First Edition (September 2001)

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Safety information

DANGER

Electrical current from power, telephone, and communication cables is hazardous.

To avoid a shock hazard:
• Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
• Connect all power cords to a properly wired and grounded electrical outlet.
• Connect to properly wired outlets any equipment that will be attached to this product.
• When possible, use one hand only to connect or disconnect signal cables.
• Never turn on any equipment when there is evidence of fire, water, or structural damage.
• Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
• Connect and disconnect cables as described in the following table when installing, moving, or opening covers on this product or attached devices.

To connect:	**To disconnect:**
1. Turn everything OFF.	1. Turn everything OFF.
2. First, attach all cables to devices.	2. First, remove power cords from outlet.
3. Attach signal cables to connectors.	3. Remove signal cables from connectors.
4. Attach power cords to outlet.	4. Remove all cables from devices.
5. Turn device ON.	

Lithium battery notice

CAUTION:
Danger of explosion if battery is incorrectly replaced.
When replacing the battery, use only IBM Part Number 33F8354 or an equivalent type battery recommended by the manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.

Do not:
• Throw or immerse into water
• Heat to more than 100°C (212°F)
• Repair or disassemble
Dispose of the battery as required by local ordinances or regulations.

Modem safety information

To reduce the risk of fire, electrical shock, or injury when using telephone equipment, always follow basic safety precautions, such as:

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch un-insulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.

Laser compliance statement

Some IBM Personal Computer models are equipped from the factory with a CD-ROM drive or a DVD-ROM drive. CD-ROM drives and DVD-ROM drives are also sold separately as options. CD-ROM drives and DVD-ROM drives are laser products. These drives are certified in the U.S. to conform to the requirements of the Department of Health and Human Services 21 Code of Federal Regulations (DHHS 21 CFR) Subchapter J for Class 1 laser products. Elsewhere, these drives are certified to conform to the requirements of the International Electrotechnical
Commission (IEC) 825 and CENELEC EN 60 825 for Class 1 laser products. When a CD-ROM drive or a DVD-ROM drive is installed, note the following handling instructions.

CAUTION:
Use of controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.

Removing the covers of the CD-ROM drive or DVD-ROM drive could result in exposure to hazardous laser radiation. There are no serviceable parts inside the CD-ROM drive or DVD-ROM drive. Do not remove the drive covers.

Some CD-ROM drives and DVD-ROM drives contain an embedded Class 3A or Class 3B laser diode. Note the following statement.

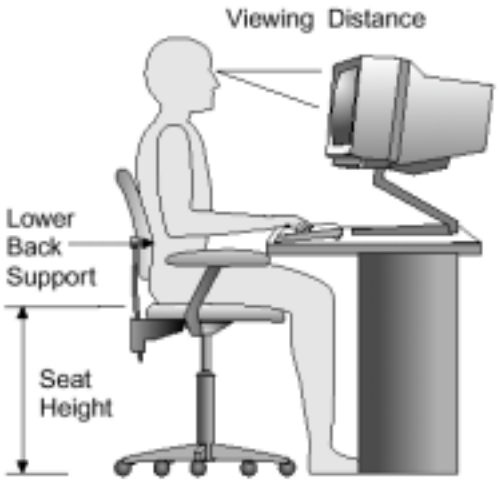
DANGER
Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.

Arranging your workspace

To get the most from your computer, arrange both the equipment you use and your work area to suit your needs and the kind of work you do. Your comfort is of foremost importance, but light sources, air circulation, and the location of electrical outlets also can affect the way you arrange your workspace.

Comfort

Although no single working position is ideal for everyone, here are a few guidelines to help you find a position that suits you best.
Sitting in the same position for a long time can cause fatigue. A good chair can make a big difference. The backrest and seat should adjust independently and provide good support. The seat should have a curved front to relieve pressure on the thighs. Adjust the seat so that your thighs are parallel to the floor and your feet are either flat on the floor or on a footrest.
When using the keyboard, keep your forearms parallel to the floor and your wrists in a neutral, comfortable position. Try to keep a light touch on the keyboard and your hands and fingers relaxed. You can change the angle of the keyboard for maximum comfort by adjusting the position of the keyboard feet.



Adjust the monitor so the top of the screen is at, or slightly below, eye level. Place the monitor at a comfortable viewing distance, usually 51 to 61 cm (20 to 24 in.), and position it so you can view it without having to twist your body. Also position other equipment you use regularly, such as the telephone or a mouse, within easy reach.

Glare and lighting

Position the monitor to minimize glare and reflections from overhead lights, windows, and other light sources. Even reflected light from shiny surfaces can cause annoying reflections on your monitor screen. Place the monitor at right angles to windows and other light sources, when possible. Reduce overhead lighting, if necessary, by turning off lights or using lower wattage bulbs. If you install the monitor near a window, use curtains or blinds to block the sunlight. You might have to adjust the Brightness and Contrast controls on the monitor as the room lighting changes throughout the day.
Where it is impossible to avoid reflections or to adjust the lighting, an antiglare filter placed over the screen might be helpful. However, these filters might affect the clarity of the image on the screen; try them only after you have exhausted other methods of reducing glare.
Dust buildup compounds problems associated with glare. Remember to clean your monitor screen periodically using a soft cloth moistened with a nonabrasive liquid glass cleaner.

Air circulation

Your computer and monitor produce heat. The computer has a fan that pulls in fresh air and forces out hot air. The monitor lets hot air escape through vents. Blocking the air vents can cause overheating, which might result in a malfunction or damage. Place the computer and monitor so that nothing blocks the air vents; usually, 51 mm (2 in.) of air space is sufficient. Also, make sure the vented air is not blowing on someone else.

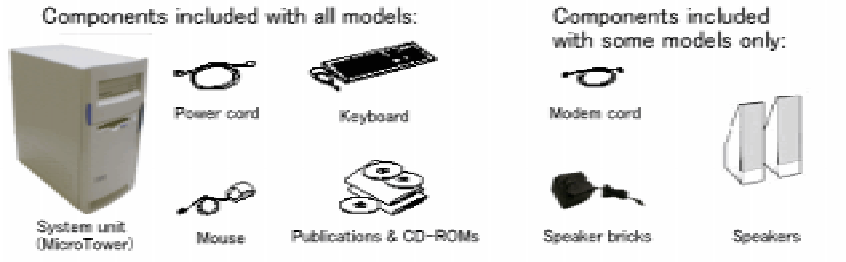
Electrical outlets and cable lengths

The location of electrical outlets and the length of power cords and cables that connect to the monitor, printer, and other devices might determine the final placement of your computer.

When arranging your workspace:
• Avoid the use of extension cords. When possible, plug the computer power cord directly into an electrical outlet.
• Keep power cords and cables neatly routed away from walkways and others.

Getting Started

Components included



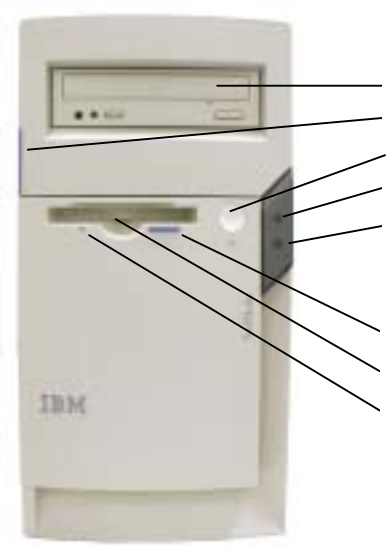
Adding hardware options to your computer is an easy way to increase its capabilities. Instructions for installing external and internal options are included in this publication. When adding an option, use these instructions along with the instructions that come with the option.
Static electricity, although harmless to you, can seriously damage computer components and options.
When you add an option, do *not* open the static-protective package containing the option until you are instructed to do so.
When you handle options and other computer components, take these precautions to avoid static electricity damage:
• Limit your movement. Movement can cause static electricity to build up around you.
• Always handle components carefully. Handle adapters and memory modules by the edges. Never touch any exposed circuitry.
• Prevent others from touching components.
• When you install a new option, touch the static-protective package containing the option to a metal expansion-slot cover or other unpainted metal surface on the computer for at least two seconds. This reduces static electricity in the package and your body.
• When possible, remove the option and install it directly in the computer without setting the option down. When this is not possible, place the static-protective package that the option came in on a smooth, level surface and place the option on it.
• Do not place the option on the computer cover or other metal surface.

Important
Before you install any option, read “Safety Information” on precautions and guidelines will help you work safely.

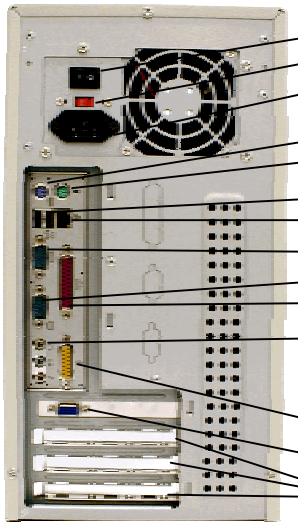
Controlling monitor settings

When you connected your monitor to your system unit and turned your computer on for the first time, your computer automatically selected settings for monitor performance. Depending on the monitor you have, you might want to change some of these settings for optimal performance. Using Windows 98, you can customize the screen resolution, number of colors, the size of the screen, and other properties.

Check Switches, Indicators and Connectores



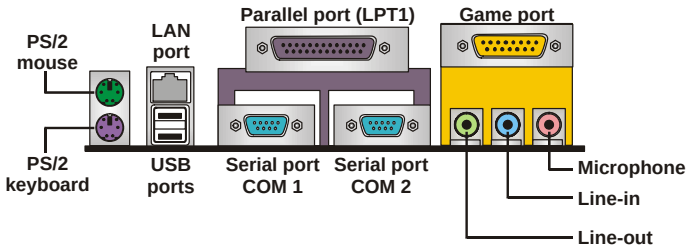
CD-ROM or DVD
Storage Bay Knob
Power-On/Off
Power-On Light
Hard-Disk or DVD Light
Diskette Eject Button
Diskette Drive
Diskette Drive Light



Power-On Switch
Voltage Selection Switch
Power Connector
Keyboard
Mouse
USB(two)
Ethernet
Serial-1
Serial-2
Parallel
Audio jack
Line out
Line in
Microphone
MIDI port
SVGA Monitor
PCI Adapter slot 1(Modem use for type 2259)
slot 2
slot 3

Connect the system components

Most cable connectors are color-coded to match the location at the back of the system unit where you connect the cable.
Read “Safety information” in the User Guide to learn about connecting cables.



PS/2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS/2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
LAN Port	If your system board comes with the LAN option, you can connect an RJ-45 cable to the LAN port.
USB Ports	Use the USB ports to connect USB devices.
LPT1	Use LPT1 to connect printers or other parallel communications devices.
COM1/2	Use the COM ports to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1/3. COM2 is identified by the system as COM2/4.
Game Port	Use the game port to connect a joystick or a MIDI device.
Audio Ports	Use the three audio ports to connect audio devices. The left side jack is for a stereo line-out signal. The middle jack is for a stereo line-in signal. The right side jack is for a microphone.

External Connector Color Coding

Many connectors now use standard colors as shown in the table below.

Connector	Color
Analog VGA	Blue
Audio line-in	Light blue
Audio line-out	Lime
Digital monitor/flat panel	White
IEEE 1394	Grey
Microphone	Pink
MIDI/game	Gold
Parallel	Burgundy
PS/2-compatible keyboard	Purple
PS/2-compatible mouse	Green
Serial	Teal or Turquoise
Speaker out/subwoofer	Orange
Right-to-left speaker	Brown
USB	Black
Video out	Yellow
SCSI, network, telephone, modem	None

Connects Power cords

The voltage selector switch should be preset for your area; however, contact your local power company if you are uncertain of the voltage for your area.
• If the voltage supply range in your area is 100-127V, set the voltage selector switch so you can see 115V or 115.
• If the voltage supply range in your area is 200-240V, set the voltage selector switch so you can see 230V or 230.
Connect the power cords to the computer and monitor first, and then connect the power cords to the electrical outlets. For clarity, only the power cords are shown in this picture.

Note:
If your computer has a power switch on the back of the computer, press it in the ON position (1=ON).
Voltage selection switch is covered by a sticker to avoid accidental access.

Basic trouble shooting

Symptom	Action
The computer does not start when you press the power button.	Verify that: • The power cord is plugged into the rear of the computer and into a working electrical outlet. • If your computer has a secondary power switch on the back of the computer, ensure that it is switched on. Check the power indicator on the front of the computer to ensure that the power is on. If you cannot correct the problem, have the computer serviced.
The monitor screen is blank.	Verify that: • The monitor cable is securely attached to the rear of the monitor and to the rear of the computer. • The monitor power cord is plugged into the monitor and into a working electrical outlet. • The monitor is turned on, and the brightness and contrast controls are set correctly. • The monitor signal cable is securely connected to the monitor and to the monitor connector on the computer. If you cannot correct the problem, have the computer serviced.

Symptom	Action
The keyboard does not work. The computer does not respond to the keyboard.	Verify that: • The computer and monitor are turned on and the brightness and contrast controls are set correctly. • The keyboard is securely connected to the keyboard connector on the computer. • No keys are stuck. If you cannot correct the problem, have the computer serviced.
The mouse does not work. The computer does not respond to the mouse.	Verify that: • The computer and monitor are turned on and the brightness and contrast controls are set correctly. • The mouse is securely connected to the mouse connector on the computer. If you cannot correct the problem, have the computer serviced.
The operating system will not start.	Verify that: • There is no diskette in the diskette drive. • The startup sequence includes the device where the operating system resides. Usually, the operating system is on the hard disk. During startup, look for the prompt to start the Configuration/Setup Utility program. Press the function key that is specified. Verify the startup sequence in the Configuration/Setup Utility program. If you cannot correct the problem, have the computer serviced.
The computer beeps multiple times before the operating system starts.	Verify that no keys are stuck down. If you cannot correct the problem, have the computer serviced.

System Summary – NetVista Type 6049

Processor	• Intel Pentium4 processor with integrated 256KB level 2 cache Socket478	
Clocks	• 400MHz clocks to Pentium4 processor front side bus • 133MHz clocks to SDRAM modules on DIMM sockets • 33MHz clocks to PCI slots	
Chipset	• Intel 845 chipset consisting of i82845/i82801BA memory Controller Hub ICH2 I/O Controller Hub Firmware Hub • ITE IT8712F low pin count (LCP) interface super I/O controller	
Memory	• Three sockets of 168pin, 3.3V dual inline memory module(DIMM) • On each socket, PC133, non-parity, un-buffered SDRAM module • With 32MB to 1GB memory module size • Standard model has a 128MB DIMM(occupying one socket) 3GB maximum in the system, using three 1GB DIMM	
Video Subsystem	• SiS305 32MB Real AGP 2X card • 640 x 480, 800 x 600, 1024 x 768 resolution with 24-bit colors	
Storage Devices	• 3.5-inch FDD x 1 for 720KB and 1.44MB media • 3.5-inch HDD x 1 with 20-60GB capacity and ATA-100 interface • 5.25-inch x 1 with CD-ROM(48x). • One open bay 5.25-inch for optional optical devices.	
Audio Subsystem	• AC97 Audio Codec, System Beeper only	
Network Interface	• RealTek 8100, Ethernet 100/10base/T • Headers for WOL and WOM are provided on the system board	
Expansion Slots	• Three PCI 2.2 slots	
External Interface	• Serial port x 2 with D-sub 9-pin connector • Parallel port x 1 with D-sub 25-pin connector • USB port x 2 • Audio jacks(Microphone/Line-In/Line-Out) • MIDI port x 1 • Video port x 1 with D-sub 15-pin connector • LAN port x 1(Ethernet 100/10base/T) • Keyboard port x 1 with PS/2 mini-DIN connector • Mouse port x 1 with PS/2 mini-DIN connector	
BIOS	• AWARD BIOS in 2Mbit flash memory • MS PC99 complied	
Keyboard/Mouse	• IBM PS2 keyboard/Two button Mouse	
Physical Size	• 380(H) x 196(W) x 360(D) 7.6Kg, Pearl White	
Power Consumption	• Maximum • Nominal • Sleep • Soft Off	110 watts 65 watts 5 watts 4 watts
Power Supply	• 220V AC 3A	
Preload OS	• Windows 98 SE, Windows 2000 or Windows XP Pro	
Ambient Air	• Power On	10 ~ 35 degree C 8 ~ 80 %
	• Power Off	10 ~ 43 degree C 8 ~ 80 %

System Summary – NetVista Type 2259

Processor	• Intel Pentium4 processor with integrated 256KB level 2 cache Socket478	
Clocks	• 400MHz clocks to Pentium4 processor front side bus • 133MHz clocks to SDRAM modules on DIMM sockets • 33MHz clocks to PCI slots	
Chipset	• Intel 845 chipset consisting of i82845/i82801BA memory Controller Hub ICH2 I/O Controller Hub Firmware Hub • ITE IT8712F low pin count (LCP) interface super I/O controller	
Memory	• Three sockets of 168pin, 3.3V dual inline memory module(DIMM) • On each socket, PC133, non-parity, un-buffered SDRAM module • With 32MB to 1GB memory module size • Standard model has a 128MB DIMM(occupying one socket) 3GB maximum in the system, using three 1GB DIMM	
Video Subsystem	• SiS305 32MB Real AGP 2X card • 640 x 480, 800 x 600, 1024 x 768 resolution with 24-bit colors	
Storage Devices	• 3.5-inch FDD x 1 for 720KB and 1.44MB media • 3.5-inch HDD x 1 with 20-60GB capacity and ATA-100 interface • 5.25-inch x 1 with DVD, CD-RW or CD-ROM(48x) • One open bay 5.25-inch for optional optical devices.	
Audio Subsystem	• AC97 Audio Codec, External speaker/Bricks	
Network Interface	• RealTek 8100, Ethernet 100/10base/T • Headers for WOL and WOM are provided on the system board	
Expansion Slots	• Three PCI 2.2 slots(occupying one socket for Modem)	
External Interface	• Serial port x 2 with D-sub 9-pin connector • Parallel port x 1 with D-sub 25-pin connector • USB port x 2(occupying one socket for Keyboard) • Audio jacks(Microphone/Line-In/Line-Out) • MIDI port x 1 • Video port x 1 with D-sub 15-pin connector • LAN port x 1(Ethernet 100/10base/T) • Keyboard port x 1 with PS/2 mini-DIN connector • Mouse port x 1 with PS/2 mini-DIN connector • Modem port x 1	
BIOS	• AWARD BIOS in 2Mbit flash memory • MS PC99 complied	
Keyboard/Mouse	• IBM RAK-IIIe keyboard/Scroll Point-II Mouse	
Physical Size	• 380(H) x 196(W) x 360(D) 7.6Kg, Stealth Black	
Power Consumption	• Maximum • Nominal • Sleep • Soft Off	110 watts 65 watts 5 watts 4 watts
Power Supply	• 220V AC 3A	
Preload OS	• Windows ME, Windows 98 or Windows XP Home	
Ambient Air	• Power On	10 ~ 35 degree C 8 ~ 80 %
	• Power Off	10 ~ 43 degree C 8 ~ 80 %

Hardware Descriptions

System Board Description

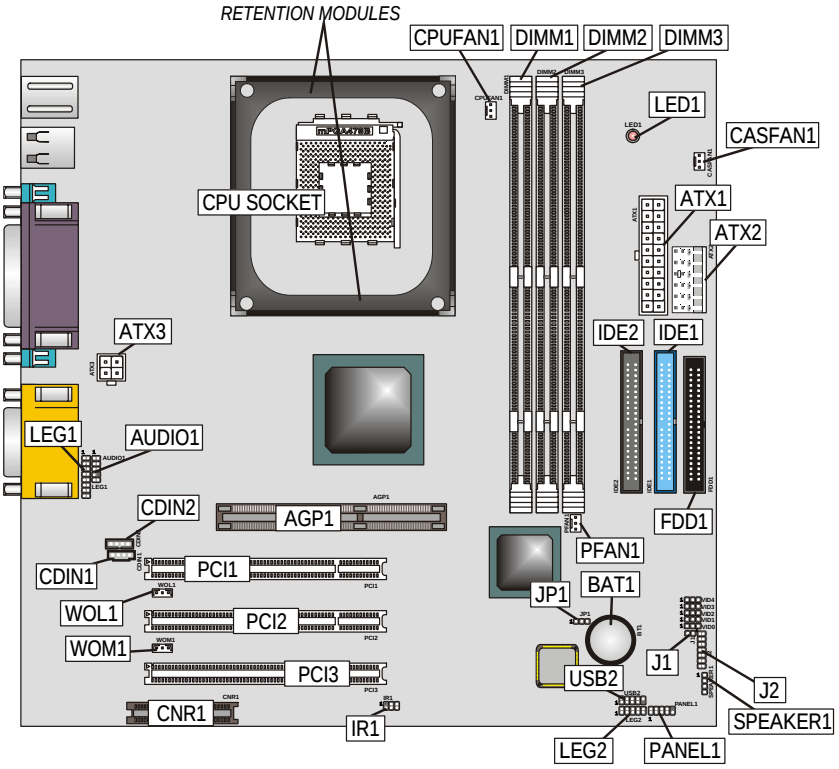
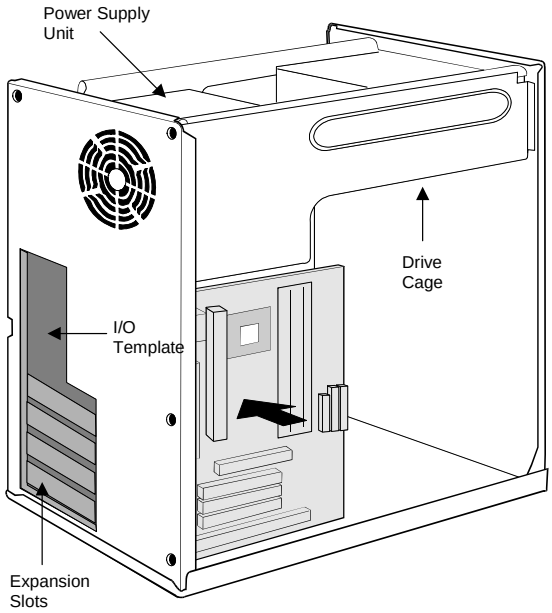


Table of System board Components

Label	Component
AGP1	Accelerated Graphics Port
ATX1	Standard 20-pin ATX power connector
ATX2	Aux Vcc and Vcc3 6-pin ATX power connector

ATX3	+12 VDC 2 x 2 ATX power connector
AUDIO1	Mic/speaker-out header
BAT1	Three volt realtime clock battery
CASFAN1	Chassis Fan
CDIN1	CD-in connector (Panasonic)
CDIN2	CD-in connector (Sony)
CPUFAN1	Cooling fan for CPU
CNR1	Communications Networking Riser slot
CPU Socket	CPU socket (mPGA478)
DIMM1 ~ DIMM3	Three 168-pin DIMM sockets
FDD1	Floppy disk drive connector
IDE 1	Primary IDE channel
IDE 2	Secondary IDE channel
IR1	IR connector
J1	External SMI (System Management Interrupt) connector
J2	Smart I/O
JP1	Clear CMOS jumper
LED1	LED status indicator connector
PANEL1	Front panel connectors for suspend LED, HDD LED, power switch and H/W reset.
PCI1 ~ PCI3	Three 32-bit add-on card slots
PFAN1	Power fan connector
SPEAKER1	Speaker connector
WOL1	Wake On LAN wakeup connector
WOM1	Wake On Ring wakeup connector

The illustration below shows the location of System Board, Power supply, I/O devices and option slots in a tower-type case.



Options Installation

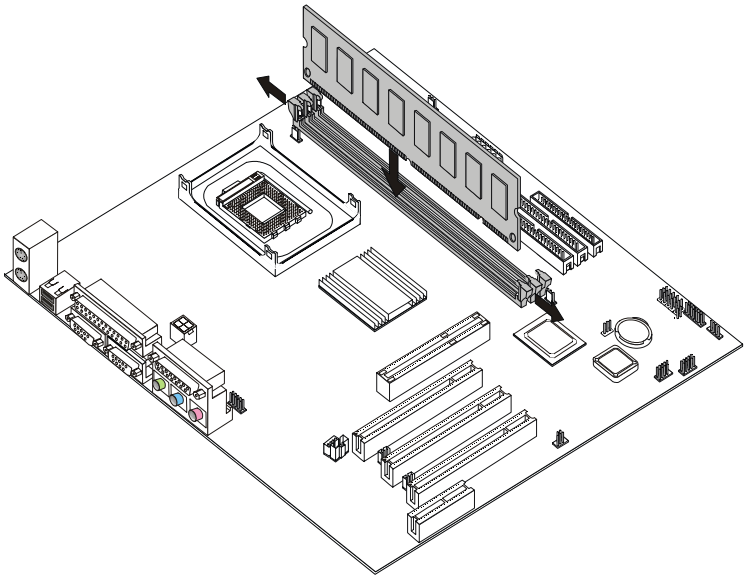
Installing Memory Modules

For this system board, you must use 168-pin 3.3V non-buffered Dual In-line Memory Modules (DIMMs). The memory chips are standard SDRAM (Synchronous Dynamic Random Access Memory). The table below shows the supported frequencies.

Frontside Bus (FSB) Frequency	System Memory Bus (SMB) Frequency
100 MHz	100 MHz
100 MHz	133 MHz

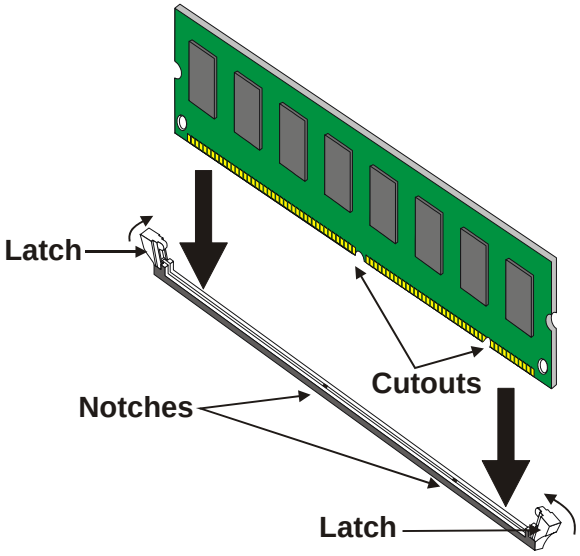
Installation Procedure

The system board accommodates three memory modules. You must install at least one module in any of the three slots. Each module can be installed with 64 MB to 512 MB of memory. Total capacity is 3GB.

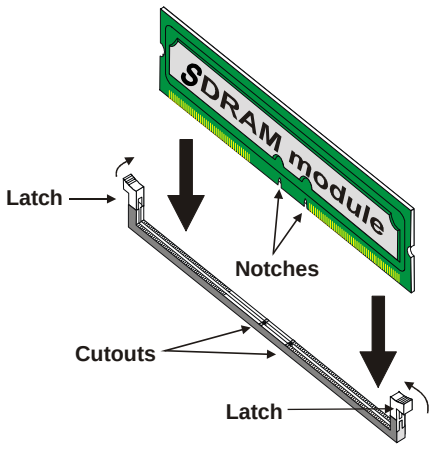


1. Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so

that they can only be installed correctly. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot:



2. Push the latches on each side of the DIMM slot down.
3. Install the DIMM module into the slot and press it firmly down so that it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM when it is installed correctly.



Installing a Hard Disk Drive/CD-ROM

This section describes how to install IDE devices such as a hard disk drive and a CD-ROM drive.

About IDE Devices

Your system board has a primary and secondary IDE channel interface (IDE1 and IDE2). An IDE ribbon cable supporting two IDE devices is bundled with the system board.

If you want to install more than two IDE devices, get a second IDE cable and you can add two more devices to the secondary IDE channel.

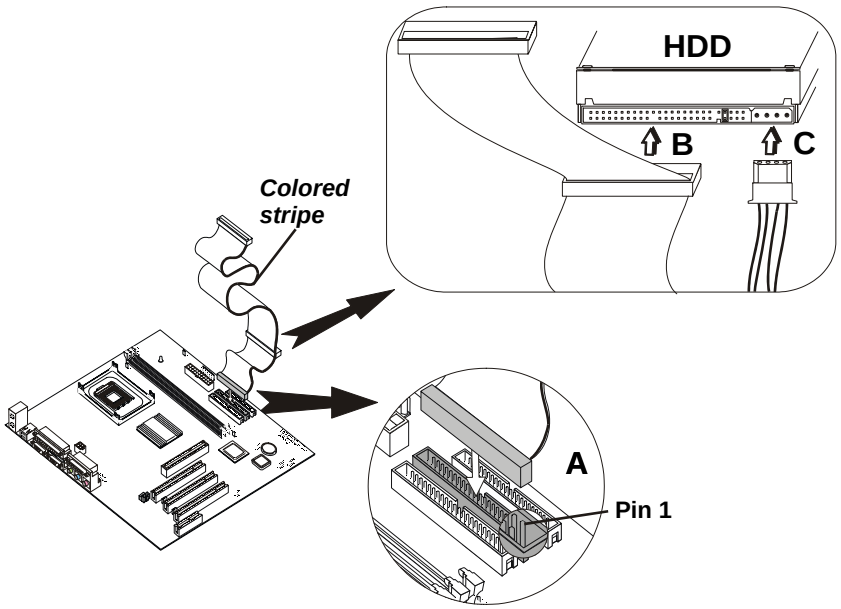
IDE devices have jumpers or switches that are used to set the IDE device as MASTER or SLAVE. When installing two IDE devices on one cable, ensure that one device is set to MASTER and the other device is set to SLAVE. The documentation of your IDE device explains how to do this.

About UltraDMA

This system board supports UltraDMA 33/66/100. UDMA is a technology that accelerates the performance of devices in the IDE channel. To maximize performance, install IDE devices that support UDMA and use 80-pin IDE cables that support UDMA 33/66/100.

Installing a Hard Disk Drive

1. Install the hard disk drive into the drive bay.
2. Plug the IDE cable into IDE1 (A):



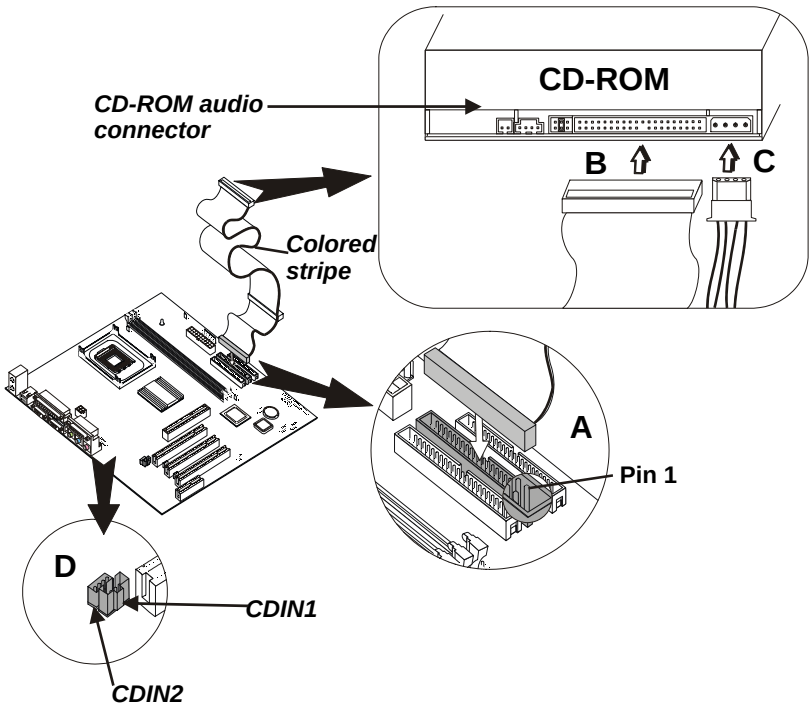
Note: The ribbon cable connectors are keyed so that they can only be installed correctly on the device connector. If the connector is not keyed, make sure that you match the pin-1 side of the cable connector with the pin-1 side of the device connector. Each connector has the pin-1 side clearly marked. The pin-1 side of each ribbon cable is always marked with a colored stripe on the cable.

3. Plug an IDE cable connector into the hard disk drive IDE connector (B). It doesn't matter which connector on the cable you use.
4. Plug a power cable from the case power supply into the power connector on the hard disk drive (C).

When you first start up your system, the BIOS should automatically detect your hard disk drive. If it doesn't, enter the Setup Utility and use the IDE Hard Disk Auto Detect feature to configure the hard disk drive that you have installed.

Installing a CD-ROM(RW)/DVD Drive

1. Install the CD-ROM/DVD drive into the drive bay.
2. Plug the IDE cable into IDE1 (A). If you have already installed an HDD, use the other connector on the IDE cable.



Note: The ribbon cable connectors are keyed so that they can only be installed correctly on the device connector. If the connector is not keyed, make sure that you match the pin-1 side of the cable connector with the pin-1 side of the device connector. Each connector has the pin-1 side clearly marked. The pin-1 side of each ribbon cable is always marked with a colored stripe on the cable.

3. Plug an IDE cable connector into the CD-ROM/DVD drive IDE connector (B). It doesn't matter which connector on the cable you use.
4. Plug a power cable from the case power supply into the power connector on the CD-ROM/DVD drive (C).
5. Use the audio cable provided with the CD-ROM/DVD drive to connect to the system board CD-in connector CDIN1 or CDIN2 (D).

When you first start up your system, the BIOS should automatically detect your CD-ROM/DVD drive. If it doesn't, enter the Setup Utility and configure the CD-ROM/DVD drive that you have installed.

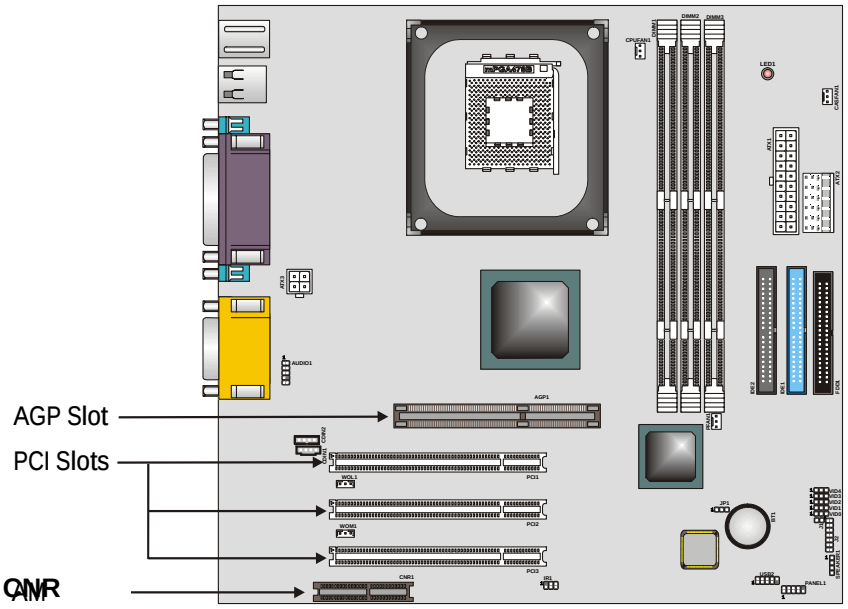
Installing Add-on Cards

This system board has three 32-bit PCI (Peripheral Components Interconnect) expansion slots, one 4xAGP slot, and one Communications and Networking Riser (CNR) slot.

4xAGP Slot The 4xAGP slot is used to install a graphics adapter that supports the 4xAGP specification and has a 4xAGP edge connector. The 4xAGP slot only supports 1.5V 4xAGP and 2xAGP cards.

PCI Slots PCI slots are used to install expansion cards that have the 32-bit PCI interface.

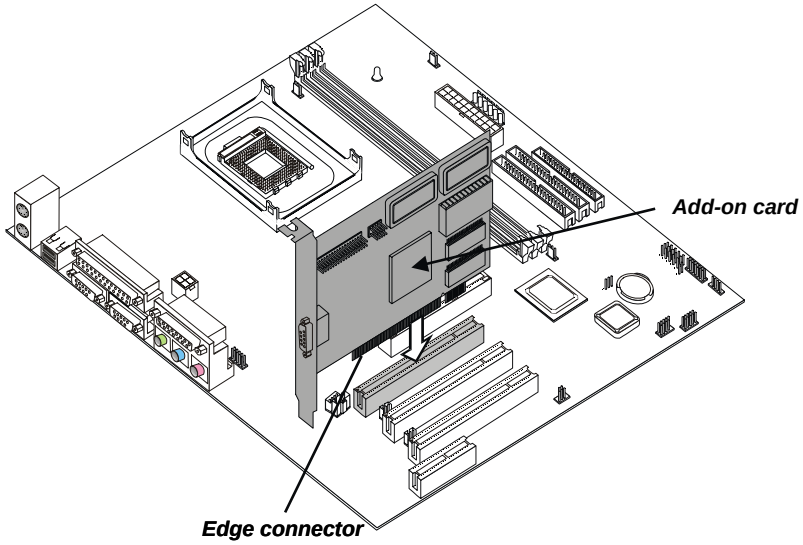
CNR Slot This slot is used to insert CNR cards including LAN, Modem, and Audio functions.



Note: Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

1. Remove a blanking plate from the system chassis corresponding to the slot you are going to use.

2. Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.

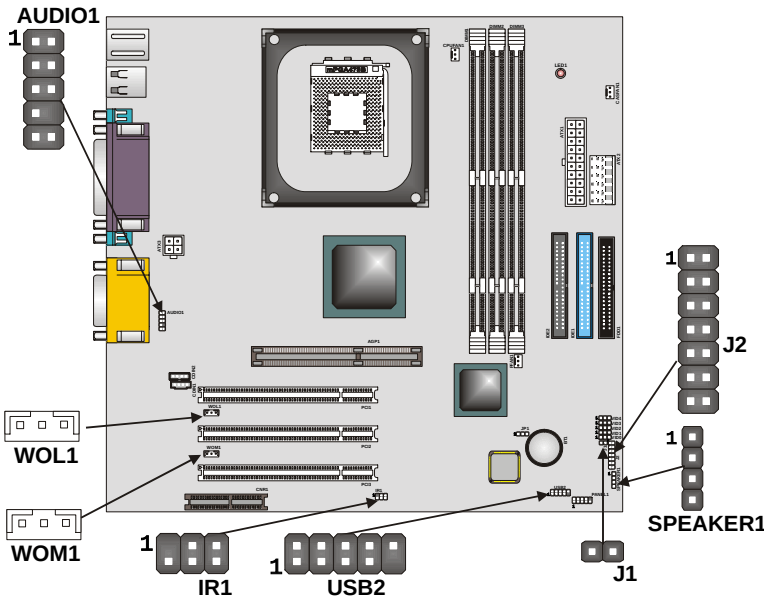


3. Secure the metal bracket of the card to the system chassis with a screw.

Note: For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.

Connecting Optional Devices

Refer to the following for information on connecting the system board's optional devices:



AUDIO1: Front panel audio header

This system board supports front panel microphone and speaker out ports. If your computer chassis has these ports, connect them to JLA1.

Pin	Signal Name	Pin	Signal Name
1	MICIN	2	AGND
3	MICBIAS	4	5V
5	SPKOUTR	6	XSPKOUTR
7	EMPTY	8	KEY
9	SPKOUTL	10	XSPKOUTL

WOL1/WOM1: Wake On LAN/Wake On Modem

If you have installed a LAN card, use the cable provided with the card to plug into the system board WOL1 connector. This enables the Wake On LAN (WOL) feature. When your system is in a power-saving mode, any LAN signal automatically resumes the system. You must enable this item using the Power Management page of the Setup Utility.

Pin	Signal Name
1	5VSB
2	Ground
3	SENSE

If you have installed a modem, use the cable provided with the modem to plug into the system board WOM1 connector. This enables the Wake On Modem (WOM) feature.
When your system is in a power-saving mode, any modem signal automatically resumes the system. You must enable this item using the Power Management page of the Setup Utility.

J1: ExtSMI connector

The ExtSMI connector is for use with SMI hardware interrupt power management.

Pin	Signal Name
1	EXTSMI
2	GND

SPEAKER1: Internal speaker

Connect the internal speaker connector to this header.

Pin	Signal Name
1	External speaker
2	Onboard buzzer
3	NC
4	VCC

J2: Smart I/O

The Smart I/O connector is for use with media storage devices using the LPC interface.

Pin	Signal Name	Pin	Signal Name
1	PCICLK	11	VCC3
2	SERIRQ	12	VCC3
3	LFRAME#	13	GND
4	LDRQ#	14	GND
5	LAD0	15	5VSB
6	LAD1	16	GND
7	LAD2	17	GND
8	LAD3	18	RESERVED(GND)
9	PCIRST#	19	VCC5
10	PME#	20	VCC5

Replacing the system battery

Follow these steps to replace the battery:
1. Place the blade of a small, flat-blade screwdriver under the edge of the retaining clip.
2. Turn the screwdriver one quarter turn, raising the clip while pressing down on the old battery to remove it.
3. Carefully raise the retaining clip, and insert the new battery with the + symbol facing out.

Setup Utility

About the Setup Utility

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.
The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.
This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility.
This Setup Utility should be used:

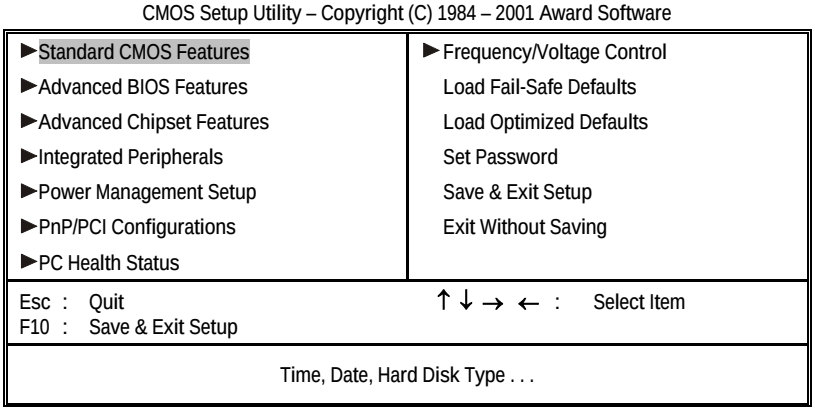
- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

Pressing the delete key accesses the BIOS Setup Utility:



BIOS Navigation Keys
The BIOS navigation keys are listed below:

Key	Function
Esc	Exits the current menu
←↑↓→	Scrolls through the items on a menu
+/–/PU/PD	Modifies the selected field's values
F10	Saves the current configuration and exits setup
F1	Displays a screen that describes all key functions
F5	Loads previously saved values to CMOS
F6	Loads a minimum configuration for troubleshooting.
F7	Loads an optimum set of values for peak performance

Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.
Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ►) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.
In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ►.

System Summary

This option displays a table of items defining basic information about your system.

CMOS Setup Utility – Copyright (C) 1984 – 2001 Award Software
System Summary

Processor		Item Help
► IDE Primary Master		Menu Level ►
► IDE Primary Slave		Press [Enter] to enter next page for detail hard drive settings.
► IDE Secondary Master		
► IDE Secondary Slave		
Drive A	[1.44M, 3.5 in.]	
Drive B	[None]	
Floppy 3 Mode Support	[Disabled]	
Video	[EGA/VGA]	
Base Memory	640K	
Extended Memory	64512K	
Total Memory	65536K	

↑↓→←: Move Enter : Select +/-/PU/PD:Value: F10: Save ESC: Exit F1:General Help
F5:Previous Values F7: Default Settings

Processor

This item displays information about the processor. This is a display only field.

►IDE Devices (None)

Your computer has two IDE channels (Primary and Secondary) and each channel can be installed with one or two devices (Master and Slave). Use these items to configure each device on the IDE channel.
Press <Enter> to display the IDE submenu:

CMOS Setup Utility – Copyright © 1984 – 2001 Award Software
IDE Primary Master

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master Access Mode	[Auto] [Auto]	Menu Level ►►
Capacity	0 MB	To auto-detect the HDD's size, head . . . on this channel
Cylinder	0	
Head	0	
Precomp	0	
Landing Zone	0	
Sector	0	

↑↓→←: Move Enter : Select +/-/PU/PD:Value: F10: Save ESC: Exit F1:General Help
F5:Previous Values F7: Default Settings

IDE HDD Auto-Detection

Press <Enter> while this item is highlighted to prompt the Setup Utility to automatically detect and configure an IDE device on the IDE channel.

> **Note:** If you are setting up a new hard disk drive that supports LBA mode, more than one line will appear in the parameter box. Choose the line that lists LBA for an LBA drive.

IDE Primary/Secondary Master/Slave (Auto)

Leave this item at Auto to enable the system to automatically detect and configure IDE devices on the channel. If it fails to find a device, change the value to Manual and then manually configure the drive by entering the characteristics of the drive in the items described below.

Refer to your drive's documentation or look on the drive casing if you need to obtain this information. If no device is installed, change the value to None.

> **Note:** Before attempting to configure a hard disk drive, ensure that you have the configuration information supplied by the manufacturer of your hard drive. Incorrect settings can result in your system not recognizing the installed hard disk.

Access Mode (Auto)

This item defines ways that can be used to access IDE hard disks such as LBA (Large Block Addressing). Leave this value at Auto and the system will automatically decide the fastest way to access the hard disk drive.
Press <Esc> to return to the Standard CMOS Features page.

Drive A/Drive B (1.44M, 3.5 in./None)

These items define the characteristics of any diskette drive attached to the system. You can connect one or two diskette drives.

Floppy 3 Mode Support (Disabled)

Floppy 3 mode refers to a 3.5-inch diskette with a capacity of 1.2 MB. Floppy 3 mode is sometimes used in Japan.

Video (EGA/VGA)

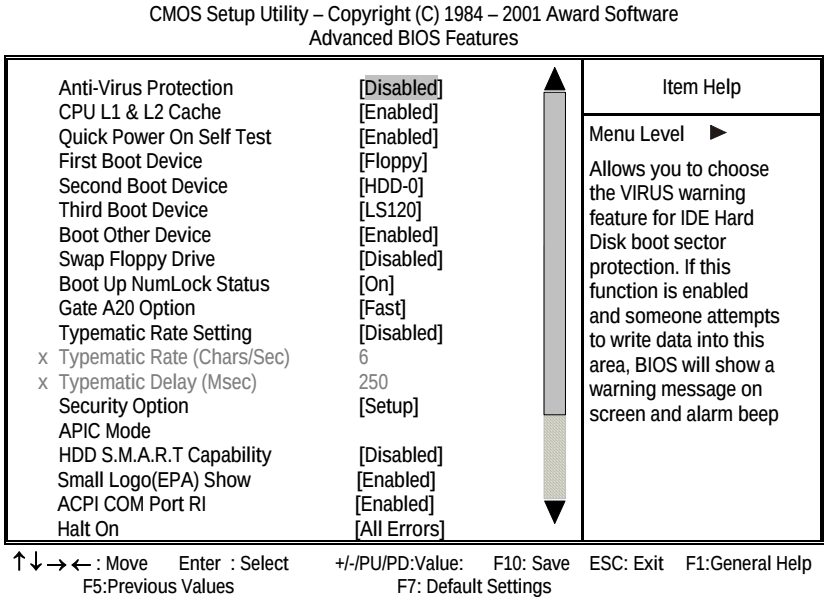
This item defines the video mode of the system. This system board has a built-in VGA graphics system; you must leave this item at the default value.

Base Memory, Extended Memory, and Total Memory

These items are automatically detected by the system at start up time. These are display-only fields. You cannot make changes to these fields.

Start Option

This option displays the startup options available for your system.



Anti-Virus Protection(Disabled)

When enabled, this item provides protection against viruses that try to write to the boot sector and partition table of your hard disk drive. You need to disable this item when installing an operating system. We recommend that you enable this item as soon as you have installed an operating system.

> **Note**: For complete protection against viruses, install virus software in your operating system and update the virus definitions regularly.

CPU L1 & L2 Cache (Enabled)

All processors that can be installed in this system board use internal level 1 (L1) and external level 2 (L2) cache memory to improve performance. Leave this item at the default value for better performance.

Quick Power On Self Test (Enabled)

Enable this item to shorten the power on testing (POST) and have your system start up faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

First/Second/Third Boot Device (Floppy/HDD-0/LS120)

Use these three items to select the priority and order of the devices that your system searches for an operating system at start-up time.

Boot Other Device (Enabled)
When enabled, the system searches all other possible locations for an operating system if it fails to find one in the devices specified under the First, Second, and Third boot devices.

Swap Floppy Drive (Disabled)
If you have two floppy diskette drives in your system, this item allows you to swap the assigned drive letters so that drive A becomes drive B, and drive B becomes drive A.

Boot Up NumLock Status (On)
This item defines if the keyboard Num Lock key is active when your system is started.

Gate A20 Option (Fast)
This item defines how the system handles legacy software that was written for an earlier generation of processors. Leave this item at the default value.

Typematic Rate Setting (Disabled)

If this item is enabled, you can use the following two items to set the typematic rate and the typematic delay settings for your keyboard.

- **Typematic Rate (Chars/Sec):** Use this item to define how many characters per second are generated by a held-down key.
- **Typematic Delay (Msec):** Use this item to define how many milliseconds must elapse before a held-down key begins generating repeat characters.

Security Option (Setup)
If you have installed password protection, this item defines if the password is required at system start up, or if it is only required when a user tries to enter the Setup Utility.

APIC Mode (Enable)
This option enables and disables APIC (Advanced Programmable Interrupt Controller) functionality. The APIC is an Intel chip that provides symmetric multiprocessing (SMP) for its Pentium systems.

HDD S.M.A.R.T Capability (Disabled)
The S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) system is a diagnostics technology that monitors and predicts device performance. S.M.A.R.T. software resides on both the disk drive and the host computer.

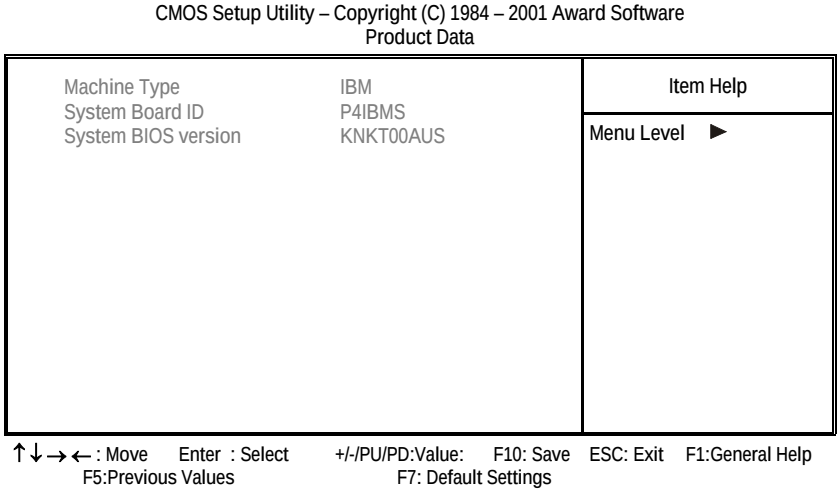
Small Logo (EPA) Show (Enabled)
Enables or disables the display of the EPA logo during boot.

ACPI COM Port RI (Enabled)
When using an IBM WorkPAD PDA COM port interface, enabling this item prevents system lock-up when starting Windows. When disabled, the system only supports the IBM WorkPAD PDA.

Halt On (All Errors)
This item defines the operation of the system POST (Power On Self Test) routine. You can use this item to select which types of errors in the POST are sufficient to halt the system.

Product Data

These items display information about the system board, computer, and system BIOS. These fields are display only.



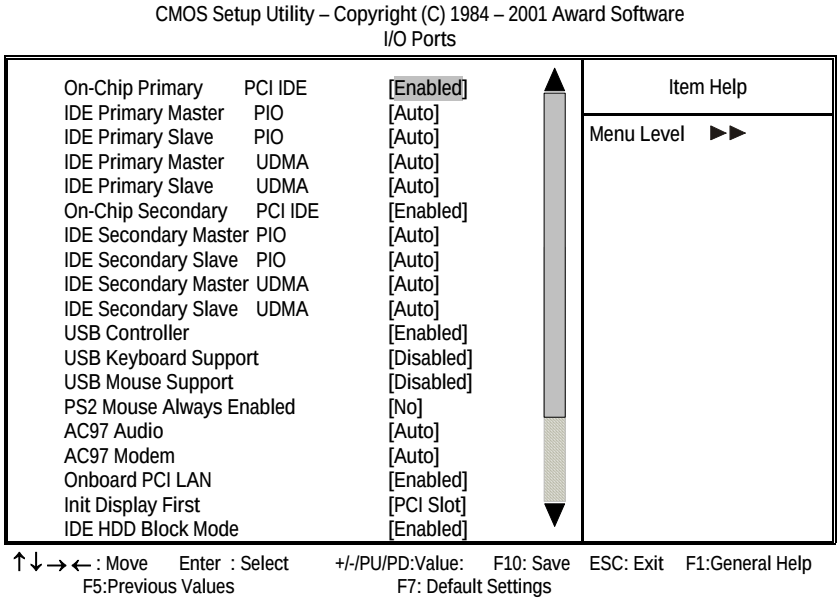
Machine Type (types 2259 and 6049)
Displays the ID for the computer.

System Board ID
Displays the system board identification. You need this information when updating the BIOS.

System BIOS version
Displays the system BIOS version. You need this information when updating the BIOS.

I/O Ports

These items define the operation of peripheral components on the system's input/output ports.



On-Chip Primary/Secondary PCI IDE (Enabled)

Use these items to enable or disable the PCI IDE channels that are integrated on the system board.

IDE Primary/Secondary Master/Slave PIO (Auto*)*

Each IDE channel supports a master device and a slave device. These four items let you assign which kind of PIO (Programmed Input/Output) is used by IDE devices. Choose Auto to let the system auto detect which PIO mode is best, or select a PIO mode from 0-4.

IDE Primary/Secondary Master/Slave UDMA (Auto)

Each IDE channel supports a master device and a slave device. This system board supports UltraDMA technology, which provides faster access to IDE devices.

If you install a device that supports UltraDMA, change the appropriate item on this list to Auto. You may have to install the UltraDMA driver supplied with this system board in order to use an UltraDMA device.

USB Controller (Enabled)

Enable this item if you plan to use the Universal Serial Bus ports on this system board.

USB Keyboard Support (type 6049 Disabled)
Enable this item if you plan to use a keyboard connected through the USB port in a legacy operating system (such as DOS) that does not support Plug and Play.

USB Mouse Support (Disabled)
Enable this item if you plan to use a USB mouse.

PS2 Mouse Always Enable
Always enable this item.

AC97 Audio (Auto)
Enables and disables the onboard audio chip. Disable this item if you are going to install a PCI audio add-on card.

AC97 Modem (Auto)
Enables and disables the onboard modem. Disable this item if you are going to install an external modem.

Onboard PCI LAN (Enabled*)*
Select Enabled if your system contains a built-in PCI LAN controller.

Init Display First (PCI Slot)
Use this item to specify whether your graphics adapter is installed in one of the PCI slots or is integrated on the system board.

IDE HDD Block Mode (Enabled)
Enable this field if your IDE hard drive supports block mode. Block mode enables BIOS to automatically detect the optimal number of block read and writes per sector that the drive can support and improves the speed of access to IDE devices.

Onboard Serial Port 1 (3F8/IRQ4*)*
This option is used to assign the I/O address and interrupt request (IRQ) for the onboard serial port 1 (COM1).

Onboard Serial Port 2 (2F8/IRQ3)
This option is used to assign the I/O address and interrupt request (IRQ) for the onboard serial port 2 (COM2).

Onboard Parallel Port (378/IRQ7)
This option is used to assign the I/O address and interrupt request (IRQ) for the onboard parallel port.

Parallel Port Mode (ECP)
Enables you to set the data transfer protocol for your parallel port. There are four options: SPP (Standard Parallel Port), EPP (Enhanced Parallel Port), ECP (Extended Capabilities Port), and ECP+EPP.

SPP allows data output only. Extended Capabilities Port (ECP) and Enhanced Parallel Port (EPP) are bi-directional modes, allowing both data input and output. ECP and EPP modes are only supported with EPP- and ECP-aware peripherals.

ECP Mode Use DMA (3)
When the onboard parallel port is set to ECP mode, the parallel port can use DMA 3 or DMA 1.

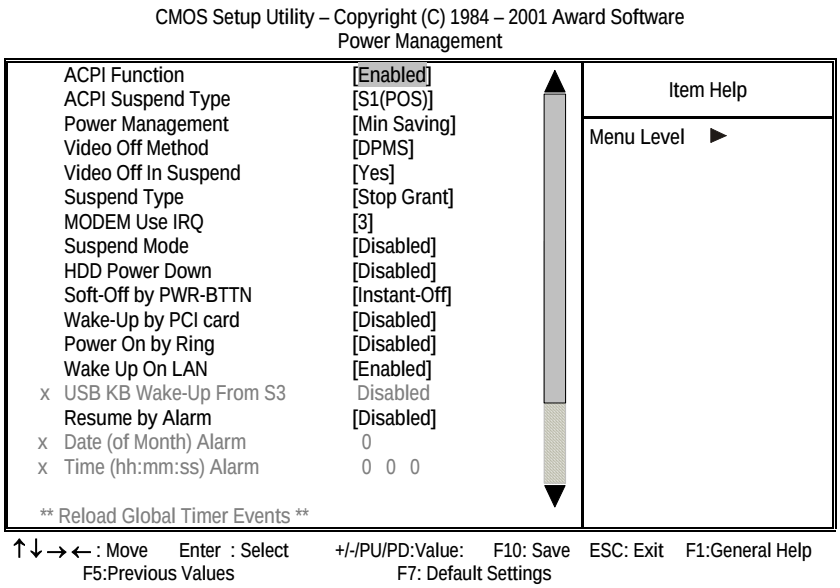
Game Port Address (201)
This item sets the I/O address for the game port.

Midi Port Address (330*)*
This item sets the I/O address for the Midi function.

Midi Port IRQ (10)
This item sets the interrupt request for the Midi function.

Power Management

This option lets you control system power management. The system has various power-saving modes including powering down the hard disk, turning off the video, suspending to RAM, and software power down that allows the system to be automatically resumed by certain events.
The power-saving modes can be controlled by timeouts. If the system is inactive for a time, the timeouts begin counting. If the inactivity continues so that the timeout period elapses, the system enters a power-saving mode. If any item in the list of Reload Global Timer Events is Enabled, then any activity on that item will reset the timeout counters to zero.
If the system is suspended or has been powered down by software, it can be resumed by a wake up call that is generated by incoming traffic to a modem, a LAN card, a PCI card, or a fixed alarm on the system realtime clock.



ACPI Function (Enabled)

This system board supports ACPI (Advanced Configuration and Power management Interface). Use this item to enable or disable the ACPI feature.

> **Note:** ACPI is a power management specification that makes hardware status information available to the operating system. ACPI enables a PC to turn its peripherals on and off for improved power management. It also allows the PC to be turned on and off by external devices, so that mouse or keyboard activity wakes up the computer.

ACPI Suspend Type (S1(POS))

Use this item to define how your system suspends. In the default, S1(POS), the suspend mode is equivalent to a software power down. If you select S3 (STR), the suspend mode is a suspend to RAM, i.e., the system shuts down with the exception of a refresh current to the system memory.

Power Management (Min Saving)

This item acts like a master switch for the power-saving modes and hard disk timeouts. If this item is set to Max Saving, power-saving modes occur after a short timeout. If this item is set to Min Saving, power-saving modes occur after a longer timeout. If the item is set to User Define, you can insert your own timeouts for the power-saving modes.

Video Off Method (DPMS)

This item defines how the video is powered down to save power. This item is set to DPMS (Display Power Management Software) by default.

Video Off In Suspend (Yes)

This option defines if the video is powered down when the system is put into suspend mode.

Suspend Type (Stop Grant)

If this item is set to the default Stop Grant, the CPU will go into Idle Mode during power saving mode.

MODEM Use IRQ (3)

If you want an incoming call on a modem to automatically resume the system from a power-saving mode, use this item to specify the interrupt request line (IRQ) that is used by the modem. You might have to connect the fax/modem to the system board Wake On Modem connector for this feature to work.

Suspend Mode (Disabled)

The CPU clock will be stopped and the video signal will be suspended if no Power Management events occur for a specified length of time. Full power function will return when a Power Management event is detected. Options are from 1 Min to 1 Hour and Disable.

HDD Power Down (Disabled)
The IDE hard drive will spin down if it is not accessed within a specified length of time. Options are from 1 Min to 15 Min and Disable.

Soft-Off by PWR-BTTN (Instant-Off)
Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the power button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec. then you have to hold the power button down for four seconds to cause a software power down.

Wake-Up by PCI Card (Disabled*)*
When this item is enabled, the system power will be turned on if there is any PCI card activity.

Power On by Ring (Disabled)
If this item is enabled, it allows the system to resume from a software power down or a power-saving mode whenever there is an incoming call to an installed fax/modem. You have to connect the fax/modem to the system board.

Wake Up On LAN (Enabled)
When set to Enabled, the system power will be turned on if the LAN port receives an incoming signal. You have to connect the fax/modem to the system board Wake On LAN connector for this feature to work.

USB KB Wake-Up S3 (Disabled)
If you are using a USB keyboard, and the ACPI suspend type is set to S3, you can enable this item to allow a keystroke to wake up the system from power saving mode.

Resume by Alarm (Disabled*)*
When set to Enabled, additional fields become available and you can set the date (day of the month), hour, minute and second to turn on your system. When set to 0 (zero) for the day of the month, the alarm will power on your system every day at the specified time.

**** Reload Global Timer Events ****
Global Timer (power management) events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything that occurs to a device that is configured as Enabled, even when the system is in a power-down mode.

Primary/Secondary IDE 1/0 (Disabled)
When these items are enabled, the system will restart the power-saving timeout counters when any activity is detected on any of the drives or devices on the primary or secondary IDE channels.

FDD, COM, LPT Port (Disabled)
When this item is enabled, the system will restart the power-saving timeout counters when any activity is detected on the floppy disk drive, serial ports, or the parallel port.

PCI PIRQ[A-D]# (Disabled)
When disabled, any PCI device set as the Master will not power on the system.

Advanced Option

This option configures how PnP (Plug and Play) and PCI expansion cards operate in your system. Both the ISA and PCI buses on the System board use system IRQs (Interrupt ReQuests) and DMAs (Direct Memory Access). You must set up the IRQ and DMA assignments correctly through the PnP/PCI Configurations Setup utility for the system board to work properly. Selecting PnP/PCI Configurations on the main program screen displays this menu:

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Advanced Setup

	Reset Configuration Data	[Disabled]	Item Help
	Resources Controlled by	[Auto(ESCD)]	
x	IRQ Resources	Press Enter	Menu Level ►
	PCI/VGA Palette Snoop	[Disabled]	Default is Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot.
	Assign IRQ For USB	[Enabled]	
	INT Pin 1 Assignment	[Auto]	
	INT Pin 2 Assignment	[Auto]	
	INT Pin 3 Assignment	[Auto]	
	INT Pin 4 Assignment	[Auto]	
	INT Pin 5 Assignment	[Auto]	
	INT Pin 6 Assignment	[Auto]	
	INT Pin 7 Assignment	[Auto]	
	INT Pin 8 Assignment	[Auto]	

↑↓→←: Move Enter : Select +/-/PU/PD:Value: F10: Save ESC: Exit F1:General Help
F5:Previous Values F7: Default Settings

Reset Configuration Data (Disabled)
If you enable this item and restart the system, any Plug and Play configuration data stored in the BIOS Setup is cleared from memory.

Resources Controlled By (Auto(ESCD))
You should leave this item at the default Auto(ESCD). Under this setting, the system dynamically allocates resources to Plug and Play devices as they are required.
If you cannot get a legacy ISA (Industry Standard Architecture) expansion card to work properly, you might be able to solve the problem by changing this item to Manual, and then opening up the IRQ Resources and Memory Resources submenus.

In the IRQ Resources submenu, if you assign an IRQ to Legacy ISA, then that Interrupt Request Line is reserved for a legacy ISA expansion card. Press <Esc> to close the IRQ Resources submenu.
In the Memory Resources submenu, use the first item Reserved Memory Base to set the start address of the memory you want to reserve for the ISA expansion card. Use the second item Reserved Memory Length to set the amount of reserved memory. Press <Esc> to close the Memory Resources submenu.

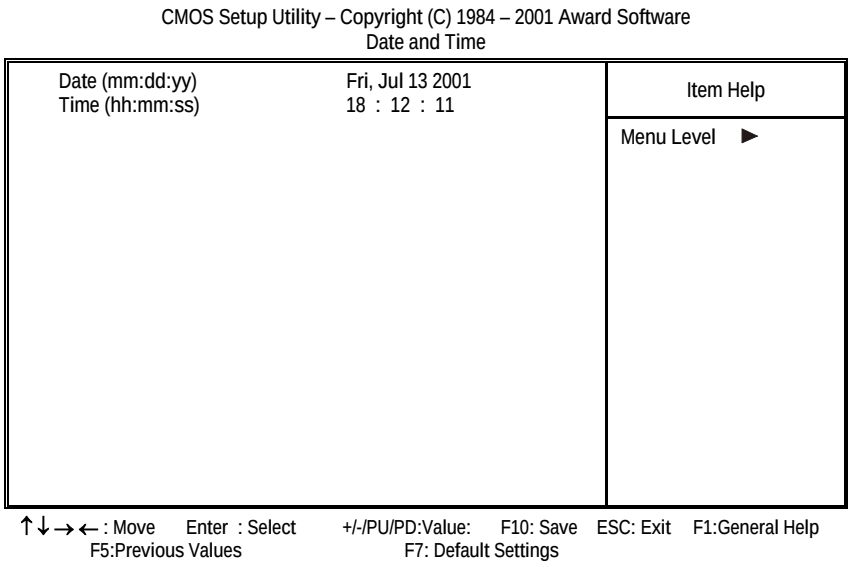
PCI/VGA Palette Snoop (Disabled)
This item is designed to overcome problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled.

Assign IRQ For USB (Enabled)
Names the interrupt request (IRQ) line assigned to the USB on your system. Activity of the selected IRQ always awakens the system.

INT Pin1~8 Assignment (Auto*)*
Names the interrupt request (IRQ) line assigned to a device connected to the PCI interface on your system.

Date and Time

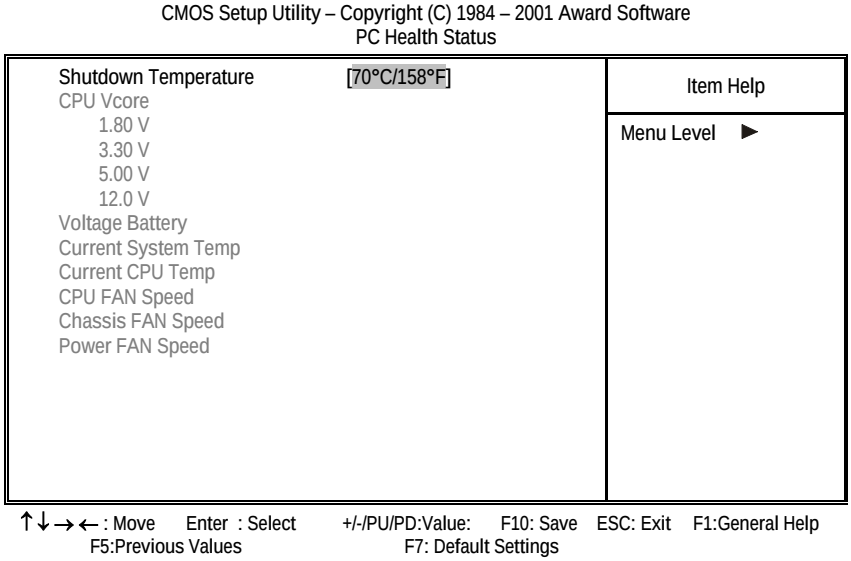
This item sets the date and time for the system.



Date and Time
The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

PCI Health Status Option

On system boards that support hardware monitoring, this item lets you monitor the parameters for critical voltages, critical temperatures, and fan speeds.



Shutdown Temperature (70°C/158°F)

Enables you to set the maximum temperature the system can reach before powering down.

System Component Characteristics

These fields provide you with information about the systems current operating status. You cannot make changes to these fields.

- CPU Vcore (CPU core voltage)
- Voltage Battery (battery voltage)
- Current System Temp (degrees Fahrenheit and Celsius)
- Current CPU Temp (degrees Fahrenheit and Celsius)
- CPU fan speed (in RPMs)
- Chassis FAN Speed (in RPMs)
- Power FAN Speed (in RPMs)

Load Defaults Option

This option opens a dialog box that lets you install fail-safe defaults for all appropriate items in the Setup Utility:
Press <Y> and then <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The fail-safe defaults place no great demands on the system and are generally stable. If your system is not functioning correctly, try installing the fail-safe defaults as a first step in getting

your system working properly again. If you only want to install fail-safe defaults for a specific option, select and display that option, and then press <F6>.

Set Supervisor and User Passwords Options

These items can be used to install a password. A Supervisor password takes precedence over a User password, and the Supervisor can limit the activities of a User. To install a password, follow these steps:

1. Highlight the item Set Supervisor/User Password on the main menu and press <Enter>.
2. The password dialog box appears.

   Enter Password:

3. If you are installing a new password, type in the password. You cannot use more than eight characters or numbers. The Set Supervisor/User Password item differentiates between upper and lower case characters.
4. Press <Enter> after you have typed in the password. If you are deleting a password that is already installed, press <Enter> when the password dialog box appears. You see a message that indicates that the password has been disabled.

   PASSWORD DISABLED !!!
   Press any key to continue . . .

5. Press any key. You are prompted to confirm the password:

   Confirm Password:

6. Type the password again and press <Enter>, or press <Enter> if you are deleting a password that is already installed.
7. If you typed the password correctly, the password will be installed.

Save & Exit Setup Option

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, press <Y> to save and exit, or press <N> to return to the main menu:

Exit Without Saving

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, press <Y> to discard changes and exit, or press <N> to return to the main menu.

Note:	If you have made settings that you do not want to save, use the "Exit Without Saving" item and press <Y> to discard any changes you have made.

IBM Statement of Limited Warranty

Part 1 - General Terms

This Statement of Limited Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 replace or modify those of Part 1. The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term “Machine” means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them.
The term “Machine” does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Limited Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.

The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM’s Official Published Specifications (“Specifications”). The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation unless IBM or your reseller informs you otherwise.
If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally equivalent, you may return it to your place of purchase and your money will be refunded.

Extent of Warranty

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.
THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED

WARRANTIES, SO THE ABOVE EXCLUSION
OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

Items Not Covered by Warranty

IBM does not warrant uninterrupted or error-free operation of a Machine.
Any technical or other support provided for a Machine under warranty, such as assistance via telephone with “how-to” questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND.**

Warranty Service

To obtain warranty service for a Machine, contact IBM or your reseller. If you do not register your Machine with IBM, you may be required to present proof of purchase.
During the warranty period, IBM or your reseller, if approved by IBM to provide warranty service, provides without charge certain types of repair and exchange service to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. At its discretion, IBM or your reseller will
1) either repair or exchange the failing Machine and
2) provide the service either at your location or a service center. IBM or your reseller will also manage and install selected engineering changes that apply to the Machine.
Some parts of IBM Machines are designated as Customer Replaceable Units (called “CRUs”), e.g., keyboards, memory, or hard disk drives. IBM ships CRUs to you for replacement by you. You must return all defective CRUs to IBM within 30 days of your receipt of the replacement CRU. You are responsible for downloading designated Machine Code and Licensed Internal Code updates from an IBM Internet Web site or from other electronic media, and following the instructions that IBM provides.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item. Many features, conversions, or upgrades involve the removal of parts and their return to IBM.
A part that replaces a removed part will assume the warranty service status of the removed part.
Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to
1. ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. where applicable, before service is provided:
a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides;
b. secure all programs, data, and funds contained in a Machine;
c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfill their obligations; and
d. inform IBM or your reseller of changes in a Machine's location.
IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.
Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

Limitation of Liability

Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), except for any liability that cannot be waived or limited by applicable laws, IBM is liable for no more than
1. damages for bodily injury (including death) and damage to real property and tangible personal property; and

2. the amount of any other actual direct damages, up to the charges (if recurring, 12 months' charges apply) for the Machine that is subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code.
This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.
UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES, LOST PROFITS OR LOST SAVINGS, EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY

TO YOU.
Governing Law
Both you and IBM consent to the application of the laws of the country in which you acquired the Machine to govern, interpret, and enforce all of your and IBM's rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Agreement, without regard to conflict of law principles.

Part 2 - Country-unique Terms

ASIA PACIFIC

AUSTRALIA

The IBM Warranty for Machines: *The following paragraph is added to this Section:*
The warranties specified in this Section are in addition to any rights you may have under the Trade Practices Act 1974 or other similar legislation and are only limited to the extent permitted by the applicable legislation.
Limitation of Liability: *The following is added to this Section:*
Where IBM is in breach of a condition or warranty implied by the Trade Practices Act 1974 or other similar legislation, IBM's liability is limited to the repair or replacement of the goods or the supply of equivalent goods. Where that condition or warranty relates to right to sell, quiet possession or clear title, or the goods are of a kind ordinarily acquired for personal, domestic or household use or consumption, then none of the limitations in this paragraph apply.
Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:*
laws of the State or Territory.

CAMBODIA, LAOS, AND VIETNAM

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:*
laws of the State of New York.
The following is added to this Section:
Disputes and differences arising out of or in connection with this Agreement shall be finally settled by arbitration which shall be held in Singapore in accordance with the rules of the International Chamber of Commerce (ICC).
The arbitrator or arbitrators designated in conformity with those rules shall have the power to rule on their own competence and on the validity of the Agreement to submit to arbitration. The arbitration award shall be final and binding for the parties without appeal and the arbitral award shall be in writing and set forth the findings of fact and the conclusions of law.
All proceedings shall be conducted, including all documents presented in such proceedings, in the English language. The number of arbitrators shall be three, with each side to the dispute being entitled to appoint one arbitrator.

The two arbitrators appointed by the parties shall appoint a third arbitrator before proceeding upon the reference. The third arbitrator shall act as chairman of the proceedings. Vacancies in the post of chairman shall be filled by the president of the ICC. Other vacancies shall be filled by the respective nominating party. Proceedings shall continue from the stage they were at when the vacancy occurred.
If one of the parties refuses or otherwise fails to appoint an arbitrator within 30 days of the date the other party appoints its, the first appointed arbitrator shall be the sole arbitrator, provided that the arbitrator was validly and properly appointed.
The English language version of this Agreement prevails over any other language version.

HONG KONG AND MACAU

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:*
laws of Hong Kong Special Administrative Region.

INDIA

Limitation of Liability: *The following replaces items 1 and 2 of this Section:*
1. liability for bodily injury (including death) or damage to real property and tangible personal property will be limited to that caused by IBM's negligence;
2. as to any other actual damage arising in any situation involving nonperformance by IBM pursuant to, or in any way related to the subject of this Statement of Limited Warranty, IBM's liability will be limited to the charge paid by you for the individual Machine that is the subject of the claim.

JAPAN

Governing Law: *The following sentence is added to this Section:*
Any doubts concerning this Agreement will be initially resolved between us in good faith and in accordance with the principle of mutual trust.

NEW ZEALAND

The IBM Warranty for Machines: *The following paragraph is added to this Section:*
The warranties specified in this Section are in addition to any rights you may have under the Consumer Guarantees Act 1993 or other legislation which cannot be excluded or limited. The Consumer Guarantees Act 1993 will not apply in respect of any goods which IBM provides, if you require the goods for the purposes of a business as defined in that Act.

Limitation of Liability: *The following is added to this Section:*

Where Machines are not acquired for the purposes of a business as defined in the Consumer Guarantees Act 1993, the limitations in this Section are subject to the limitations in that Act.

PEOPLE'S REPUBLIC OF CHINA (PRC)

Governing Law: *The following replaces this Section:*
Both you and IBM consent to the application of the laws of the State of New York (except when local law requires otherwise) to govern, interpret, and enforce all your and IBM's rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Agreement, without regard to conflict of law principles.
Any disputes arising from or in connection with this Agreement will first be resolved by friendly negotiations, failing which either of us has the right to submit the dispute to the China International Economic and Trade Arbitration Commission in Beijing, the PRC, for arbitration in accordance with its arbitration rules in force at the time. The arbitration tribunal will consist of three arbitrators. The language to be used therein will be English and Chinese.
An arbitral award will be final and binding on all the parties, and will be enforceable under the Convention on the Recognition and Enforcement of Foreign Arbitral Awards (1958).
The arbitration fee will be borne by the losing party unless otherwise determined by the arbitral award.
During the course of arbitration, this Agreement will continue to be performed except for the part which the parties are disputing and which is undergoing arbitration.