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M768MR, V3.2A
IBXX/September 2000

Notice:

The user must find a properly compatible AGP VGA card in the 133MHz system, because the AGP clock frequency will be over 66MHz.

Table of Contents

Chapter 1

Introduction

This mainboard has a **Socket 370**, which uses an **Intel PPGA (Plastic Pin Grid Array) Celeron** or **FCPGA Pentium III** processor. You can install any one of these processors on the mainboard.

The mainboard supports Socket 370 clock speeds up to **933MHz**. This mainboard supports front-side bus speeds of **66MHz**, **100MHz** or **133MHz**.

This mainboard uses the Intel 440BX chipset which provides **CPU Plug & Play** through firmware. The mainboard has a built-in **PCI 3D Sound System** and a **V.90 Fax/Modem DAA module** is shipped with the mainboard. In addition, the mainboard has a full set of **ATX I/O Ports** including PS/2 keyboard and mouse ports, two USB ports, a parallel port and two serial ports.

This mainboard has all the features you need to develop a powerful multimedia workstation that is network ready, and has built-in communications. The board is **Micro ATX size** and has power connectors for an **ATX** power supply.

Key Features

The key features of this mainboard include:

Socket-370 Processor Support

- Supports **PPGA Celeron** CPUs which provide Pentium II performance with integrated L1 and L2 cache
- **FCPGA Pentium III** CPUs are supported
- Supports 66MHz, 100MHz or 133MHz Front-Side Bus

All processors are automatically configured using firmware and a synchronous Host/DRAM Clock Scheme.

Memory Support

- Two DIMM slots for 168-pin SDRAM memory modules
- Support for 66MHz, 100MHz and 133MHz memory bus
- Maximum installed memory is 2 x 256 MB = 512 MB

Expansion Slots

- One AGP Slot
- Three 32-bit PCI slots
- One 8/16-bit ISA slot

Onboard IDE channels

- Primary and Secondary PCI IDE channels
- Support for PIO (programmable input/output) modes
- Support for Multiword DMA modes
- Support for Bus Mastering and Ultra DMA 33/66 (optional) modes

Power Supply and Power Management

- ATX power supply connector
- ACPI and previous PMU support, suspend switch, keyboard power on/off
- Supports Wake on Modem, Wake on LAN and Wake on Alarm

Sound System

- Complies with the PC98 audio specification
- 16-bit CODEC for full-duplex playback and recording
- HRTF 3D professional audio supports both Direct Sound 3D® and A3D®-compatible interfaces plus support for **4-channel speakers**
- Driver support for MS-DOS, Microsoft Windows 95/98/2000/NT 4.0
- Built-in 32ohm earphone buffer and 3D surround sound
- Provides MPU-401 Game/MIDI port and legacy Sound Blaster 16 support
- Downloadable Wave-table Synthesizer supports Direct Music®
- Stereo Mixer supports analog mixing from CD-Audio and Line In or digital mixing from voice, FM/Wave-table and digital CD-Audio

Onboard I/O Ports

- Provides PC99 Color Connectors for easy peripheral device connections
- Floppy disk drive connector with 1Mb/s transfer rate
- Two serial ports with 16550-compatible fast UART
- One parallel port with ECP and EPP support
- Two USB ports
- Two PS/2 ports for keyboard and mouse
- One infrared header for optional module

Hardware Monitoring

- Built-in hardware monitoring for CPU & System temperatures, fan speeds and mainboard voltages

Fax/Modem DAA Module

- **56 Kbps Fax/Modem DAA module**
- Supports V.90, V.34, V.32bis, V.32, V.22bis, V.22
- Supports Auto Fallback and MNP 5, V.42bis data compression with 115,200-compatible Virtual UART
- Requires 16MB RAM and Microsoft Windows 95/98/NT

Onboard Flash ROM

- Automatic CPU and board configuration
- Supports Plug and Play configuration of peripheral devices and expansion cards
- Built-in virus protection using **Trend's ChipAwayVirus** provides boot process virus protection.

Bundled Software

- **PC-Cillin** provides automatic virus protection under Windows 95/98
- **SuperVoice** is data, fax and voice communication software
- **Gamut2000** provides professional audio features included MP3 encoding/playback
- **MediaRing Talk** provides PC to PC or PC to Phone internet phone communication
- **3Deep** delivers the precise imagery and displays accurate color in your monitor
- **Corel WordPerfect Suite 8** is an office application suite under Windows® (optional)
- **WinDVD** is a DVD playback application (optional)

Dimensions

- Micro ATX form factor (24.4cm x 22cm)

Package Contents

Your mainboard package ships with the following items:

- The mainboard
- This User's Guide
- 1 UDMA/66 IDE cable
- 1 Floppy disk drive cable
- 1 Fax/Modem DAA module
- Support software on CD-ROM disk

Static Electricity Precautions

Components on this mainboard can be damaged by static electricity. Take the following precautions when unpacking the mainboard and installing it in a system.

1. Keep the mainboard and other components in their original static-proof packaging until you are ready to install them.
2. During installation, wear a grounded wrist strap if possible. If you don't have a wrist strap, discharge static electricity by touching the bare metal of the system chassis.
3. Handle the mainboard carefully by the edges. Avoid touching the components unless it is absolutely necessary. During installation put the mainboard on top of the static-protection packaging it came in with the component side facing up.

Pre-Installation Inspection

1. Inspect the mainboard for damage to the components and connectors on the board.
2. If you suspect that the mainboard has been damaged, do not connect power to the system. Contact your mainboard vendor and report the damage.

Chapter 2

Mainboard Installation

To install this mainboard in a system, follow the procedures in this chapter:

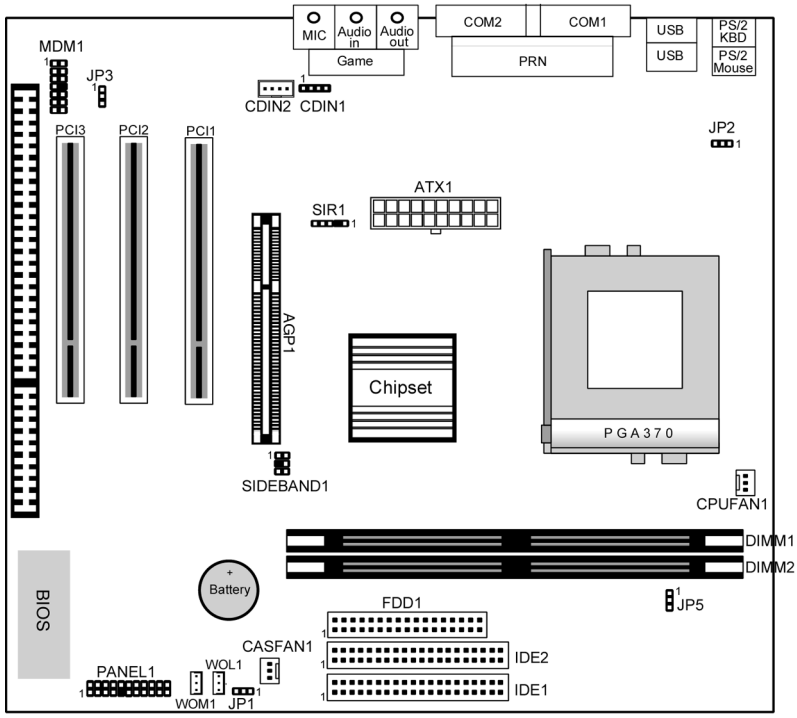
- Identify the mainboard components
- Install a CPU
- Install one or more system memory modules
- Verify that any jumpers or switches are set correctly
- Install the mainboard in a system chassis (case)
- Connect any extension brackets or cables to the mainboard connector headers
- Install any other devices and make the appropriate connections to the mainboard connector headers.

Note:

1. Before installing this mainboard, make sure jumper JP1 is set to Normal, the default setting is set to Clear CMOS. See this chapter for information on locating JP1 and the setting options.
2. Never connect power to the system during installation. Doing so may damage the mainboard.

Mainboard Components

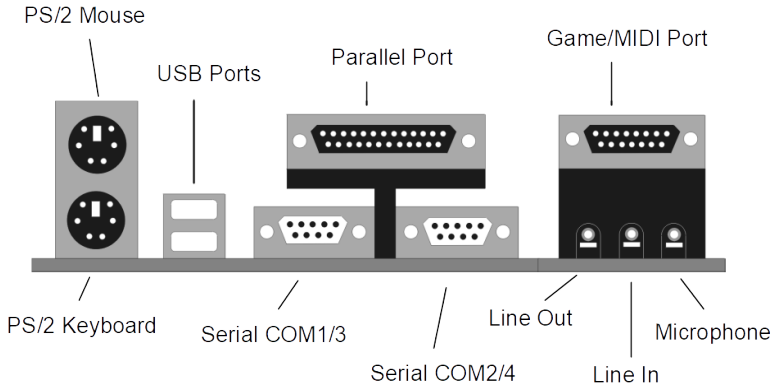
Use the diagram below to identify the major components on the mainboard.



Note: Any jumpers on your mainboard that do not appear in this illustration are for testing only.

I/O Ports

The illustration below shows a side view of the built-in I/O ports on the mainboard.



Install A CPU

This mainboard has a Socket-370 which supports Celeron PPGA and FCPGA Pentium III processors.

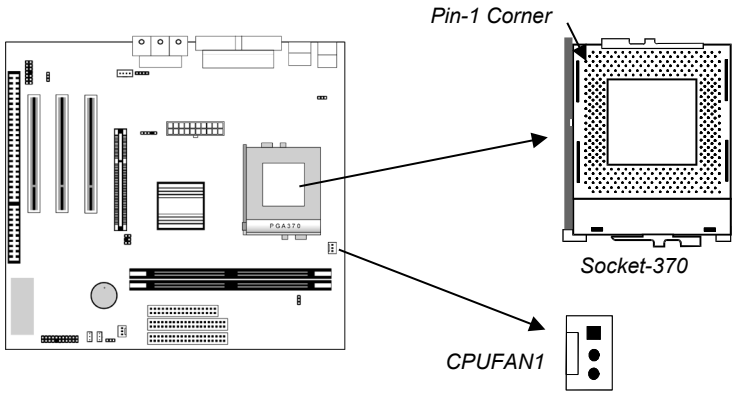
Do not try to install a Socket 7 processor in the Socket-370. A Socket 7 processor such as the Pentium-MMX, or the AMD K5/K6 does not fit in the Socket 370.
The following list notes the processors that are currently supported by this mainboard.

FCPGA Pentium III: 500~933MHz, FSB: 100MHz, 133MHz
PPGA Celeron: 300~600MHz, FSB: 66 MHz

Installing a Socket-370 Processor

A processor installs into the ZIF (Zero Insertion Force) Socket-370 on the mainboard.

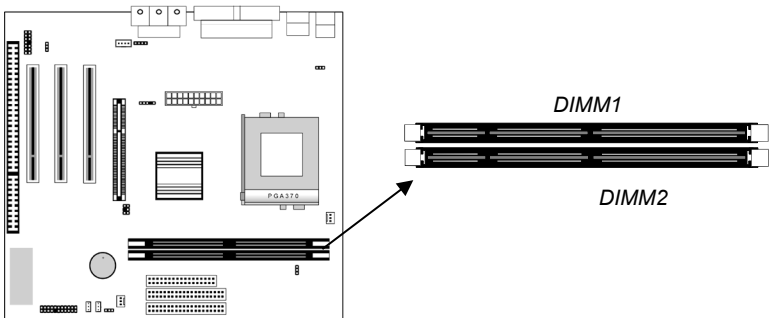
1. Locate the Socket-370 and CPUFAN1. Pull the locking lever out slightly from the socket and raise it to the upright position.



2. On the processor, identify the Pin-1 corner by its beveled edge.
3. On the Socket-370, identify the Pin-1 corner. The Pin-1 corner is at the end of the locking lever when it is locked.
4. Match the Pin-1 corners and insert the processor into the socket. No force is required and the processor should drop into place freely.
5. Swing the locking lever down and hook it under the catch on the side of the socket. This secures the CPU in the socket.
6. All processors should be installed with a combination heatsink/ cooling fan, connect the cable from the fan to the CPU fan power connector CPUFAN1.

Install Memory

The mainboard has two DIMM sockets for system memory modules. You must install at least one memory module in order to use the mainboard.



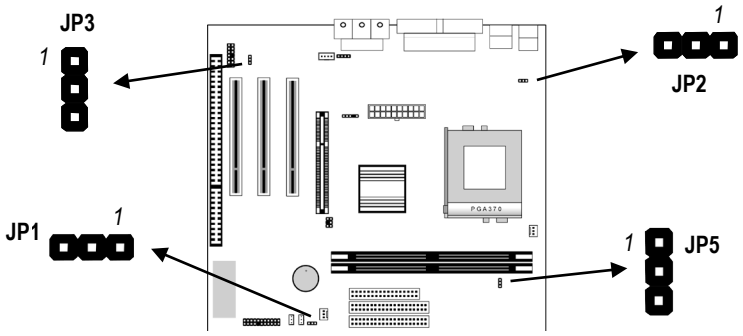
For this mainboard, you must use 168-pin, 3.3V unbuffered SDRAM memory modules. If the installed CPU uses a 100MHz system bus, you must use PC100 or PC133 memory. If the installed CPU uses a 66MHz system bus, you must use PC66 memory. You can install any size memory module from 8 MB to 256MB, so the maximum memory size is 2 x 256MB = 512 MB.

The edge connectors on the memory modules have cut outs, which coincide with spacers in the DIMM sockets so that memory modules can only be installed in the correct orientation.

To install a module, push the retaining latches at either end of the socket outwards. Position the memory module correctly and insert it into the DIMM socket. Press the module down into the socket so that the retaining latches rotate up and secure the module in place by fitting into notches on the edge of the module.

Setting Jumper Switches

Jumpers are sets of pins which can be connected together with jumper caps. The jumper caps change the way the mainboard operates by changing the electronic circuits on the mainboard. If a jumper cap connects two pins, we say the pins are SHORT. If a jumper cap is removed from two pins, the pins are OPEN.



Jumper JP1: Clear CMOS Memory

Use this jumper to clear the contents of the CMOS memory. You may need to clear the CMOS memory if the settings in the Setup Utility are incorrect and prevent your mainboard from operating. To clear the CMOS memory, disconnect all the power cables from the mainboard and then move the jumper cap into the CLEAR setting for a few seconds.

Function	Jumper Setting
Normal Operation	Short Pins 1-2
Clear CMOS Memory	Short Pins 2-3

Jumper JP2: Keyboard Power On Selector

If you enable the keyboard power on feature, you can use hot keys on your keyboard as a power on/off switch for the system.
Note: *The system must provide 1A on the +5VSB (+5V Standby) signal before using the Keyboard Power On function.*

Function	Jumper Setting
Enable Keyboard Power On	Short Pins 1-2
Disable Keyboard Power On	Short Pins 2-3

Jumper JP3: Audio System Enable/disable Jumper

This 3-pin jumper can be used to enable or disable the onboard audio system. If you prefer to install a different audio system on a third party expansion card, you must disable the onboard audio in order to free up resources for the alternate sound card.

Function	Jumper Cap
Enable audio system	Short pins 1-2
Disable audio system	Short pins 2-3

Jumper JP5: 133 MHz System Bus Selector

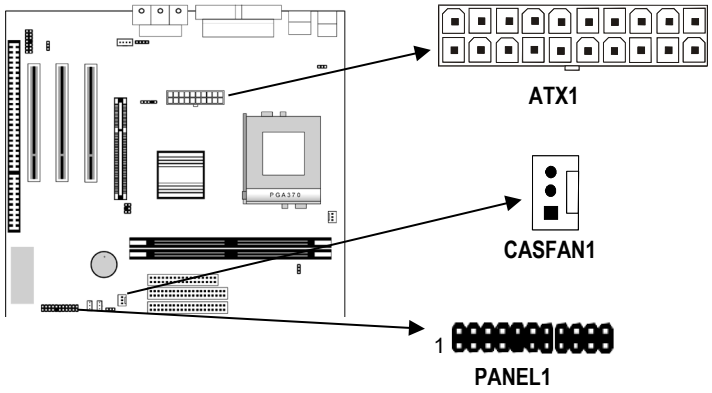
Use this jumper to set the 133 MHz system bus frequency or not.

Function	Jumper Setting
66/100 MHz	Short Pins 1-2
133 MHz	Short Pins 2-3

Install the Mainboard

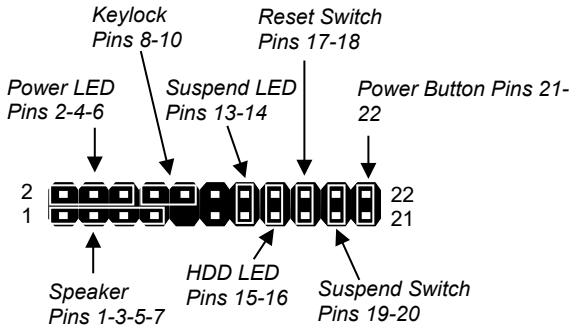
Install the mainboard in a system chassis (case). The board is a micro-ATX size mainboard with a twin-tier of I/O ports. You can install this mainboard in any ATX case. Special micro-ATX cases are also available with a reduced number of expansion slot bays and a smaller power supply unit. Ensure that your case has an I/O cover plate that matches the ports on this mainboard.

Install the mainboard in a case. Follow the instructions provided by the case manufacturer using the hardware and internal mounting points on the chassis.



1. Connect the power connector from the power supply to the **ATX1** connector on the mainboard.
2. If there is a cooling fan installed in the system chassis, connect the cable from the cooling fan to the **CASFAN1** fan power connector on the mainboard.
3. Connect the case switches and indicator LEDs to the **PANEL1** switch and LED connector header.

See the illustration below for a guide to the PANEL1 connector pin assignments.



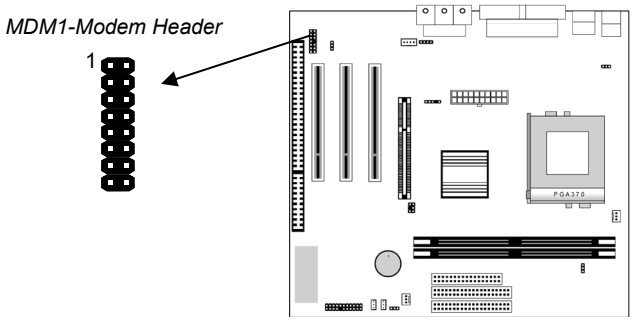
Install the Extension Brackets

The extension brackets are used to connect features on the mainboard to external connectors that can be attached to the system chassis. Follow the steps below to install the extension brackets.

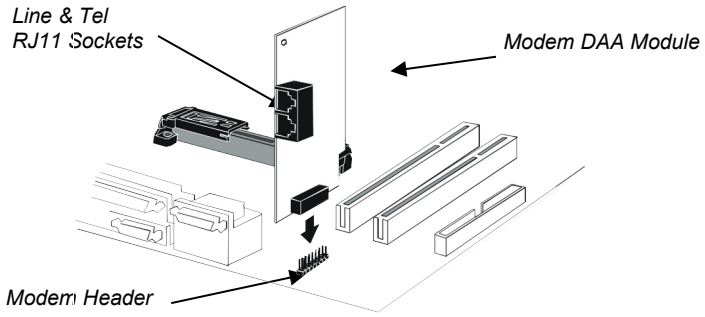
Note: *All the ribbon cables used on the extension brackets have a red stripe on the Pin-1 side of the cable.*

Fax/Modem Module

The Fax/Modem DAA module plugs directly into the mainboard in line with to an expansion slot opening in the system chassis. When you remove the slot cover from the system chassis, you can access the LINE and TEL RJ11 connectors on the metal edge of the Fax/ Modem DAA module.

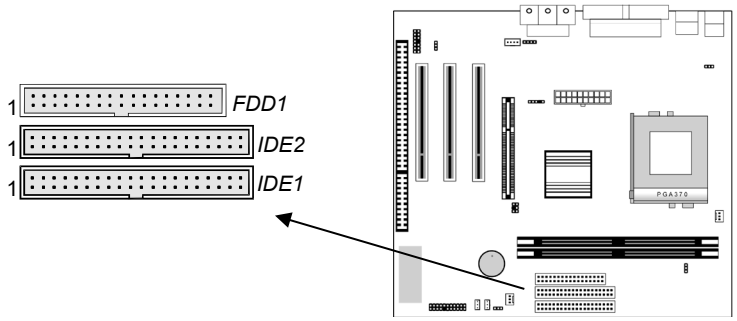


1. Locate the MDM1 modem header on the mainboard.
2. Plug the Fax/Modem DAA module into the header.
3. Remove the modem header slot cover.



Install Other Devices

Install and connect any other devices in the system following the steps below.



Floppy Disk Drive

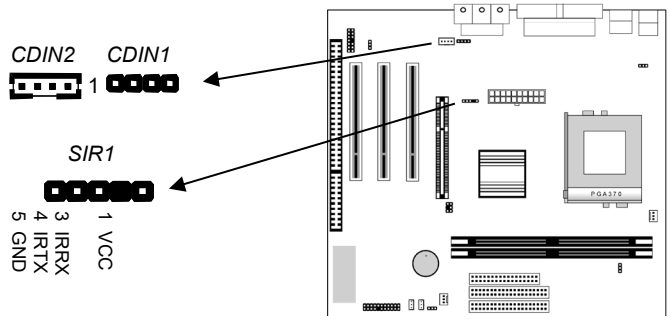
The mainboard ships with a floppy disk drive cable that can support one or two drives. Drives can be 3.5" or 5.25" wide, with capacities of 360K, 720K, 1.2MB, 1.44MB, or 2.88MB.
Install your drives and connect power from the system power supply. Use the cable provided to connect the drives to the floppy disk drive header **FDD1**.

IDE Devices

IDE devices include hard disk drives, high-density diskette drives, and CD-ROM or DVD-ROM drives, among others.
The mainboard ships with an IDE cable that can support one or two IDE devices. If you connect two devices to a single cable, you must configure one of the drives as Master and one of the drives as Slave. The documentation of the IDE device will tell you how to configure the device as a Master or Slave device. The Master device connects to the end of the cable.
Install the device(s) and connect power from the system power supply. Use the cable provided to connect the device(s) to the Primary IDE channel connector **IDE1** on the mainboard.
If you want to install more IDE devices, you can purchase a second IDE cable and connect one or two devices to the Secondary IDE channel connector **IDE2** on the mainboard. If you have two devices on the cable, one must be Master and one must be Slave.

Internal Sound Connections

If you have installed a CD-ROM drive or DVD-ROM drive, you can connect the drive audio cable to the onboard sound system. On the mainboard, locate the two 4-pin connectors CDIN1/2. There are two kinds of connector because different brands of CD-ROM drive have different kinds of audio cable connectors. Connect the cable to the appropriate connector.



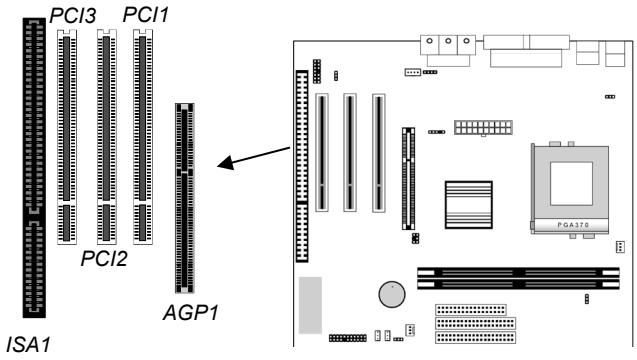
Infrared Port

You can connect an infrared port to the mainboard. You can purchase this option from third-party vendors.

1. Locate the infrared port SIR1 header on the mainboard.
2. If you are adding an infrared port, connect the ribbon cable from the port to the SIR1 header and then secure the port to an appropriate place in your system chassis.

Expansion Slots

This mainboard has one AGP slot, three 32-bit PCI expansion slots and one 8/16-bit ISA slot. The PCI slot PCI3 and the ISA slot ISA1 are shared slots. This means that you can use either one of these slots, but not both of them at the same time. The two slots correspond to the same expansion card opening in the system case.



Follow the steps below to install an add-in card to one of the slots.

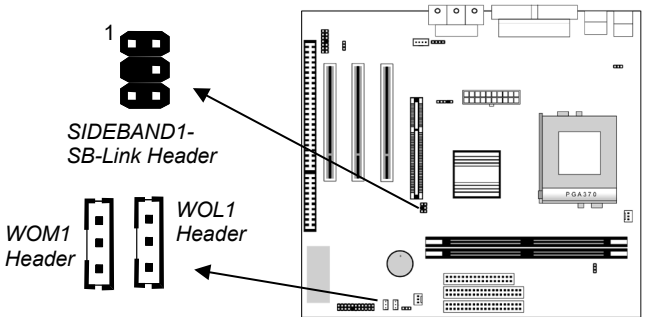
1. Determine which slot you need to use. The table below shows the functions of the slots.

AGP	AGP stands for Accelerated Graphics Port. Use this slot to install a graphics adapter which has an AGP edge connector.
PCI	PCI stands for Peripheral Components Interconnect. Use this slot to install current add-in cards which have a 32-bit PCI edge connector.
ISA	ISA stands for Industry Standard Architecture. Use this slot to install older, legacy add-in cards which have an 8/16-bit ISA edge connector.

2. Locate the ISA or PCI or AGP slot on the mainboard.
3. Remove the blanking plate from the appropriate expansion slot on the system chassis.
4. Install the edge connector of the expansion card into the slot and press it quite firmly down so that it is seated correctly.
5. Secure the bracket of the card into the expansion slot in the system chassis using the screw that held the blanking plate in place.

Add-In Card Options

This mainboard has a Wake On LAN and a Wake On Modem connectors that can be used by an installed network adapter and an installed modem adapter. It also has a SB-Link connector that can be used by an installed PCI Sound Blaster audio card.



Wake On LAN (WOL)

You can configure your system so that it powers down by software and can be resumed by alarms. If you have installed a LAN adapter expansion card, connect the card to the Wake On LAN header WOL1. This allows incoming traffic to resume the system from a software power down. You need to enable this feature in the system setup utility.

Wake On Modem (WOM)

If you have installed a fax/modem card, connect the fax/modem to the Wake On Modem header WOM1. You can then use the setup utility to program your computer to resume from a power saving mode whenever there is an incoming call to the fax/modem.

SB-Link

If you have disabled the built-in sound system and installed a PCI Sound Blaster audio card, you can connect the card to the SIDEBAND1 header on the mainboard. The SB-Link circuit solves some problems that can occur when you try to play some older computer games which run in the DOS real-mode environment.

Chapter 3

BIOS Setup Utility

Introduction

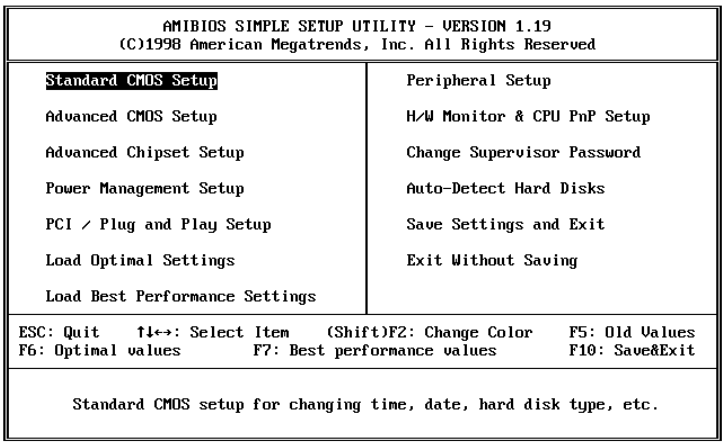
The BIOS Setup Utility records settings and information about your computer such as the date and time, the kind of hardware installed, and various configuration settings. Your computer uses this information to initialize all the components when booting up and functions as the basis for coordination between system components.

If the Setup Utility configuration is incorrect, it may cause the system to malfunction. It can even stop your computer from booting properly. If this happens, you can use the clear CMOS jumper to clear the CMOS memory used to store the configuration information, or you can hold down the **Page Up** key while you reboot your computer. Holding down the **Page Up** key also clears the CPU PnP Setup information, you may need to set the CPU speed again.

You can run the setup utility and manually make changes to the configuration. You might need to do this to configure some of the hardware that you install on or connect to the mainboard, such as the CPU, system memory, disk drives, etc.

Running the Setup Utility

Each time your computer starts, before the operating system loads, a message appears on the screen that prompts you to "*Hit <DEL> if you want to run SETUP*". When you see this message, press the **Delete** key and the Main menu page of the Setup Utility appears on your monitor.



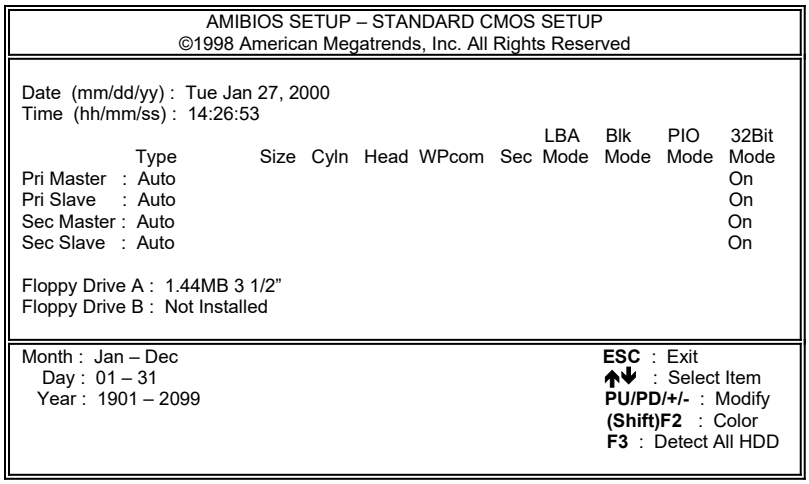
You can use the cursor arrow keys to highlight any of the options on the main menu page. Press **Enter** to select the highlighted option. To leave the setup utility, press the **Escape** key. To cycle through the Setup Utility's optional color schemes hold down the **Shift** key and press **F2**.

Some of the options on the main menu page lead to tables of items with installed values. In these pages, use the cursor arrow keys to highlight the items, and then use the **PgUp** and **PgDn** keys to cycle through the alternate values for each of the items. Other options on the main menu page lead to dialog boxes which require you to answer Yes or No by hitting the **Y** or **N** keys.

If you have already made changes to the setup utility, press **F10** to save those changes and exit the utility. Press **F5** to reset the changes to the original values. Press **F6** to install the setup utility with a set of default values. Press **F7** to install the setup utility with a set of high-performance values.

Standard CMOS Setup Page

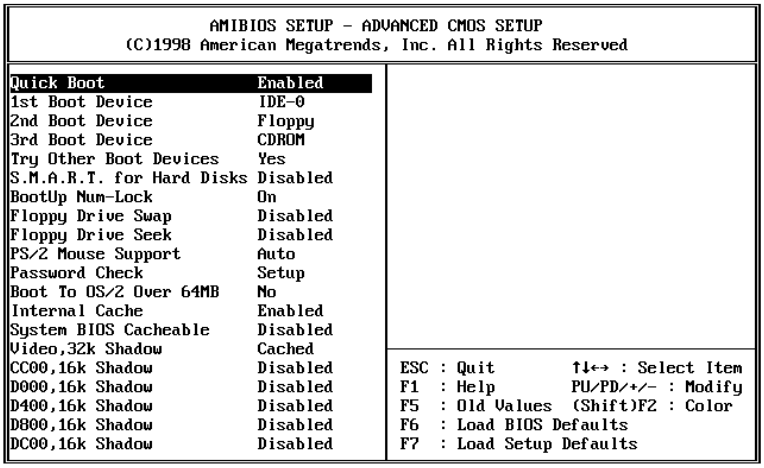
Use this page to set basic information such as the date and time, the IDE devices, and the diskette drives. If you press the F3 key, the system will automatically detect and configure the hard disks on the IDE channels.



Date & Time	Use these items to set the system date and time
Pri Master **Pri Slave** **Sec Master** **Sec Slave**	Use these items to configure devices connected to the Primary and Secondary IDE channels. To configure an IDE hard disk drive, choose *Auto*. If the *Auto* setting fails to find a hard disk drive, set it to *User*, and then fill in the hard disk characteristics (Size, Cyls, etc.) manually. If you have a CD-ROM drive, select the setting *CDROM*. If you have an ATAPI device with removable media (e.g. a ZIP drive or an LS-120) select *Floptical*.
Floppy Drive A **Floppy Drive B**	Use these items to set the size and capacity of the floppy diskette drive(s) installed in the system.

Advanced CMOS Setup Page

Use this page to set more advanced information about your system. Take some care with this page. Making changes can affect the operation of your computer.

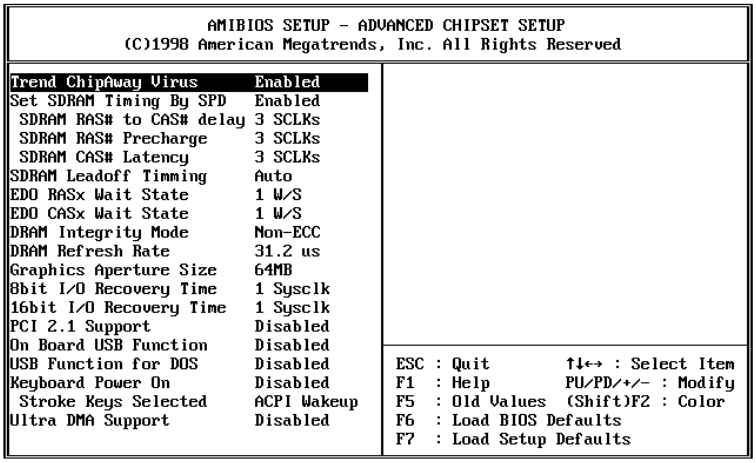


Quick Boot	If you enable this item, the system starts up more quickly be elimination some of the power on test routines.
1st Boot Device **2nd Boot Device** **3rd Boot Device**	Use these three items to determine the order and priority that your computer follows to load an operating system at start-up time.
Try Other Boot Device	If you enable this item, the system will also search for other boot devices if it fails to find an operating system from the first three locations.
S.M.A.R.T. Capability	Enable this item if your hard disk(s) supports SMART (Self-Monitoring, Analysis and Reporting Technology).
BootUp Num-Lock	This item determines if the Num Lock key is active or inactive at system start-up time.
Floppy Drive Swap	If you have two diskette drives installed and you enable this item, drive A becomes drive B and drive B becomes drive A.

Floppy Drive Seek	If you enable this item, your system will check the diskette drives at start up time. Disable this item unless you are using an old 360K diskette drive.
PS/2 Mouse Support	Set this item to auto so that it will automatically detect if you are using a mouse with a PS/2 interface.
Password Check	If you have installed a password on your system, use this item to determine if the password is required to enter the setup utility (*Setup*) or required at start-up time and to enter the setup utility (*Always*).
Boot To OS/2 Over 64MB	Enable this item if you are booting the OS/2 operating system and you have more than 64MB of memory installed.
Internal Cache	Leave this item enabled since all the processors that can be installed on this board have internal cache memory.
System BIOS Cacheable	If you enable this item, a segment of the system BIOS will be cached to main memory for faster execution.
Video, 32k Shadow	If you enable this item, 32k of the video BIOS is cached to main memory for faster execution.
XXXX, 16k Shadow	These items allow 16k segments of the BIOS of other devices to be cached to main memory for faster execution.

Advanced Chipset Setup Page

This page lets you set some of the timing parameters for the system.



Trend ChipAway Virus	This mainboard has built-in virus protection in the firmware. Use this item to enable or disable the built-in virus protection.
SDRAM Items	The five items which define the timing for SDRAM memory are pre-installed with fixed values and you cannot change them.
EDO RASx Wait State	This item sets wait states for the Row Address Strobe (RAS) for installed EDO RAM memory.
EDO CASx Wait State	This item sets wait states for the Column Address Strobe (CAS) for installed EDO RAM memory.
DRAM Integrity Mode	Use this item to define the kind of error correction supported by the memory that you have installed.
DRAM Refresh Rate	Use this item set the refresh rate for the installed DRAM.
Graphics Aperture Size	This item defines an aperture for the graphics. Leave this item at the default value 64 MB.
8/16-bit I/O Recovery Time	These two items set the timing parameters for legacy 8-bit and 16-bit ISA expansion cards. Leave these items at the default value.

PCI 2.1 Support	Enable this item to support compliance with thw PCI specification version 2.1
On Board USB Function	Enable this item if you plan on using the USB (Universal Serial Bus) ports integrated on this mainboard.
USB Function for DOS	Enable this item if you plan on using the USB ports while working in the DOS environment.
Keyboard Power On	Your system can enter a software power down. If you enable this item, you can resume the system by pressing hot keys on the keyboard. You must be using an ATX power supply and enable jumper JP2 in order to use this feature.
Stroke Keys Selected	If you have enabled the Keyboard Power On, use this item to select the hot keys to power on the system.
Ultra DMA Support	Enable this item if your IDE hard disk drives support Ultra DMA

Power Management Setup Page

This page sets some of the parameters for the system power management operation.

AMIBIOS SETUP – POWER MANAGEMENT SETUP
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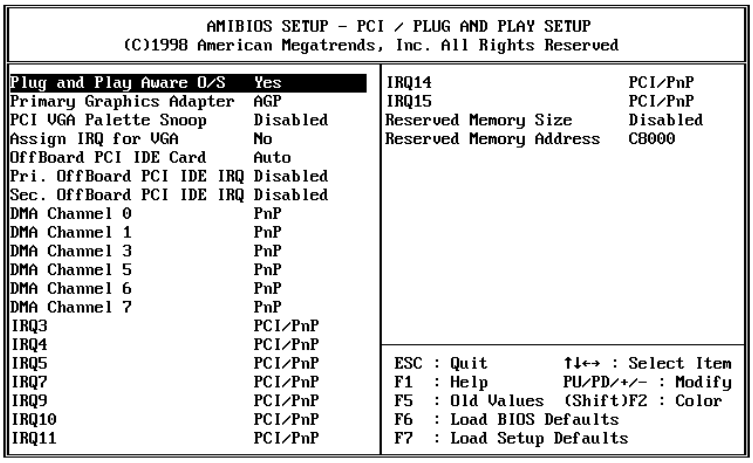
Power Management/APM	Disabled	RTC Alarm Minute	30
Green Monitor Power State	Suspend	RTC Alarm Second	30
Video Power Down Mode	Stand By		
Hard Disk Power Down Mode	Suspend		
Standby Time Out (Minute)	Disabled		
Suspend Time Out (Minute)	Disabled		
Display Activity	Ignore		
Serial port 1	Monitor		
Serial port 2	Monitor		
Parallel port	Ignore		
Floppy disk	Monitor		
Primary master IDE	Monitor		
Primary slave IDE	Ignore		
Secondary master IDE	Monitor		
Secondary slave IDE	Ignore		
RTC Alarm Power On	Disabled	ESC : Quit	↑↓←→ : Select Item
LAN Resume From Soft Off	Disabled	F1 : Help	PU/PD/+/- : Modify
RTC Alarm Power On	Disabled	F5 : Old Values	(Shift)F2 : Color
RTC Alarm Date	15	F6 : Load Optimal values	
RTC Alarm Hour	12	F7 : Load Best performance values	

Power Management/APM	Use this item to enable or disable the power management routines. If you enable the power management, you can use the items below to set the power management operation.
Green Monitor Power State	This item defines which power-saving mode is required to trigger the power management operations of a green monitor.
Video Power Down Mode	This item defines which power-saving mode is required to power down the monitor.
Hard Disk Power Down Mode	This item defines which power-saving mode is required to power down the hard disk drive.
Standby Time Out (Minute)	This sets the timeout for standby mode in minutes. If the time selected passes without any system activity, the computer will enter the power-saving standby mode.
Suspend Time Out (Minute)	This sets the timeout for suspend mode in minutes. If the time selected passes without any system activity, the computer will enter the power-saving suspend mode.

Display Activity	If you set this item to Monitor, any activity on the display will reset the timers for the power-saving timeouts.
Serial Port 1	If you set this item to Monitor, any activity on the serial port 1 will reset the timers for the power-saving timeouts.
Serial Port 2	If you set this item to Monitor, any activity on the serial port 2 will reset the timers for the power-saving timeouts.
Parallel port	If you set this item to Monitor, any activity on the parallel port will reset the timers for the power-saving timeouts.
Primary master/ slave IDE	If you set these items to Monitor, any activity on devices on the primary IDE channel will reset the timers for the power-saving timeouts.
Secondary master/ slave IDE	If you set these items to Monitor, any activity on devices on the primary IDE channel will reset the timers for the power-saving timeouts.
Ring Resume From Soft Off	If you enable this item, incoming calls to the fax/ modem can resume the system from a power-saving mode or a software power down.
LAN Resume From Soft Off	If you enable this item, network traffic to the LAN adapter can resume the system from a power-saving mode or a software power down.
RTC Alarm Power On	If you enable this item you can set an alarm on the system realtime clock that will resume the system from a power-saving mode or a software power down.
RTC Alarm Date / Hour / Minute / Second	If you have enabled the RTC Alarm Power on, use these items to set the time and date of the alarm.

PCI / Plug and Play Setup Page

This page sets some of the parameters for devices installed on the system PCI bus, and devices that use the system plug and play capability.



Plug and Play Aware O/S	Enable this item if you are using an O/S that supports Plug and Play such as Windows 95 or 98.
Primary Graphics Adapter	Use this item to define if your primary graphics adapter is installed in a PCI slot or on an AGP bus.
PCI VGA Palette Snoop	When this item is enabled, multiple VGA devices operating on different buses can handle data from the CPU on each set of palette registers on every video device.
Assign IRQ for VGA	If this item is enabled, an IRQ will be assigned to the VGA graphics system. We recommend that you set this value to No.
Offboard PCI IDE Card	If you are using an IDE interface add-in card, use this item to define which PCI slot the card is installed in. Leave this item at Auto for automatic detection.

Pri. / Sec. Offboard PCI IDE IRQ	If you are using an IDE interface add-in card, use these items to assign an IRQ to the primary and secondary IDE channels.
DMA Channel X	If you set this to PnP, the system will dynamically allocate DMA channels as they are required. If you set a DMA channel to ISA/EISA, it will be reserved for a non-plug and play ISA or EISA device.
IRQ X	If you set this to PCI/PnP, the system will dynamically allocate IRQs as they are required. If you set an IRQ to ISA/EISA, it will be reserved for a non-plug and play ISA or EISA device.
Reserved Memory Size	This item lets you reserve a block of memory for any device that requires it.
Reserved Memory Address	This item lets you set the address for any block of memory that has been reserved.

Load Optimal Settings

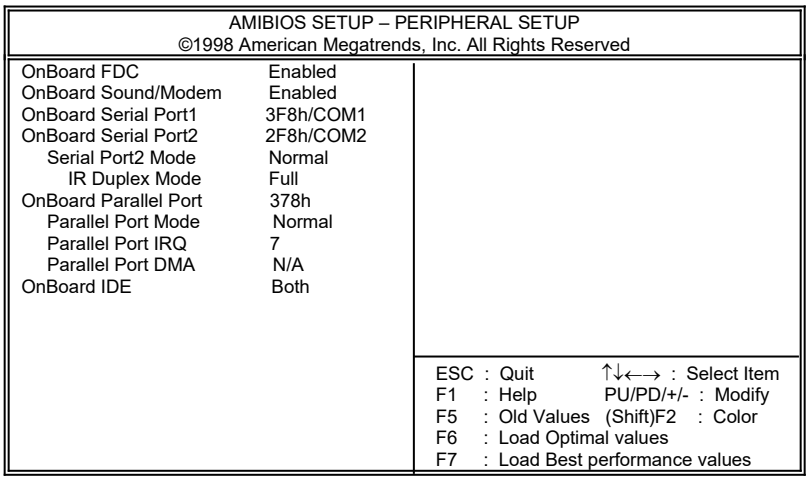
If you select this item and press **Enter** a dialog box appears. If you press **Y**, and then **Enter**, the setup utility is loaded with a set of optimal default values. The optimal default values are not very demanding and they should allow your system to function with most kinds of hardware and memory chips.

Load Best Performance Settings

If you select this item and press **Enter** a dialog box appears. If you press **Y**, and then **Enter**, the setup utility is loaded with a set of best-performance default values. The optimal default values are quite demanding and your system might not function properly if you are using slower memory chips or other kinds of low-performance components.

Peripheral Setup Page

This page sets some of the parameters for peripheral devices installed on the system.

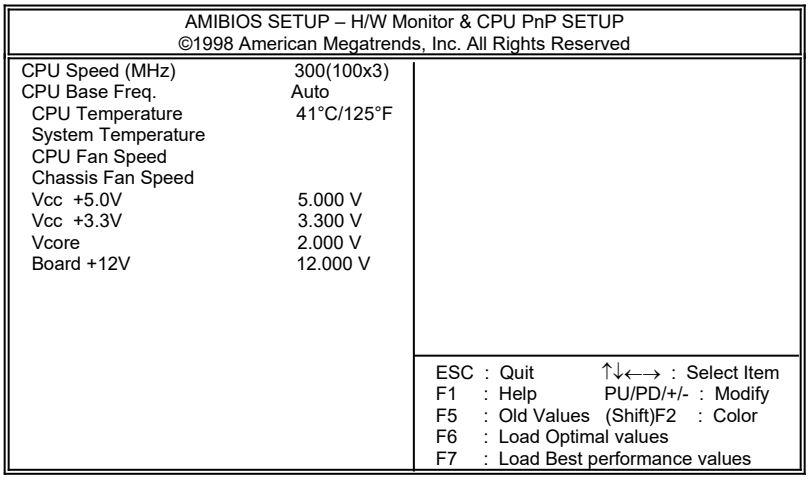


Onboard FDC	Use this item to enable or disable the onboard floppy disk drive interface.
Onboard Sound/ Modem	Use this item to enable or disable the onboard audio/modem chip.
Onboard Serial Port1	Use this item to enable or disable the onboard serial port COM1/3, and to assign a port address.
Onboard Serial Port2	Use this item to enable or disable the onboard serial port COM2/4, and to assign a port address.
Serial Port2 Mode	Use this item to allocate the resources of the second serial port. Under Normal, the resources are allocated to the onboard serial port. Under ASKIR or IrDA, the resources are allocated to the onboard IR port.
IR Duplex	Use this item to define if the optional infrared port is full-duplex or half-duplex.
Onboard Parallel Port	Use this item to enable or disable the onboard parallel port LPT1, and to assign a port address

Parallel Port Mode	Use this item to determine the parallel port mode. You can select Normal, ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or Bi-Dir.
Parallel Port IRQ	Use this item to assign an IRQ to the parallel port.
Parallel Port DMA	Use this item to assign a DMA channel to the parallel port.
Onboard IDE	Use this item to enable or disable either of the two onboard IDE channels, Primary or Secondary.

Hardware Monitor & CPU PnP Setup Page

This page lets you set the parameters for hardware monitoring and manually or automatically configure the mainboard for the CPU.



CPU Speed	Use this item to set the internal clock speed of your CPU.
CPU Base Freq.	Use this item to sets the external clock frequency for the CPU. The options include Auto, 100 and 133MHz. Set the CPU clock based on the requirements of the CPU installed on the board.
CPU / System Temperature	Use these items to monitor the threshold temperature for the CPU and system.
FAN Speeds, voltages	Use these items to monitor the parameters for the fan speeds and the mainboard voltages.

Change Supervisor Password

If you highlight this item and press **Enter**, a dialog box appears which lets you enter a Supervisor password. You can enter no more than six letters or numbers. Press **Enter** after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press **Enter** after you have retyped it correctly. The password is required at boot time, or when the user enters the setup utility.

Change or Remove the Password

Highlight this item and type in the current password. At the next dialog box, type in the new password, or just press Enter to disable password protection.

Auto-Detect Hard Disks

This item automatically detects and installs any hard disk drives installed on the primary and secondary IDE channel. Most modern drives can be detected. If you are using a very old drive that can't be detected, you can install it manually.

Setup will check for two devices on the primary IDE channel and then two devices on the secondary IDE channel. At each device, the system will flash an N in the dialog box. Press **Enter** to skip the device and proceed to the next device. Press **Y**, then **Enter** to tell the system to auto-detect the device.

Save Settings and Exit

Highlight this item and press **Enter** to save the changes that you have made in the setup utility and exit the setup program. When the Save and Exit dialog box appears, press **Y** to save and exit, or press **N** to return to the setup main menu.

Exit Without Saving Option

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

Chapter 4

Software & Applications

Introduction

The support software CD-ROM that is included in the mainboard package contains all the drivers and utility programs needed to properly run our products. Below you can find a brief description of each software program, and the location for your mainboard version. More information on some programs is available in a README file, located in the same directory as the software.
If the operating system used in your system is Windows 98, it will automatically install all the drivers and utilities for your board. See the Auto-Installing under Windows 98 section.

Installing Support Software

The software on the support CD-ROM is for Windows 95/NT/2000 and Windows 98. The installation procedure differs depending on which Operating System you have, but the automatic installation is now for Win98 only.

Installing under Windows 95/NT/2000

To install support software for Windows 95/NT/2000 follow this general procedure:

1. Insert the support CD-ROM disc in the CD-ROM drive.

(The system might get an error message from the PnP function. Don't care the message. You don't really need that file to install the drivers)

2. Use My Computer or Windows Explorer to look at the directory structure. You must use the Open command in the right-button menu. Double-clicking on the drive icon will result in an error message because the disc's AutoRun feature doesn't work in Windows 95/NT/2000.
3. Execute the EXE file name given in the description below.

Note: *The correct path name for each software driver is provided, where* ***D:*** *identifies the CD-ROM drive letter – modify if necessary.*

Bus Master IDE Driver

The IDE Bus Master Drivers allows the system to properly manage the IDE channels on the mainboard. You need to install an IDE driver if you are running Windows 95/NT 4.0.

- Windows 95 – D:\IDE\IntelBX\WIN95\SETUP.EXE
- Windows NT4.0 – D:\IDE\IntelBX\NT40

USB Driver

The USB Driver allows the system to recognize the USB ports on the mainboard. You need to install this driver if you are running Windows 95. Windows 95 OSR2 does not require this driver. This driver is available for:

- Win95 – D:\USB\EUSBSUPP\USBSUPP.EXE
- Win95 (Chinese) – D:\USB\CUSBSUPP\CUSBSUPP.EXE

Audio Driver

The Sound driver allows the system to generate optimal sound effects. Find the driver and Audio applications here:

- D:\SOUND\Driver\C-Media\
- D:\SOUND\Gamut\

Fax/Modem Drivers and Software

Find the fax/modem drivers and software here:

- D:\Modem\Driver\PCI\
- D:\Modem\SuperVoice\ [Telecom management software]
- D:\Modem\MediaRing Talk

3Deep Software

Find the software here:

- D:\3Deep\3Deep 3.3\Setup.EXE

BIOS Update Utility

The BIOS Update utility allows you to update the BIOS file on the mainboard to a newer version. You can download the latest version of the BIOS setup available for your mainboard from the website.

- D:\UTILITY\AMINF321.EXE

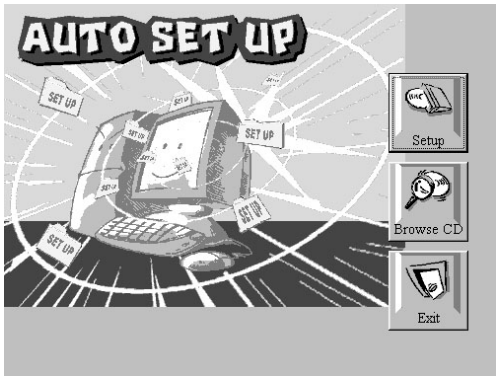
PC-Cillin Software

The PC-cillin software program provides anti-virus protection for your system.
This program is available for:

- DOS – D:\PC-CILLIN\DOS\PCSCAN.EXE
- Win9x – D:\PC-CILLIN\WIN98\SETUP.EXE

Auto-installing under Windows 98

The support software CD-ROM disc loads automatically under Windows 98. When you insert the CD-ROM disc in the system CD-ROM drive the Autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit. See the following screen illustration.



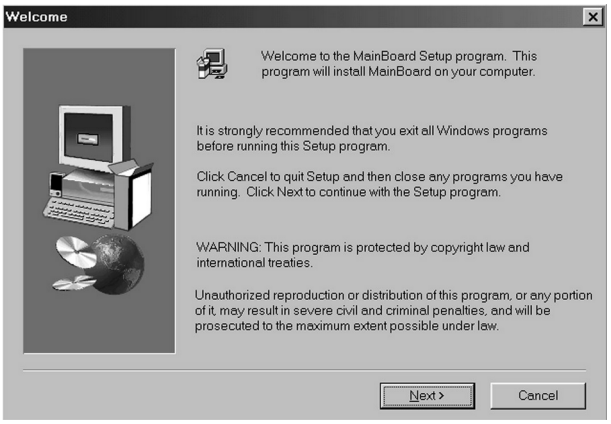
When you click on the **Setup** button the software installation program will run and you can select what kind of installation you want to do, as explained later in this section.
The **Browse CD** button is the standard Windows command that allows you to examine the contents of the disc using the Windows 98 file browsing interface.

The **Exit** button closes the Auto Setup window. To run the program again, reinsert the CD-ROM disc in the drive or click on AutoRun in the context sensitive menu for the CD-ROM drive icon in a file browser window.

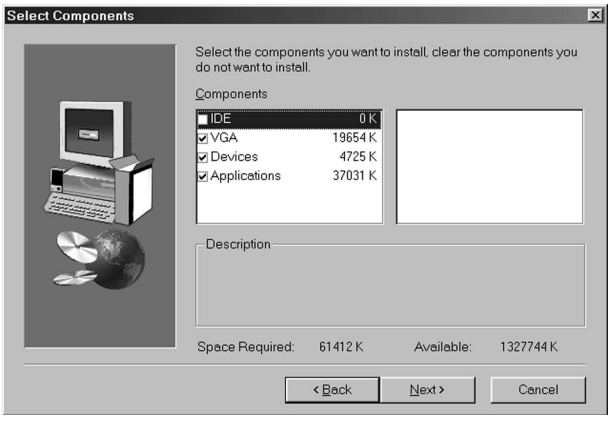
Installing Software with Auto Setup

To install support software for the system board follow this procedure:

1. Click on the **Setup** button. The install program will load and display the following screen. Click the **Next** button.



2. Select the items that you want to setup by clicking on it (the default options are recommended). Click the **Next** button to proceed.



3. The support software will automatically install.

Once any of the installation procedures start, software is automatically installed in sequence. You will need to follow the onscreen instructions, confirm commands and allow the computer to restart as few times as is needed to complete installing whatever software you selected to install. When the process is finished, all the support software will be installed and working.

There are some utilities that you have to manually install if you need, check to the above section.

Using the PCI Audio Software

1. Before you install the PCI Sound Pro drivers, make sure your Operating System has been installed, otherwise the onboard PCI audio might be detected as an "Other device" by the OS device manager.
2. After the drivers are properly installed, choose the MULTIMEDIA icon in the CONTROL PANEL when you need to use the Software Wave-Table drivers as a MIDI output device. Select the MIDI tab and click on "C-media SoftMidi Synthesis (Win98) / Driver (Win95)", then click "OK" to confirm.
3. A Windows application named Audio Rack is provided with the PCI Sound Pro drivers, which gives you control over all the audio functions through a user interface that is as simple to use as a home stereo system. We recommend that you use the Audio Rack's System Mixer to control your computer's audio volume, recording devices and recording gain.
4. If the devices you are using require the MIDI port as the control interface, you need to select the MULTIMEDIA icon in the CONTROL PANEL. Select the MIDI tab and click on "CM8738 MPU-401" (Win98) or "CM8738/C3DX PCI Audio External MIDI Port" (Win95), and then click "OK" to confirm.
5. For more information, refer to the PCI Sound Pro manual on the CD that ships with this mainboard.

The Four Speakers System

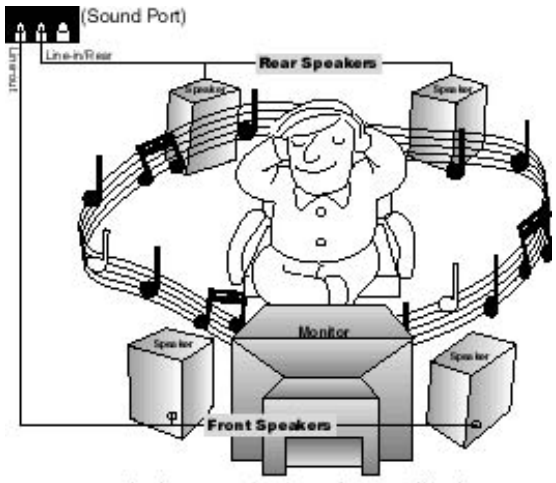
The onboard PCI Sound Pro audio system supports 2 wave channels (front/rear) known as the 4 speaker system. If you are running applications which use the DirectSound® 3D or A3D® audio interface, your system can simulate realistic 3D sound through a 4 speaker setup. Follow the steps below to install a 4-speaker setup.

Speaker Installation

Connect the front two speakers to the Line-out jack on the sound ports extension bracket. Connect the rear two speakers to the Line-in/Rear jack on the sound ports extension bracket. The original Line-in can be moved to Aux.

Speaker Position

Set up your speakers similar to the following figure to get the best audio result.



A picture on the 4 speakers application.

Mixer Setup

There is a 4-speakers option in the Volume Control of the Mixer when you are setting up the PCI Audio Application. Click on the 4 SPK icon to enable this option. This means that the output to the rear speakers is sent through the Line-in/Rear jack. In order to

avoid hardware conflicts, **DO NOT** enable this option when the Line-in/Rear jack is connected with a line-in device. While the 4 speakers mode is enabled, turn on/off the output of the front speakers and adjust the volume of the speakers so that the front/rear speakers have the same volume.

Demo

Execute the "Helicopter" demo in the C3D HRTF Positional Audio Demos of the PCI Audio Application. When you hear the helicopter flying behind you, it means that the rear speakers are working properly.