

Personal Computer User's Guide

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**Federal Communications Commission (FCC)
Statement
FCC Notice - Part 15**

This equipment 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 equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, 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 equipment and the receiver.
- ◆ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ◆ Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

THIS DEVICE COMPLIES WITH PART 15 OF 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 UNDESIRE OPERATION.

Safety and Maintenance Precautions

1. Read and follow all instructions carefully.
2. Save these instructions for future use.
3. Follow all warnings and instructions marked on the products.
4. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
5. Do not use this product near water.
6. Do not place this product on an unstable surface. If the product should fall, it may become seriously damaged and, more importantly, may cause injuries to the user.
7. There should be slots and openings at the back or bottom of the cabinet for ventilation. This is also to ensure reliable operation of the product and to protect it from overheating. The openings should never be blocked. Do not place the product on a bed, sofa, rug or other similar surfaces. This product should never be placed near any object that produces heat. This product should not be placed in a built-in installation unless proper ventilation is provided.
8. This product should be operated from the type of power source indicated on the label. If you are not sure of the type of power available, consult your dealer or local power company.
9. Do not allow anything to rest on the power cord. Do not put this product where the cord could be stepped on.
10. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or cause short circuits, risking the possibility of a fire or electric shock. Never spill liquid of any kind onto this product.
11. Please turn off power of all equipment when it is not used for a long time.
12. For pluggable equipment, the socket-outlet should be installed near the equipment and should be easily accessible.
13. **CAUTION:** (English)
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

ATTENTION: (French)

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

VORSICHT! (German)

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

14. Do not attempt to service this product yourself. If you have the suspicion that the product is not in proper working order, unplug the unit and seek assistance from qualified service personnel, especially under the following conditions:
 - a. When the power cord or plug is damaged or frayed.
 - b. If liquid has been spilled onto the product, or if the product has been exposed to rain or water.
 - c. 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 further damage or complications.
 - d. If the product has been dropped or the cabinet has been damaged.
 - e. If the product exhibits a distinct deterioration in performance, indicating a need for service.

**Canadian Department of Communication Radio
Frequency Interference Statement**

(English)

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

(French)

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

Wichtige Sicherheitshinweise

1. Bitte lesen Sie sich diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen.
Verwenden Sie keine Flüssig- oder Aerosolreiniger. Am besten dient ein angefeuchtetes Tuch zur Reinigung.
4. Das Gerät ist vor Feuchtigkeit zu schützen.
5. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Verletzungen hervorrufen.
6. Die Belüftungsöffnungen dienen zur Luftzirkulation, die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.
7. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
8. Verlegen Sie die Netzanschlußleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
9. Alle Hinweise und Warnungen, die sich an den Geräten befinden, sind zu beachten.
10. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
11. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
12. Wenn folgende Situationen auftreten, ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
 - a. Netzkabel oder Netzstecker sind beschädigt.
 - b. Flüssigkeit ist in das Gerät eingedrungen.
 - c. Das Gerät war Feuchtigkeit ausgesetzt.
 - d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
 - e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
 - f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
13. Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 645 beträgt 70dB(A) oder weniger.
14. Zum Netzanschluß dieses Gerätes ist eine geprüfte Leitung zu verwenden. Für einen Nennstrom bis 6A und ein Gerätegewicht größer 3kg ist eine Leitung nicht leichter als H05VV-F, 3G, 0.75mm² einzusetzen.
15. Das CD-ROM Laufwerk ist ein Laserklasse 1 Gerät.

Sicherheitshinweise

1. Die Steckdose muß sich in der Nähe des Gerätes befinden und leicht zugänglich sein.
2. Zum Reinigen den Stecker aus der Steckdose ziehen.
Beim Reinigen keine Flüssigreiniger oder Sprays verwenden, sondern ein angefeuchtetes Tuch.
3. Das PC gerät nicht in Naßräume oder in der Nähe von Wasser benutzen, wie z.B. Badezimmer, Schwimmbad, Spülbecken usw.. Das Eindringen von Wasser kann zur Zerstörung des Gerätes führen.
4. Das PC gerät nicht auf einer unstabilen Unterlage, wie z.B. Rollwagen, Gestell usw., aufstellen. Es könnte herunterfallen und Verletzungen oder Beschädigungen von Mensch und Gerät verursachen.
5. Die Belüftungsöffnungen nicht blockieren oder auf falscher Oberfläche, wie Bett, Sofa usw., stellen. Durch die Blockierung kann es zur Zerstörung des Gerätes durch Überhitzung kommen.
6. Versuchen Sie niemals dieses Gerät selbst zu warten, da beim Öffnen oder Abnehmen des Gehäuses die Gefahr eines elektrischen Schlages besteht.
7. Keine Gegenstände auf das Anschlußkabel stellen, damit es nicht durch scharfe Kanten zerstört werden kann.
8. Keinerlei Gegenstände durch die Öffnungen in das Gerät stecken, da es dadurch sonst zu Kurzchlüssen kommen kann.
9. Bei Störungen des Gerätes den Wartungsdienst verständigen.
10. Bei Reparaturen dürfen nur Originalersatzteile oder Bauteile mit gleichen Eigenschaften verwendet werden. Andere Bauteile können Feuer, elektrischen Schlag oder andere Gefahren verursachen.
11. Nach Beendigung von Wartungsarbeiten oder Reparaturen durch den Kundendienst sollte die Sicherheitsprüfung durchgeführt werden.
12. Bei längerem Stillstand des Gerätes, ist diese von der Versorgungsspannung zu trennen. Dies verhindert eine Beschädigung des Gerätes durch eine Überspannung in der Zuleitung.
13. Der arbeitsplatzbezogene Lärmschutzpegel nach DIN 45 635 ist kleiner 70dB(A).

About This Guide

Congratulations on your purchase of this new computer system. This user's guide provides information on the installation and setup procedures for your new motherboard or computer system.

Chapter 1: Getting Started gives you information on what is provided with your computer system and the available functions and locations of controls. If you are a first-time computer user, this chapter also introduces you to the basics of computing.

Chapter 2: Specifications lists the standard features and technical specifications of the motherboard.

You can find the motherboard layout in **Chapter 3: Connectors and Jumpers**. Through this chapter, you can acquaint yourself with the functions and locations of different connectors and jumpers on your motherboard.

For information on BIOS Setup Utility, please refer to **Chapter 4: BIOS Setup**. You may need to look into this chapter if you are installing new peripherals into your system, or would like to change system settings such as power management, ...etc.

If you need to install or replace CPU, memory, and other internal devices, refer to **Chapter 5: Installation**.

You can find information on device drivers and utility in **Chapter 6: Device Driver Installation**.

You can find suggestions for problems you may encounter with your personal computer in **Chapter 7: Troubleshooting**. This chapter contains information to help you to solve most common problems when using your personal computer.

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CHAPTER 1

Getting Started

This chapter introduces you to your computer system. If this is the first time you are using a computer, this chapter provides information on the basics of computing.

Choosing a Location

Before you start, you need to find a place for your computer. Like any other delicate electronic device, your PC should be placed in a suitable location.

-  Your PC should be placed on a flat, sturdy surface where you plan to work. Dropping it may cause serious damages.
-  There must be enough ventilation for proper heat dissipation. Make sure there is enough spaces (at least two to three inches) on all sides except the bottom.
-  The main unit, keyboard, mouse, and all other peripheral devices should be located in a relatively dry and cool place. These should be kept away from direct sunlight or any other sources of extreme heat. Exposing to high temperature may cause internal overheating, and may blemish the exterior of your computer system.
-  Do not place your PC near water. Accidentally pouring liquid onto your system may damage it.
-  Keep your PC away from devices that generate radio frequency interference such as stereo equipment. This

should also be kept at least three feet from sources of strong magnetic fields since these may destroy information stored on your diskette and hard disk.

Unpacking Your System

After finding a suitable location, you can remove your PC from the box. Please check to see if there is anything missing.

Main items in your package should include:

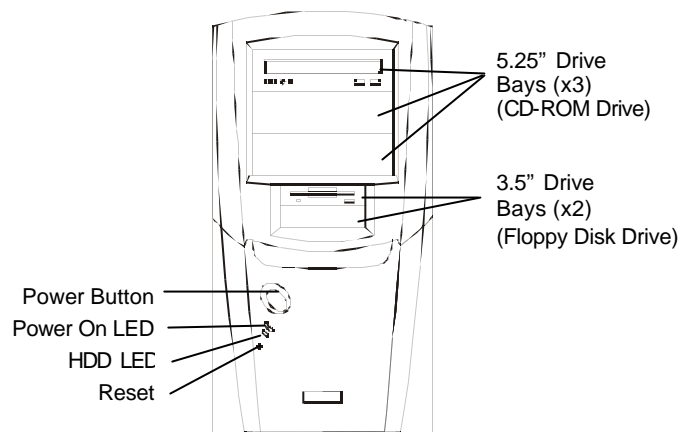
- Main Unit
 - Depending on your order, your system may include floppy disk drive, hard disk drive, and CD-ROM drive.
- Windows 95 Enhanced PS/2 Keyboard
- PS/2 Mouse
- Device Drivers and Utility Disk/s
- Windows 98 Software Package
 - This includes Windows 98 operating system on CD-ROM disc, a 3.5" boot disk, and a user's guide.
- This User's Guide
- AC Power Cord

There may be some optional devices or items included in the package. These shall depend on the model and the configuration that you have ordered. If there is anything missing, contact your dealer immediately.

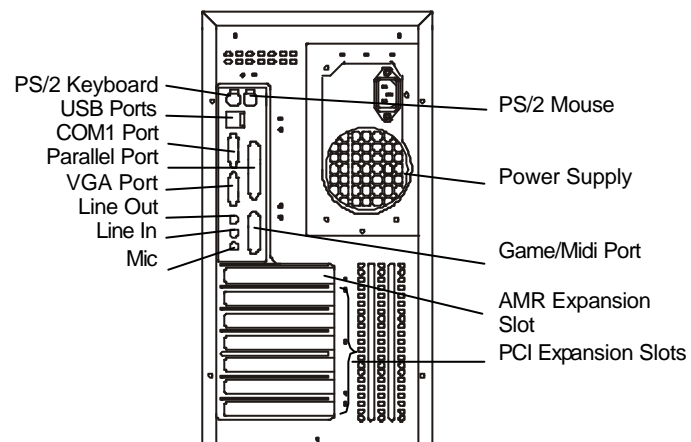
Keep the original carton and packing materials. If you need to move your PC to another location in the future, the original packaging materials protect your PC.

Locations and Functions of Controls

Front Panel



Rear Panel



Making the Connections

You are now ready to connect the devices to get the system working. For installation of devices that are not covered in this section, please refer to their respective manuals.

———— **WARNING: Before You Start Connecting** ————

***M**ake sure that your computer is turned **OFF** before connecting any devices. Connecting devices with the power on may result in severe damages!*



Keyboard

The keyboard is an input device. You use this to enter your commands or data to the computer. Connect the keyboard to your system by inserting the connector of its cable to the *PS/2 Keyboard Jack* found at the rear of your system. The connector is designed to fit into the keyboard jack in only one way. Do not forcibly insert the connector. Be sure to align the pins into the holes accordingly before inserting.



Mouse

The mouse is another input device. This is also known as a pointing device. You use this to point to the required items, confirm or cancel your commands, or select items from a given list. Connect the mouse to your system by inserting the connector of its cable to the *PS/2 Mouse Port* at the rear of your system. The connector is designed to fit into the PS/2 mouse port in only one way. Do not forcibly insert the connector. Be sure to align the pins into the holes accordingly before inserting.



SVGA/VGA Monitor

The monitor is an output device. This is also known as the screen display. You need this to see the results of the computer operations and other information required from the system. You will need a video cable to connect a monitor to your system. This is usually supplied with the monitor.

There are monitors that come with video cable attached to the monitor. In such case, just align the connector from the video cable to the *VGA Port* of your system. You can recognize VGA port easily as only this type of connector can be fit into it.

Other monitors bundle a separate video cable. After inserting an end of the video cable to the *VGA Port*, connect the other end to the monitor.



Printer

The printer is another output device. You use this to provide hardcopies of the documentation required. This is also called an LPT device, or, a parallel printer. Parallel refers to the type of communication method used to transmit the signals between your system and the printer. This type of transmission is faster, but is limited by the distance of communicating devices.

To connect a parallel printer to your system, you shall need a printer cable. This type of cable is supplied with your printer. Connect an end of this cable to the *Parallel Port* at the rear of your system.

Check the printer's manual for any driver installation required to maximize its performance. Then, make sure that you have

designated your print destination properly in your applications program before issuing a print command.



AC Power Cord

Now, get the AC power cord and insert the female end (with holes) into the AC Power In of the *Power Supply* at the rear of your system. The other end of the power cord is plugged into an AC wall outlet. Next, check if the power cords of all other devices (monitor, printer, etc) are all plugged to the AC wall outlet.

We strongly suggest that you use a multiple-outlet surge protector (sometimes called a "power strip") so as to prevent damage to your system and its peripherals caused by electrical surges in the power line. Connect the power of all other devices or peripherals to this, too. Be sure to have the surge protector plugged to a wall outlet all to itself.

It is also greatly recommended that your computer and its peripherals be plugged into a grounded outlet. Do not use any device to convert the three-prong (grounded) plug of your power cord for use with a two-prong (non-grounded) outlet.


Turning the System On/Off

By now, everything is already connected and you are ready to turn on your PC. Press *Power Button* and your computer will boot and automatically enter Windows 98 operating system. The *Power On LED* of your computer will be lit.

WARNING: Before You Turn On Your

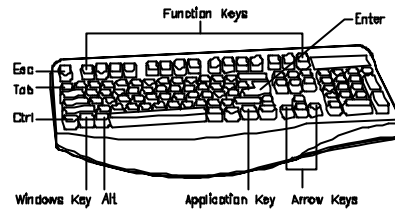
*Before turning on your system and all other peripherals connected to this, check first if they are switched to the right **AC voltage**. Turning the system on with improper voltage setting may result in severe damages.*

If you would like to turn off your system, perform Windows 98 shut down operations first:

- 1 Press  (Windows) key.
- 2 Click "Shut Down...".
- 3 Confirm by clicking "Yes" button.

Using the Keyboard

Keyboard works like a typewriter. There are, however, a number of keys specific to a computer keyboard that you won't find on a typewriter. These are shown and listed below:



Tells the PC you have finished entering a command and you want the PC to execute it.



Confirms your selection and tells the PC to proceed.



This usually returns you to the previous screen. Also used to exit a program.



Usually used to move the cursor to the next field or menu item.



Moves the cursor in the direction of the arrow.



Windows key -> Displays the Microsoft Windows 98 Start menu. Pressing this has the same effect as clicking Start button at the bottom left of the screen.



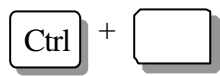
Application key -> Opens a shortcut menu for the current program. Pressing this has the same results as pressing the right button of the mouse.



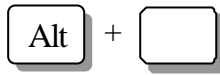
~

Function keys -> They are shortcut keys for various operations, depending on the instructions set by the applications program.

Special Key Combinations



Holding down this key with another key at the same time gives a command to the current program. The commands are dependent on the preset settings of an application program.



Pressing this key with an ASCII code returns the ASCII character. Some application programs also assign preset settings to this key.

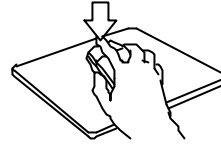


Displays the close program. This allows you to select a specific program to be terminated. Pressing this combination two times consecutively resets your computer without performing shut down operations. Doing so may result to data loss.

Using the Mouse

With most software programs, you use a mouse to select options and move around the screen.

You may want to place a mouse pad under your mouse to make it move more smoothly. You can buy mouse pads at computer and office supply stores.



Pointing with the Mouse

Slide the mouse on a flat surface and watch the pointer on your screen move in the same direction. You point to an item by positioning the pointer over the item. If you run out of space on the mouse pad, lift the mouse to reposition it.

Clicking the Mouse

The mouse has either two or three buttons: a left and a right button, and sometimes a middle button. You will use the left button most often. Press the left button to highlight items, to select items, or to run your software programs. The right button has different uses depending on the software. In most software programs, pressing the right button will display a shortcut menu. The center button is rarely used.

To “click” an item, point to the item on the screen, and press the left mouse button. To “double-click” an item, press the left button twice quickly. Pressing the middle button once is the same as ‘double-click’ the left button.

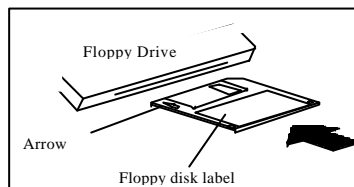
Using the Floppy Disk Drive

Your floppy disk drive reads from and/or writes to 3.5" floppy disks. Maximum capacity of a floppy disk is 1.44MB.

Floppy drive is designated by your operating system as drive

Inserting a Disk

Hold the disk with the label and the arrow facing up. Then, slide the disk into the drive until it snaps into place.



WARNING

If you remove a disk while the indicator light is on, you may damage the information on the disk.

Removing a Disk

First, make sure the drive indicator light is *off*. Then, press the Eject button located at the lower right corner of the drive.

A. It is represented by **A:**. Presence of floppy disk drive is automatically detected by your system and the operating system.

Using the Hard Disk

Hard disk drive is a storage medium that allows you to store programs and data. Aside from the Windows operating system, your PC is supplied with a number of system programs installed on the hard disk. Like any other types of disks, it is essential that you make backup copies of your hard disk data periodically.

WARNING: Before You Reset or Turn Off

When the Hard Disk Access LED is flashing, do not reset or turn off your system. Doing so may cause loss of, or damage to, hard disk data.

Hard disk drive is designated as drive C, symbol is **C:**. Your system BIOS and Windows operating system automatically detects your hard disk drive. If it is not detected, enter your BIOS Setup Utility to see if it is properly registered.

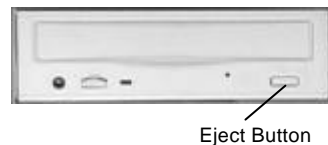
Using the CD-ROM Drive

Before you insert a CD, check for dust or fingerprints on the face of the CD without the title. Dust or smudges may cause the drive to read the CD incorrectly. You can use a clean, dry, non-abrasive cloth to wipe it clean.

Inserting a Disc

Turn on your PC. Press the Eject button (usually found at the lower right side of the CD-ROM drive) to open the CD drawer. Hold the CD by the edge with the title facing up and place it into the CD drawer. Press the Eject button again, or gently push the front of the CD drawer, to close it.

CD-ROM Drive



Removing a Disc

Press the Eject button to open the CD drawer. Then, lift the CD by its edge and place it in its protective sleeve or case. Press the Eject button again, or gently push the front of the CD drawer, to close it.

CD-ROM is short for Compact Disc - Read Only Memory. As the name implies, it is "read-only". You cannot save information on CD-ROM discs.

CD-ROM drive is designated as **D:**. Windows operating system can automatically detect most CD-ROM drives. If your drive is not detected, you need to install the device drivers that come with that drive. Refer to the drive's manual for the procedures.

Handling CD-ROM Discs With Care

- ☆ Dust and smudges on the face of the CD without the title or label may cause the drive to read the CD incorrectly. Use a clean, dry, non-abrasive cloth to wipe it clean.
- ☆ Do not force the CD drawer open by hand.
- ☆ Do not place objects (other than CD-ROM disc) in the CD-ROM drawer.
- ☆ Do not touch the pickup lens of the CD-ROM drive module.
- ☆ To prevent accidents or collection of dusts, be sure to close the CD drawer when not in use.
- ☆ Do not scratch or write on discs. Also, do not put tape on discs.
- ☆ Keep the discs away from direct sunlight or sources of extreme heat.
- ☆ Keep the discs away from water or liquid.

CHAPTER 2

Specifications

This chapter lists the standard features and technical specifications of your motherboard.

Standard Features

- ☆ Pentium III 450-600 MHz and Pentium II 350-450 MHz processors at 100 MHz bus speed; or Pentium II 233-333 MHz and Celeron SEPP 266-500 MHz processors at 66 MHz bus speed. 133 MHz will be supported by future Intel 133 MHz FSB processors
- ☆ Designed using 810E Intel chipset (Whitney)
- ☆ Two 168-pin DIMM sockets supporting up to 512MB unbuffered 3.3V SDRAM
- ☆ Integrated EIDE, AGP (Accelerated Graphics Port), USB and DMA controllers
- ☆ 4 Mb Firmware Hub AMI® Flash BIOS
- ☆ APM 1.2, DMI 2.1, PCI with PME support, ACPI 1.0, Plug and Play (PnP)
- ☆ Integrated Super I/O Controller
- ☆ Built-in ports: serial ports x2, parallel port, PS/2 keyboard port, PS/2 mouse port, USB ports x2, Game/Midi port, line in, line out, microphone in.
- ☆ ATX form-factor providing 6 PCI slots, 1 AMR slot
- ☆ Runs under Windows 98 operating system.
- ☆ Supports ACPI (Advanced Configuration and Power Interface), WOL (Wake-on-LAN) feature and PC Health

Monitoring feature.

IMPORTANT NOTICE

Device drivers and their installation procedures are provided on CD disc.

Technical Specifications

CPU (Central Processing Unit)

- Pentium III 450-600 MHz and Pentium II 350-450 MHz processors at 100 MHz bus speed
- Pentium II 233-333 MHz and Celeron SEPP 266-466 MHz processors at 66 MHz bus speed
- 133 MHz will be supported by future Intel 133 MHz FSB processors

Intel 810 Chipset

- GMCH (Graphics Memory Controller Hub) enables a 66, 100, 133 MHz front side bus speed. It also provides the interconnect between the SDRAM and the rest of the system logic, which supports a 64-bit 100 MHz DRAM array and utilizes Direct AGP technology to create vivid 2D and 3D effects and images.
- ICH (I/O Controller Hub) provides the interface to the PCI Bus and communicates with the GMCH over a dedicated hub interface.
- AMR (Audio Modem Riser) integrates the audio/modem functions on the motherboard. This kind of integration enhances system capabilities while reducing costs. The AMR interface is based on an AC-link that is compliant with Intel's Audio CODEC '97 version 2.1 specification.

- FWH (Firmware Hub) brings added security and managability to the PC platform infrastructure. FWH also stores the system BIOS and video BIOS which eliminates a redundant nonvolatile memory component.
- STR (Suspend to RAM) enables all data in system memory stored in RAM when the system is suspended and system power is turned off. You must be running ACPI for this feature to take effect.
- Recovery from AC power loss helps you to determine how the system will respond when AC power is lost and restored to the system. See the BIOS chapter for the setting.

Power Interface (ACPI/PC 98 Features)

ACPI (Advanced Configuration and Power Interface) and PC 98 Features are supported.

- Microsoft OnNow: *a system and device power control that makes the system stays on but appears off, and responds immediately to user or other requests when prompted.*
- Slow blinking Power On LED to indicate that system is in suspend mode
- Support for USB keyboard during system boot-up if this is the only keyboard connected to the system
- Real-time clock wake-up alarm to respond to preset wake-up events. In the BIOS, the user can set a timer to wake-up the system at a predetermined time (see page 4-17)
- Power button used as suspend button when ATX power supply is used
- External modem ring-on wakes the system up when a call is detected. Note it can only be used with an ATX 2.01 (or above) compliant power supply
- Wake-On-LAN (WOL) can allow remote PC setup, update and asset tracking after office hours and on weekends so the daily LAN traffic is kept to a minimum and users are not

interrupted. Note that Wake-on LAN can only be used with an ATX 2.01 (or above) compliant power supply

BIOS

- 4 Mb Firmware Hub AMI® Flash BIOS
- APM 1.2, DMI 2.1, PCI with PME support, ACPI 1.0, Plug and Play (PnP)

Memory

- Two 168-pin DIMM sockets provided (Note: Because the 810E chipset features a 100 MHz memory bus, the SDRAM must be PC-100 compliant DIMMs regardless of the front side bus speed being used)

Built-in I/O

- 2 EIDE bus master interfaces support Ultra DMA/66 (backward compatible with UDMA/33 and PIO)
- One floppy port interface (up to 2.88 MB)
- PS/2 keyboard and PS/2 mouse ports
- Two Fast UART 16550A compatible serial ports
- One parallel port that supports EPP (Enhanced Parallel Port) and ECP (Extended Capabilities Port)
- Expansion slots: 6 PCI slots, 1 AMR slot
- Two USB (Universal Serial Bus) ports
- One infrared port

CD Utilities

- BIOS flash upgrade utility
- SUPER Doctor utility
- Drivers for 810E chipset utilities and onboard audio and video

Others

- Selectable CPU and chassis fan speed control (set in BIOS)
- Keyboard wake-up (NOTE: In order to support this function, your power supply must be ATX 2.01 or higher and must provide a minimum standby voltage of 720 mA)
- Internal/external modem ring-on
- AC '97 2.1 compliant link for audio and telephony CODECs
- Onboard Direct AGP graphics controller with D.V.M.T. and 4 MB display cache (NOTE: There is no display cache for TTM 2285, it is only for TTM 2286. See GMCH on page 2-2)
- Wake-on-LAN (WOL)
- Multiple FSB clock frequency selections (set in BIOS)
- Control of recovery from AC power loss

PC Health Monitoring Features

- Seven on-board voltage monitors: *A warning or an error message is reported on screen if voltage of CPU Core(s), Chipset Voltage, +3.3V, +/- 5V, or +/- 12V supply becomes unstable. You can also determine the sensitivity of the voltage monitor by adjusting the threshold of the monitored voltage.*
- Three-fan status monitors: *Checks the RPM status of the cooling fans. The on-board CPU fans are controlled by the ACPI BIOS and the ACPI enabled operating system. The thermal fan is controlled by the overheat detection logic.*
- Environment temperature control: *The thermal control sensor of the system will turn on the thermal control fan whenever CPU temperature goes over the user-defined threshold. This prevents the CPU from overheating. The on-board chassis thermal circuitry, on the other hand, monitors the overall system temperature and alert users when the chassis temperature is too high. These features are available even if the system is put in suspend mode.*

- CPU fan auto-off in sleep mode: *CPU fan is turned on if system power is turned on. When the CPU is in sleep mode the power can be turned off. When in sleep mode, the CPU will not run at full power, thereby generating less heat.*
- CPU fan overheat LED and control: *This features enables user to define an overheat temperature. When the temperature is exceeded, both the overheat fan and the warning LED are triggered. This feature is available only when the user enables the CPU overheat warning function in the BIOS (see page 4-22)*
- System resource alert: *The system will alert you of potential resource problems (i.e., voltages was too high or low, fan failure and chassis intrusion, etc) This feature is available when used with the Super Doctor utility program.*
- Hardware BIOS virus protection: *The contents of BIOS can be changed only through Flash utility. This prevents viruses from infecting the BIOS area which may cause loss of valuable data.*
- Auto-switching voltage regulator for CPU core: *This allows the regulator to run cooler and make the system more stable. The regulator can support up to 20A current and with auto-sensing voltage ID ranging from 1.3V to 3.5V.*

Power Supply

- Processors should have high CPU clock rates of 300 MHz and above for proper and reliable operation
- *It is strongly recommended that you use a high quality power supply that meets ATX power supply Specification 2.01 or above*

Power Input Requirement

115/230 V~, 4/2A, 60/50 Hz

Environmental Specifications

Ambient Temperature

Operating: 50 °F to 104 °F (10 °C to 40 °C)
Non-operating: 5 °F to 140 °F (- 15 °C to 60 °C)

NOTE: Safety regulations for operating temperature are set at 25°C ±5°C.

Humidity

Operating: 15% to 80%, no condensation
Non-operating: 10% to 90%, no condensation

Unit Dimensions

Motherboard: 305 x 178 mm
Tower System: 210 (W) x 460 (D) x 390 (H) mm

REMARK

Specifications are subject to change without prior notice

CHAPTER 3

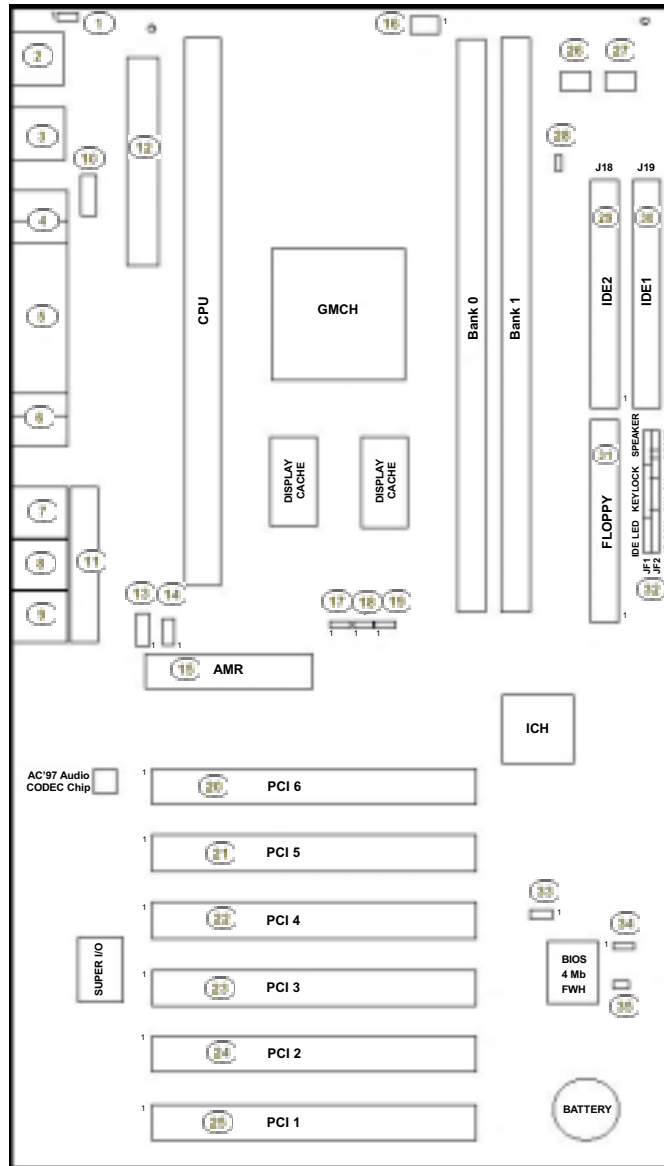
Connectors & Jumpers

This chapter provides the layout, descriptions and functions of the connectors and jumpers of your motherboard.

There are a number of connectors and jumpers on the motherboard. Connectors allow you to connect to different peripherals and/or devices. Jumpers, on the other hand, provide you flexibility and different functions when set to different values.

These jumpers were set to factory default before shipping, which gives you the best performance. You should not alter these settings unless you are sure of what you are doing. If you want to change any setting, please make sure that the computer has been turned OFF and make a note of what the original settings are. In this way, you can always revert to the original settings if the new settings do not work.

Motherboard Layout



Quick Reference

Item	Jumper/Connector	Function	Page
1	JPWAKE	Keyboard Wake Up	3-11
2	J30	PS/2 KB (lower) & PS/2 MS (upper) Connectors	3-5
3	J32, J33	USB Port Connectors	3-9
4, 10	COM1, COM2	Serial Ports	3-5
5	J35	Parallel (Printer) Port	3-8
6	J4	I/O Ports - VGA (Monitor) Port	3-15
7	LINE OUT	I/O Ports - Line Out Jack	3-15
8	LINE IN	I/O Ports - Line In Jack	3-15
9	MIC	I/O Ports - Microphone Jack	3-15
11	GAME/Midi PORT	I/O Ports - Game/Midi Port	3-15
12	J29	ATX Power Supply Connector	3-5
13, 14	CD, CD_1	CD Headers	3-6
15	J28	Audio Modem Riser Connector	3-12
16, 26, 27	FAN1, FAN2, FAN3	FAN Headers	3-6
17	JP28	AC'97 Enable/Disable	3-7
18, 19	JP12, JP11	Front Side Bus Speed Jumpers	3-7
20~25	PCI6 ~ PCI1	PCI Slot Connectors	3-10
28	JOH	Overheat LED Header	3-8
29, 30	J18, J19	IDE2/IDE1 HDD Connectors	3-10
31	JP26	Floppy Disk Drive Connector	3-9
Item	Jumper/Connector	Function	Page
32	JF1, JF2	Front Panel Headers	3-13

33	WOL	Wake On LAN Connector	3-6
34	JBT1	CMOS Clear	3-7
35	JL1	Chassis Intrusion	3-11

NOTE

Jumpers were set to factory default before shipping. You should not alter these settings unless you are sure of what you are doing. If you need to change jumper settings, MAKE SURE THAT THE COMPUTER HAS BEEN TURNED OFF. Also, you are highly recommended to take note of the original settings so that you can always revert to these settings if the new settings do not work.

Description on Connectors & Jumpers

✧ ATX Power Supply Connector (J29)

The 20-pin connector from the switching power supply is connected to **J29**.

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	3.3V	6	5V	11	3.3V	16	GND
2	3.3V	7	GND	12	-12V	17	GND
3	GND	8	PW-OK	13	GND	18	-5V
4	5V	9	5VSB	14	PS-ON	19	5V
5	GND	10	12V	15	GND	20	5V

✧ ATX PS/2 KB & PS/2 MS connectors (J30)

The ATX PS/2 keyboard and the PS/2 mouse are connected to the computer via female mini-hole connectors **J30** mounted on the motherboard.

Pin	Signal
1	Data
2	NC
3	GND
4	VCC
5	Clock
6	NC

✧ Serial Ports (COM1/COM2)

A connector for serial port 1 connector is located on **COM1**. A header for serial port 2 is located on **COM2**.

Pin	Signal	Pin	Signal
1	DCD	2	DSR
3	Serial In	4	RTS
5	Serial Out	6	CTS
7	DTR	8	RI
9	GND	10	NC

✧ Wake-On-LAN Connector (WOL)

Wake-on-LAN is a key feature for corporate systems. **WOL** connector allows a management

Pin	Signal
1	+5V Standby
2	GND
3	Wake-up

application to remotely power on a computer that is originally turned off. You must have a LAN card with WOL and cable to use this function. Also, you have to enable this setting in BIOS.

✧ Fan Connectors (FAN1, FAN2, FAN3)

The thermal control fan is located on **FAN3**. The chassis fan is located on **FAN2** while **FAN1** is a CPU Fan header.

Pin	Signal
1	GND (BLACK)
2	12V (RED)
3	Tachometer

****Caution:** These fan connectors are DC direct.

✧ CD Headers (CD, CD_1)

There are two CD headers of different sizes on the motherboard for audio CD playback. You must connect an audio cable from your CD player to the header that fits your cable's connector.

Pin	Signal
1	Right Stereo Signal
2	GND
3	GND
4	Left Stereo Signal

✧ Front Side Bus Speed Jumpers (JP11, JP12)

Changing the CPU speed is enabled by software control in BIOS. The Front Side Bus (FSB) speed is set with **JP11** and **JP12**.

JP11	JP12	FSB Speed
1-2	1-2	Auto
2-3	Open	66MHz
Open	Open	100MHz
Open	2-3	133MHz

****Note:** The Auto setting allows the CPU to set the speed. If the system does not reboot after changing the CPU speed, clear CMOS and reboot, then set the correct CPU speed in BIOS Setup.

✧ CMOS Clear (JBT1)

Set this jumper to clear CMOS data. When CMOS data is cleared, system configuration has to be entered during boot. For an ATX power supply, you must completely shut down the system, remove AC power cord and then use **JBT1** to clear CMOS. Do not use the PW_ON of **JF2** connector to clear CMOS.

Pin	Description
1-2	Normal
2-3	Clear CMOS

✧ AC'97 Enable/Disable (JP28)

AC'97 brings high quality audio to PCs. When enabled with **JP28**, audio is processed onboard and the AMR slot will support modems only. The disabled setting should be selected when you wish to use an add-on card for audio either in the AMR or a PCI slot.

Pin	Definition
1-2	Enabled
2-3	Disabled

✧ Overheat LED (JOH)

The **JOH** is used to connect to LED and provides warning of chassis overheating status.

Pin	Signal
1	12VDC
2	OH Active

✧ Parallel (Printer) Port (J35)

J35 is a parallel port built-in on the motherboard. You can enable, disable, or select the mode of parallel port through BIOS Setup Utility.

Pin	Signal	Pin	Signal
1	Strobe-	2	Auto Feed-
3	Data Bit 0	4	Error-
5	Data Bit 1	6	Init-
7	Data Bit 2	8	SLCT IN-
9	Data Bit 3	10	GND
11	Data Bit 4	12	GND
13	Data Bit 5	14	GND
15	Data Bit 6	16	GND
17	Data Bit 7	18	GND
19	ACK	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SLCT	26	NC

✧ USB Port Connectors (J32, J33)

The two USB (Universal Serial Bus) connectors, **J32** and **J33**, are mounted on the motherboard for connecting up to two USB devices.

J32		J33	
Pin	Signal	Pin	Signal
1	+5V	1	+5V
2	P0-	2	P0-
3	P0+	3	P0+
4	GND	4	GND
5	N/A	5	Key

✧ Floppy Disk Drive

Connector (JP26)

Floppy connector is located on **JP26**. Use a 34-pin data cable to connect this to a floppy drive.

Pin	Signal	Pin	Signal
1	GND	2	FDHDIN
3	GND	4	Reserved
5	Key	6	FDEDIN
7	GND	8	Index -
9	GND	10	Motor Enable
11	GND	12	Drive Select B-
13	GND	14	Drive Select A-
15	GND	16	Motor Enable
17	GND	18	DIR-
19	GND	20	STEP-
21	GND	22	Write Data -
23	GND	24	Write Gate -
25	GND	26	Track 00-
27	GND	28	Write Protect -
29	GND	30	Read Data-
31	GND	32	Side 1 Select -
33	GND	34	Diskette

✧ **PCI Slot Connectors (J11A, J12A, J11, J12, J13, J14)**

Install PCI cards through these slots.

✧ **IDE1/IDE2 HDD Connectors (J19, J18)**

Pin	Signal	Pin	Signal
1	Reset IDE	2	GND
3	Host Data 7	4	Host Data 8
5	Host Data 6	6	Host Data 9
7	Host Data 5	8	Host Data 10
9	Host Data 4	10	Host Data 11
11	Host Data 3	12	Host Data 12
13	Host Data 2	14	Host Data 13
15	Host Data 1	16	Host Data 14
17	Host Data 0	18	Host Data 15
19	GND	20	Key
21	DRQ3	22	GND
23	I/O Write-	24	GND
25	I/O Read-	26	GND
27	IOCHRDY	28	BALE
29	DACK3-	30	GND
31	IRQ14	32	IOCS16-
33	Addr 1	34	GND
35	Addr 0	36	Addr2
37	Chip Select 0	38	Chip Select 1-
39	Activity	40	GND

There are no jumpers to configure the onboard IDE

interfaces **J18** and **J19**. These pins apply to both. ATA33 and ATA66 both use 40-pin header. You must use the ATA66 cable included with your system to benefit from the ATA66 feature.

✧ **Keyboard Wake-Up (JPWAKE)**

This keyboard Wake-up is located in **JPWAKE**. Enable both the jumper and the BIOS setting to configure the system to be woken up by depressing a key on the keyboard.

Pin	Definition
1-2	Disabled
2-3	Enabled

✧ **Chassis Intrusion (JL1)**

The chassis intrusion header is located on **JL1** of the motherboard.

Pin	Definition
1	Intrusion Input
2	Ground

✧ Audio Modem Riser Connectors (AMR)

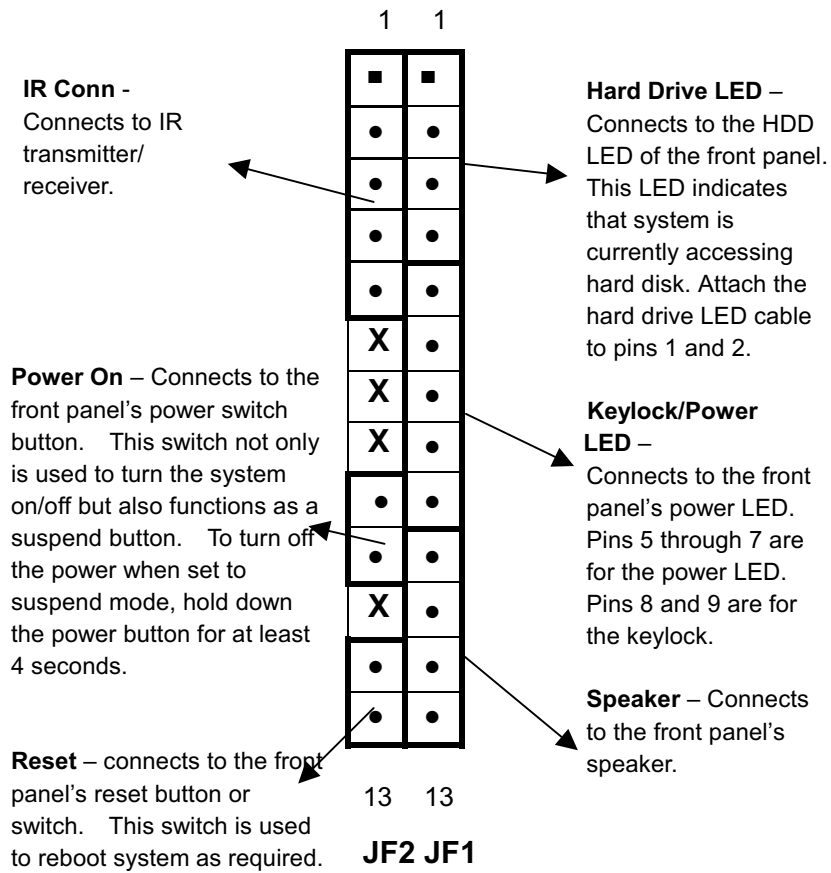
Pin	Signal	Pin	Signal
B1	AUDIO_MUTE#	A1	AUDIO_PWRDN
B2	GND	A2	MONO_PHONE
B3	MONO_OUT_PC_BEEP	A3	NC
B4	NC	A4	NC
B5	NC	A5	NC
B6	PRIMARY_DN#	A6	GND
B7	-12V	A7	+5Vdual/+5VSB
B8	GND	A8	USB_OC#
B9	+12V	A9	GND
B10	GND	A10	USB+
B11	+5VD	A11	USB-
	(KEY)		(KEY)
	(KEY)		(KEY)
B12	GND	A12	GND
B13	NC	A13	S/P-DIF_IN
B14	NC	A14	GND
B15	+3.3VD	A15	+3.3Vdual/+3.3VSB
B16	GND	A16	GND
B17	AC97_SDATA_OUT	A17	AC97_SYNC
B18	AC97_RESET#	A18	GND
B19	AC97_SDATA_IN3	A19	AC97_SDATA_IN1
B20	GND	A20	GND
B21	AC97_SDATA_IN2	A21	AC97_SDATA_IN0
B22	GND	A22	GND
B23	AC97_MSTRCLK+RST	A23	AC97_BITCLK

The **AMR** integrates the audio and modem functions on the motherboard which enhances system capabilities and reduces costs. The AMR interface is based on an AC-link that is compliant with Intel's Audio Codec'97 version 2.1 specification.

✧ Front Panel Connectors (JF1, JF2)

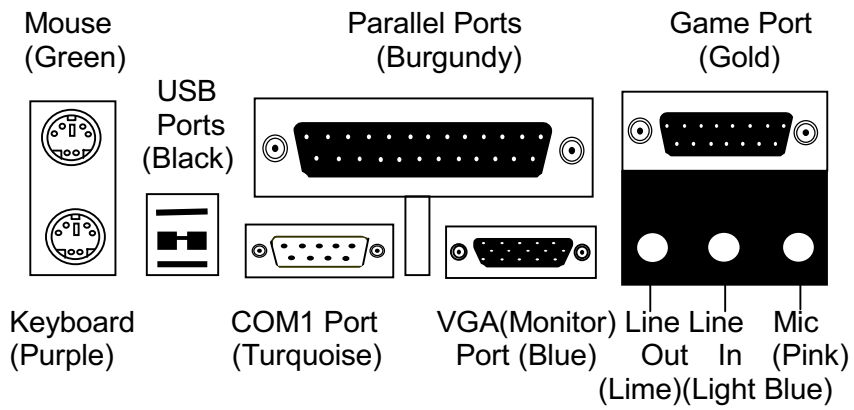
Connects to the different functions on the front panel.
JF1, JF2 connect motherboard I/O controls to the front panel.

JF1			JF2		
Function	Pin	Signal	Function	Pin	Signal
Hard drive LED	1	+5V	Infrared Connector	1	+5V
	2	HD Active		2	Key
	3	HD Active		3	IRRX
	4	+5V		4	GND
Power LED	5	VCC +5V		5	IRTX
	6	VCC +5V		6	NC
	7	GND		7	NC
Keyboard Lock	8	Keyboard Inhibit		8	NC
	9	GND	Power On	9	PW_ON
Speaker	10	VCC + 5V	10	GND	
	11	NC	11	NC	
	12	Key	Reset	12	GND
	13	Speaker data		13	Reset



I/O Ports

The I/O ports are color coded in conformance with the PC 99 specification. See below for the colors and locations of the various I/O ports.



CHAPTER 4

BIOS Setup

The AMI BIOS Setup Utility of your system is discussed in this chapter. This BIOS is stored in a Flash EEPROM and can be easily upgraded using a floppy disk-based program.

Basic Input and Output System (BIOS) is the interface between the hardware and the operating system software. Its function is to provide a series of software interrupts and functions that control operations on certain devices connected to your system. Aside from this, it performs a series of Power On Self Test (POST) every time you boot the system. POST checks your actual system configuration with the system configuration data stored in a non-volatile memory known as CMOS RAM. These tests are to ensure that your system is properly configured to recognize the devices such as memory, FDD, HDD, etc.

Usually, you may need to perform setup due to the following circumstances:

- Setting the built-in clock/calendar to the correct time and/or date
- Enabling or disabling special features such as power management functions, system passwords, etc.
- Setting or resetting configuration data if these were accidentally lost or if the onboard battery was replaced.

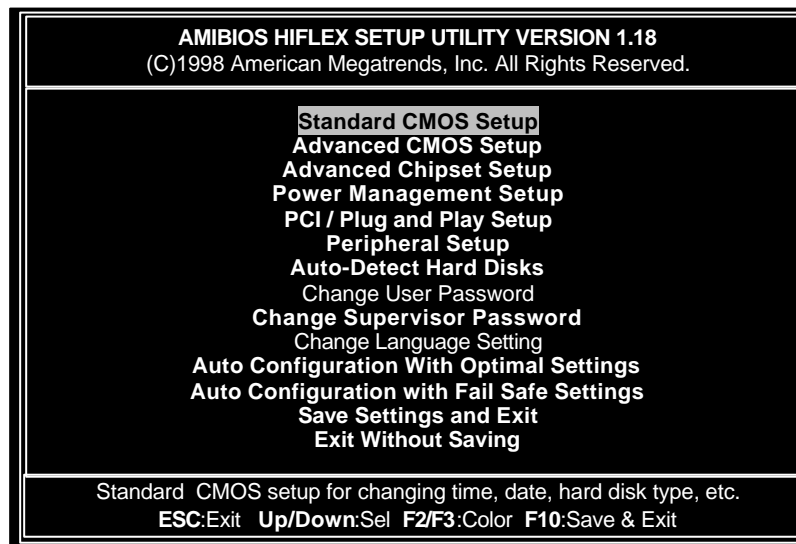
Entering System Setup

When you turn on your system, press key immediately to enter BIOS Setup Utility.

You have to press key fast enough before it starts up the operating system. If you are not able to enter the Setup Utility through this, reboot your computer and repeat the above procedure.

If the computer detects discrepancies between your CMOS data and actual system configuration, it will prompt you with an error message and request you to run setup. Just the same, you can enter setup by pressing key.

The following main menu appears upon entering Setup Utility:



You can use up and down arrow keys to move to the desired option, then, press <Enter> on that option to select it or to open its sub-menu. Press <ESC> to return to the previous menu or to exit setup.

Standard CMOS Setup

Standard CMOS setup allows you to set the system date and time; to specify floppy disk drives installed in your system; to indicate up to four IDE type storage devices (HDDs or CD-ROM drive); to enable/disable virus protection; and/or to know the base and extended memory size. When this option is selected, the following appears on screen:

AMIBIOS SETUP – STANDARD CMOS SETUP										
(C)1998 American Megatrends, Inc. All Rights Reserved.										
Date (mm/dd/yyyy): Fri Jul 02, 1999					Base Memory: 640 KE					
Time (hh/mm/ss) : 16:05:13					ExtD Memory: 255 KB					
Floppy Drive A: 1.44 MB 3.5										
Floppy Drive B: Not Installed										
							LBA	Blk	PIO	32Bit
	Type	Size	Cyln	Head	WPcom	Sec	Mode	Mode	Mode	Mode
Pri Master	: Auto									On
Pri Slave	: Auto									On
Sec Master	: Auto									On
Sec Slave	: Auto									On
Boot Sector Virus Protection Disabled										
Month: Jan – Dec					ESC:Exit Up/Down:Sel					
Day: 01 – 31					PgUp/PgDn:Modify					
Year: 1901 – 2099					F2/F3:Color					

The available options for each item or field is displayed at the bottom left of the screen.

Date, Time

To set your system date and time, use the up and down arrow keys to move the cursor to and highlight the field to be modified. Then, use <PgUp> and <PgDn> keys to change the field values to the current date and time.

Floppy Drive A, Floppy Drive B

You can specify the type of floppy drive that is installed in your system. Options include: *360KB 5.25*, *1.2MB 5.25*, *720KB 3.5*, *1.44MB 3.5*, or *2.88MB 3.5* or *Not Installed*.

Pri Master, Pri Slave, Sec Master, Sec Slave

Select these options to configure the corresponding drive. When you set these selections to ***Auto***, your system automatically detects the storage devices that are installed in your system. If you want to manually select or enter the drive parameters, press <PgUp> and <PgDn> keys to select from a list of choices, then press <Enter> to select.

Choices available include:

- 1-46:* These are predefined hard disk types
- User:* Enter the parameters manually
- Auto:* Set parameters automatically on each boot
- CDROM:* Used for ATAPI CDROM drives
- ARMD:* Used for LS120, MO, Iomega ZIP drives

Other items to be selected are:

LBA Mode: Select On if the drive has a capacity greater than 540MB.

Block Mode: Select On to allow block mode data transfers. Be sure that your hard disk supports this mode. Data may be destroyed if this mode is not supported.

PIO Mode: Select PIO mode 0-4 as appropriate, or select Auto to allow BIOS to determine PIO Mode. If you select a mode not supported by your drive, the drive will not work properly.

32-Bit Mode: Select On to allow 32-bit data transfers.

Boot Sector Virus Protection

This item provides you the option to protect the boot sector and partition table of the hard disk from virus intrusion. Set this to ***Enabled*** if virus protection is preferred. Note that if this is enabled, you may need to change information here when installing new programs.

Base Memory, Extd Memory

Your system automatically detects and displays the size of base memory and extended memory installed in your system. These items cannot be modified.

Advanced CMOS Setup

Advanced CMOS Setup allows you to configure basic system performance.

AMIBIOS SETUP – ADVANCED CMOS SETUP (C)1998 American Megatrends, Inc. All Rights Reserved.		
Quick Boot	Enabled	Available Options:
Pri Master ARMD Emulated as	Auto	Disabled
Pri Slave ARMD Emulated as	Auto	Enabled
Sec Master ARMD Emulated as	Auto	
Sec Slave ARMD Emulated as	Auto	
1st Boot Device	Floppy	
2nd Boot Device	1st IDE-HDD	
3rd Boot Device	ATAPI CD ROM	
Try Other Boot Devices	Yes	
Initial Display Mode	Silent	
Floppy Access Control	Read-Write	
Hard Disk Access Control	Read-Write	
S.M.A.R.T. for Hard Disks	Disabled	
Boot Up Num-Lock	On	
PS/2 Mouse Support	Enabled	
Password Check	Setup	
Boot to OS/2	No	
Internal Cache	WriteBack	ESC:Exit Up/Down:Sel
External Cache	WriteBack	PgUP/PgDN: Modify
System BIOS Cacheable	Enabled	F2/F3: Color

AMIBIOS SETUP – ADVANCED CMOS SETUP (C)1998 American Megatrends, Inc. All Rights Reserved.		
Sec Slave ARMD Emulated	Auto	Available Options:
1st Boot Device	Floppy	Disabled
2nd Boot Device	1st IDE-HDD	Enabled
3rd Boot Device	ATAPI CD ROM	Cached
Try Other Boot Devices	Yes	
Initial Display Mode	BIOS	
Floppy Access Control	Read-Write	
Hard Disk Access Control	Read-Write	
S.M.A.R.T. for Hard Disks	Disabled	
Boot Up Num-Lock	On	
PS/2 Mouse Support	Enabled	
Password Check	Setup	
Boot to OS/2	No	
Internal Cache	WriteBack	ESC:Exit Up/Down:Sel
External Cache	WriteBack	PgUP/PgDN: Modify
System BIOS Cacheable	Enabled	F2/F3: Color
Processor Serial Number	N/A	
Default Primary Video	External	
C000 Shadow (64K)	Cached	
D000 Shadow (64K)	Disabled	

The “**Available Options**” found at the right column of the screen list the choices available for the item or field that you have selected. Use <PgUp> or <PgDn> keys to select the required option, and press <Enter> to complete the setting.

Please refer to the table below for the options available for each item and the corresponding descriptions:

Item	Options	Description
Quick Boot	Disabled Enabled	<i>Enabled</i> allows the BIOS to skip certain tests to speed up boot process. If enabled, the message "Hit if you want to run SETUP" will not appear on screen during boot.
Pri Master ARMD Emulated as	Auto Floppy Hard Disk	If IDE is an ATAPI removable drive, select whether the drive is to be emulated as a floppy drive or a hard drive. When set to <i>Auto</i> , the default emulation type is <i>Floppy</i> for LS120, Hard Disk for MO, Hard Disk for IOMEGA ZIP.
Pri Slave ARMD Emulated as		
Sec Master ARMD Emulated as		
Sec Slave ARMD Emulated as		
1st Boot Device	Disabled 1st IDE-HDD 2nd IDE-HDD 3rd IDE-HDD 4th IDE-HDD Floppy ARMD-FDD ARMD-HDD ATAPICDROM SCSI ** Network* I2O*	BIOS will attempt to read the boot record from first, second, then third device in the selected order until it is successful in reading the boot record. Note that BIOS will not attempt to boot from any device which is not selected as the boot device. ** Option available for 1st and 2nd boot device. * Options available only for 1st boot device.
2nd Boot Device		
3rd Boot Device		
Try Other Boot Devices	Yes No	If all selected boot devices failed to boot, Yes allows BIOS to boot from other boot devices present but not selected as boot device in the setup.
Initial Display	BIOS	Selecting <i>BIOS</i> lets the POST start

Mode	Silent	with the normal sign-on message screen, while <i>Silent</i> has it start with silent screen.
Floppy Access Control	Read-Write Read-Only	Specifies the read/write access that is set when booting from a floppy/hard disk drive. This option will be effective only if the device is accessed through BIOS.
Hard Disk Access Control		
S.M.A.R.T. for Hard Disks	Disabled Enabled	S.M.A.R.T. is Self-Monitoring, Analysis and Reporting Technology → developed to manage reliability of hard disk by predicting future device failures. When <i>Enabled</i> , hard disk should have S.M.A.R.T. capability, too. Note: S.M.A.R.T. cannot predict all future device failures. This should be used as a warning tool only.
BootUp Num-Lock	On Off	<i>On</i> turns the Num Lock key off when system is powered on. This allows user to use the cursor keys on the numeric keypad.
PS/2 Mouse Support	Enabled Disabled	Enables or disables the support for PS/2 type mouse.
Password Check	Always Setup	Enables password checking: <i>Always</i> - every time the system boots <i>Setup</i> - if BIOS Setup Utility is executed
Boot to OS/2	No Yes	<i>Yes</i> allows BIOS to run with OS/2 and use more than 64MB of system memory.
Internal Cache	Disabled WriteThru WriteBack	Enables or disables internal/external cache memory.
External Cache		
System BIOS Cacheable	Disabled Enabled	<i>Enabled</i> allows the contents of F0000h system memory segment to be read from or written to cache memory for faster execution.

Processor Serial Number	Enabled Disabled	Intel Pentium III processors have a serial number as a unique system identifier. For privacy reasons, disabling this setting prevents the release of this identifier.
Default Primary Video	External Internal	<i>External</i> means system is using a PCI video card while <i>Internal</i> means system is using onboard graphics. If no video card is detected when set to ' External' , onboard graphics will automatically be enabled.
C000 Shadow (64K)	Disabled Enabled Cached	Specifies how the 32KB of video ROM at C0000h-C7fffh is treated. <i>Disabled</i> - contents of video ROM are not copied to RAM. <i>Enabled</i> - contents of this area are copied (shadowed) from ROM to RAM for faster execution. <i>Cached</i> - contents of this area are copied from ROM to RAM and can be written to or read from cache.
D000 Shadow (64K)		

Advanced Chipset Setup

This setup menu configures the features of the chipset used.

AMIBIOS SETUP – ADVANCED CHIPSET SETUP (C)1998 American Megatrends, Inc. All Rights Reserved.		
USB Function	Enabled	Available Options: Enabled Disabled ESC :Exit Up/Down :Sel PgUP/PgDN : Modify F2/F3 : Color
USB KB/Mouse Legacy Support	Disabled	
CPU Latency Timer	Disabled	
DRAM Page Closing Policy	Closed	
CD Hole	Disabled	
Memory Hole	Disabled	
DRAM Refresh	15.6 us	
DRAM Cycle Time (SCLKs)	Fast	
CAS# Latency (SCLKs)	Auto	
RAS to CAS delay (SCLKs)	Auto	
SDRAM RAS# Precharge (SCLKs)	Auto	
Display Cache Window Size	64MB	
CPU Speed	Reserved	
Initialize Display Cache Memory	Enabled	
Paging Mode Control	CLOSE	
RAS-to-CAS	Default	
CAS Latency	Slow	
RAS Timing	Slow	
RAS Precharge Timing	Slow	
MIDI Decode	Disabled	

AMIBIOS SETUP – ADVANCED CHIPSET SETUP (C)1998 American Megatrends, Inc. All Rights Reserved.		
RAS-to-CAS	Default	Available Options: Default Override ESC :Exit Up/Down :Sel PgUP/PgDN : Modify F2/F3 : Color
CAS Latency	Slow	
RAS Timing	Slow	
RAS Precharge Timing	Slow	
MIDI Decode	Disabled	
AC97 Modem Controller	Auto	
AC97 Audio Controller	Auto	
SMBus Controller	Enabled	
DMA-0 Type	PC/PCI	
DMA-1 Type	PC/PCI	
DMA-2 Type	LPC DMA	
DMA-3 Type	LPC DMA	
DMA-5 Type	PC/PCI	
DMA-6 Type	PC/PCI	
DMA-7 Type	PC/PCI	
ICH Delayed Transaction	Disabled	
DMA Buffer Enable	Disabled	
Memory Detection Mode	Auto Only	
SDRAM Buffer Strength	Weak	
CPU Clock Frequency	Auto	

Be sure you are familiar with the chipset before you attempt to make any changes on these.

The “**Available Options**” found at the right column list the choices available for the item or field that you have selected. Use <PgUp> or <PgDn> keys to select the required option, and press <Enter> to complete the setting.

Please refer to the table below for the options available for each item and the corresponding descriptions:

Item	Options	Description
USB Function	Disabled Enabled	Enables or disables USB functions.
USB KB/Mouse Legacy Support	Keyboard Auto Keyb+Mouse Disabled	Enables or disables USB keyboard and mouse if 'USB Function' is enabled.
CPU Latency Timer	Enabled Disabled	Enables or disables the corresponding items. Refer to descriptions shown at the right column of the screen.
DRAM Page Closing Policy	Closed Open	
CD Hole	Enabled Disabled	
Memory Hole	Disabled 15M-16M	15M-16M makes this area reserved for ISA use. (Some ISA cards may require specific areas of memory in order to function.)
DRAM Refresh Rate	15.6 us 7.8 us FR128 CLKS Reserved	Specifies the timings of the corresponding items.
DRAM Cycle Time (SCLKs)	Fast Slow	
CAS# Latency (SCLKs)	Auto 3 2	This item regulates the column address strobe.

RAS to CAS Delay (SCLKs)	Auto 3 2	This item specifies the length of the delay inserted between RAS (Row Address Strobe) and CAS (Column Address Strobe) signals of the DRAM system memory access cycle.
SDRAM RAS# Precharge (SCLKs)	Auto 3 2	This item specifies the length of the RAS precharge part of the DRAM system memory access cycle when Synchronous DRAM system memory is installed in the computer.
Display Cache Window Size	32MB 64MB	This item specifies the cache size to be used for display data.
CPU Speed	Reserved 4x 533 3x 400 5x 666 2.5x 333 4.5x 600 3.5x 466 5.5x 733 6x 800	This item allows the change of CPU speed. <i>Reserved</i> settings will cause no change. The other settings list the CPU speeds: the paired numbers list the CPU speed at 100 and 66 MHz FSB, respectively. The first number shows the resulting CPU Core/Bus ratio.
Initialize Display Cache Memory	Disabled Enabled	The onboard video includes a 4MB onboard display cache. <i>Enabled</i> utilizes the cache.

Precharge time is the number of cycles it takes for the RAS to accumulate its charge before a DRAM refresh. If insufficient time is allowed, refresh may not complete and the DRAM may fail to retain data.

Paging Mode Control	CLOSE OPEN	Sets the paging mode control when ' Initialize Display Cache Memory' is enabled.
RAS-to-CAS	Default Override	Specifies the interval between Refresh signals to DRAM system memory, when ' Initialize Display Cache Memory' is enabled.
CAS Latency	Slow Fast	Regulates the speed of the column address strobe (CAS) or timing of row address strobe (RAS) when ' Initialize Display Cache Memory' is enabled.
RAS Timing		
RAS Precharge Timing	Slow Fast	Sets the precharge timing of row address strobe when ' Initialize Display Cache Memory' is enabled.
MIDI Decode	330h-331h 300h-301h Disabled	Enables or disables corresponding items.
AC97 Modem Controller	Auto Disabled	
AC97 Audio Controller		
SMBus Controller	Enabled Disabled	
DMA0 Type	LPC/DMA PC/PCI	Specifies the bus of which the specified DMA channel can be used on.
DMA1 Type		
DMA2 Type		
DMA3 Type		
DMA5 Type		
DMA6 Type		
DMA7 Type		
ICH Delayed Transaction	Enabled Disabled	Enables or disables the corresponding items.
DMA Buffer Enable		
Memory Detection Mode	Auto Only SPD	Indicates the specifications of the corresponding items.

SDRAM Buffer Strength	Weak Auto Manufacture	
CPU Clock Frequency	Auto 133.3 MHz 137 MHz 140 MHz 146 MHz 150 MHz 153 MHz	Allows the increase of FSB speed over the normal 66 , 100 and 133 MHz settings controlled by jumper JP11.

Power Management Setup

This setup menu configures power conservation features.

AMIBIOS SETUP – POWER MANAGEMENT SETUP (C)1998 American Megatrends, Inc. All Rights Reserved.		
Standby Time Out	Disabled	Available Options: Disabled 1 Min 5 Min 10 Min
Suspend Power Saving Type	S1	
Suspend Time Out	Disabled	
Power Button Mode	On/Off	
CPU Sleep Pin Enable	Enabled	
Green PC Monitor Power State	Stand By	
Video Power Down Mode	Suspend	
Hard Disk Power Down Mode	Suspend	
Hard Disk Time Out (Minute)	Disabled	
Display Activity	Ignore	
Manual Throttle Ratio	50%	
ADVANCED SMI ENABLE CONTROLS		
Timer Overflow Enable	Disabled	
Thermal SMI Enable	Disabled	
PME SMI Enable	Disabled	
SW SMI Timer Enable	Disabled	
TCO Logic SMI Enable	Enabled	
ADVANCED RESUME EVENT CONTROLS		
		ESC:Exit Up/Down:Sel PgUP/PgDN: Modify F2/F3: Color

AMBIOS SETUP – POWER MANAGEMENT SETUP		
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PME SMI Enable	Disabled	Available Options: Enabled Disabled
SW SMI Timer Enable	Disabled	
TCO Logic SMI Enable	Enabled	
ADVANCED RESUME EVENT CONTROLS		
RTC Resume	Disabled	
RTC Alarm Date	Reserved	
RTC Alarm Hour	120	
RTC Alarm Minute	Reserved	
RTC Alarm Second	Reserved	
AC97 Logic Resume	Disabled	
USB Controller Resume	Disabled	
PME Resume	Disabled	
Remote Ring On	Disabled	
SMBUS Resume	Disabled	
LAN Wake-Up	Disabled	
Suspend to RAM Support	Disabled	ESC:Exit Up/Down:Sel PgUP/PgDN: Modify F2/F3: Color
Post Video on S3 Resume	Enabled	
Reset IDE on S3 Resume	Enabled	

The “**Available Options**” found at the right column of the screen list the choices available for the item or field that you have selected. Use <PgUp> or <PgDn> keys to select the required option, and press <Enter> to complete the setting.

Please refer to the table below for the options available for each item and the corresponding descriptions:

Item	Options	Description
Standby Time Out	Disabled 1 Min 5 Min 10 Min	Specifies the length of system inactivity period while in full power on state before it enters standby power state.
Suspend Power Saving Type	S1 C2	Specifies type of suspend power saving.
Suspend Time Out	Disabled 1 Min 5 Min 10 Min	Specifies the length of system inactivity period while in full standby state before it enters suspend power state.

Power Button Mode	Standby Suspend On/Off	When power button is pushed: <i>Standby</i> places the computer in Standby mode or Full On power mode. <i>Suspend</i> places the computer in Suspend mode. <i>On/Off</i> turns the computer on or off.
CPU Sleep Pin Enable	Enabled Disabled	Enables or disables the corresponding items.
Green PC Monitor Power State	Stand By Suspend Off	Specifies the power state that the selected item enters after the specified period of inactivity has expired.
Video Power Down Mode	Disabled Stand By Suspend	
Hard Disk Power Down Mode		
Hard Disk Time Out (Minute)	Disabled 1 M (1 Min interval) 14	Specifies the length of hard disk drive inactivity period before computer enters the power-conserving state specified in the ' Hard Disk Power Down Mode' .
Display Activity	Monitor Ignore	Specifies if BIOS is to monitor display activity for power conservation purposes.
Manual Throttle Ratio	87.5% 75.0% 62.5% 50% 37.5% 25% 12.5%	Throttling is used to lower power consumption and reduce heat. This item allows the CPU to operate at a reduced average power and sacrifice performance.
Advanced SMI Enable Controls		
Timer Overflow Enable	Enabled Disabled	<i>Enabled</i> allows the system to generate a System Management Interrupt after specific amount of time has passed, specific temperature has been exceeded, or a Power Management Event has occurred.
Thermal SMI Enable		
PME SMI Enable		

SW SMI Timer Enable	Enabled Disabled	Enables or disables this item.
TCO Logic SMI Enable	Enabled Disabled	<i>Enabled</i> allows the TCO logic to generate a System Management Interrupt when a century rollover occurs.
Advanced Resume Event Controls		
RTC Resume	Disabled Enabled	Sets the RTC alarm to wake up the system on the specified period.
RTC Alarm Date	Every Day 01 31	Specifies the date and time to wake up the system if ' RTC Resume' is enabled.
RTC Alarm Hour	00 23	
RTC Alarm Minute	00 59	
RTC Alarm Second	59	
AC97 Logic Resume	Enabled Disabled	<i>Enabled</i> wakes up the system if the event occurs on the specific item.
USB Controller Resume		
PME Resume		
Remote Ring On		
SMBUS Resume		
LAN Wake-Up		
Suspend to RAM Support	Disabled Enabled	Enables or disables STR (Suspend to RAM) feature.
Post Video on S3 Resume	Disabled Enabled	Determines whether or not to invoke VGA BIOS POST when resume from STR.
Reset IDE on S3 Resume	Disabled Enabled	Determines whether or not to reset IDE when resume from STR.

PCI/Plug and Play Setup

This setup menu configures PCI and Plug-and-Play features.

AMIBIOS SETUP – PCI / PLUG AND PLAY SETUP (C)1998 American Megatrends, Inc. All Rights Reserved.		
Plug and Play-Aware OS	No	Available Options: No Yes ESC:Exit Up/Down:Sel PgUP/PgDN: Modify F2/F3: Color
PCI Latency Timer (PCI Clocks)	64	
PCI VGA Palette Snoop	Disabled	
PCI IDE Busmaster	Disabled	
Offboard PCI IDE Card	Auto	
Offboard PCI IDE Primary IRQ	Disabled	
Offboard PCI IDE Secondary IRQ	Disabled	
PCI Slot1 IRQ Priority	Auto	
PCI Slot2 IRQ Priority	Auto	
PCI Slot3 IRQ Priority	Auto	
PCI Slot4 IRQ Priority	Auto	
DMA Channel 0	PnP	
DMA Channel 1	PnP	
DMA Channel 3	PnP	
DMA Channel 5	PnP	
DMA Channel 6	PnP	
DMA Channel 7	PnP	
IRQ3	PCI/PnP	
IRQ4	PCI/PnP	
IRQ5	PCI/PnP	

AMIBIOS SETUP – PCI / PLUG AND PLAY SETUP (C)1998 American Megatrends, Inc. All Rights Reserved.		
PCI Slot2&4 IRQ Priority	Auto	Available Options: Auto 3 4 5 7 9 10 11 12 14 ESC:Exit Up/Down:Sel PgUP/PgDN: Modify F2/F3: Color
PCI Slot5 IRQ Priority	Auto	
PCI Slot6 IRQ Priority	Auto	
DMA Channel 0	PnP	
DMA Channel 1	PnP	
DMA Channel 3	PnP	
DMA Channel 5	PnP	
DMA Channel 6	PnP	
DMA Channel 7	PnP	
IRQ3	PCI/PnP	
IRQ4	PCI/PnP	
IRQ5	PCI/PnP	
IRQ7	PCI/PnP	
IRQ9	PCI/PnP	
IRQ10	PCI/PnP	
IRQ11	PCI/PnP	
IRQ14	PCI/PnP	
IRQ15	PCI/PnP	
Reserved Memory Size	Disabled	
Reserved Memory Address	C8000	

The “**Available Options**” found at the right column of this screen list the choices available for the item or field that you have selected. Use <PgUp> or <PgDn> keys to select the required option, and press <Enter> to complete the setting.

Please refer to the table below for the options available for each item and the corresponding descriptions:

Item	Options	Description
Plug and Play-Aware OS	No Yes	Set this to Yes if your operating system is aware of and follows the Plug and Play specification.
PCI Latency timer (PCI Clocks)	32 64 96 128 160 192 224 248	Specifies the latency timings in PCI clocks for all PCI devices.
PCI VGA Palette Snoop	Disabled Enabled	This option must be set to <i>Enabled</i> if any ISA adapter card installed in the system requires VGA palette snooping.
PCI IDE Busmaster	Disabled Enabled	Specifies if the IDE controller on the PCI bus has bus mastering capabilities.
Offboard PCI IDE Card	Auto Slot 1 Slot 2 Slot 3 Slot 4 Slot 5 Slot 6	Specifies if an offboard PCI IDE controller adapter card is installed. If it is installed, the onboard IDE controller is automatically disabled. This option forces IRQ14 and IRQ15 to a PCI slot on the PCI local bus, in order to support non-compliant ISA IDE controller adapter cards. If this is installed, 'Offboard PCI IDE Primary IRQ' and 'Offboard PCI IDE Secondary IRQ' items must be set.

Offboard PCI IDE Primary IRQ	Disabled INTA INTB INTC INTD Hardwired	Specifies PCI interrupt used by the primary/secondary IDE channel on the offboard PCI IDE controller. This is available only if 'Offboard PCI IDE Card' is not set to <i>Auto</i> .
Offboard PCI IDE Secondary IRQ		
PCI Slot1&3 IRQ Priority	Auto 3 4 5 7 9 10 11 12 14	Specifies the IRQ priority for PCI devices installed in the PCI expansion slots.
PCI Slot2&4 IRQ Priority		
PCI Slot5 IRQ Priority		
PCI Slot6 IRQ Priority		
DMA Channel 0	PnP ISA/EISA	Specifies which channels are used to control the data transfers between I/O devices and system memory.
DMA Channel 1		
DMA Channel 3		
DMA Channel 5		
DMA Channel 6		
DMA Channel 7		
IRQ3	PCI/PnP ISA/EISA	Specifies which bus the specified IRQ line is used on and allows reserving interrupts for legacy ISA adapter cards. If more interrupts must be removed from the pool, you can use these options to reserve the IRQ by assigning an ISA/EISA setting to it. Onboard I/O is configured by the BIOS and are configured as PCI/PnP. IRQ14 and 15 will not be available if onboard PCI IDE is enabled. If all IRQs are set to ISA/EISA and IRQ14 and 15 are allocated to the onboard IDE, IRQ 9 will still be available for PCI and PnP devices.
IRQ4		
IRQ5		
IRQ7		
IRQ9		
IRQ10		
IRQ11		
IRQ14		
IRQ15		

Reserved Memory Size	Disabled 16K 32K 64K	Specifies the size of the memory area reserved for legacy ISA adapter cards.
Reserved Memory Address	C0000 C4000 C8000 CC000 D0000 D4000 D8000 DC000	Specifies the beginning address (in hex) of the reserved memory area. The specified ROM memory area is reserved for use by legacy ISA adapter cards. This option is available only if 'Reserved Memory Size' is not set to <i>Disabled</i> .

Peripheral Setup

This setup menu configures system I/O support.

AMIBIOS SETUP – PERIPHERAL SETUP		
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KBC Clock Rate	8MHz	Available Options: 6 MHz 8 MHz 12 MHz 16 MHz
CPU Current Temperature	42 degree C	
CPU Overheat Warning	Disabled	
CPU Overheat Warning Temp.	N/A	
H/W Monitor IN0 (CPU1)	2.03	
H/W Monitor IN2 (+3.3V)	3.28	
H/W Monitor IN3 (+5V)	+5.05	
H/W Monitor IN4 (+12V)	+11.91	
H/W Monitor IN5 (-12V)	-11.52	
H/W Monitor IN6 (-5V)	N/A	
CPU Fan	5273	
Chassis Fan	0000	
Thermal Control Fan	0000	
Onboard FDC	Enabled	
Onboard Serial Port 1	3F8h	
Onboard Serial Port 2	2F8h	
Serial Port 2 Mode	Normal	
IR Duplex Mode	N/A	
Onboard Parallel Port	378	
		ESC:Exit Up/Down:Sel PgUP/PgDN: Modify F2/F3: Color

AMIBIOS SETUP – PERIPHERAL SETUP		
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CPU Fan	5273	Available Options: ESC:Exit Up/Down:Sel PgUP/PgDN: Modify F1: Help F2/F3: Color
Chassis Fan	0000	
Thermal Control Fan	0000	
Onboard FDC	Enabled	
Onboard Serial Port 1	3F8h	
Onboard Serial Port 2	2F8h	
Serial Port 2 Mode	Normal	
IR Duplex Mode	N/A	
Onboard Parallel Port	378	
Parallel Port Mode	ECP	
EPP Version	N/A	
Parallel Port IRQ	7	
Parallel Port DMA Channel	3	
Power Loss Control	Always OFF	
Keyboard Wake-up Function	Disabled	
Onboard Game & Mini Port	Enabled	
Game Port Base Address	200h	
MIDI Port Base Address	330h	
MIDI IRQ	9	
Onboard IDE	Both	

The “**Available Options**” found at the right column of this screen list the choices available for the item or field that you have selected. Use <PgUp> or <PgDn> keys to select the required option, and press <Enter> to complete the setting.

Please refer to the table below for the options available for each item and the corresponding descriptions:

Item	Options	Description
Fan Speed Control	Full Medium Stop	Selects the fan speed.
Keyboard Clock Rate	6 MHz 8 MHz 12 MHz 16 MHz	Sets the clock rate of the keyboard.
CPU Current Temperature	NA	Current CPU temperature is displayed.
CPU Overheat Warning	Enabled Disabled	<i>Enabled</i> sets the CPU overheat warning temperature.

CPU Overheat Warning Temperature	25 degree C 75 degree C	Sets the CPU overheat warning temperature.
H/w Monitor IN0 (CPU1)	NA	These are for PC Health Monitoring features. BIOS automatically displays the current status.
H/W Monitor IN2 (+3.3V)		
H/W Monitor IN3 (+5V)		
H/W Monitor IN4 (+12V)		
H/W Monitor IN5 (-12V)		
H/W Monitor IN6 (-5V)		
CPU Fan		
Chassis Fan		
Thermal Control Fan		
OnBoard FDC	Disabled Enabled	Enables the floppy drive controller (FDC) on the motherboard.
OnBoard Serial Port1	Disabled 3F8h 2F8h 3E8h 2E8h	Specifies the base I/O port address of serial ports 1 and 2, respectively.
OnBoard Serial Port2		
Serial Port 2 Mode	Normal IrDA 1.6ms IrDA 3/16 ASKIR ASKIR500 ASKIRDem ASKIRD500	Specifies the operating mode of serial port 2. Available for selection only if 'OnBoard Serial Port2' is not set to <i>Disabled</i> .
IR Duplex Mode	Full Half	Sets the mode of communication if 'Serial Port 2 Mode' is set to 'Normal'.
OnBoard Parallel Port	Disabled 378 278 Auto	Specifies the base I/O port address of the parallel port on the motherboard.

Parallel Port Mode	Normal Bi-Dir EPP ECP	<i>Normal</i> → normal parallel mode <i>Bi-Dir</i> supports bi-directional transfers. <i>EPP</i> (Enhanced Parallel Port) → provide asymmetric bidirectional data transfer driven by the host device. <i>ECP</i> (Extended Capabilities Port) → achieve data transfer rates of up to 2.5 Mbps. Uses DMA protocol and provides symmetric bidirectional communication.
EPP Version	1.7 1.9	Available only if 'Parallel Port Mode' is <i>EPP</i> .
Parallel Port IRQ	5 7	Specifies IRQ to be used by the parallel port.
Parallel Port DMA Channel	0 1 2 3 5 6 7	Available only if 'Parallel Port Mode' is <i>ECP</i> .
Power Loss Control	Always OFF Always ON Previous	Specifies what state the system returns to after losing power.
Keyboard Wake-up Function	Disabled Ctrl F1 Space Any Key	Specifies which key will wake up the system when pressed. JPWAKE jumper has to be enabled, too.
Onboard Game & Mini Port	Enabled Disabled	Enables or disables Game/Mini Port.
Game Port Base Address	200h 208h	Specifies the base address to be used for game port.
MIDI Port Base Address	330h 300h 298h	Specifies the base address to be used for MIDI port.

MIDI IRQ	5 7 9 10	Specifies the IRQ to be used for the parallel port.
On-Board IDE	Disabled Primary Secondary Both	Specifies the onboard IDE controller channels to be used.

Auto-Detect Hard Disks

Your system automatically detects and configures the IDE devices installed. This option provides you with details on such configurations.

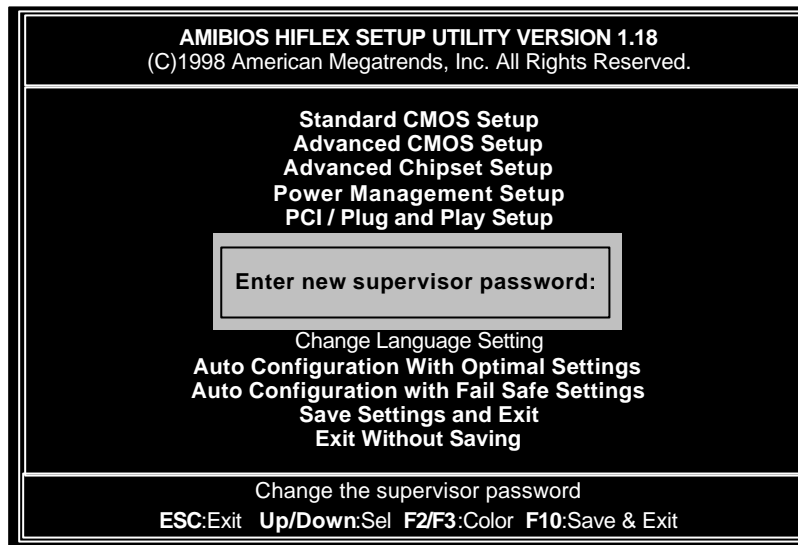
After selecting this option, press <Enter> and wait while BIOS performs auto-detect. If IDE devices are detected, details such as the size, number of cylinders, head, etc., of the devices will be displayed correspondingly.

Change User Password Change Supervisor Password

Two levels of passwords are supported by your system. If you use both, the Supervisor password must be set first. Note that you can configure your system such that all users must enter a password every time the system boots or when BIOS is executed.

The password check option is enabled in the Advanced CMOS Setup by choosing either 'Always' or 'Setup'. Password is stored in CMOS RAM.

When you select 'Change User Password' or 'Change Supervisor Password', you are prompted with the screen as shown:



Type a 1-6 character password. Asterisks appear in place of the password typed. You have to retype the password when prompted, then press <Enter>. The password is encrypted and stored in CMOS RAM. A confirmation message will be displayed on screen if the password was successfully entered.

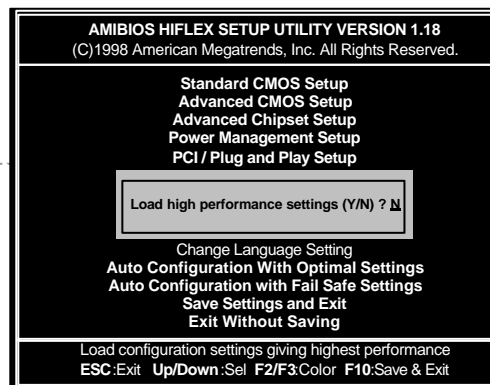
Make sure you do not forget the password; otherwise, you need to clear CMOS RAM and reset the password.

Change Language Setting

This option allows you to select a different language for the text messages displayed on screen. Currently, the only option and default setting is *English*.

Auto Configuration with Optimal Settings

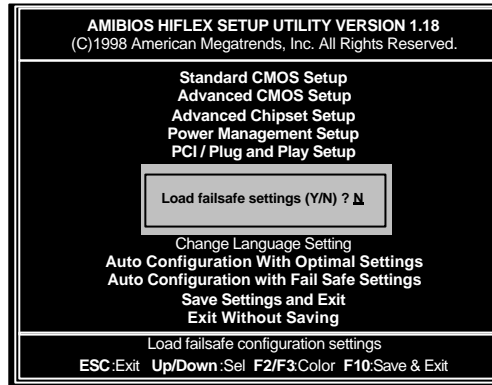
Choose this option to load the optimal



default settings for BIOS. Optimal default settings are best-case values that should optimize system performance. If CMOS data is corrupt, the Optimal settings are loaded automatically.

Auto Configuration with Fail Safe Settings

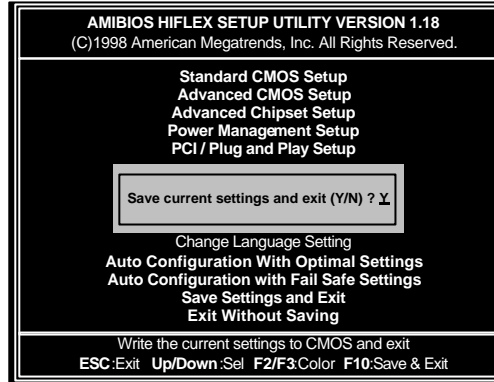
Choose this option to load the fail-safe default settings for BIOS. Fail-safe settings offer the most stable settings but are far from optimal system performance. Use this option as a diagnostic aid if the system is behaving erratically.



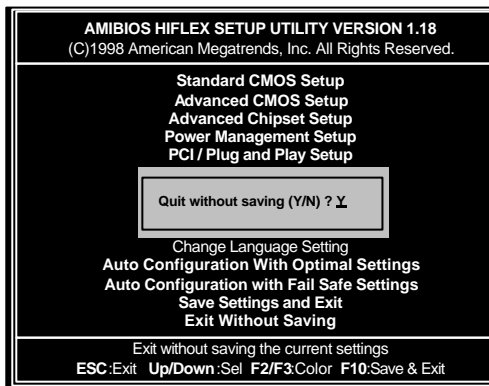
Exiting System Setup

There are two ways of exiting BIOS Setup Utility.

Select ' Save Settings and Exit' if you want to save all changes made before exiting. Then, type "Y" when this dialog box appears on screen.



If you would like to quit setup without saving the modifications you have just made, choose ' Exit Without Saving', then type "Y" to exit.



REMARK

Setup menus are subject to changes without prior notice.

CHAPTER 5

Installation

This chapter provides the installation procedures for internal devices.

Before proceeding with the installation procedures, read through some safety tips and precautions first:

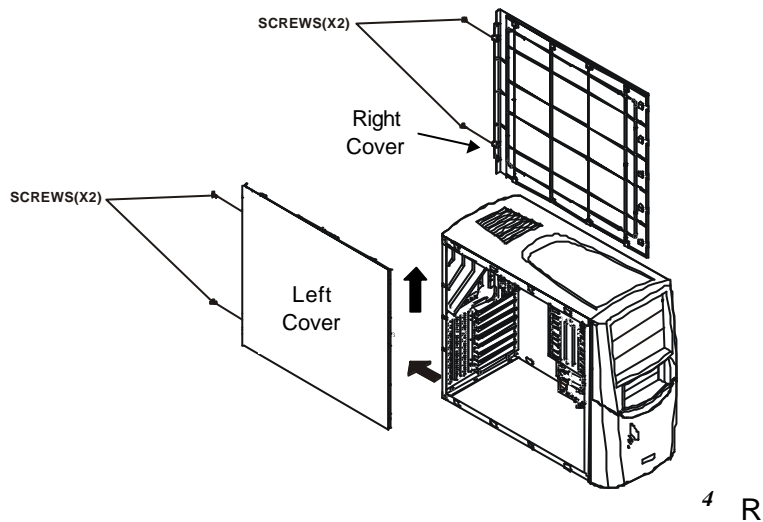
- Use a grounded wrist strap designed for static discharge.
- Discharge static electricity from your hands by touching a grounded metal object before touching the internal components of your system.
- Do not put the system on an unstable surface, near water, nor near sources of extreme heat.
- Ensure that power of the system is turned off and power cord is disconnected from the power source before disassembling your system.
- Remove all cable connections from the system by pulling out the connector, not the cables. Pulling the cables may cause lead wires to break.
- Put disassembled/removed parts, including screws, in a safe and easily accessible place and make sure none of these drop or are left inside the main unit.
- Do not attempt to clean any part/s with liquid cleansers or aerosols. Use a damp cloth for cleaning, instead.
- Before installing back the cover, check if all parts, including internal cables, are properly mounted or installed.

Removing System Covers

— **WARNING: Before Removing System Cover** —

Turn off the Power Button. Disconnect all power cords and signal cables attached to the system. Connecting devices with the power on may result in severe damages!

- 1 The system cover is divided into three parts, namely, the left cover, right cover and top cover. When installing the 3.5" internal HDD, remove only the left cover. When installing the 3.5" FDD or 5.25" storage devices, remove both left and right covers. In any case, there is no need to move the top cover.
- 2 Unscrew the two chassis screws of the left cover.
- 3 Move the left cover backward, then lift up to release.

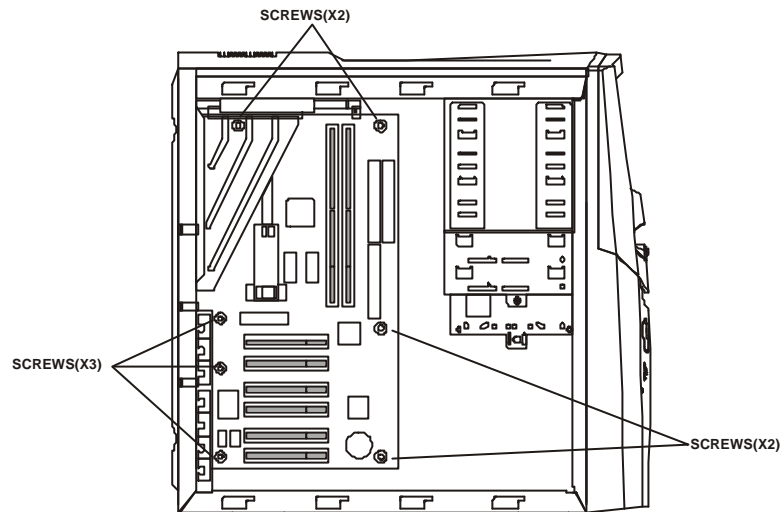


Repeat steps 2 and 3 to remove the right cover, if necessary.

- 5 Find a suitable location to place the screws and covers.

Installing the Motherboard

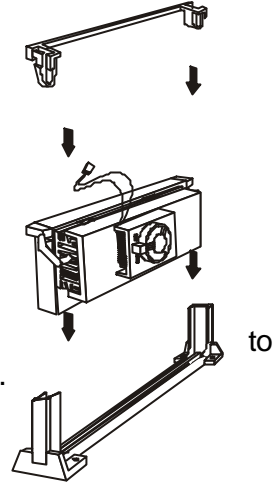
- 1 Remove system cover.
- 2 Align the seven screw holes of the motherboard to the seven tooling holes on the chassis (as shown).



- 3 Secure properly the tooling holes with seven motherboard mounting screws.
- 4 Connect power cable, FDD data and power cable, IDE data and power cables, front bezel connectors, add-on cards, etc.
- 5 Re-install back the system covers.

Installing CPU

- 1 Locate CPU Slot on the motherboard. You can see the retention mechanism on it.
- 2 Attach the fan assembly to Pentium II/III processor.
- 3 Vertically insert the CPU and fan assembly into the retention mechanism, until it clicks into place.
- 4 Place a top holder on top of the CPU, until it is fully installed.
- 5 Then, connect the fan's power cable FAN1 connector on the motherboard.



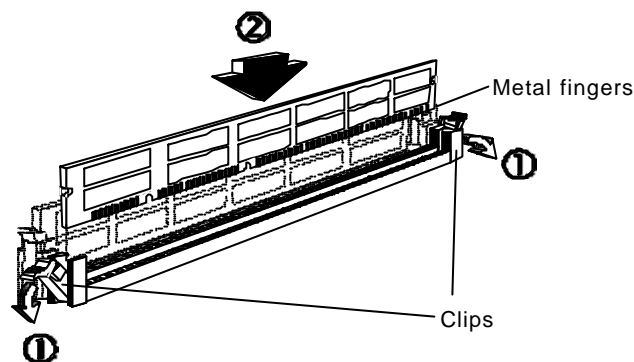
NOTE

There are different kinds of fan assembly that can fit into the Pentium II/III processor. You can consult your dealer for the installation of fan assembly into the processor.

Installing System Memory

Your system provides two DIMM slots (Bank0, Bank1) for the installation of system memory.

- ¹ Locate the DIMM socket.
- ² Align the two notches of the DIMM with the receptive points on the DIMM socket, then insert the DIMM into the socket. (You cannot insert the DIMM into its socket if this is not aligned properly.)



- ³ Check if the clips return to its original standing position and if these are properly locked onto the hollow of the DIMM. If not, press slightly to lock it.
- ⁴ You do not have to change jumpers or BIOS setting. Your system automatically detects the size and type of memory installed.

Installing Add-On Cards

Several kinds of PCI add-on or adapter cards can be added into your system for additional or enhanced features. These may include VGA card, modem card, and many others.

- 1* Remove system cover.
- 2* Choose the PCI slot in which you want to install the adapter card.
- 3* Unscrew the corresponding expansion slot cover screw and remove that cover.
- 4* Set the required jumpers on the adapter card, as required. Refer to its manual for more details.
- 5* Carefully, but firmly, press the adapter card into the expansion slot until it is fully installed.
- 6* Secure the expansion slot cover screw.
- 7* Save the expansion slot cover for future use.
- 8* Check the manual of the adapter card to see if there is any jumper on the motherboard that requires setting. Look for the corresponding location and function of that jumper in this user's guide.
- 9* Restore system cover.

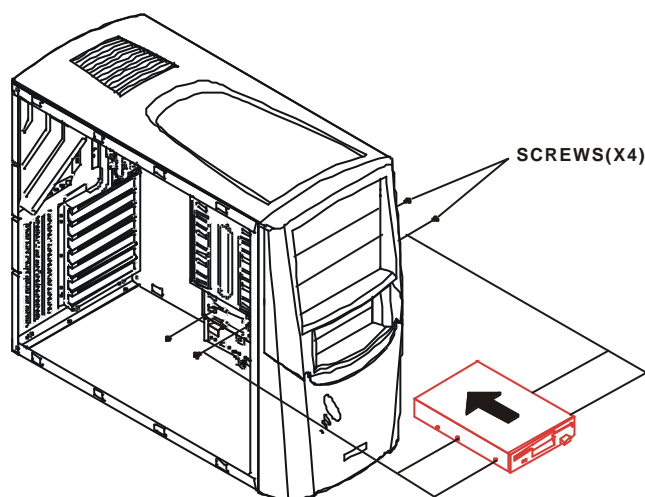
Installing Devices

The succeeding sections provide installation procedures for system chassis that is the same as described in this user's guide. The number of drive bays provided by this chassis are:

Internal Exposed 5.25" Drives	x3
Internal Exposed 3.5" Drives	x2
Internal Hidden 3.5" Drives	x1

Installing 3.5" Floppy Drive

- ¹ Remove system covers. Locate the **FDD bracket** inside the chassis.
- ² Slide the 3.5" FDD into the second level of the bracket. (Note that FDD can be installed into the second level of the bracket only.)

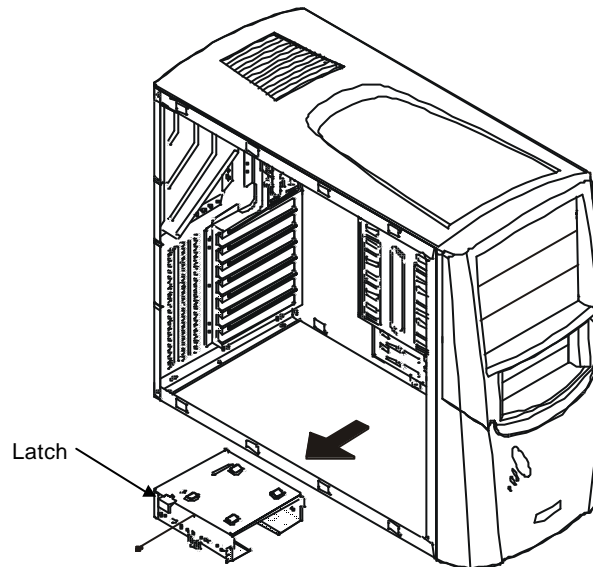


- ³ Secure with four screws, two on each side.

- 4 Connect the mini-size four-line power cable from the switching power supply to the receptacle on the 3.5" FDD.
- 5 Connect an end of the 34-pin data cable to the 3.5" FDD and the other end to FDD connector on the motherboard.
- 6 Re-install system covers.

Installing 3.5" HDD

- 1 Remove left system cover. Locate the **HDD bracket** inside the chassis.
- 2 Unscrew the HDD bracket mounting screw.
- 3 Press the latch with your thumb and pull the bracket out of the chassis.



- 4 Set the jumper settings of the HDD to its proper mode.

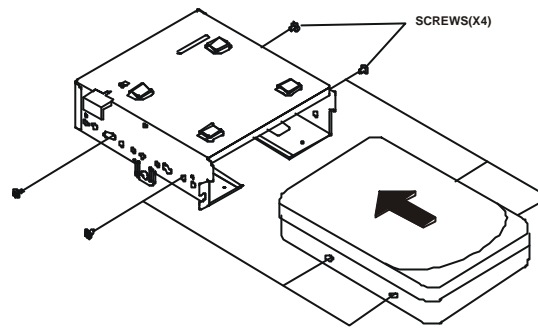
- 5 Slide the 3.5" HDD into the HDD bracket.

- 6 Secure with four screws, two on each side.

- 7 Re-install the bracket back into the chassis. Make sure that the four hooks of the bracket align properly with the FDD bracket.

- 8 Secure back the HDD bracket mounting screw.

- 6 Connect the four-line power cable from the switching power supply to the receptacle on the 3.5" HDD.



NOTE

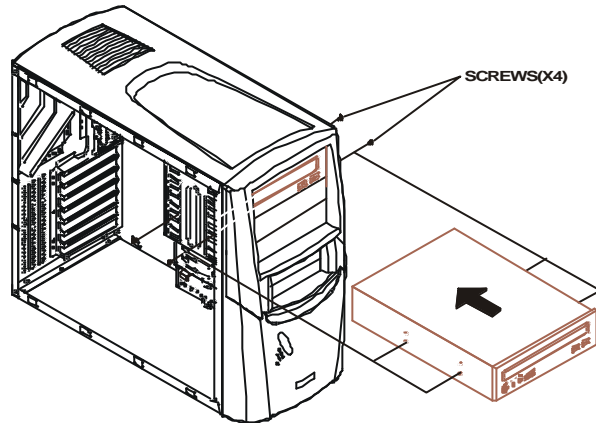
Hard disk drive cable has 40 wires and three connectors. The blue connector is connected to the motherboard, black connector is connected to the primary master device while the gray connector is connected to the primary slave device.

- 7 Connect an end of the 40-pin data cable (black) to the HDD drive and the other end (blue) to first IDE connector on the motherboard. Set the HDD to master.

- 8 Re-install the system covers.

Installing 5.25" IDE Devices

- 1 Remove system covers.
- 2 Slide the IDE drive into one of the three levels of the CD-ROM bracket.
- 3 Secure with four screws from both sides.



- 4 Connect the four-line power cable from the switching power supply to the receptacle on the IDE drive.
- 5 Connect an end of the 40-pin data cable to the IDE drive and the other end to the second IDE connector on the motherboard.

NOTE

Make sure that the setting on the IDE drives must be correct (master or slave) and must match with that on the motherboard. Drive designated as master is to the end of a daisy-chained data cable while slave is connected to the connector found in the middle of the daisy-chained data cable. Jumper on the device itself has to be set properly as master or slave to ensure proper operations.

- 6 Re-install the system covers.

CHAPTER 6

Device Driver Installation

In most cases, your system comes with the required device driver(s) already pre-installed. You may need to install or reinstall these device driver(s) due to the following circumstances:



- When you re-install your operating system
- When you format or reformat your HDD

Your system comes with the necessary drivers placed on a CD. This chapter informs you how to install required device driver(s).

To install these, insert this CD into your CD-ROM drive, this display should appear automatically:



If the above display does not appear, click on *My Computer* icon, then double click on the icon representing your CD-ROM drive. Select *Setup* icon.

Click  beside an item to view its readme file. Then, click each item, one at a time, from top to bottom, to install. After installing each item, you must reboot the system before moving on to the next. Everything here should be installed except the optional 'SUPER Doctor' Utility. The 'Security' and 'Graphics Driver' support multiple languages. Click the arrow to pull down a menu of choices and select the language required. If you need to view the entire contents of the CD, click  at the bottom.

Note: The memory size reported in the device manager may be less than expected because some of it is used by the onboard graphics. Higher screen resolutions take up more memory.

Chapter 7

Troubleshooting

Useful tips and handy solutions you may need for your troubleshooting are provided in this chapter. If you are having trouble with the operating system, check the User's Guide that comes with your Windows 98 software package.

Memory Error

1. Make sure the DIMM modules are properly and fully installed.
2. Determine if different speeds of DIMMs have been installed and verify that the BIOS setup is configured for the fastest speed of RAM used. It is recommended to use the same RAM speed for all DIMMs in the system.
3. Check for bad DIMM modules or slots by swapping a single DIMM module between both DIMM slots and noting the results.
4. Make sure you are using PC 100 compliant, unbuffered SDRAM. EDO, buffered and registered SDRAM are not supported.

Losing the System's Setup Configuration

1. Check the setting of jumper JBT1. Ensure that you are using a high quality power supply. A poor quality power supply may cause the system to lose the CMOS setup information.
2. Your battery may be old. Check that it still supplies ~3VDC. If not, replace with a new one.
3. If the above step does not fix the Setup configuration problem, contact your dealer for repair.

No Display

Computer isn't getting power.

Make sure no short circuits exist between the motherboard and chassis.

Verify that all jumpers are set to their default positions.

Turn the power switch on and off to test the system.

Check that the 115V/230V switch of the power supply is properly set.

VGA monitor not properly connected

If the power is on but you have no video, remove all the add-on cards, and cables.

Use the speaker to determine if any beep codes exist.

Consult monitor's manual if necessary.

Computer is in sleep or

Press a key on the keyboard

<i>suspend mode.</i>	or move the mouse to wake it up.
<i>Monitor's brightness control is not adjusted properly.</i>	Adjust monitor's brightness control to the desired level.
<i>A screen saver program is turned on.</i>	Press a key or move the mouse to turn off the screen saver program.

Keyboard or Mouse Doesn't Work

<i>Cables are not properly connected.</i>	Turn off your system and check if the cable is properly connected to the right jack/port of your system.
<i>Keyboard or Mouse is defective.</i>	Contact your dealer to replace it.

Booting Up

<i>System reports an error message that is not related to setup problems.</i>	Your system may have a virus which has infected the master boot record. Run a virus-checking software to remove the virus. Write down the message and call your dealer.
<i>System prompts for a password on boot</i>	Type in your password to continue. If you have lost the password or the password has been enabled by accident, call

your dealer.

The computer provides a message indicating that the operating system is missing

The computer is not recognizing the hard drive as the boot drive. The hard drive type might not be properly specified. Run the **Setup** program and enter the "**Standard CMOS Setup**" menu. Check the hard drive information. If incorrect, return to the initial Setup menu and select "**IDE HDD Auto Detection.**" If the hard drive needs to be re-initialized, call your dealer first.

Try booting with the Windows 98 CD boot disk.

If the problem recurs or persists, contact your dealer.

Computer cannot locate the device for starting the computer.

Run the Setup program. Make sure that both the A: drive and the C: drive are set for the appropriate drive in the "**Standard CMOS Setup**" menu of the **Setup** program.

Cannot boot from floppy disk

Boot sequence is set to access the C: drive first. Run BIOS **Setup** to select the preferred sequence.

Try another bootable disk to properly boot.

Floppy is defective. Throw it away.

No video, or system hangs-up

Be sure monitor is plugged into the outlet or surge protector.

Check to be sure that connections between the monitor and the computer are secure.

Open the case and check if the video card is properly seated in its slot.

If you are an advanced user, you might check to see if any other cards are using the same addresses.

Computer does not come on when the power switch is turned on.

Make sure the plug is firmly seated in the power strip or outlet.

Make sure the power strip is on.

Make sure that the outlet is working.

CMOS checksum error

This problem can be caused by a weak battery. Replace the battery if necessary.

Floppy Disk Drive Doesn't Work

Floppy disk drive LED indicator is not lit.

LED indicator might be defective.

Enter Setup Utility and check if

	floppy disk drive is detected.
	Floppy disk drive might be defective. Contact your dealer for replacement.
<i>Floppy disk drive LED indicator is lit.</i>	Check the type of disk and if the disk is properly inserted into the drive.
	Floppy disk is defective. Throw it away.
<i>Floppy disk is not working correctly.</i>	Setup configuration is incorrect. Check the Setup program. In the " Standard CMOS Setup " menu, check to see if the Floppy Disk Drive is set for the proper drive type.
	Be sure the disk is properly installed in the drive.
	Be sure the disk is properly formatted.
<i>Disk cannot eject from the drive.</i>	Label may be detached and is blocking the ejection. Visually inspect the slot to see if any obstruction by the label. Call your dealer if you see an obstruction.
	Metal cover on the disk has been bent. Call your dealer.

Non-system Disk Error Message

A floppy disk is inserted into the floppy disk drive when the computer is turned on.

There is no operating system found in the floppy disk. Just remove the disk from the drive and press any key to continue the boot procedure.

CD-ROM Errors

CD-ROM disc not detected

Check if the disc is inserted properly into the CD drawer with its label facing up.

Check if CD drawer is closed all the way.

CD-ROM disc ejected without any error message.

Check if the disc is inserted properly into the CD drawer with its label facing up.

If there are visible scratches or dirt on the shiny side of the disc, your disc need to be cleaned. You may clean this with a CD polishing kit. If the scratches or dirt can't be removed, you have to replace the disc.

Check if other discs can be read. Your CD-ROM drive might be damaged.

Can't open a document/file on the disc

Some files or documents require specific software installed before it can be opened. Check the

manual that came with the disc.

Printer Doesn't Work/ Wrong Characters Printed

Incorrect printer settings.

Check Print Manager and select the correct printer destination.

Updated device driver required

Check your printer device driver.

If your printer is of an older model, use the updated drivers provided with the Windows operating system.

If you are using a latest model, you can install its device driver into your system. Consult the printer manual.

Cable is not properly connected.

Turn off your system and check printer cable connections.

Inaccurate System Clock

System clock is not properly set.

Enter BIOS Setup Utility and set system clock to current time and date.

Onboard Lithium battery is used up or exhausted.

Contact your dealer to replace it.

Problems with Sound

No sound

Make sure that the speaker is hooked up to an AC adapter and the power button is ON.

Use only the AC adapter provided. Check the connections between the computer and the speakers.

Check if there is output from the speaker. Remove the plug from the sound card, turn the speaker to maximum volume and touch the tip of the plug. If you hear a humor buzz coming from the speakers, the speakers are working. Check the sound card to locate the problem.

Headphones plugged into the speaker's headphone jack will block sound from the speakers. Remove the headphones to restore sound to the speakers.

Check volume controls on sound card, CD-ROM and speakers. Also check the software volume controls.

Sound coming from only one channel

Check connections to the sound card and to the speakers. Make sure cables are plugged in completely and the connections are correctly hooked up. See your speaker documentation for more information on the

connections.

Buzzing or humming sound

Check volume, tone and mixer controls on software. Follow the manual's setup instructions for these controls.

Problems with System Boards

Fax/Modem board will not send or receive data.

Check Device Manager in Windows 98 to see if there is a problem with the board.

Make sure the connections to the board via telephone lines are correct.

Make sure the phones are working.

Fax does not automatically receive incoming faxes.

Check software to see if autoreceive option is enabled.

Fax/modem disconnects during transmission.

Be sure that you have disabled Call Waiting on your phone.

Check for faulty connections and the noise in the line.

Modem does not connect properly to host system.

Make sure connection type and protocol are properly set.

Be sure the receiving system is compatible with your modem.

Try connecting at a slower speed.

*Slow Fax/modem
transmission time*

Be sure that all software for the connection is properly set.

Check fax/modem manual for further information.

Make sure the software you are using is set at the maximum speed allowed by the connection.