your hard disk performance. This parameter appears only in the Advanced Level.	**Auto**, Multi Mode 0 to 2, or Ultra Mode 0 to 2
CD-ROM Drive DMA Mode	Improves the system performance by allowing direct memory access to the CD-ROM. This parameter appears only in the Advanced Level.	Enabled or **Disabled**

Onboard Peripherals

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

```
                        Onboard Peripherals

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

Serial Port 2.................................................[Enabled ]
    Base Address..........................................[2F8h]
    IRQ.........................................................[ 3 ]

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

• Onboard Device Settings

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

The following table describes the parameters found in this menu. Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
Serial Port 1 / 2	Let you enable or disable the serial ports.	**Enabled** or Disabled
Base Address	Lets you set a logical base address for each serial port. This parameter is configurable only if the Serial Port parameter is enabled.	**3F8h** (for serial port 1), **2F8h** (for serial port 2), 2E8h, 3E8h
IRQ	Lets you assign an interrupt for each serial port. This parameter is configurable only if the Serial Port parameter is enabled.	4 or 11 (for serial port 1), 3 or 10 (for serial port 2)

Parameter	Description	Options
Parallel Port	Lets you enable or disable the parallel port.	**Enabled** or Disabled
Base Address	Lets you set a logical base address for the parallel port. This parameter is configurable only if the Parallel Port parameter is enabled.	3BCh, **378h**, 278h
IRQ	Lets you assign an interrupt for the parallel port. This parameter is configurable only if the Parallel Port parameter is enabled.	5 or **7**
Operation Mode	Lets you set your parallel port's operation mode. This parameter is configurable only if the Parallel Port parameter is enabled.	Standard Parallel Port (SPP), **Bidirectional**, Enhanced Parallel Port, Extended Capabilities Port
ECP DMA Channel	Allows you to assign a DMA channel for the ECP parallel port function. This parameter is configurable only if you select the Extended Capabilities Port (ECP) as the operation mode.	1 or 3
Onboard Device Settings	Allows you to configure the device controllers available on board. Selecting this option displays the Onboard Device Settings sub-menu.	

Onboard Device Settings

The following screen shows the Onboard Device Settings sub-menu:

```
                    Onboard Device Settings

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




↑↓ = Move Highlight Bar              F1 = Help
Esc = Exit                           →←  = Change Setting
```
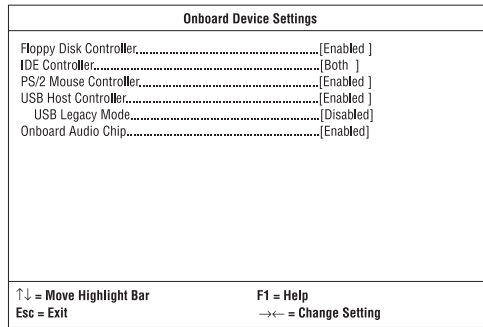
The following table describes the parameters found in this sub-menu.
Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
Floppy Disk Controller	Lets you enable or disable the onboard floppy disk controller.	**Enabled** or Disabled
IDE Controller	Lets you enable or disable the onboard primary, secondary or both IDE interfaces.	Primary, Secondary **Both**, or Disabled
PS/2 Mouse Controller	Lets you enable or disable the onboard PS/2 mouse controller.	**Enabled** or Disabled
USB Host Controller	Lets you enable or disable the onboard USB host controller.	**Enabled** or Disabled

Parameter	Description	Options
USB Legacy Mode	Lets you activate or deactivate the USB keyboard connected to your system. When activated, the USB keyboard functions in a DOS environment.	Enabled or **Disabled**
Onboard Audio Chip	Lets you enable or disable the onboard audio controller. If you installed an audio card into your system, you must to disable this parameter for the card to work properly.	**Enabled** or Disabled

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Power Management

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

The following screen shows the Power Management parameters and their default settings:

```
                        Power Management

Power Management Mode................................................[Enabled ]
  IDE Hard Disk Standby Timer.........................................[Off] Minute(s)
  System Sleep Timer.................................................[Off] Minute(s)
    Sleep Mode.....................................................[———]

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

System Resume Timer Mode............................................[Enabled]
  System Resume Time...............................................[—:--:--]

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




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

The following table describes the parameters found in this menu. Settings in **boldface** are the default and suggested settings.

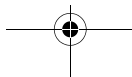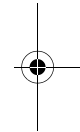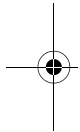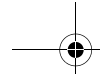| Parameter	Description	Options
Power Management Mode	Allows you to reduce the system's power consumption. When enabled, the IDE hard disk and system timers become configurable.	**Enabled** or Disabled
IDE Hard Disk Standby Timer	Allows the hard disk to enter Standby mode after inactivity of 1 to 15 minutes, depending on your setting.	1 to 15 minutes, or **Off**

Parameter	Description	Options
System Sleep Timer	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.	2, 5, 10, 15, 20, 30, 40, 50...120 minutes, or **Off**
Sleep Mode	Lets you specify the power-saving mode that the system will enter after a specified period of inactivity. This parameter is configurable only if the System Sleep Timer is enabled.	Standby or Suspend
Power Switch > 4 sec.	Lets you specify whether to automatically turn off the machine or put the system to Suspend mode once the power switch is pressed for a period longer than 4 seconds.	**Power Off** or Suspend
System Resume Timer Mode	Lets you enable or disable the automatic system resume function. This function allows you to specify the time to resume the system from Suspend mode.	**Enabled** or Disable
System Resume Time	Lets you specify the time when to resume the system from Suspend mode to normal mode. This parameter is configurable only if the System Resume Timer Mode is enabled.	Hour: 0 to 23 Minute: 0 to 59 Second: 0 to 59 Time setting in hour-minute-second format.
System Wake-up Event	Lets you specify the activity that will resume the system to normal operation.	

Parameter	Description	Options
Modem Ring Indicator	Wakes the system from Sleep mode once a fax/modem activity is detected.	**Enabled** or Disabled
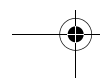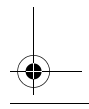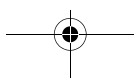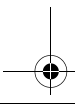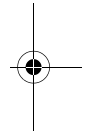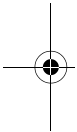
Boot Options

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

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

```
                          Boot Options

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

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

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


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

The following table describes the parameters found in this menu. Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
Boot Sequence	Allows you to specify the boot search sequence.	Floppy Disk, Hard Disk, IDE, CD-ROM
First Hard Disk Drive	Specifies whether the BIOS utility will boot from an IDE hard disk or a SCSI hard disk drive.	**IDE** or SCSI

Parameter	Description	Options
Primary Display Adapter	Lets you activate the onboard video controller as your primary display adapter, or automatically disable it once BIOS detects that there is a video card installed in your system. If you have installed a video card in your system.	Onboard or **Auto**
Fast Boot	Allows you to define your system's booting process, whether to skip some POST routines or proceed with the normal booting process.	**Auto** or Disabled
Silent Boot	When enabled, BIOS is in graphical mode and displays only an identification logo during POST and while booting. Then, the screen displays the operating system prompt (as in DOS) or logo (as in Windows 95). If any error occurred while booting, the system automatically switches to the text mode. 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.	**Enabled** or Disabled
Num Lock After Boot	Allows you to activate or deactivate the Num Lock function upon booting.	**Enabled** or Disabled

Parameter	Description	Options
Memory Test	Lets you specify whether you want BIOS to perform or bypass the RAM test during POST.	**Disabled**
Configuration Table	Allows you to enable or disable the display 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. This parameter appears only when you are in the Advanced Level.	**Enabled** or 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. This parameter appears only when you are in the Advanced Level.	Enabled or **Disabled**

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Date and Time

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

Date and Time
Date.................................[WWW MMM DD, YYYY] Time................................[HH:MM:SS]
↑↓ = Move Highlight Bar   F1 = Help Esc = Exit   →← = Change Setting

The following table describes the parameters found in this menu:

Parameter	Description	Options
Date	Lets you set the date following the weekday-month-day-year format.	Weekday: Sun, Mon, Tue, Wed, Thu, Fri, Sat Month: Jan, Feb...Dec Day: 1 to 31 Year: 1980 to 2079
Time	Lets you set the time following the hour-minute-second format.	Hour: 0 to 23 Minute: 0 to 59 Second: 0 to 59

System Security

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

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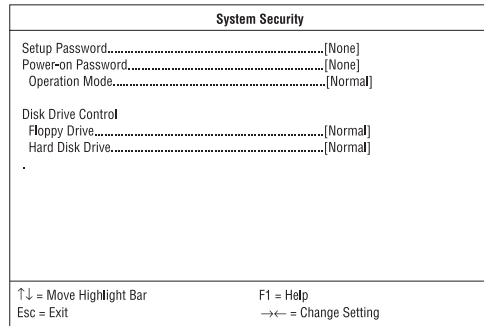
```
                        System Security

Setup Password.............................................[None]
Power-on Password..........................................[None]
  Operation Mode...........................................[Normal]

Disk Drive Control
  Floppy Drive.............................................[Normal]
  Hard Disk Drive..........................................[Normal]
  .




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

The following table describes the parameters found in this menu. Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
Setup Password	Prevents unauthorized access to the BIOS utility.	**None** or Present. The Present settings allows you to set a Setup password. For instructions on how to set a Setup password, refer to "Setting a Password" on page 64.

Parameter	Description	Options
Power-on Password	Secures your system against unauthorized use. Once you set this password, you have to type it whenever you boot the system.	**None** or Present. The Present settings allows you to set a Setup password. For instructions on how to set a Setup password, refer to "Setting a Password" on page 64.
Operation Mode	Lets you enable or disable the password prompt display. When enabled, the password prompt appears before system boot. When disabled, the password prompt does not appear; however, your system will not respond to any keyboard or mouse input until you enter the correct password.	**Normal** or Keyboard Lock
Disk Drive Control	Allows you to protect your system's floppy drive and hard disk data from being modified (possible under DOS mode only).	
Floppy Drive	Protects your floppy drive data from being modified.	**Normal**, Write Protect All Sectors, Write Protect Boot Sectors
Hard Disk Drive	Protects your hard disk data from being modified.	**Normal**, Write Protect All Sectors, Write Protect Boot Sectors

Setting a Password

1. Make sure that **JP7** is set to **1-2** (bypass password).

2. You cannot enter the BIOS utility if a Setup password does not exist and **JP7** is set to **2-3** (password check enabled). By default, **JP7** is set to **1-2** (bypass password).

3. Enter the BIOS utility and select System Security .

4. Highlight the Setup Password parameter to set a Setup password, or Power-on Password to set a Power-on password. Then press ← or →. The following screen appears:

Setup Password
Enter your new Setup Password twice. Setup Password may be up to 7 characters long. Enter Password...[xxxxxxx] Enter Password again.......................................[xxxxxxx] Set or Change Password
↑↓ = Move Highlight Bar   F1 = Help Esc = Exit   →← = Change Setting

5. Type a password. The password may consist of up to seven characters. Then press **Enter**.

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

6. Retype the password then press **Enter**.

7. After setting the password, highlight the Set or Change Password option.

8. Press **Esc** to return to the System Security screen.

9. Press **Esc** to return to the main menu.

10. Press **Esc** to exit the BIOS utility. A dialog box appears asking if you want to save the CMOS data.

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

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

13. Set **JP7** to **2-3** to enable the password function.

If you have set a Setup password, the next time you want to enter the BIOS utility, you must key-in your Setup password.

If you have set a Power-on password, you will be prompted to enter that password every time you boot your system.

Changing or Removing the Password

Should you want **to change one of your passwords**, do the following:

1. Enter the BIOS utility and select System Security .

2. Highlight the Setup Password parameter (for Setup password) or the Power-on Password parameter (for Power-on password). Then press ← or →. The Password menu appears.

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

4. Enter a new password.

5. Press **Esc** to return to the System Security screen.

6. Press **Esc** to return to the main menu.

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

8. Select Yes to save the changes.

To remove the password, simply select the Setup Password parameter (for Setup password) or the Power-on Password parameter (for Power-on password) from the System Security menu and set it to None.

Bypassing the Password

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

1.   Turn off and unplug the system.

2.   Open the system housing and set **JP7** to **1-2** 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 password or remove it by
selecting None. Refer to "Changing or Removing the Passwor "
on page 65 for the procedure.

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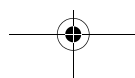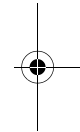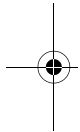
Advanced Options

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

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

The following screen shows the Advanced Options parameters:

Advance Options
• Memory/Cache Options
• PnP/PCI Options
↑↓ = Move Highlight Bar, ↵ = Select, Esc = Exit
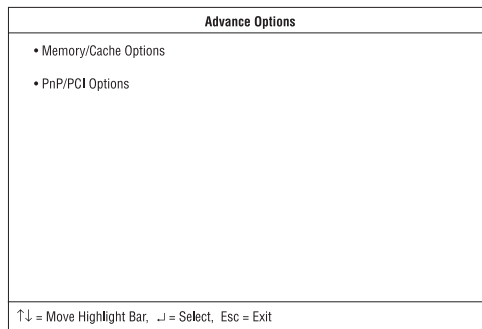
Caution: Do not change any settings in the Advanced Options menu if you are not a qualified technician to avoid damaging the system.

Memory/Cache Options

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

```
┌────────────────────────────────────────────────────────────┐
│                   Memory/Cache Options                      │
├────────────────────────────────────────────────────────────┤
│ Internal Cache (CPU Cache)..............................[Enabled ] │
│ External Cache.........................................[Enabled ] │
│    Cache Scheme.......................................Write-back │
│                                                            │
│ Memory at 15MB-16MB Reserved for..........................[System] │
│                                                            │
│                                                            │
│                                                            │
│                                                            │
│                                                            │
│                                                            │
│                                                            │
├────────────────────────────────────────────────────────────┤
│ ↑↓ = Move Highlight Bar          F1 = Help                 │
│ Esc = Exit                       →← = Change Setting        │
└────────────────────────────────────────────────────────────┘
```
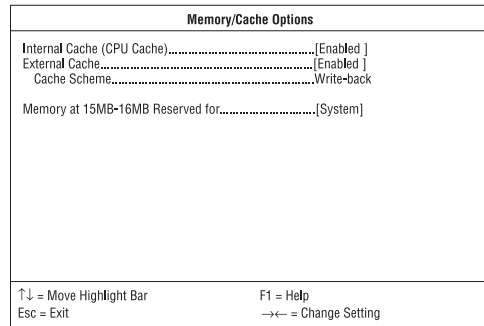
This menu lets you configure the system memory.

The following table describes the parameters found in this sub-menu.
Settings in **boldface** are the default and suggested settings.

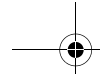| Parameter	Description	Options
Internal Cache (CPU Cache)	Lets you enable or disable the primary cache memory, i.e., the CPU memory.	**Enabled** or Disabled
External Cache	Lets you enable or disable the secondary cache memory.	**Enabled** or Disabled
Cache Scheme	Lets you specify the cache scheme mode, whether you want to update cache but not the memory (write-back mode) or update both the cache and the memory (write-through) when there is a write instruction.	**Write-back**

Parameter	Description	Options
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.	**Syste** or Add-on card
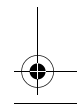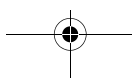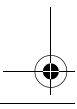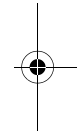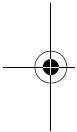
PnP/PCI Options

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

```
                        PnP/PCI Configuration

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]
Graphics Aperture Size....................................[64] MB
Plug and Play OS..........................................[Yes]
Reset Resource Assignments................................[No ]




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

The following table describes the parameters found in this sub-menu. Settings in **boldface** are the default and suggested settings.

Parameter	Description	Options
PCI IRQ Setting	Allows you to automatically or manually configure the Plug-and-Play (PnP) devices installed in your system. Refer to your device manual for technical information about the PCI card.	**Auto** or Manual
PCI Slot 1 / 2 / 3	Allow you to manually assign an interrupt for each PCI device installed in your system. When the PCI IRQ Settings is set to Auto, BIOS automatically assigns the available IRQs to the PCI devices.	
PCI IRQ Sharing	Allows you to assign the same IRQ to two different devices.	Yes or **No**

Parameter	Description	Options
VGA Palette Snoop	Enables the palette snooping feature if you installed more than one VGA card in the system, allowing the control palette register (CPR) to manage and update the VGA RAM DAC (Digital Analog Converter, a color data storage) of each VGA card installed in the system. The snooping process lets the CPR send a signal to all the VGA cards so that they can update their individual RAM DACs. The signal goes through the cards continuously until all RAM DAC data has been updated. This allows the display of multiple images on the screen. Some VGA cards have required settings for this feature. Check your VGA card manual before setting this parameter.	Enabled or **Disabled**
Graphics Aperture Size	Lets you specify the system memory area reserved for Accelerated Graphics Port (AGP). AGP is a new bus design that enables the system to support 3D applications by speeding up the VGA bus and increasing the bandwidth.	**64 MB** It is recommended that you to leave this parameter to its default setting.
Plug and Play OS	Lets you specify whether BIOS will initialize only PnP boot devices such as SCSI cards, or all PnP boot and non-boot devices such as sound cards.	**Yes** or No

Parameter	Description	Options
Reset Resource Assignments	When enabled, avoids IRQ conflict when installing non-PnP and 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.	Yes or **No** After clearing the resource data, it is recommended that you reset the parameter to its default, i.e., No.
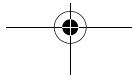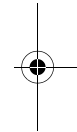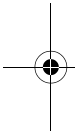
Load Default Settings

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

```
Do you want to load default settings?

      [Yes]          [No]
```

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

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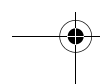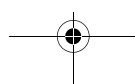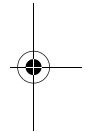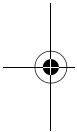
Abort Settings Change

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

Do you want to abort settings change?
[Yes]   [No]

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

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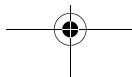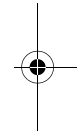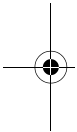
Exiting Setup

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

> Do you really want to exit SETUP?
>
> [Yes]   [No]
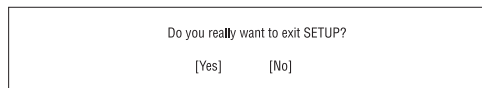
Select Yes to exit Setup. Select No to return to the main menu. If you have made changes in the parameter settings, the following dialog box appears:

> Settings have been changed.
> Do you want to save to CMOS settings?
>
> [Yes]   [No]
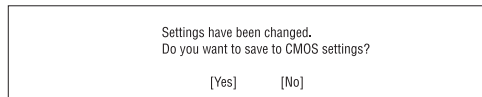
Select Yes to save your changes before you exit Setup. Select No to discard all changes and exit Setup.
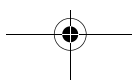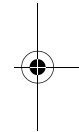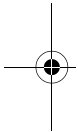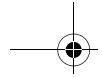
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BIOS Information

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