Personal Computer
User's Guide

June, 1998

5728891701 **TTD2261**

Copyright Notice

Trademark Acknowledgement

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.

Use only shielded cables to connect I/O devices to this equipment.

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 INTERFERE NCE. AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED. INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

Safety And Maintenance Precautions

1. Read all of these instructions.
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. Slots and openings in the cabinet and the back or bottom are provided for ventilation to ensure reliable operation of the product and to protect it from overheating. These openings should never be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug or other similar surfaces. This product should never be placed near or over any object which 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)

    II 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.
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 Réglement sur le materiel brouilleur du Canada.

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Chapter 1: Getting Started

Congratulations on your purchase of this new computer system! Your computer is designed to give you high integration, high performance/cost ratio and best multimedia support. It also offers you real ease of use - it's easy to setup, easy to use, and easy to expand – the right choice for your Home PC system.

This user's guide will provide you some basic information on how to use your computer, guide you through the setup procedure, tell you how to install devices and provide many tips on using your new system.

Choosing A Location

Like any other delicate electronic device, your PC should be put in a suitable location. This location should be relatively dry and cool, and must have proper ventilation.

1. Your PC should be placed on a flat, sturdy surface where you plan to work. The main unit must have at least *two to three inches of space on all sides* (except the bottom) for proper heat dissipation.
2. The entire system, including the main unit, the keyboard, and any other peripheral devices, should be *kept away from direct sunlight* or any other source of extreme heat. Direct sunlight could cause internal overheating, or blemish the exterior of your computer system.
3. Keep your PC away from devices that generate radio frequency interference. Such devices include stereo equipment and television sets. Your PC should also be *kept at least three feet from sources of strong magnetic fields*, since they may destroy the information stored on your diskette and hard disk.

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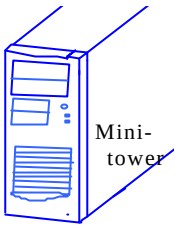
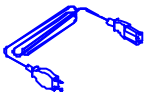
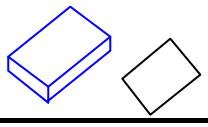
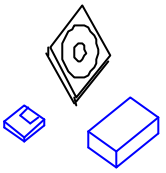
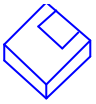
Unpacking Your PC

After removing your PC from the box, please check to see if your system is missing anything. Please refer to the checklist below. Your system should contain all of these items:

1		Main unit
2		Win95 PS/2 enhanced keyboard
3		PS/2 mouse
4		AC Power Cord
5		This User's Guide, and Warranty Registration Card

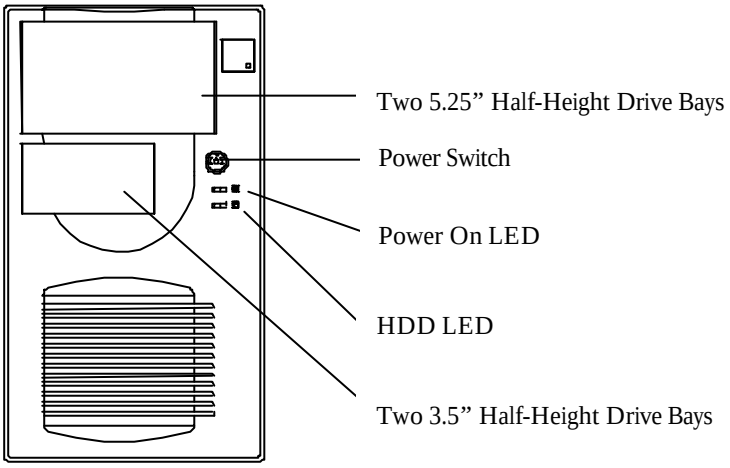
6		Microsoft Windows 95 software package (including a 3.5” floppy diskette, a CD-ROM disk, and a user’s guide)
7		Sound device driver

If any item is missing, please contact your dealer for assistance.

Keep the original carton and packing materials. If you decide to move your PC in the future, the original packaging materials will protect your PC.

Locations and Functions of Parts

Front Panel



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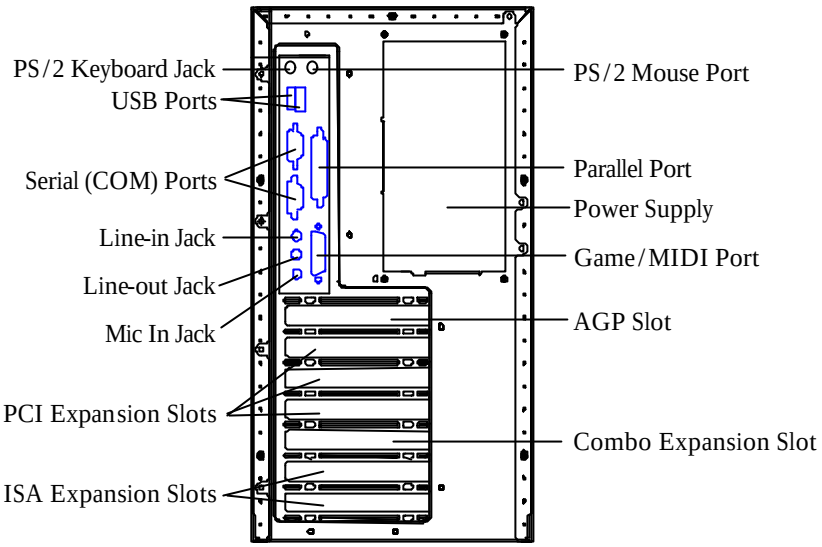
Rear Panel



Making the Connections

Now you are ready to connect all the devices and get the system working. There are two types of connections: **signal cable connections** and **power cord connections**. In this chapter, we will show you how to install some of the more common devices. Be sure to familiarize yourself with the parts and locations introduced in the above section.

▲ **Warning:** Please make sure that the power switch of your computer is turned **OFF** before connecting any devices. Connecting devices with the power on could damage the system's motherboard.

For installation of devices that are not covered in this manual, please refer to their respective manuals.

Signal Cable Connections

Keyboard

The Win95 PS/2 enhanced keyboard's connector is designed to fit into the system's keyboard jack in only one way. Align the connector properly and insert it to the PS/2 keyboard jack at the rear panel of the system.

Mouse

The PS/2 mouse's connector is designed to fit into the system's mouse jack in only one way. Align the connector properly and insert it to the PS/2 mouse jack at the rear panel of the system.

Monitor

Connect the video cable of a VGA or SVGA monitor to the system through the VGA port at the rear panel of your system.

Printer

Connect an end of a parallel (also known as Centronics) printer's cable to the receptacle on the printer, then connect the other end to the parallel port at the rear panel of the system.

To print, make sure that you have designated your print destination (usually LPT1:) properly in your application program.

☞ **Note**: If your printer does not work, refer to your Windows 95 and/or printer manual. Or, contact your dealer for assistance.

Power Cord Connections

We strongly suggest that you use a *multiple-outlet surge protector* (sometimes called a "power strip") so as to prevent damage to your system caused by electrical surges in the power line.

To connect the AC power cord to the main unit, plug the female end of the power cord into the AC Power In on the computer's rear panel. Next, connect all plugs from your system's devices into the surge protector or AC wall outlet.

▲ **Warning:** If you are using a surge protector, allow the surge protector to have a wall outlet all to itself. Your computer must 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.

You are now ready to power on your PC. Simply press the power switch. Your computer will then automatically enter the Windows 95 environment.

Entering the Setup Mode

If you need to enter Setup mode, press **DEL** key when you see "**Hit DEL if you want to run Setup**" message on the screen. Then, read the on-screen messages and follow the instructions for your required operations. You can also refer to *Chapter 3: BIOS Setup* for more details.

Chapter 2:
Learning The Basics

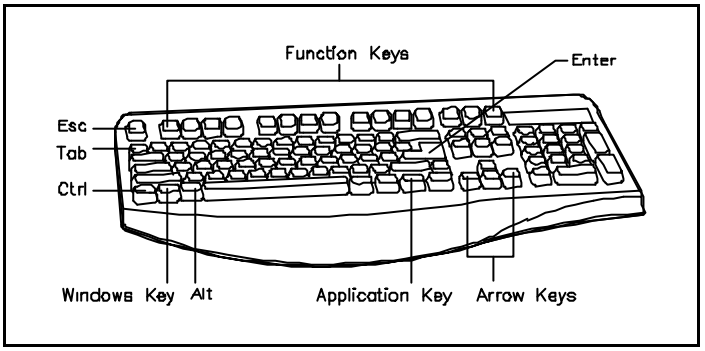
This section teaches you some of the basic skills you will need to operate your new PC. The devices or peripherals introduced here include keyboard, mouse, floppy disk drive, hard disk drive and CD-ROM drive.

Powering On Your PC

Locate the power switch on the front panel of your computer. Then, press to turn it on. Upon turning it on, the power indicator LED will be lit.

Using Your Keyboard

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



- Pressing the ¿ Enter key tells the PC you have finished

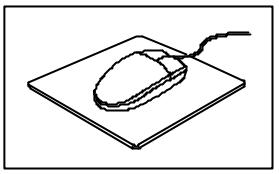
entering a command, and you want the PC to execute it. You will often use this key to tell the PC it is OK to go ahead. This key also starts a new paragraph in word processing programs.

- In many programs, the Esc key returns you to the previous screen, or exits the program.
- In many programs, the Tab key moves your cursor to the next field or menu item.
- The ↑ ↓ → ← arrow keys move the cursor in the direction of the arrow.
- The (Windows) key displays the Microsoft Windows 95 Start menu.
- Pressing the (Application) key opens a shortcut menu for the current program. You can use shortcut menus to save keystrokes.
- The function keys, F1 through F12 , are shortcuts for various operations. Different programs use the functions for different operations.
- Holding down the Ctrl or Alt key while pressing another key gives the current program a command.
- Holding down the Ctrl and Alt keys and then pressing the Del key displays the close program window. You can use this window to close a specific program, or to shut down your PC.

Using Your Mouse

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

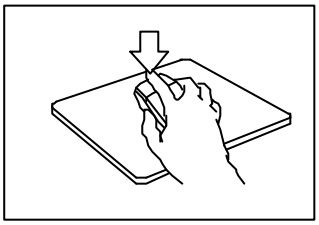
You may want to place a mouse pad under your mouse to make it move more smoothly. You can buy mouse pads at computer and office supply stores.



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



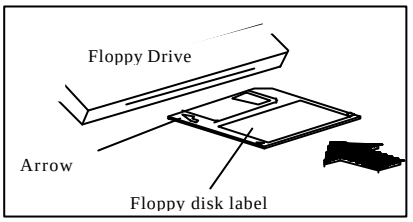
The mouse has either two or three buttons: a left and a right button, and sometimes a middle button. You will use the left button most often. Press the left button to highlight items, to select items, or to run your software programs. The right button has different uses depending on the software. In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

To "click" on an item, point to the item on the screen, and press the left mouse button once. To "double-click" on an item, press the left button twice quickly.

Using Your Floppy Disk Drive

Your floppy disk drive uses 3.5" high density dual or single-sided floppy disks.

Inserting a Floppy Disk



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

Removing a Floppy Disk

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

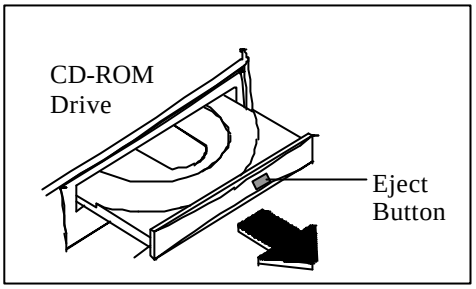
▲ **Warning:** If you remove a disk while the indicator light is on, you may damage the information on the disk.

Using Your CD-ROM Drive

Before you insert a CD, check for dust or fingerprints on the side 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 CD-ROM Disk

Turn on your PC. Press the Eject button 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.



Removing a CD-ROM Disk

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.

Using Your Hard Disk

Your PC is supplied with a number of system programs installed on the hard disk. It is essential that you make backup copies of these system programs.

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

Make it a regular practice to back up the data stored in the hard disk.

Chapter 3: BIOS Setup

If you need to change the BIOS setup of your system, please read this appendix before proceeding.

Usually, you may need to perform setup if you are:

- Adding or removing devices from your system;
- Setting the built-in clock/calendar;
- Enabling or disabling special features such as power management functions, system passwords, etc., or
- Resetting CMOS data if these were accidentally lost or if the on-board battery is changed.
- Changing the type of video display

If you are not too sure on what changes you need to make, please contact your dealer for assistance.

Entering System Setup

There is only one way to enter the Setup Main Menu in order to modify the settings in your CMOS data. After the power on self test is successfully performed during bootup, the following message will appear on the screen for a very short time:

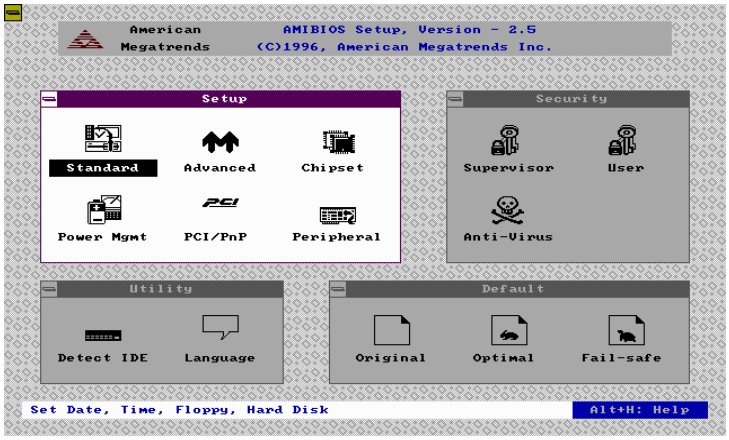
"**Hit DEL if you want to run Setup**"

You have to press <**Del>** key fast enough before your system starts up your operating system. (You can press the <**Del>** key even before the message shows up.) If you are not able to

enter the Setup Main Menu, you have to reboot your computer to repeat the above procedure.

If the computer detects discrepancies between your configuration data and actual system configuration, it will prompt you with an error message and request you to run setup. Run Setup Main Menu also by pressing <**Del**> key.

The following screen will appear upon entering the Setup Main Menu:



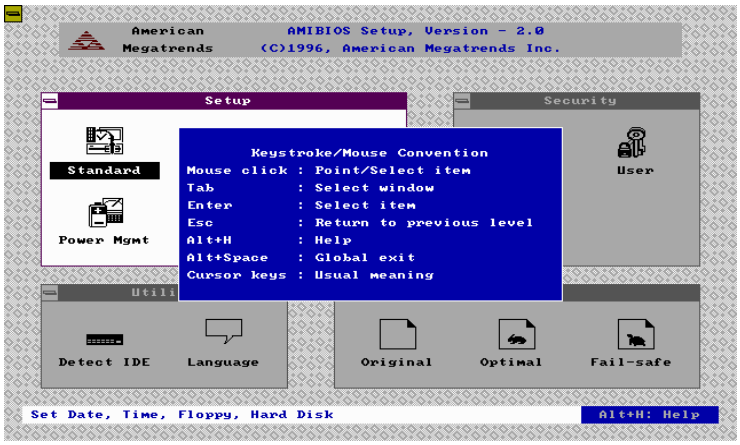
There are four main function groups, namely: Setup, Security, Utility, and Default. Options of each of these will be discussed in the following sections.

You can use your mouse to click on the desired option, then, double click on that option to select it or to open its sub-menu; or you can use your keyboard to do so. If you are using your keyboard:

- press <**Tab**> key to highlight the desired group
- use **arrow keys** to highlight desired option within a group

Press <**Enter**> key to select the desired option or to open its sub-menu.

A Help screen, as shown below, is also provided by pressing <**Alt**>+<**H**> keys simultaneously:

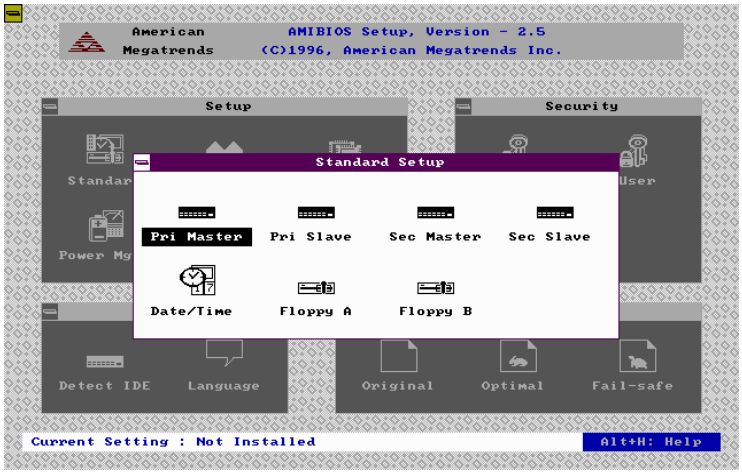


Press <**ESC**> to return to the previous menu.

Setup Function Menu

Standard Setup Sub-menu

This sub-menu allows you to install up to four IDE type storage devices (HDDs or CD-ROM drive); set the system date and time; and/or install floppy disk drives into your system. When this sub-menu is selected, the following appears on screen:

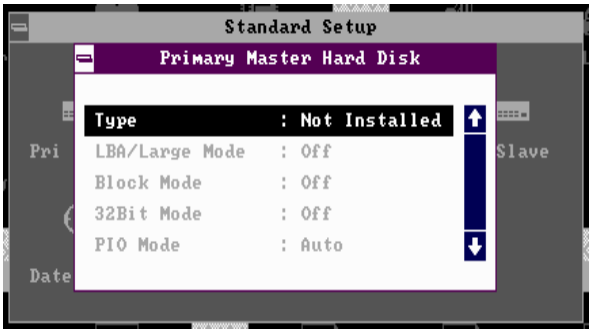


Pri Master, Pri Slave, Sec Master, Sec Slave

3

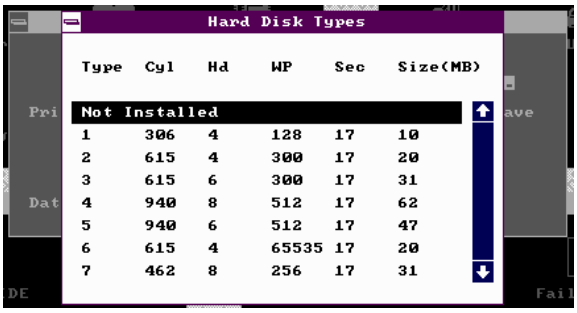
Your system automatically detects the storage devices that are installed in your system. However, you can manually select the types of devices through this sub-menu. The selections "**Pri Master**", "**Pri Slave**", "**Sec Master**" and "**Sec Slave**" allows you to set up your IDE devices manually.

The following appears on the "Standard Setup" screen when "**Pri Master**" is selected:



This same screen appears when "**Pri Slave**", "**Sec Master**" or "**Sec Slave**" is selected, only the title bar is changed to "**Primary Slave Hard Disk**", "**Secondary Master Hard Disk**", or "**Secondary Slave Hard Disk**", respectively.

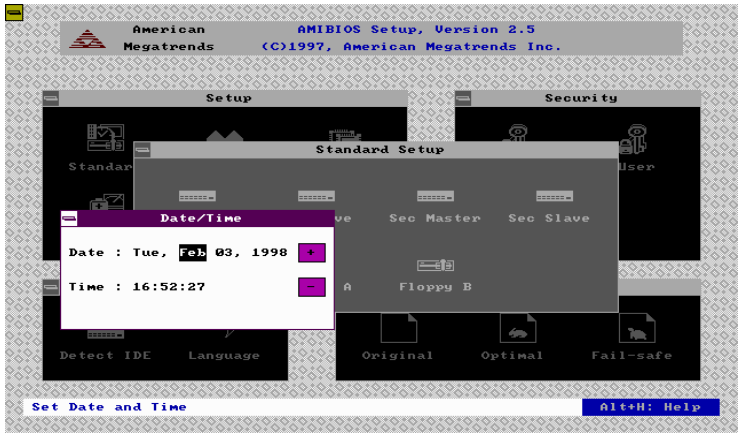
Pressing <**Enter>** or double clicking the mouse buttons on the above item "**Type**" will have the following list displayed:



Press <**PgDn**> key to list more options. Use arrow keys to move among options. Select the type of your IDE device correctly by pressing <**Enter**> or by clicking your mouse. If you are not sure of the type of your hard disk, you can choose "**Auto**" to let the system automatically detect your device.

Date/Time

Choosing this item allows you to set the date and time of your system. The following screen appears:

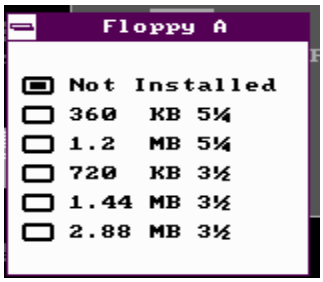


Use the arrow keys to move among the items. Press <+> or <-> keys on your keypad or use your mouse to click on the "**+**" or "**-**" icons on the screen to set the current date and time.

Press <**Enter**> or click the upper left corner of the "Date/Time" control menu box to close the window and return to the "Standard Setup" sub-menu.

Floppy A, Floppy B

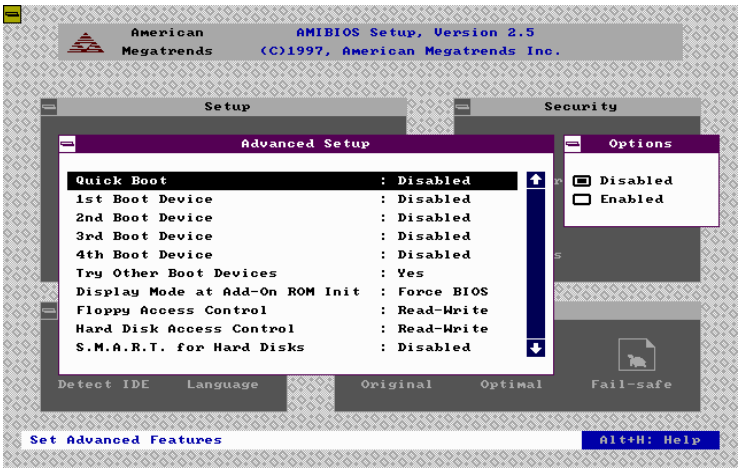
These two items allow you to configure your system's floppy drive/s. Selecting "**Floppy A**" on the "Standard Setup" sub-menu will display the following:



Use the arrow keys to select the proper type. Press <**Enter**> or click the upper left corner of the "Floppy A" control menu box to close the window and return to the "Standard Setup" sub-menu.
If you have a second floppy disk drive, follow the same procedure above after selecting "**Floppy B**" from the "Standard Setup" sub-menu.

Advanced Setup Sub-menu

The following screen appears when "**Advanced**" is selected from the "Setup" menu, and "**1st Boot Device**" is selected from the "Advanced Setup" sub-menu:



The "**Options**" sub-menu at the right of the "Advanced Setup" sub-menu provides you with the choices available for the item you selected in "Advanced Setup" sub-menu. Use arrow keys to select and press <**Enter**> to complete the setting.

Pressing <**PgDn**> key or, <↓> arrow key after the last line shown, will provide you with more items on this sub-menu. These items are as shown:

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

Item	Options	Description
Quick Boot	Disabled Enabled	Enabling this will boot the system quickly.
1st Boot Device	Disabled IDE-0 IDE-1 IDE-2 IDE-3 Floppy Floptical* CD-ROM SCSI Network	Sets the first boot device that the system attempts to boot from.
2nd Boot Device	Disabled	Sets the second, third and fourth boot

* Jumper settings of some floptical devices, such as LS-120, may not be set

3rd Boot Device 4th Boot Device	IDE-0 Floppy Floptical* CD-ROM	and fourth boot devices that the system attempts to boot from.
Try Other Boot Devices	Yes No	If system is unable to boot from 1st to 4th boot devices, "Yes" allows the system to try other devices.
Display Mode at Add-On ROM Init	Force BIOS Keep Current	"Force BIOS" initializes the system to use the display mode from the VGA ROM. "Keep Current" uses the display mode indicated in CMOS.
Floppy Access Control Hard Disk Access Control	Read-Write Read-Only	"Read-Write" allows read and write access to the floppy drive or HDD. "Read Only" provides only read access (no write access) to the floppy drive or HDD.
S.M.A.R.T. for Hard Disks	Disabled Enabled	Check your HDD spec if it has S.M.A.R.T. feature before enabling this.

to master or slave. You are suggested to refer to their respective manuals for details.

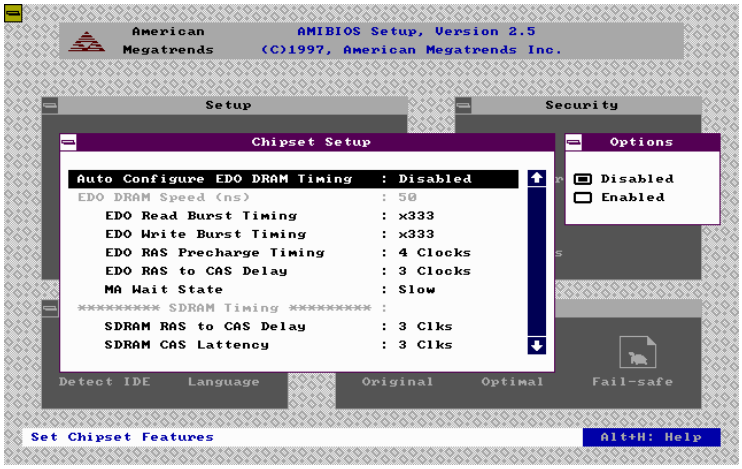
BootUp Num-Lock	Off On	Setting this "On" enables the numeric function of the numeric keypad during bootup.
Floppy Drive Swap	Disabled Enabled	Enabling this allows swapping of two floppy drives.
Floppy Drive Seek	Disabled Enabled	Enables or disables the FPC's floppy drive seek feature.
PS/2 Mouse Support	Enabled Disabled	System supports a PS/2 mouse when this is enabled.
Typematic Rate	Slow Fast	Sets the keyboard controller's typematic rate.
System Keyboard	Absent Present	"Absent" allows system to boot up even if keyboard is not connected. "Present" requires the presence of a keyboard during bootup.
Primary Display	Absent VGA/EGA/ CGA40x25 CGA80x25 Mono	Sets the type of display connected to the system.

Password Check	Setup Always	"Setup" allows the system to boot and use the password only to protect the Setup Utility Configuration settings from being tampered with. "Always" requires you to enter the password every time you boot the system. Set your passwords through the Security Menu.
Boot to OS/2 over 64MB	No Yes	If OS/2 operating system is used and memory is greater than 64MB, this has to be set to "Yes".
CPU MicroCode Updation	Disabled Enabled	"Enabled" allows the system to update P6 CPU's microCode.
Internal Cache	Disabled	Sets the type of internal cache that is available in the CPU chip.
System BIOS Cacheable	Disabled Enabled	Enabling this allows system to use cache, thus, enhancing system performance.

C000, 16k Shadow	Disabled	System will treat these addresses as shadow memory when "Enabled"; or as cache memory when "Cached".
C400, 16k Shadow		
C800, 16k Shadow		
CC00, 16k Shadow		
D000, 16k Shadow		
D400, 16k Shadow		
D800, 16k Shadow		
DC00, 16k Shadow		

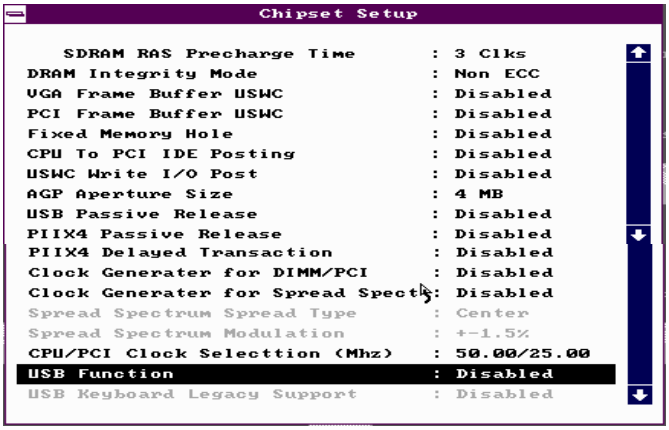
Chipset Setup Sub-menu

The following screen appears when "Chipset" is selected from the "Setup" menu:



The "**Options**" sub-menu at the right of the "Chipset Setup" sub-menu provides you with the choices available for the item you selected in "Chipset Setup" sub-menu. Use arrow keys to select and press <**Enter**> to complete the setting.

Pressing <**PgDn**> key or, <↓> arrow key after the last line shown, will provide you with more items on this sub-menu. These items are as shown:



3

☞ **NOTE:** The information here are dependent on the specifications of the chips and chipsets used. You are strongly recommended not to change default values unless you are aware and sure of what changes you need to make. Always refer to the chip's or chipset's specifications for correct settings.

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

Item	Options	Description
Auto Configure EDO DRAM Timing	Disabled Enabled	Enables or disables automatic configuration of EDO DRAM timing.
EDO DRAM Speed <ns>	50 60 70	Sets EDO DRAM speed if auto configuration is enabled.
EDO Read Burst Timing	x333 x222	Sets EDO DRAM specifications if auto configuration is disabled.
EDO Write Burst Timing	x333 x222	
EDO RAS Precharge Timing	4 Clocks 3 Clocks	
EDO RAS to CAS Delay	4 Clocks 3 Clocks	
MA Wait State	Slow Fast	
SDRAM RAS to CAS Delay	3 Clks 2 Clks	Sets SDRAM specifications.
SDRAM CAS Latency	3 Clks 2 Clks	Sets SDRAM specifications.

SDRAM RAS Precharge Time	3 Clks 2 Clks	specifications.
DRAM Integrity Mode	Non ECC EC only ECC*	Sets the type of DRAM installed.
VGA Frame Buffer USWC	Disabled Enabled	Sets Chipset specifications.
PCI Frame Buffer USWC	Disabled Enabled	
Fixed Memory Hole	Disabled 512KB-640KB 15MB-16MB	
CPU To PCI IDE Posting	Disabled Enabled	
USWC Write I/O Post	Disabled Enabled	
AGP Aperture Size	4 MB 8 MB 16 MB 32 MB 64 MB 128 MB 256 MB	Sets Chipset specifications.

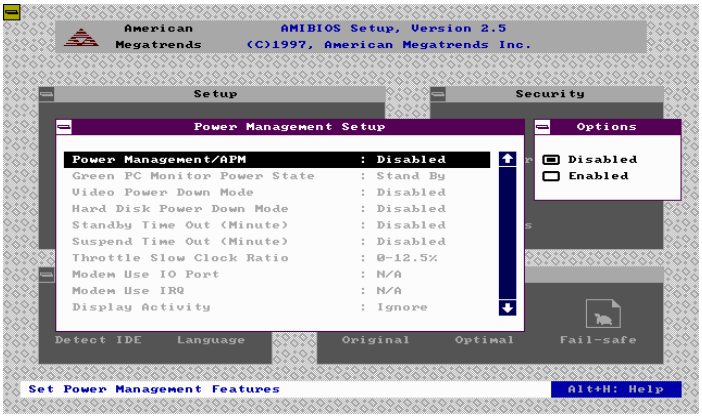
* ECC (Error Checking and Correcting) memory detects multiple-bit errors and corrects single-bit errors. Note that ECC mode in your system is enabled only if ECC memory is used and if ECC mode in BIOS setup is enabled. When ECC mode is enabled, performance loss is expected.

USB Passive Release	Disabled Enabled	
PIIX4 Passive Release	Disabled Enabled	
PIIX4 Delayed Transaction	Disabled Enabled	
Clock Generator for DIMM/PCI	Disabled Enabled	Sets the clock generator's specifications.
Clock Generator for Spread Spect	Disabled Enabled	
Spread Spectrum Spread Type	Center Down	Sets the clock generator's specifications. Options available only if 'Clock Generator for Spread Spect' is enabled.
Spread Spectrum Modulation	+-1.5% +-0.6%	

CPU/PCI Clock Selection (MHz)	50.00/25.00 75.00/32.00 83.30/41.65 68.50/34.25 83.30/33.30 75.00/37.50 60.00/30.00 66.80/33.40	Sets the CPU/PCI clock's basic frequency.
USB Function	Disabled Enabled	Enables or disables chipset's USB function.
USB Keyboard Legacy Support	Disabled Enabled	Sets USB keyboard as the legacy device if 'USB Function' is enabled..

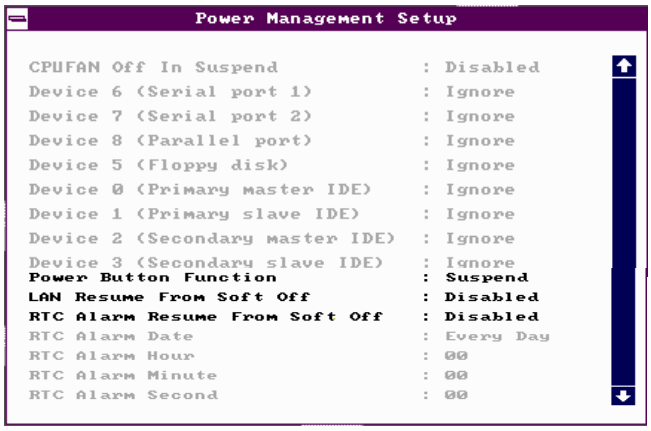
Power Management Setup Sub-menu

The following screen appears when "Power Management" is selected from the "Setup" menu:



The "**Options**" sub-menu at the right of the "Power Management Setup" sub-menu provides you with the choices available for the item you selected in "Power Management Setup" sub-menu. Use arrow keys to select and press <**Enter**> to complete the setting.

Pressing <**PgDn**> key or, <↓> arrow key after the last line shown, will provide you with more items on this sub-menu. These items are as shown:



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

Item	Options	Description
Power Manage-ment /APM	Disabled Enabled	Disables or enables the power saving features. When disabled, most items in this menu are deactivated.
Green PC Monitor Power State	Stand By Suspend Off	Sets the monitor's power state. Available only if power management feature is enabled.
Video Power Down Mode	Disabled Stand By Suspend	Sets the video chip's power state. Available only if power management feature is enabled.
Hard Disk Power Down Mode	Disabled Stand By Suspend	Sets the hard disk power state. Available only if power management feature is enabled.

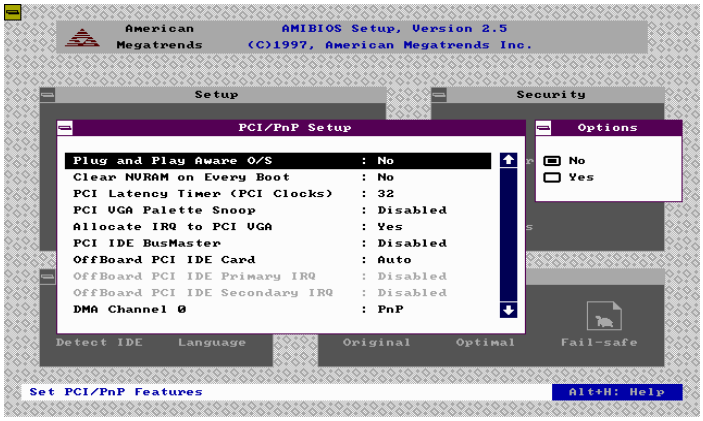
Standby Time Out (Minute)	Disabled 1 2 4 8 10 20 30 40 50 60	Sets the time out (in minutes) before system is put to standby/suspend mode. Available only if power management feature is enabled.
Suspend Time Out (Minute)		
Throttle Slow Clock Ratio	0-12.5% 12.5-25% 25-37.5% 37.5-50% 50-62.5% 62.5-75% 75-87.5%	Sets the rate of reducing the clock ratio of the CPU. Available only if power management feature is enabled.
Modem Use IO Port	N/A 3F8h/COM1 2F8h/COM2 3E8h/COM3 2E8h/COM4	Sets the I/O port address of modem. Available only if power management feature is enabled.
Modem Use IRQ	N/A 3 4 5 7 9 10 11	Sets the IRQ address used by the modem. Available only if power management feature is enabled.

CPUFAN Off In Suspend	Disabled Enabled	"Enabled" stops the operation of CPU's fan if the system is put in suspend mode. Options available only if power management feature is enabled.
Display Activity	Ignore Monitor	During power-saving state, "Ignore" will not wake up the system if an interrupt is generated; "Monitor" will check activities of these peripherals and wakes up the system if an interrupt is generated. Options available only if power management feature is enabled.
Device 6 (Serial port 1)		
Device 7 (Serial port 2)		
Device 8 (Parallel port)		
Device 5 (Floppy disk)		
Device 0 (Primary master IDE)		
Device 1 (Primary slave IDE)		
Device 2 (Secondary master IDE)		
Device 3 (Secon-dary slave IDE)		

Power Button Function	Suspend On/Off	"Suspend" puts the system in suspend mode if power button is pressed. Pressing this for more than four seconds turns the system off. "On/Off" turns the system on or off when the power button is pressed.
LAN Resume From Soft Off	Disabled Enabled	When enabled, the system can be awaken through LAN.
RTC Alarm Resume from Soft Off	Disabled Enabled	Sets the RTC alarm to wake up the system on a specified date and time.
RTC Alarm Date	Every Day 1 ~ 31	Specifies the date and time the system is awakened. Options can be selected only if 'RTC Alarm Resume from Soft Off' is enabled.
RTC Alarm Hour	00 ~ 23	
RTC Alarm Minute	00 ~ 59	
RTC Alarm Second	00 ~ 59	

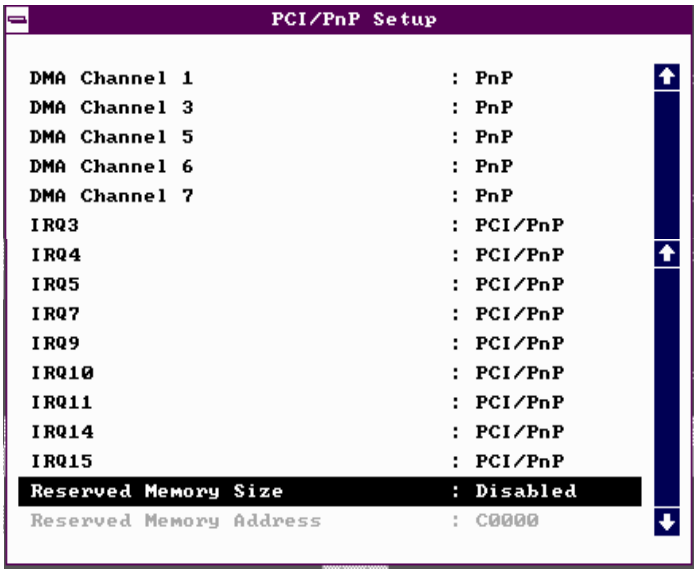
PCI/PnP Setup Sub-menu

The following screen appears when "PCI/PnP" is selected from the "Setup" menu:



The "**Options**" sub-menu at the right of the "PCP/PnP Setup" sub-menu provides you with the choices available for the item you selected in "PCP/PnP Setup" sub-menu. Use arrow keys to select and press <**Enter**> to complete the setting.

Pressing <**PgDn**> key or, <↓> arrow key after the last line shown, will provide you with more items on this sub-menu. These items are as shown:



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

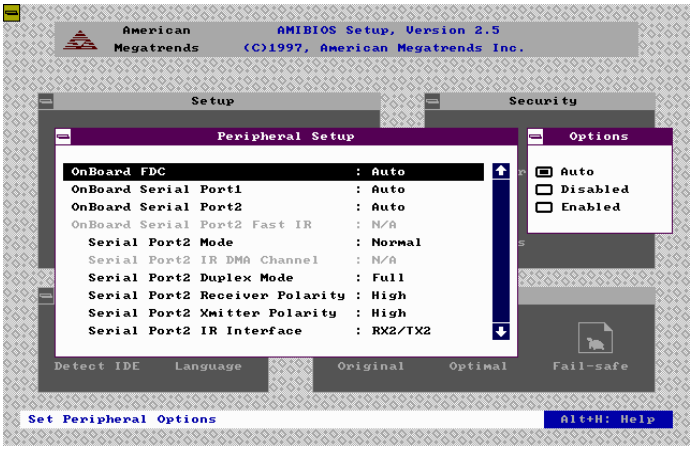
Item	Options	Description
Plug and Play Aware O/S	No Yes	Set this option to "Yes" if the operating system you are using supports Plug and Play feature. This option must be set correctly or PnP adapter cards installed in the system will not be configured properly.
Clear NVRAM on Every Boot	No Yes	Clears or maintains the contents of NVRAM during bootup.
PCI Latency Timer (PCI Clocks)	32 64 96 128 160 192 224 248	Selects the PCI clocks.
PCI VGA Palette Snoop	Disabled Enabled	It enables or disables the VGA palette snoop feature.

Allocate IRQ to PCI VGA	Yes No	Assigns an interrupt signal to the PCI VGA card.
ONBoard Sound Chipset	Disabled Enabled	Disables onboard sound when add-on sound card is used.
PCI IDE BusMaster	Disabled Enabled	It enables or disables the chipset's IDE bus master.
OffBoard PCI IDE Card	Auto Slot1 Slot2 Slot3 Slot4 Slot5 Slot6	"Auto" checks the PCI IDE cards automatically. You have to choose this option manually if a non-compliant PCI IDE card installed in the system.
OffBoard PCI IDE Primary IRQ	Disabled INTA INTB INTC INTD Hardwired	Sets the type of interrupt used by the non-compliant PCI IDE card. Options available only if 'OffBoard PCI IDE Card' is not set to "Auto".
OffBoard PCI IDE Secondary IRQ		
DMA Channel 0	PnP ISA/EISA	If your add-on card requires specific DMA channel, choose "ISA/EISA". Otherwise, choose "PnP" for auto
DMA Channel 1		
DMA Channel 2		
DMA Channel 3		

DMA Channel 4		selection by your system.
DMA Channel 5		
DMA Channel 6		
DMA Channel 7		
IRQ3	PCI/PnP ISA/EISA	If your add-on card requires specific interrupt signal, choose "ISA/EISA". Otherwise, choose "PnP" for auto selection by your system.
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 of the reserved memory area. Options available only if 'Reserved Memory Size' is not set to "Disabled".

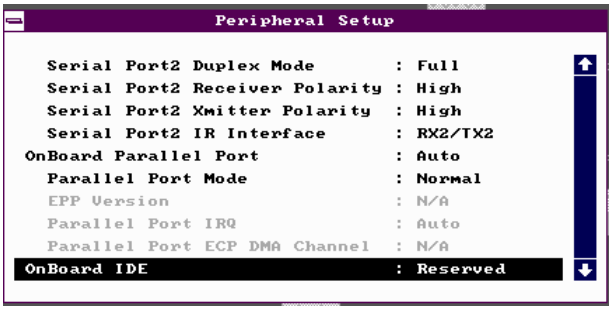
Peripheral Setup Sub-menu

The following screen appears when "Peripheral" is selected from the "Setup" menu:



The "**Options**" sub-menu at the right of the "Peripheral Setup" sub-menu provides you with the choices available for the item you selected in "Peripheral Setup" sub-menu. Use arrow keys to select and press <**Enter**> to complete the setting.

Pressing <**PgDn**> key or, <↓> arrow key after the last line shown, will provide you with more items on this sub-menu. These items are as shown:



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

Item	Options	Description
OnBoard FDC	Auto Disabled Enabled	Enables or disables the on board FDC. "Auto" allows the system to choose on-board FDC or FDC adapter card automatically.
OnBoard Serial Port1	Auto Disabled 3F8h 2F8h 3E8h 2E8h	Sets the base address of the 2 serial ports.
OnBoard Serial Port2		

OnBoard Serial Port2 Fast IR	-	Value is set to "N/A" if 'Serial Port2 Mode' is set to "Normal", "IrDA SIR-A" or "ASK-IR". Otherwise, it is set to "Auto".
Serial Port2 Mode	Normal IrDA SIR-A ASK-IR IrDA SIR-B IrDA HDLC IrDA 4PPM Consumer Raw IR	"Normal" sets serial port 2 for connection to serial devices. Other selections set serial port 2 for the type of infrared communications.
Serial Port2 IR DMA Channel	-	Value is set to "N/A" if 'Serial Port2 Mode' is set to "Normal", "IrDA SIR-A", "ASK-IR", or "IrDA SIR-B". Otherwise, it is set to "Auto".
Serial Port2 Duplex Mode	Full Half	Sets the mode of communication.
Serial Port2 Receiver Polarity	High Low	
Serial Port2 Xmitter Polarity	High Low	Sets the mode of communication.

Serial Port2 IR Interface	RX2/TX2 IRRX/IRTX	Configures Super I/O Chipset's IR pins.
OnBoard Parallel Port	Auto Disabled 378 278 3BC	Sets the base address of the on-board parallel port. If this is disabled, the next four items are automatically set to "N/A".
Parallel Port Mode	Normal EPP ECP	Specifies the type of parallel communication.
EPP Version	1.9 1.7	Specifies the EPP Version if 'Parallel Port Mode' is set to "EPP". Otherwise, this is set to "N/A".
Parallel Port IRQ	5 7	Specifies the interrupt request signal for the parallel device. Option available only if 'OnBoard Parallel Port' is not set to "Auto" or "Disabled".

Parallel Port ECP DMA Channel	1 3	Specifies the DMA selection of the parallel device. Option available only if 'OnBoard Parallel Port" is not set to "Auto" or "Disabled" and if 'Parallel Port Mode' is set to "ECP".
OnBoard IDE	Disabled Primary Secondary Both	It disables or enables one or both on board IDE ports.

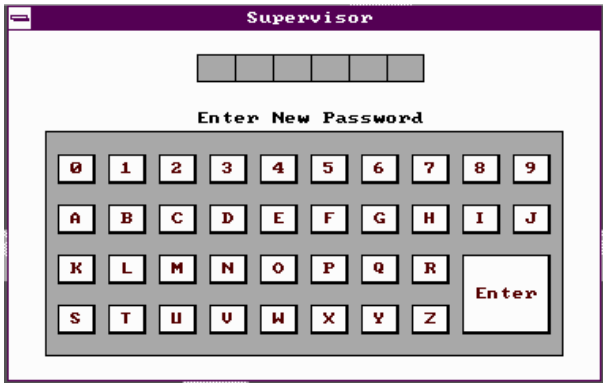
Security Function Menu

Supervisor, User Sub-menu

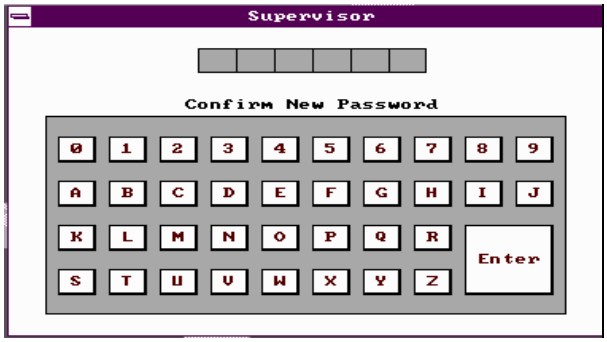
Passwords prevent unauthorized use of your computer. If "Password Check" in the "Advanced Setup" sub-menu is set to "Always", it is impossible to boot the computer without entering the user password. If it is set to "Setup", supervisor password is required if configuration changes are to be made.

If you forgot your passwords, there is no other way to retrieve this information. In such case, you need to clear the CMOS data (one way is by removing and installing back the on-board battery) and reconfigure your system.

When "Supervisor" is selected from the "Security" menu, the following screen appears:



You are requested to type in your password. This can consist of up to six characters. "*" appears on the boxes instead of the characters that you have typed. After entering these characters, you will be prompted to confirm your password. Type the password again.



If there are discrepancies between the first and second password entered, system will not accept the password. You will be prompted to enter the password again.

The following screen appears if the password is successfully entered:

Pressing <**Enter**> or clicking "**OK**" button completes the installation of the Supervisor password.

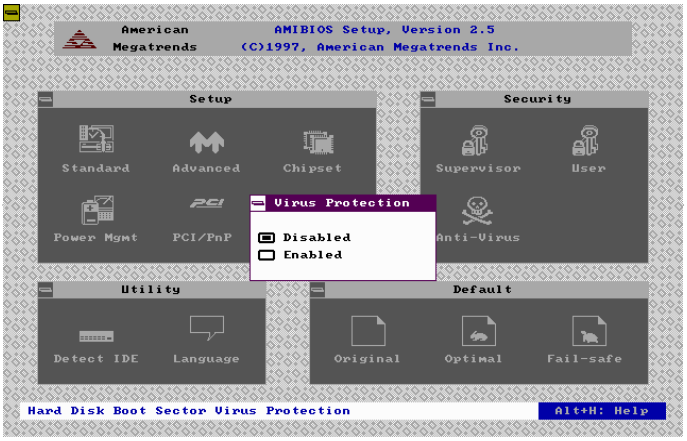
If you would like to change your current password, select "Supervisor" sub-menu from "Security" menu. You will be prompted to enter current password, type in new password and confirm the new password entered. The dialog box "Supervisor Password Installed" will appear if the changes were successfully installed.

To enter user password, select "User" sub-menu in the "Security" menu and follow the same procedures above. Note that you are allowed to enter user password only after supervisor password is installed.

Anti-Virus Setup Sub-menu

This selection provides the user an option to protect the boot sector and partition table of the hard disk from virus intrusion.

Selecting "Anti-Virus" sub-menu from "Security" menu will display the following screen:



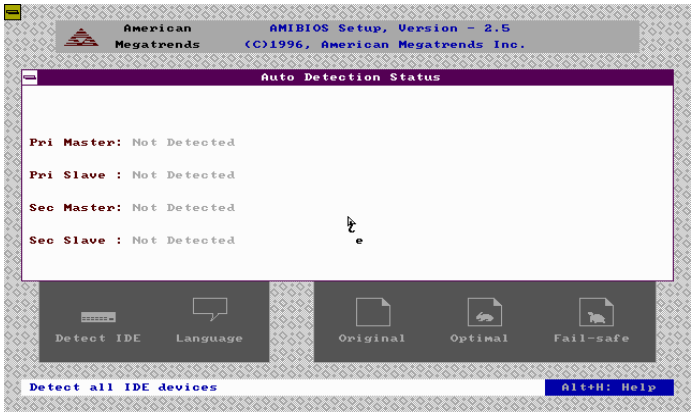
Choosing "**Enabled**" activates your system's virus protection feature.

Utility Function Menu

Detect IDE Option

Your system automatically detects and configures the IDE devices installed in your system. This sub-menu provides you with details on such configurations.

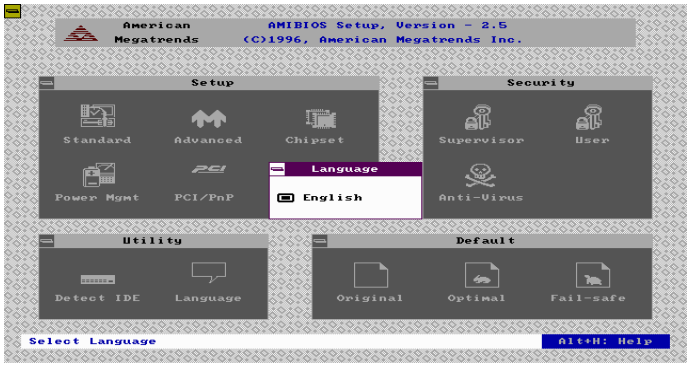
Selecting "Detect IDE" from the "Utility" menu will display the following screen:



If IDE devices are detected, details will be displayed.

Language Option

The following screen appears if "Language" is selected from "Utility" menu:



Currently, only "English" is the available option.

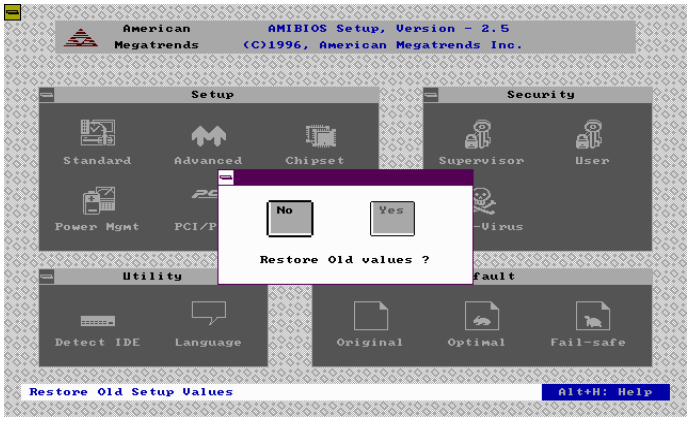
Default Function Menu

A set of default values is permanently stored in your system allowing the system to load these automatically if there are invalid CMOS data.

Original Sub-menu

This option restores the values in the CMOS data before current changes are made. Restoring these values is equivalent to disregarding the changes you have just made.

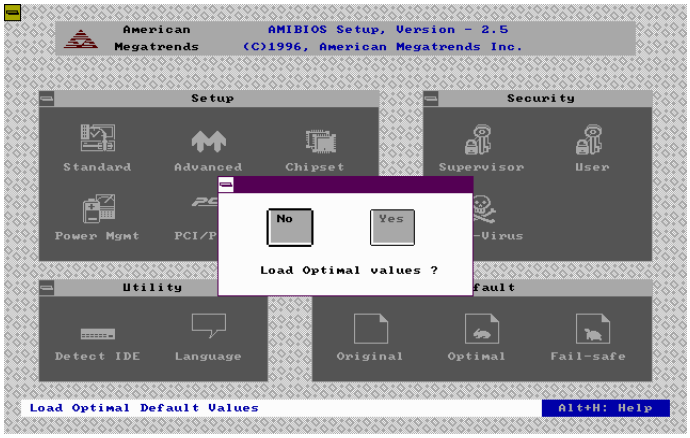
If this option is selected, the following screen appears:



Select "Yes" to restore old values and disregard current changes.

Optimal Sub-menu

This option allows system to be configured automatically with the best-case values so as to optimize its performance. When this is selected, the following appears on screen.

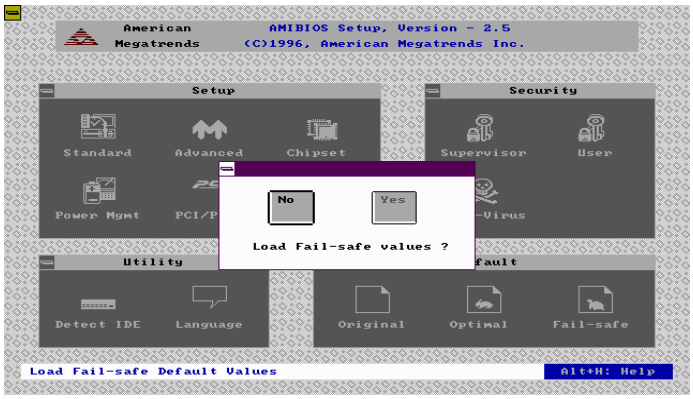


Select "Yes" to configure the system with best-case values.

Fail-safe Sub-menu

Select this option if you would like the system to be configured automatically with the most stable and safe settings.

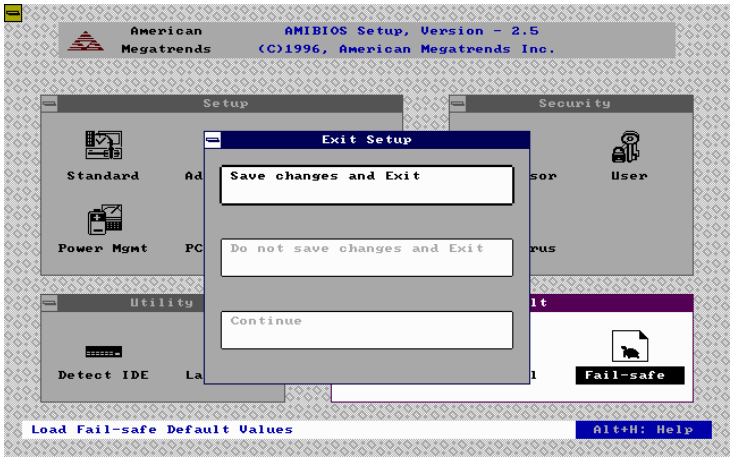
The following screen is displayed when "Fail-safe" option is selected:



Select "Yes" if you would like to load these values.

Exiting Setup

When you are finished with the modifications, or would like to quit setup, double-click on the control menu box appearing on the top leftmost part of the screen. The "Exit Setup" dialog box will appear on screen. You can also exit the system by pressing <**Esc**> key until the "Exit Setup" dialog box appears on screen.



"**Save changes and Exit**" saves all changes made into the CMOS data before leaving Setup mode.

"**Do not save changes and Exit**" leaves Setup mode without saving, thus, disregarding all changes made.

"**Continue**" does not exit from Setup mode, instead, lets you continue with your setup operations.

☛ **Notes:** **(1)** If you set incorrect parameters on the Setup menus, the bootup process may not succeed. Please reboot the system and press <**Del**> key to enter the Setup menus, then, modify the incorrect settings.

(2) If system detects invalid data in CMOS, it automatically loads the set of default values provided by the manufacturer.

▲ **Remark:** All Setup menus are subject to change without notice.

Chapter 4:
Installing Device Drivers

The 3.5” HDD that comes with your system is already pre-installed with Windows 95 operating system. Aside from this, all the required device drivers were also pre-installed in the factory.

You may need to install or re-install device drivers usually due to the following circumstances:

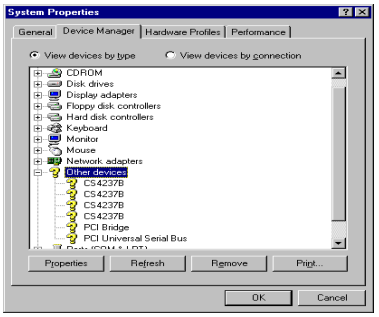
- When you re-install your operating system
- When you reformatted your HDD

This chapter provides you with step by step procedures on how to install the following device drivers into your system::

- Crystal PnP Audio System
- Bus Master IDE Device Driver
- PCI Universal Serial Bus Driver
- Intel 82371xB INF Update Installer

Crystal PnP Audio System

1. Complete the installation of Windows 95 operating system. If you are not so familiar with the installation procedure, please refer to the user's guide of Microsoft Windows 95 software package.
2. Double click on "**My Computer**" icon, located on the top left part of your screen.
3. Choose "**Control Panel**" icon by double clicking on it, then select "**System**" icon. The "System Properties" window will be displayed on the screen.



4. Click on "**Device Manager**" tab and select "**Other Devices**".
5. Remove the four **"CS4237B"** by selecting these and click "**Remove**". Then, click "**OK**" after this message.

6. Next, click "**Refresh**". The following screen appears.

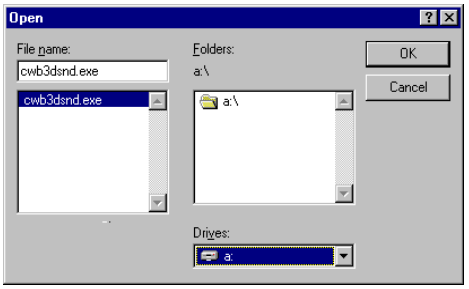
4

7. Put the "**SOUND DRIVER**" diskette into the floppy drive and click **"NEXT"** button.

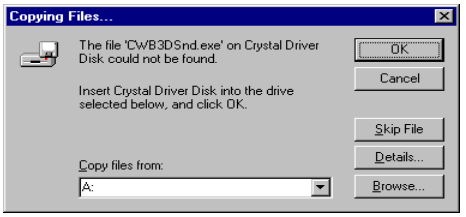
8. Click "**Finish**" when the following screen is displayed.

9. Click the "**OK**" button.

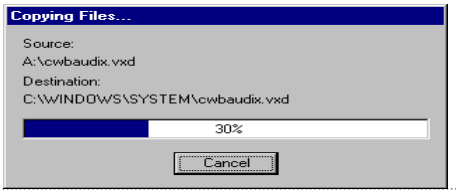
10. Select "**cwb3dsnd.exe**" from drive **A:** and click "**OK**", as shown:



11. Click the "**OK**" again when the following message appears.



12. The following screen informs

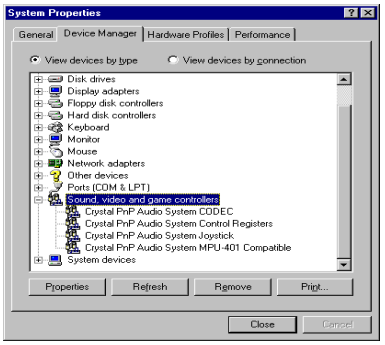


you that the system is copying files.

13. Your audio driver is now properly installed.

14. Check the "System Properties" for the newly installed audio driver:

    a. Double click on "**My Computer**"
    b. Select "**Control Panel**"
    c. Choose "**System**"
    d. Click on "**Device Manager**" tab

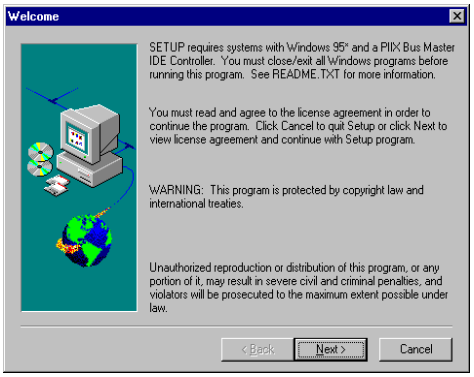


Bus Master IDE Device Driver

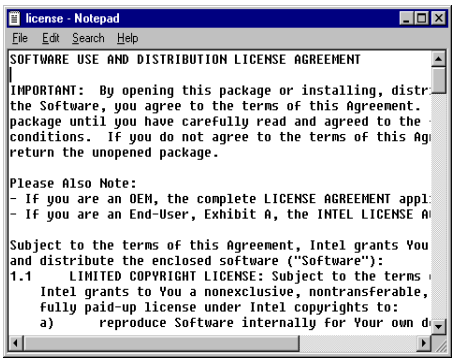
The Bus Master IDE device driver for PIIX4 based platforms under Windows 95 (v 3.01) is provided in the Device Drivers and Utility disk that comes with your system. This is contained in a self-extracting executable file, "bmide_95.exe". To install this into your system, please follow the instructions below:

1. Complete the installation of Windows 95 operating system. If you are not so familiar with the installation procedure, please refer to the user's guide of the Microsoft Windows 95 software package.
2. Insert the Device Drivers and Utility Disk in your floppy drive.
3. Create a subdirectory in your hard disk and copy the file "bmide_95.exe" into that subdirectory. Double click on this file to self-extract the necessary program and data files.
4. Run "setup.exe" by double clicking on it. This is to install the required driver and documentation.

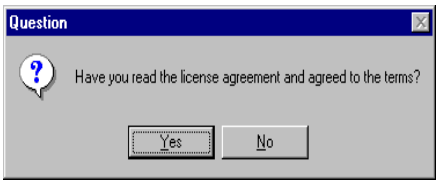
5. A Welcome Screen appears as shown below. Click "**Next**".



6. A Notepad window appears for you to read and agree to the license agreement. After reading this text file, close the Notepad program by clicking on **File** menu, then choose **Exit**.

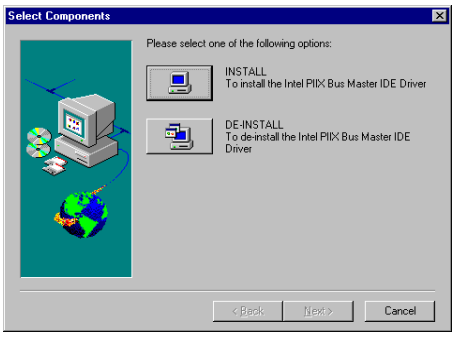


7. Click "**Yes**" to accept/agree to the license agreement and proceed to the next step. Click "**No**" to terminate this program without installing this device driver into your system.

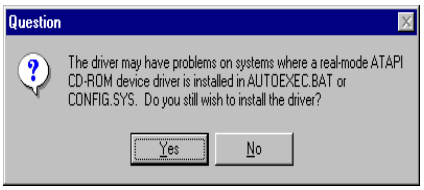


4

8. Select "**INSTALL**" to start installing the PIIX4 Bus Master IDE device driver.



9. This dialog box appears next on screen. Click "**Yes**" to continue with the installation. (Clicking "**No**" terminates this installation process.)



☞ **Note:** If the driver is already installed in the system, setup will ask you whether you want to continue with the installation process or not. If you choose not to continue, the installation process will be terminated.

4

10. After completing the installation process of the device driver, this message appears. Click "**OK**" to restart the system.

11. After restarting, Windows 95 will display a message that it has found an Intel PCI Bus Master IDE controller hardware and is installing it.

12. If a "**New Hardware Found**" dialog box appears on screen requesting for the location of drivers, select the subdirectory of your Windows 95 with the following path:

C:\WINDOWS\SYSTEM\IOSUBSYS

wherein "C:\WINDOWS" is the subdirectory of your Windows 95. (If your Windows 95 operating system is located in another subdirectory, replace C:\WINDOWS with the appropriate subdirectory name.) Then, click "**OK**".

13. You will be prompted to restart your system again. Select "**Yes**" to restart.

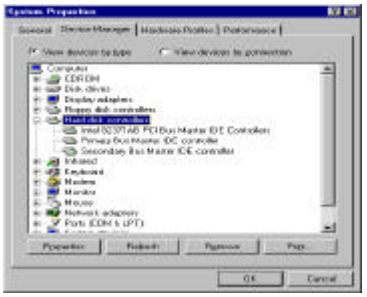
14. To check if your system has the proper drivers installed, check the following files under the specified subdirectory:

    C:\WINDOWS\SYSTEM\IOSUBSYS**IDEATAPI.MPD**
    C:\WINDOWS\SYSTEM\IOSUBSYS**PIIXVSD.VXD**
    C:\WINDOWS\INF**IDEATAPI.INF**

    wherein C:\WINDOWS is the subdirectory of your Windows 95 operating system. (If your Windows 95 operating system is located in another subdirectory, replace C:\WINDOWS with the appropriate subdirectory name.)

    Or, you can check your Device Manager for the new/updated drivers:

    a. Double click on "**My Computer**" icon
    b. Select "**Control Panel**"
    c. Choose "**System**"
    d. Click on "**Device Manager**" tab



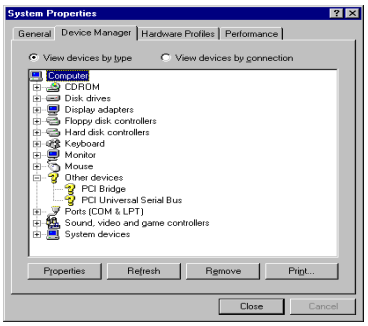
PCI Universal Serial Bus Driver

☞ **Note:** This device driver should be installed before the "Intel 82371XB Update Installer" is installed in your system.

1. Complete the installation of Windows 95 operating system. If you are not so familiar with the installation procedure, please refer to the user's guide of Microsoft Windows 95 software package.

2. Double click on "**My Computer**" icon, located on the top left part of your screen.

3. Choose "**Control Panel**" icon by double clicking on it, then select "**System**" icon. The "System Properties" window will be displayed on the screen.

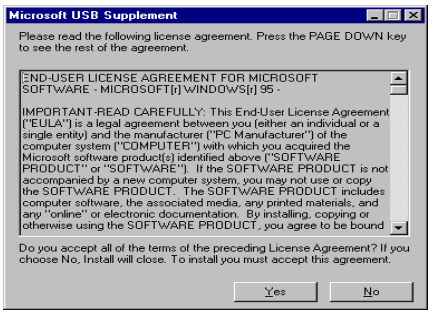


4. Click "**Device Manager**" tab and select "**Other Devices**".

5. Insert "**USB Driver & Utility**" Diskette into the floppy drive.

6. Run "**usbsupp.exe**" by double clicking on it. Click "**Yes**".

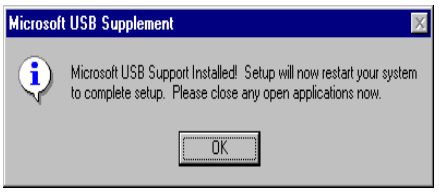
7. Click "**Yes**" to accept the agreement and proceed with the installation. Click "**No**" to terminate this program without installing this device driver into your system.



8. The system performs "ScanDisk" operation.

4

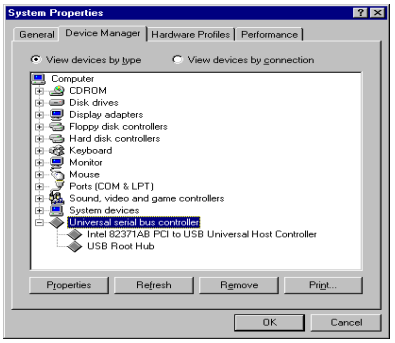
9. Next, the system copies the required files. This dialog box appears after the copy operation is completed.



10. Click "**OK**" to restart the system.

11. Install the "Intel 82371XB INF Update Installer". (Please refer to the next section, "**Intel 82371xB INF Update Installer**", for the procedures.) The system will then automatically install the drivers for "PCI Universal Serial Bus".

12. To check your Device Manager entries for the newly installed "**PCI Universal Serial Bus**" driver:
    a. Double click on "**My Computer**"
    b. Select "**Control Panel**"
    c. Choose "**System**"
    d. Click "**Device Manager**" tab
    e. Double click on "**Universal Serial Bus Controller**"



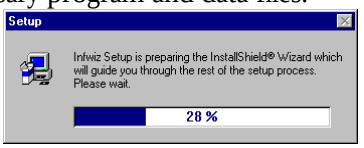
Intel 82371xB INF Update Installer

☞ **Note:** Before proceeding with this section, please make sure that your system have already copied necessary files for the PCI Universal Serial Bus Driver. (Refer to the above section "**PCI Universal Serial Bus Driver**" for the procedures.)

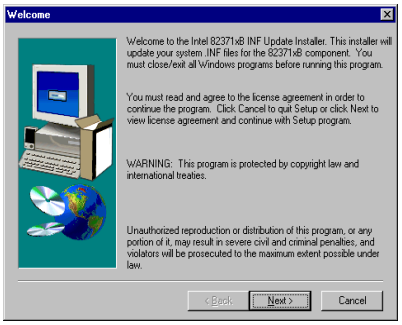
Your system is equipped with the latest PIIX4 chipset, 82371AB. In order for Windows 95 to recognize this chipset

and configure your system properly, a self-extracting executable file "setup.exe" is included in your Driver and Utility Disk.

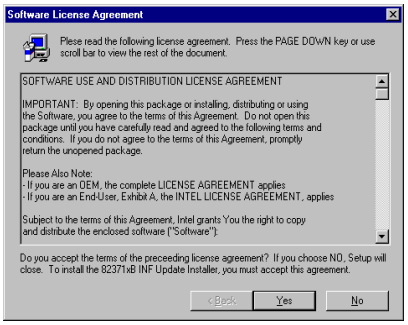
1. Complete the installation of Windows 95 operating system. If you are not so familiar with the installation procedure, please refer to the user's guide of the Microsoft Windows 95 software package.
2. Insert the Driver and Utility Disk in your floppy drive.
3. Create a subdirectory in your hard disk and copy the file "setup.exe" into that subdirectory. Double click on this file to self-extract the necessary program and data files.
4. Run "setup.exe" by double clicking on it. This message appears:



5. Next, a Welcome Screen appears as shown below. Click "**Next**".



6. The software license agreement window appears. After reading this text file, click "**Yes**" to accept the license agreement. Click "**No**" to terminate this program without installing this device driver into your system.



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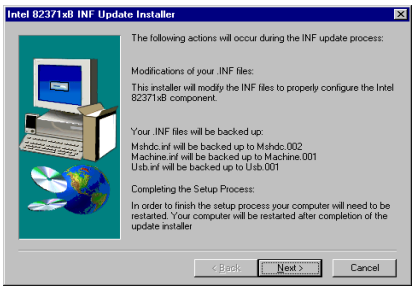
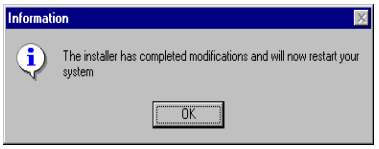
7. When the Installer Screen appears, click "**Next**".



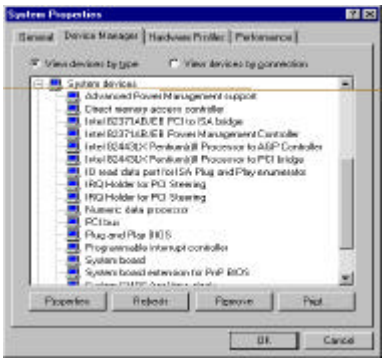
8. The installer has completed the required modifications. If the following dialog box appears, click "**OK**" to restart your system.



9. After restarting, follow the screen instructions and use default settings. (Press <Enter> key to accept the default settings.)

10. To check your Device Manager for the modifications made:

    a. Double click on "**My Computer**"
    b. Select "**Control Panel**"
    c. Choose "**System**"
    d. Click on "**Device Manager**" tab
    e. Double click "**System devices**"



4

Chapter 5: Troubleshooting

Your PC is designed and manufactured to be durable and to give you trouble-free service. Nevertheless, like any other piece of electronic equipment, it will require periodic maintenance.

Maintenance And Care

- Do not place your PC on an unstable cart, stand or table. Dropping your PC may cause serious damage.
- Do not place your PC in a sunlit window, excessive heat will shorten its life.
- Do not put any liquids near your PC.
- Do not apply power to the system until all components are connected.
- Disconnect any cord or cable by pulling the plug, not by pulling the cord or cable itself.
- Clean your PC cover when it has gathered too much dust. Be sure to turn it off and disconnect all power cords before using a damp piece of cloth to clean it. Do not apply liquid or any cleaner directly to your computer.

☞ **Note**: Never use detergents or other chemicals to clean your PC.

- Use a Surge Protector, if possible, for the computer and all external devices, such as your printer.
- Do not use a power cable that does not meet specifications.
- Do not unplug the power cord while the system is on. After you have switched off the power, wait ten seconds before switching on again.
- Do not forget to shutdown Windows 95 before turning off your PC.

- If you have any doubts regarding the operation of your PC, consult your dealer for assistance.

Troubleshooting

If you have trouble with your PC, take a few minutes to read the following information. If your problem is related to a particular procedure, you should also look for information on that procedure in Windows 95 Help.

Common Problems And Solutions

Listed below are some problems you may encounter, and some suggestions on how to correct them.

1. *The computer is turned on, but the screen is dark.*

   One of the following is probably the cause:

   - The computer isn't getting power. Check that the computer's power cord is firmly connected to the computer and plugged into a grounded three prong electrical outlet. Also check if the outlet has power.
   - The VGA monitor is not properly connected to the PC main unit. Check the video cable connection.
   - The computer is in sleep mode. Press a key on the keyboard.
   - The monitor's brightness control is not adjusted properly. Check the monitor's brightness control and adjust it to the desired level.
   - A screen saver program may darken the screen when the computer has not been used for a certain period. Press a key or move the mouse to turn off the screen saver program.

2. *The computer's clock keeps time inaccurately.*
   - The on-board Lithium battery is dead or exhausted. Contact your dealer to replace it.
3. *My keyboard doesn't work.*
   - Check that the keyboard cable is properly connected to the keyboard port (JKB).
4. *My mouse doesn't work.*
   - Check that the mouse cable is properly connected to the mouse port (JMS).
5. *My 3.5" floppy disk doesn't work.*
   - Remove the 3.5" diskette from the drive and check if the diskette was inserted correctly, or if you are using the correct type of disk drive.
   - Check if disk drive is configured correctly in BIOS by pressing F2 key to enter Setup Utility during boot-up.
6. *I get a non-system disk error message when I turn on my computer.*
   - A non-system disk error occurs when a floppy disk is inserted into the floppy disk drive when the computer is turned on. Remove the floppy disk from the drive and press any key on the keyboard to complete the boot up.
7. *I insert a CD-ROM disk, but the computer does not detect it.*
   - Make sure that the disk label is facing up and the disk is properly placed in the CD drawer.
   - Make sure that the CD drawer is closed all the way.
   - Make sure that the CD-ROM device driver software is installed.
8. *My computer ejects a CD-ROM disk without giving any error message.*
   - Make sure that the disk is flat in the tray and the disk label is facing up.

- The disk may need to be cleaned. If there are visible scratches on the shiny side of the disk, you may be able to remove them with a CD polishing kit. If the scratches can't be removed, you'll need to replace the disk.
- The disk may be damaged. Try other disk/s in the drive. If the drive reads other disk/s, the original disk is probably damaged. You may also try the original disk in another drive. If the same thing happens, the original disk is probably damaged.

9. *I can't open a document on a CD-ROM disk.*
   - Try opening the application program first; then open the document.
   - Read the manual that came with your CD-ROM disk. Some disks come with software that you need to install on your computer before using it.
10. *My printer doesn't work.*
    - Check your printer settings in the Printer Manager, make sure that you have selected the correct printer.
    - Turn off the computer and printer and check printer cable connection.

    If none of these suggestions solves the problem, reinstall your printer driver. If your printer is an older model, do not use the driver that came with the printer. Instead, use the updated printer drivers provided on the Windows 95 CD-ROM that came with your PC system. These drivers are created especially for use with your computer.

Appendix A: Specifications

Please refer to the following appendix for the specifications of your computer.

Standard Features

- High performance system using Intel Pentium II CPU
- Intel chipset (82443LX), PIIX4 (82371AB)
- 1MB Flash ROM with AMI BIOS
- ATX form-factor
- Real-time clock and system configuration in PIIX4 with battery backup
- Three DIMM sockets, for maximum of 384MB memory
- Industry standard 16-bit audio using CS4237B audio chip
- Built-in ports: serial ports x2, parallel, PS/2 keyboard, PS/2 mouse, USB ports x2, game/MIDI, microphone in, audio line in, and audio line out
- Expansion slots: ISA slots x2, PCI slots x3, combo expansion slot x1, AGP slot x1
- 104/105 key PS/2 enhanced keyboard
- Runs under MS-DOS, Windows 95, UNIX, OS/2, etc.

A

Motherboard

CPU (Central Processing Unit)

Single Pentium II processor at 233, 266, 300, or 333MHz

- MMX ™ technology implemented.
- Full backward compatibility with 8086, 80286, Intel386™, Intel486™, Pentium, and Pentium Pro processors.
- Processor's VID pins automatically program the voltage regulator on the motherboard to the required processor voltage.

Built-in L2 cache

L2 cache is located on the substrate of the S.E.C. cartridge. This includes burst pipelined synchronous static RAM (BSRAM) and tag RAM. There are a total of four BSRAM components, providing 512KB cache.

Numeric Coprocessor

- Significantly increases the speed of floating-point operations
- Complies with ANSI/IEEE standard 754-1985.

Power Management

- PC97 compliant APM (Advanced Power Management) power management feature supported.
- ACPI (Advanced Configuration and Power Interface) power management feature supported in hardware. To enable this feature, OS support and BIOS upgrade is necessary.

Memory

- 1MB Flash ROM with AMI BIOS
- Three DIMM (dual inline memory module) sockets provided for maximum of 384MB memory
- 168-pin 3.3 Vdc DIMMs or SDRAMs[1] supported. Memory access time of SDRAMs must be 66MHz.
- 64-bit non-ECC memory and 72-bit ECC[2] memory supported. System automatically detects the type of memory installed. You can enable or disable ECC mode through BIOS Setup if ECC memory is used. (Refer to *Chapter 3, BIOS Setup*, for the procedures.)
- Single- or double-sided DIMMs in the following sizes are supported:

DIMM Size	Non-ECC type	ECC type
8MB	1Mbit x 64	1Mbit x 72
16MB	2Mbit x 64	2Mbit x 72
32 MB	4Mbit x 64	4Mbit x 72
64MB	8Mbit x 64	8Mbit x 72
128MB	16Mbit x 64	16Mbit x 72

- DIMMs or SDRAMs can be installed in any of the three sockets. Memory of different sizes and speed can be used.

[1] SDRAM (Synchronous DRAM) improves memory performance by having memory access time in synchronous with memory clock cycle. This simplifies the timing design and increases memory speed since all timing is dependent on the number of memory clock cycles.

[2] ECC (Error Checking and Correcting) memory detects multiple-bit errors and corrects single-bit errors.Note that ECC mode in your system is enabled only if ECC memory is used and if ECC mode in BIOS setup is enabled. When ECC mode is enabled, performance loss is expected.

BIOS automatically detects memory type, size and speed.

Built-in I/Os

- Keyboard controller and interface
- Real-time clock/calendar
- CMOS RAM to maintain system configuration
- Two serial ports and one parallel port
- Two USB ports and one PS/2 mouse port
- Floppy Disk Controller (FDC)
- Two built-in PCI-set IDE interfaces
- Supports and IrDA and Consumer IR-compliant infrared interface
- PS/2 keyboard port, Game/MIDI port
- Microphone in jack, audio line in jack and audio line out jack
- Two ISA slots, three PCI slots, one combo expansion slot, and one AGP slot

Audio Subsystem

- Multimedia audio system using CS4237B
- Compatible with Sound Blaster, Sound Blaster Pro ™, and Microsoft Windows Sound System ™
- Integrated SRS 3D Sound Technology
- Fully Plug-and-Play ISA compatible
- MPU-401 MIDI interface

Mass Storage

There are a total of six half-height drive bays available for this system. These include two 5.25" exposed bays, two 3.5" exposed bays, and two 3.5" enclosed bays

Power Supply

Input Requirement

Your system comes with a universal switching power supply that automatically switches to the required input voltage when turned on.

Voltage (Vac)	Range (Vac)	Current (A)
115	100 to 125	1.5 max.
230	200 to 240	0.7 max.

The recommended voltages and current ratings of the plug and power cord are:

Line Voltage	Recognized Mark (Safety Standard)	Type Used
110-125 Vac	UL, CSA, etc.	125V, 10A
220-240 Vac	TUV, GS, etc.	230V, 7.5A

Output DC Load Requirement

Nominal Load Output	Maximum Current (A)	Regulation Tolerance
+5 Vdc	22.0	+/- 5%
-5 Vdc	0.5	+/- 10%
+3.3Vdc	14.0	+/- 5%
+5VSB	0.1	+/- 5%

+12 Vdc	8.0	-5% to +5%
-12 Vdc	0.8	+/- 10%

The maximum rated output power is 230W.

A

Keyboard

- Win95 PS/2 enhanced keyboard with wrist rest
- Low-profile, 104 keys with twelve function keys
- All keys are typematic
- The keyboard uses a bi-directional serial interface to carry signals to and from the system
- Three status indicators (LEDs)

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)

Humidity

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

System Unit Dimensions

Depth (D)	443 mm
Width (W)	200 mm
Height (H)	350 mm

▲ **Remark:** Specifications are subject to change without notice.

Appendix B: Connectors And Jumpers

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 functionalities 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. This way, you can always revert to the original settings if the new settings do not work.

Power Supply Connectors

Switching power supplies from different vendors or those with different "Rated Output Power" may have different types of power connector. This section provides information on the connectors of the switching power supply that is used in your system.

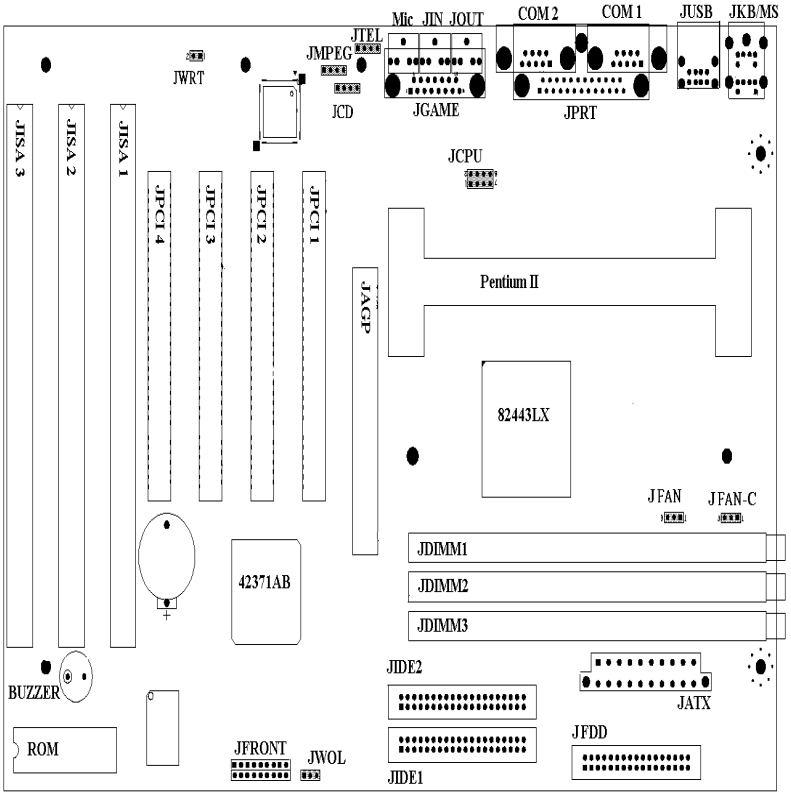
The 20-pin connector of the power supply is for connection to **JATX** connector on the motherboard. Refer to **JATX** jumper described in the latter part of this appendix for the pin configurations.

The 4-pin connectors from the switching power supply are for connection to the power input signal of storage devices. All of these connectors have the same pin configurations and carry same voltages. Those connectors that are of standard sizes are to be used on devices such as 5.25" CD-ROM drive and 3.5" HDD. The 4-pin mini size connectors are for 3.5" FDD. Pin configurations are:

Pin No.	Wire Color	Signal
1	Yellow	+ 12V
2	Black	GND
3	Black	GND
4	Red	+ 5V

Motherboard Lay-out

Please find below the motherboard lay-out for the locations of the different jumpers and connectors.



B

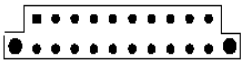
B

Quick Reference

Jumpers/ Connectors	Function	Page
JAGP	Accelerated Graphics Port	B13
JATX	Power Supply Connector	B5
JCD	ATAPI/CD Audio Connector	B8
JCOM1, JCOM2	Serial Port Connectors	B6
JCPU	Processor Frequency Ratio Selector Jumper	B12
JFAN-C, JFAN	CPU Fan 1/2 Headers	B8
JFDD	Floppy Drive Connector	B10
JFRONT	Front Panel I/O Connectors	B12
JGAME	Game/MIDI Port Connector	B8
JIDE1, JIDE2	PCI IDE Connectors	B10
JIN	Audio Line In Connector	B7
JISA1, JISA2, JISA3	ISA Bus Connectors	B15
JKB/MS	PS/2 Keyboard/Mouse Connector	B5
JMIC	Audio Mic In Connector	B7
JMPEG	MPEG Connector	B9
JOUT	Audio Line Out Connector	B7
JPCI1, JPCI2, JPCI3, JPCI4	PCI Bus Connectors	B14
JPRT	Print Port Connector	B6
JTEL	Phone In Jumper	B9
JUSB	USB Connector	B7
JWOL	Wake-on-LAN Jumper	B9
JWRT	EEPROM Programmer Jumper	B11

Motherboard Connectors and Jumpers

1. Power Supply Connector (JATX)



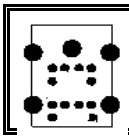
Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
				7	GND	14	PS-ON#
				8	PWRGD	15	GND
				9	+5VSB	16	GND
1	+3.3V	4	+5V	10	+12V	17	GND
2	+3.3V	5	GND	11	+3.3V	18	-5V
3	GND	6	+5V	12	-12V	19	+5V
				13	GND	20	+5V

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

If the switching power supply used is an ATX-compliant power supply, remote power on/off is supported and the system's power can be turned off through software control. This feature is called soft-off control.

Soft-off control allows your computer to automatically go back to the power state after being interrupted either by power outage or by disconnection of power cord. To enable this feature, your system's advanced power management must be enabled both in the BIOS setup utility and in the operating system. For BIOS setup, refer to *Chapter 3, BIOS Setup* for more details.

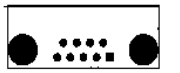
2. PS/2 Keyboard/Mouse Connector (JKB/MS)



Pin	Signal	Pin	Signal
1	Data	4	+5V (fused)
2	NC	5	CLK
3	GND	6	NC

The PS/2 enhanced keyboard is connected to the computer via a female mini-DIN connector **JKB/MS** which is mounted on the motherboard. PS/2 mouse is connected through the keyboard.

3. Serial Port Connectors (JCOM1, JCOM2)



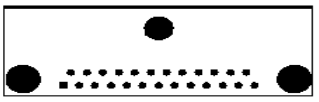
Pin	Signal	Pin	Signal
1	DCD	2	Serial In#
3	Serial Out#	4	DTR#

Pin	Signal
5	GND
6	DSR
7	RTS
8	CTS
9	RI

JCOM1 and **JCOM2** connectors are male DB9 (9-pin) serial port connectors built-in on the motherboard. To enable or disable this, perform BIOS Setup. Refer to *Chapter 3, BIOS Setup* for more details.

B

4. Print Port Connector (JPRT)

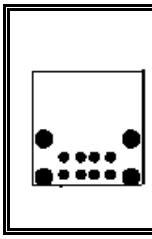


Pin	Signal	Pin	Signal
1	Strobe#	8	Data bit 6
2	Data bit 0	9	Data bit 7
3	Data bit 1	10	ACK#
4	Data bit 2	11	Busy
5	Data bit 3	12	Error
6	Data bit 4	13	Select
7	Data bit 5	14	Auto Feed#

Pin	Signal
15	Fault#
16	INIT#
17	SLCT IN#
18	GND
19	GND
20	GND
21	GND
22	GND
23	GND
24	GND
25	GND

JPRT is a female DB25 (25-hole) parallel port built-in on the motherboard. You can select the mode of parallel port through Setup utility. Refer to *Chapter 3, BIOS Setup* for more details.

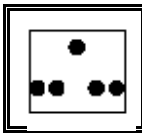
5. USB Connector (JUSB)



Pin	Signal
1	Power
2	USBP0# [USBP1#]
3	USBP0 [USBP1]
4	GND

The USB (Universal Serial Bus) connector, **JUSB,** is a 2-layered connector mounted on the motherboard for connecting up to two USB devices.

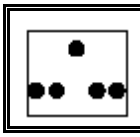
6. Audio Line In Connector (JIN)



Pin	Signal
1	GND
2	Audio Left Out
3	Audio Right Out

JIN is for connecting audio output of peripheral devices such as CD/cassette player.

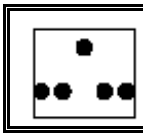
7. Audio Line Out Connector (JOUT)



Pin	Signal
1	GND
2	Audio Left In
3	Audio Right In

JOUT is for connect-ion to an amplifier system or other audio peripheral devices.

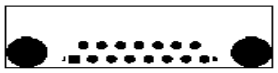
8. Audio Mic In Connector (JMIC)



Pin	Signal
1	GND
2	Mono In
3	Electret Bias Voltage

JMIC is for connection to an external micro-phone.

9. Game/MIDI Port Connector (JGAME)



Pin	Signal	Pin	Signal	Pin	Signal
1	+5V (fused)	5	GND	9	+5V (fused)
2	GP4 (JSBUT0)	6	GP1 (JSY1R)	10	GP6 (JSBUT2)
3	GP0 (JSX1R)	7	GP5 (JSBUT1)	11	GP2 (JSX2R)
4	GND	8	+5V (fused)	12	MIDI-OUTR
				13	GP3 (JSY2R)
				14	GP7 (JSBUT3)
				15	MIDI-INR

JGAME is a 15-pin connector mounted on the motherboard for connection of joystick or MIDI devices.

B

10. CPU Fan 1 Header (JFAN-C)

Pin	Signal
1	GND
2	FAN_CTRL (+12V)
3	FAN_SEN*

JFAN-C becomes active when the system is in suspend mode.

11. CPU Fan 2 Header (Active Heatsink Fan, JFAN)

Pin	Signal
1	GND
2	+12V
3	GND

JFAN becomes active when the system's power is turned on.

12. ATAPI CD Audio Connector (JCD)

Pin	Signal
1	CD_IN-Left
2	GND
3	GND
4	CD_IN-Right

The audio out-put signal of the CD-ROM drive is connected to **JCD**.

13. MPEG Connector (JMPEG)

Pin	Signal
1	CD/MPEG Right Channel Input
2	GND
3	GND
4	CD/MPEG Left Channel Input

JMPEG is for connecting MPEG-I audio in signals.

14. Phone In Jumper (JTEL)

Pin	Signal
1	Telephone In
2	GND
3	GND
4	Telephone Out

This jumper is for connection to an optional modem card to enable the system when a modem phone call is received.

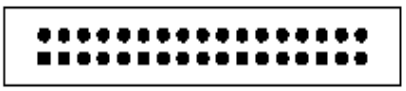
B

15. Wake-on-LAN Jumper (JWOL)

Pin	Signal
1	5V standby
2	Ground
3	MP_Wakeup

Wake-on-LAN is a key manageability feature for corporate systems. WOL jumper allows a management application to remotely power on a computer that is originally turned off.

16. Floppy Drive Connector (JFDD)

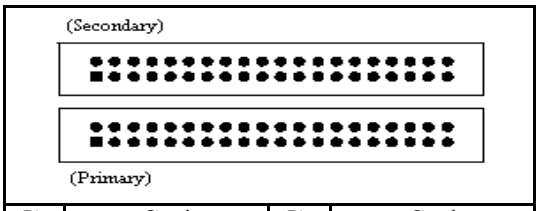


Pin	Signal	Pin	Signal
1	GND	2	DENSEL
3	GND	4	Reserved
5	Key	6	FDEIN
7	GND	8	FDINDX# (Index)
9	GND	10	FDMO0# (Motor Enable A)
11	GND	12	FDDS1# (Drive Select B)
13	GND	14	FDDS0# (Drive Select A)
15	GND	16	FDMO1# (Motor Enable B)
17	MSEN1	18	FDDIR# (Stepper Motor Direction)
19	GND	20	FDSTEP# (Step Pulse)
21	GND	22	FDWD# (Write Data)
23	GND	24	FDWE# (Write Enable)
25	GND	26	FDTRK0# (Track 0)
27	MSEN0	28	FDWPD# (Write Protect)
29	GND	30	FDRDATA# (Read Data)
31	GND	32	FDHEAD# (Side 1 Select)
33	GND	34	DSKCHG# (Diskette Change)

Floppy disk drives are connected to the motherboard by using a 34-pin flat cable to **JFDD.**

17. PCI IDE Connectors (JIDE1, JIDE2)

The PCI-bus IDE type devices are connected to the motherboard by using a 40-pin Daisy-chained cable to **JIDE1** and **JIDE2**. JIDE1 is for the primary IDE connector while JIDE2 is for the secondary IDE connector. Those signals in brackets are signals for the secondary IDE connector.



Pin	Signal	Pin	Signal
1	Reset IDE	2	GND
3	Data 7	4	Data 8
5	Data 6	6	Data 9
7	Data 5	8	Data 10
9	Data 4	10	Data 11
11	Data 3	12	Data 12
13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	GND	20	Key
21	DDRQ0 [DDRQ1]	22	GND
23	I/O Write#	24	GND
25	I/O Read#	26	GND
27	IOCHRDY	28	P_ALE (Cable Select pull-up)
29	DDACK0# [DDACK1#]	30	GND
31	IRQ14 [IRQ15]	32	Reserved
33	Address 1	34	Reserved
35	Address 0	36	Address 2
37	Chip Select 1P# [Chip Select 1S#]	38	Chip Select 3P# [Chip Select 3S#]
39	Activity#	40	GND

B

18. EEPROM Programmer Jumper (JWRT)

Pin	Signal Name
1	Pull up 1K Ohm
2	Ground

This jumper is used for programming EEPROM of the Sound chip.

19. Processor Frequency Ratio Selector Jumper (JCPU)

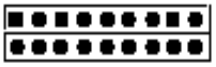
Processor Core Frequency Ratio	1-2	3-4	5-6	7-8
2 (133MHz)	IN	IN	IN	IN
3 (200MHz)	IN	OUT	IN	OUT
4 (266MHz)	OUT	IN	IN	IN
2.5 (166MHz)	IN	IN	OUT	OUT
3.5 (233MHz)	IN	OUT	OUT	OUT
4.5 (300MHz)	OUT	IN	OUT	OUT
2 (133MHz)	OUT	OUT	OUT	OUT
5 (333MHz)	OUT	OUT	IN	IN

JCPU jumper is used to set CPU speed.

20. Front Panel I/O Connectors (JFRONT)

JFRONT provides I/O connections to the following:

- Speaker – Disables or enables on-board speakers. (On-board speakers are a manufacturing option.) Speakers provide error beep code information during POST (Power On Self Test) in the event that the computer cannot use the video interface. Note that the speakers are not connected to the audio subsystem, so, does not receive output form it.
- Hard Drive LED – Indicates that data is being read from or written to IDE devices that are connected through the built-in IDE port.
- Infrared (IrDA) Connector – Provides connection to an IrDA module. If this module is connected, be sure to configure serial port 2 as an IrDA port. (See *Chapter 3, BIOS Setup* for details.)
- Power On Connector – Provides connection to the front panel power switch.



Pin	Signal	*Pin*	**Signal**
1	Vcc	8	Vcc
2	Pull up 330 Ohm 3	9	IRTX
3	Key	10	No Connect
4	No Connect	11	IRR4_Mode
5	IRRX	12	No Connect
6	GND	13	No Connect
7	GND	14	Speaker
		15	Vcc
		16	HD-LED
		17	Power On Switch
		18	GND

- Power LED – Indicates that the system's power is on.

21. Accelerated Graphics Port (JAGP)

Pin	**A**	**B**	**Pin**	**A**	**B**
1	+12V	No Connect	34	Vcc3.3	Vcc3.3
2	No Connect	Vcc	35	AD22	AD21
3	Reserved	Vcc	36	AD20	AD19
4	No Connect	No Connect	37	GND	GND
5	GND	GND	38	AD18	AD17
6	INTA#	INTB#	39	AD16	C/BE2#
7	RST#	CLK	40	Vcc3.3	Vcc3.3
8	GNT1#	REQ#	41	FRAME#	IRDY#
9	Vcc3.3	Vcc3.3	42	Reserved	Reserved
10	ST1	ST0	43	GND	GND
11	Reserved	ST2	44	Reserved	Reserved
12	PIPE#	RBF#	45	Vcc3.3	Vcc3.3
13	GND	GND	46	TRDY#	DEVSEL#
14	No Connect	No Connect	47	STOP#	Vcc3.3
15	SBA1	SBA0	48	No Connect	PERR#
16	Vcc3.3	Vcc3.3	49	GND	GND
17	SBA3	SBA2	50	PAR	SERR#
18	Reserved	SB_STB	51	AD15	C/BE1#
19	GND	GND	52	Vcc3.3	Vcc3.3
20	SBA5	SBA4	53	AD13	AD14
21	SBA7	SBA6	54	AD11	AD12
22	Key	Key	55	GND	GND

23	Key	Key	56	AD9	AD10
24	Key	Key	57	C/BE0#	AD8
25	Key	Key	58	Vcc3.3	Vcc3.3
26	AD30	AD31	59	Reserved	AD_STB0
27	AD28	AD29	60	AD6	AD7
28	Vcc3.3	Vcc3.3	61	GND	GND
29	AD26	AD27	62	AD4	AD5
30	AD24	AD25	63	AD2	AD3
31	GND	GND	64	Vcc3.3	Vcc3.3
32	Reserved	AD_STB1	65	AD0	AD1
33	C/BE3#	AD23	66	SMB0	SMB1

JAGP is a 66-pin slot mounted on the motherboard for connecting AGP card.

22. PCI Bus Connectors (JPCI1, JPCI2, JPCI3, JPCI4)

There are a total of four PCI slots available on the motherboard, namely, **JPCI1**, **JPCI2**, **JPCI3**, and **JPCI4**. However, note that **JPCI4** is a shared slot which means that you can connect a PCI card only if no ISA card is connected on **JISA1** slot.

Pin	A	B	Pin	A	B
1	GND	-12 V	32	AD16	AD17
2	+12 V	GND	33	+3.3 V	C/BE2#
3	+5 V	GND	34	FRAME#	GND
4	+5 V	No Connect	35	GND	IRDY#
5	+5 V	+5 V	36	TRDY#	+3.3 V
6	PIRQ#A	+5 V	37	GND	DEVSEL#
7	PIRQ#C	PIRQ#B	38	STOP#	GND
8	+5 V	PIRQ#D	39	+3.3 V	PLOCK#
9	Reserved	No Connect	40	+5 V	PERR#
10	+5 V (I/O)	Reserved	41	+5 V	+3.3 V
11	Reserved	No Connect	42	GND	SERR#
12	GND	GND	43	PAR	+3.3 V
13	GND	GND	44	AD15	C/BE1#
14	Reserved	Reserved	45	+3.3 V	AD14
15	PCIRST#	GND	46	AD13	GND
16	+5 V (I/O)	CLK	47	AD11	AD12
17	GNT#	GND	48	GND	AD10

Pin	A	B	Pin	A	B
18	GND	REQ#	49	AD09	GND
19	PCI_PM#	+5 V (I/O)	50	Key	Key
20	AD30	AD31	51	Key	Key
21	+3.3 V	AD29	52	C/BE0#	AD08
22	AD28	GND	53	+3.3 V	AD07
23	AD26	AD27	54	AD06	+3.3 V
24	GND	AD25	55	AD04	AD05
25	AD24	+3.3 V	56	GND	AD03
26	AD26	C/BE3#	57	AD02	GND
27	+3.3 V	AD23	58	AD00	AD01
28	AD22	GND	59	+5 V (I/O)	+5 V (I/O)
29	AD20	AD21	60	PU_ACK64#	+5V
30	GND	AD19	61	+5 V	+5 V
31	AD18	+3.3 V	62	+5 V	+5 V

23. ISA Bus Connectors (JISA1, JISA2, JISA3)

There are a total of three ISA slots available on the motherboard, namely, **JISA1**, **JISA2**, **JISA3**. However, note that **JISA1** is a shared slot which means that you can connect an ISA card only if no PCI card is connected on **JPCI4** slot.

B

Pin	B	A	D	C
1	GND	IOCHK#	MEMCS16#	SBHE#
2	BRSTDRV	SD7	IOCS16#	LA23
3	+5 V	SD6	IRQ10	LA22
4	IRQ9	SD5	IRQ11	LA21
5	-5 V	SD4	IRQ12	LA20
6	DRQ2	SD3	IRQ15	LA19
7	-12 V	SD2	IRQ14	LA18
8	ZEROWS#	SD1	DACK0#	LA17
9	+12 V	SD0	DRQ0	MEMR#
10	GND	IOCHRDY	DACK5#	MEMW#
11	SMEMW#	AEN	DRQ5	SD8
12	SMEMR#	SA19	DACK6#	SD9
13	IOW#	SA18	DRQ6	SD10
14	IOR#	SA17	DACK7#	SD11
15	DACK3#	SA16	DRQ7	SD12
16	DRQ3	SA15	+5 V	SD13
17	DACK1#	SA14	RMASTER#	SD14
18	DRQ1	SA13	GND	SD15
19	REFRESH#	SA12		
20	SYSCLK	SA11		
21	IRQ7	SA10		
22	IRQ6	SA9		
23	IRQ5	SA8		
24	IRQ4	SA7		
25	IRQ3	SA6		
26	DACK2#	SA5		
27	TC	SA4		
28	BALE	SA3		
29	+5 V	SA2		
30	OSC1	SA1		
31	GND	SA0		
	Key	Key		