

# Preface

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Version 1.0

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## Federal Communications Commission (FCC)

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 off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment onto 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.

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

## Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

## Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

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

## About the Manual

The manual consists of the following:

<b>Chapter 1</b> <b>Introducing the Mainboard</b>	Describes features of the mainboard, and provides a shipping checklist.  Go to ⇒ page 1
<b>Chapter 2</b> <b>Installing the Mainboard</b>	Describes installation of mainboard components.  Go to ⇒ page 6
<b>Chapter 3</b> <b>Using BIOS</b>	Provides information on using the BIOS Setup Utility.  Go to ⇒ page 24
<b>Chapter 4</b> <b>Using the Mainboard Software</b>	Describes the mainboard software.  Go to ⇒ page 40

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## TABLE OF CONTENTS

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<b>Preface</b>	<b>i</b>
<b>Features and Packing List Translations</b>	<b>錯誤! 尚未定義書籤。</b>
<b>CHAPTER 1</b>	<b>1</b>
<b>Introducing the Mainboard</b>	<b>1</b>
<i>Introduction</i> .....	1
<i>Checklist</i> .....	1
Standard Items .....	1
<i>Features</i> .....	2
<i>Choosing a Computer Case</i> .....	3
<i>Mainboard Components</i> .....	4
<b>CHAPTER 2</b>	<b>6</b>
<b>Installing the Mainboard</b>	<b>6</b>
<i>Safety Precautions</i> .....	6
<i>Quick Guide</i> .....	6
<i>Installing the Mainboard in a Case</i> .....	7
<i>Checking Jumper Settings</i> .....	7
Setting Jumpers .....	7
Checking Jumper Settings .....	8
Jumper Settings .....	8
<i>Connecting Case Components</i> .....	9
Front Panel Connector .....	11
<i>Installing Hardware</i> .....	12
Installing the Processor .....	12
Installing Memory Modules .....	14
Installing a Hard Disk Drive/CD-ROM .....	15
Installing a Floppy Diskette Drive .....	17
Installing Add-on Cards .....	17
Connecting Optional Devices .....	19
<i>Connecting I/O Devices</i> .....	22
External Connector Color Coding .....	23
<b>CHAPTER 3</b>	<b>24</b>
<b>Using BIOS</b>	<b>24</b>
<i>About the Setup Utility</i> .....	24
The Standard Configuration .....	24
Running the Setup Utility .....	25
<i>Using BIOS</i> .....	26
Standard CMOS Setup .....	26
Advanced CMOS Setup .....	27
Advanced Chipset Setup .....	29

Power Management Setup.....	31
PCI / Plug and Play Setup.....	34
Peripheral Setup.....	35
Hardware Monitor Page.....	37
Change Supervisor/User Password.....	38
Auto Configuration with Optimal Settings .....	39
Auto Configuration with Fail Safe Settings.....	39
Save Settings and Exit.....	39
Exit Without Saving.....	39

**CHAPTER 4** **40**

<b>Using the Mainboard Software</b>	<b>40</b>
<i>About the Software CD-ROM</i> .....	40
<i>Auto-installing under Windows 98/ME/2000/XP</i> .....	40
Running Setup .....	41
<i>Manual Installation</i> .....	42
<i>Utility Software Reference</i> .....	43

## *Chapter 1*

# Introducing the Mainboard

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### Introduction

Thank you for choosing the P6VEMD mainboard. This mainboard features the latest VIA CLE266: VT8623 Northbridge & VT8235 Southbridge chipsets. It is innovatively designed to enable the real world performance in key applications like video streaming or DVD playback that equals that of the most powerful PC systems in production today.

The VIA CLE266 includes MPEG-2 decoding and video scaling for high quality DVD acceleration and an integrated 128-bit 2D and 128-bit 3D graphics engine with internal AGP 8X and Alpha Blending for multimedia and gaming applications. While the VT8235 Southbridge connects through a 4X V-Link connection to the Northbridge transferring data at 266MB/s which is double the speed of the convention PCI bus. Based on the chipsets, the P6VEMD mainboard can support 6 USB 2.0 ports that is 40 times more bandwidth than USB 1.1, as well as ATA 133 (the fastest available IDE interface). Additional features include integrated VIA MAC for 10/100Mbps Ethernet, integrated PCI support, 6 channels Surround AC 97 audio interface and MC 97 modem.

The P6VEMD supports a PGA370 processor socket which allows complete flexibility. It is a micro-ATX board measuring 220 x 240 mm and using 4-layer printed circuit board.

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### Checklist

Compare the mainboard's package contents with the following checklist:

#### Standard Items

- One mainboard
- One diskette drive ribbon cable
- One IDE drive ribbon cable
- Software support CD
- One I/O shield
- One Retention Module
- This User's Manual

## Features

<b>Processor</b>	<p>The mainboard supports the Socket 370 which has the following features:</p> <ul style="list-style-type: none"> <li>• Accommodates Intel Pentium III processor, Tualatin processor and VIA C3 processor</li> <li>• Supports 66/100/133 MHz CPU front-side bus (FSB)</li> </ul>
<b>Chipset</b>	<p>The VT8623 Northbridge and VT8235 Southbridge chipsets are based on an innovative and scalable architecture with proven reliability and performance. A few of the chipset's advanced features are:</p> <ul style="list-style-type: none"> <li>• Support for Socket-370 VIA C3 processors</li> <li>• Supports 66 MHz V-Link Host interface with total bandwidth of 266 MB/sec</li> <li>• V-Link operates at 2x or 4x modes</li> <li>• DRAM interface synchronous with host CPU (133/100 MHz) for most flexible configuration</li> <li>• Supports 4 banks up to 2 GB DRAMs (512Mb x8/x16 DRAM technology)</li> <li>• Optimized Shared Memory Architecture (SMA)</li> <li>• 8/16/32/64MB frame buffer using system memory</li> <li>• CRT display interface with 24-bit true-color RAMDAC up to 250 MHz pixel rate with gamma correction capability</li> <li>• 12-bit DVI 1.0 compatible interface for drive of flat panel monitor using external TMDS encoders</li> <li>• PAL/NTSC TV output capability using external TV encoder</li> <li>• Motion compensation for full speed DVD playback</li> <li>• Microsoft DirectX 7.0 and 8.0 compatible</li> <li>• Integrated Fast Ethernet Controller with 1/10/100 Mbit capability</li> <li>• Dual channel UltraDMA-33/66/100/133 master mode EIDE controller</li> <li>• Transfer rate up to 133MB/sec to cover PIO mode 4, multi-word DMA mode 2 drivers, and UltraDMA-33 interface</li> <li>• USB v2.0 and Enhanced Host Controller Interface (EHCI) v1.0 compatible</li> <li>• Supports both ACPI (Advanced Configuration and Power Interface) and legacy (APM) power management</li> </ul> <p>Additional features include support for six USB ports, an AC 97 link for audio and modem, hardware monitoring, and ACPI/OnNow power management.</p>
<b>Memory</b>	<p>The mainboard accommodate 2.5V DDR SDRAM. It can support two unbuffered 184-pin slots with a maximum memory size of 2GB for registered DIMM.</p>
<b>AC 97 Audio Codec</b>	<ul style="list-style-type: none"> <li>• Compliant with AC'97 2.2 specification</li> <li>• Full-duplex Codec with independent and variable sampling rate</li> <li>• Earphone Buffer Built-In, SNR up to 90db</li> <li>• 4Ch DAC, support 4-channel speak-out</li> <li>• Advanced power management support</li> </ul>

<b>Expansion Options</b>	<p>The mainboard comes with the following expansion options:</p> <ul style="list-style-type: none"> <li>• Four 32-bit PCI slots</li> <li>• One ISA (Industry Standard Architecture) slot (optional)</li> <li>• Two IDE connectors which support four IDE channels and a floppy disk drive interface</li> <li>• One onboard LAN (optional) chip and LAN port on top of the USB port</li> </ul> <p>The P6VEMD supports Ultra DMA bus mastering with transfer rates of 33/66/100/133 MB/sec.</p>
<b>Integrated I/O</b>	<p>The mainboard has a full set of I/O ports and connectors:</p> <ul style="list-style-type: none"> <li>• Two PS/2 ports for mouse and keyboard</li> <li>• One serial port</li> <li>• One VGA port</li> <li>• One parallel port</li> <li>• One MIDI/game port</li> <li>• One LAN port</li> <li>• Two USB ports</li> <li>• Audio jacks for microphone, line-in and line-out</li> </ul>
<b>Onboard LAN (optional)</b>	<p>The Realtek RTL8100B is a highly integrated and cost-effective single-chip 10/100Mbps Fast Ethernet controller. It is enhanced with an ACPI (Advanced Configuration Power Interface) management function for PCI in order to provide efficient power management for advanced operating systems with OSPM (Operating System Directed Power Management).</p>
<b>BIOS Firmware</b>	<p>This mainboard uses AMI BIOS that enables users to configure many system features including the following:</p> <ul style="list-style-type: none"> <li>• Power management</li> <li>• Wake-up alarms</li> <li>• CPU parameters and memory timing</li> <li>• CPU and memory timing</li> </ul> <p>The firmware can also be used to set parameters for different processor clock speeds.</p>

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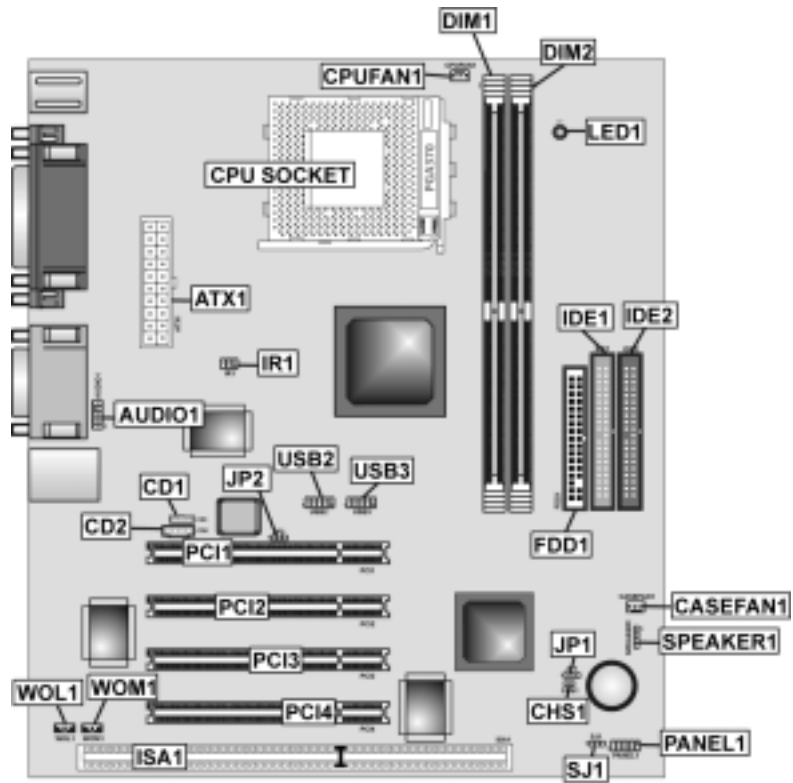
## Choosing a Computer Case

There are many types of computer cases on the market. The mainboard complies with the specifications for the micro-ATX system case. Some features on the mainboard are implemented by cabling connectors on the mainboard to indicators and switches on the system case. Ensure that your case supports all the features required. The mainboard can support one or two floppy diskette drives and four enhanced IDE drives. Ensure that your case has sufficient power and space for all the drives that you intend to install.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the mainboard.

This mainboard has a micro-ATX form factor of 220 x 240 mm. Choose a case that accommodates this form factor.

## Mainboard Components





## Table of Mainboard Components

Label	Component
ATX1	Standard 20-pin ATX power connector
AUDIO1	Front audio connector
BAT1	Three volt realtime clock battery
CASEFAN1	Case fan connector
CD1	Primary CD-in connector
CD2	Secondary CD-in connector
CHS1	Chassis Intrusion Detect
CPU SOCKET	Socket 370 for PIII/C3
CPUFAN1	Cooling fan for CPU
DIM1 ~ DIM2	Two 184-pin DDR DIMM sockets
FDD1	Floppy disk drive connector
IDE1	Primary IDE channel
IDE2	Secondary IDE channel
IR1	Infrared port
ISA1	Industry Standard Architecture slot (optional)
JP1	Clear CMOS jumper
JP2	BIOS protect jumper
LED1 <sup>1</sup>	Memory module LED
PANEL1	Connector for case front panel switches and LED indicators
PCI1 ~ PCI4	Four 32-bit add-on card slots
SJ1	Single color LED header
SPEAKER1	Speaker connector
SPDIF1	SPDIF out header
USB2/USB3	Connector for front panel USB ports
WOL1	Wake On LAN wakeup connector
WOM1	Wake On Modem wakeup connector

This concludes Chapter 1. The next chapter explains how to install the mainboard.

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<sup>1</sup> The red indicator LED1 turns on if your system is still powered, at which time memory modules cannot be installed or uninstalled.

## Chapter 2

# Installing the Mainboard

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### Safety Precautions

Follow these safety precautions when installing the mainboard:

- Wear a grounding strap attached to a grounded device to avoid damage from static electricity.
- Discharge static electricity by touching the metal case of a safely grounded object before working on the mainboard.
- Leave components in the static-proof bags they came in.
- Hold all circuit boards by the edges. Do not bend circuit boards.

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### Quick Guide

This Quick Guide suggests the steps you can take to assemble your system with the mainboards.

The following table provides a reference for installing specific components:

<b>Locating Mainboard Components</b>	Go to page 4
<b>Installing the Mainboard in a Case</b>	Go to page 7
<b>Setting Jumpers</b>	Go to page 7
<b>Installing Case Components</b>	Go to page 9
<b>Installing the CPU</b>	Go to page 12
<b>Installing Memory</b>	Go to page 14
<b>Installing an HDD and CD-ROM Drive</b>	Go to page 15
<b>Installing an FDD</b>	Go to page 17
<b>Installing Add-on Cards</b>	Go to page 17
<b>Connecting Options</b>	Go to page 19
<b>Connecting Peripheral (I/O) Devices</b>	Go to page 22

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## Installing the Mainboard in a Case

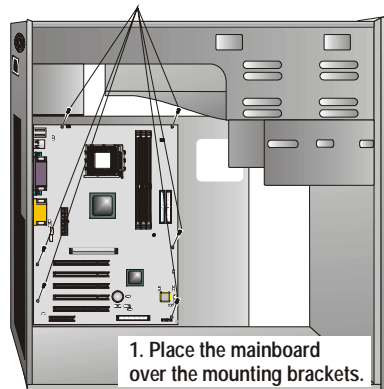
Refer to the following illustration and instructions for installing the mainboard in a case:

This illustration shows an example of a mainboard being installed in a tower-type case:

**Note:** Do not overtighten the screws as this can stress the mainboard.

Most system cases have mounting brackets installed in the case, which correspond to the holes in the mainboard. Place the mainboard over the mounting brackets and secure the mainboard onto the mounting brackets with screws.

2. Secure the mainboard with screws where appropriate.



Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your mainboard.

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## Checking Jumper Settings

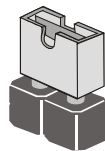
This section explains how to set jumpers for correct configuration of the mainboard.

### Setting Jumpers

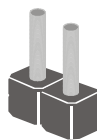
Use the mainboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

The illustrations below show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is **SHORT**. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is **OPEN**.

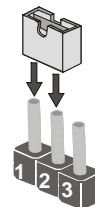
This illustration shows a 3-pin jumper. Pins 1 and 2 are **SHORT**.



Short

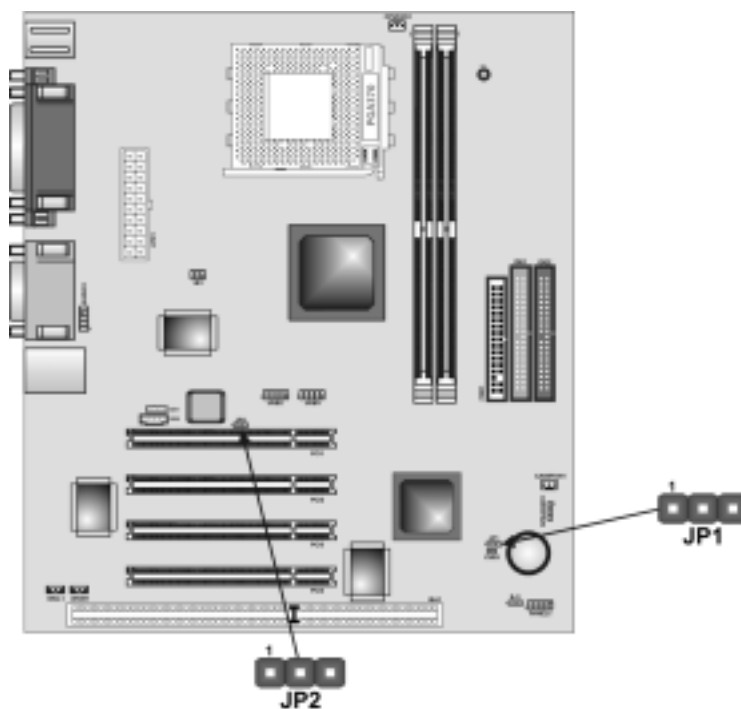


Open



## Checking Jumper Settings

The following illustration shows the location of the mainboard jumpers. Pin 1 is labeled.



## Jumper Settings

Jumper	Type	Description	Setting (default)
JP1	3-pin	Clear CMOS	1-2: Normal 2-3: <i>Clear CMOS</i>
JP2	3-pin	BIOS Flash protect	1-2: Write Enabled 2-3: <i>Write Disabled</i>

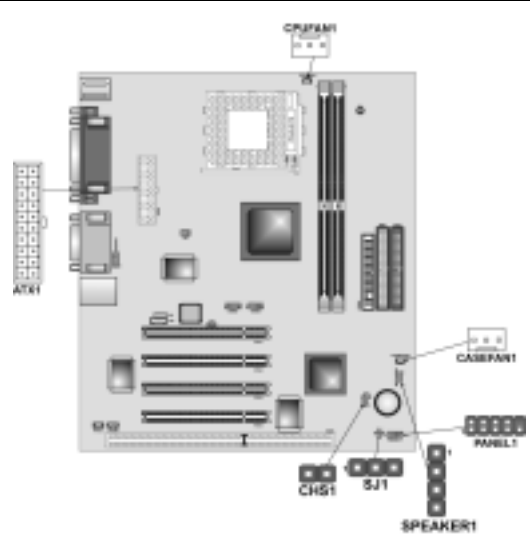
**Jumper 1 –** Use this jumper to clear the contents of the CMOS memory. You may need to clear the CMOS memory if the settings in the Setup Utility are incorrect and prevent your mainboard from operating. To clear the CMOS memory, disconnect all the power cables from the mainboard and then move the jumper cap into the CLEAR setting for a few seconds.

**Jumper 2 –** This jumper enables you to prevent the BIOS from being updated (flashed). Short pin 1-2 if you want to update your BIOS. After updating, short pin 2-3 to protect the BIOS from being flashed.

## Connecting Case Components

After you have installed the mainboard into a case, you can begin connecting the mainboard components. Refer to the following:

1. Connect the Pentium 4 processor auxiliary case power supply connector to **ATX1**.
2. Connect the CPU cooling fan cable to **CPUFAN1**.
3. Connect the case cooling fan connector to **CASEFAN1**.
4. Connect the case speaker cable to **SPEAKER1**.
5. Connect the case LED cable to **SJ1**.
6. If your case has a case open alarm cable, connect it to **CHS1**.
7. Connect the case switches and indicator to **PANEL1**.



### ATX1: ATX 20-pin Power Connector

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

### CPUFAN1/CASEFAN1: FAN Power Connectors

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor

### CHS1: Chassis Intrusion Detect

This connector allows the user to detect unauthorized intrusion to the case. It will alert the user with a warning message when the case is turned on.


**SPEAKER1: Internal speaker**

Pin	Signal Name
1	Signal
2	Key
3	Ground
4	VCC

**SJ1: Single color LED header**

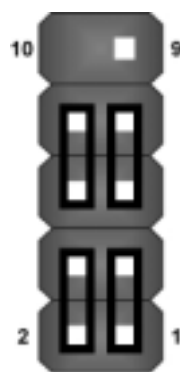
Pin	Signal Name	Function
1	ACPI LED	MSG LED (-) green
2	ACPI LED	MSG LED (-) green
3	SB5V	Power LED (+)

**ACPI LED function:**

SJ1	S0	S1	S3	S4/S5
	Light	Blinking	Blinking	Dark

## Front Panel Connector

The front panel connector (PANEL1) provides a standard set of switch and LED connectors commonly found on ATX or micro-ATX cases. Refer to the table below for information:



Pin	Signal Name	Function
1	HD_LED_P	Hard disk LED (positive)
2	FP_PWR/SLP	MSG LED [dual color or single color (+)]
3	HD_LED_N	Hard disk active LED (negative)
4	FP_PWR/SLP	MSG LED [dual color or single color (-)]
5	RST_SW_N	Reset Switch
6	PWR_SW_P	Power Switch
7	RST_SW_P	Reset Switch
8	PWR_SW_N	Power Switch
9	RSVD	Reserved
10	NC	No pin

PANEL1

### **Hard Drive Activity LED**

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

### **Power / Sleep / Message Waiting LED**

Connecting pins 2 and 4 to a single- or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

### **Reset Switch**

Supporting the reset function requires connecting pins 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

### **Power Switch**

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal debounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

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## Installing Hardware

### Installing the Processor

**Caution:** When installing a CPU heatsink and cooling fan make sure that you DO NOT scratch the mainboard or any of the surface-mount resistors with the clip of the cooling fan. If the clip of the cooling fan scrapes across the mainboard, you may cause serious damage to the mainboard or its components.

On most mainboards, there are small surface-mount resistors near the processor socket, which may be damaged if the cooling fan is carelessly installed.

Avoid using cooling fans with sharp edges on the fan casing and the clips. Also, install the cooling fan in a well-lit work area so that you can clearly see the mainboard and processor socket.

### Before installing the Processor

This mainboard automatically determines the CPU clock frequency and system bus frequency for the processor. You may be able to change these settings in the system Setup Utility. We strongly recommend that you do not overclock processors or other components to run faster than their rated speed.

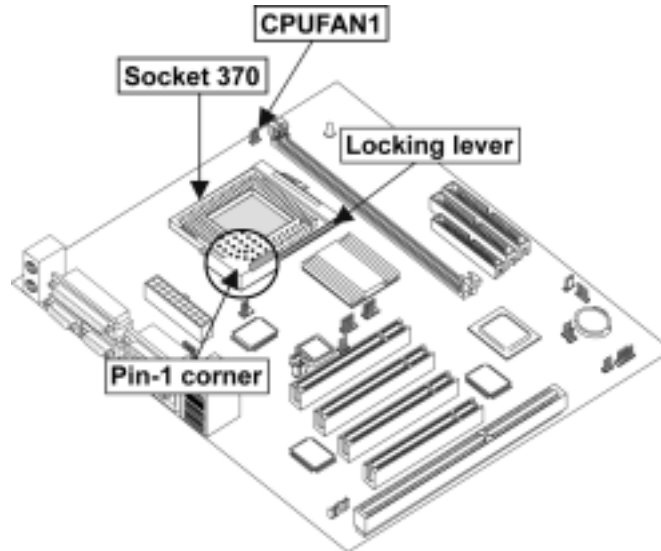
**Warning:** Overclocking components can adversely affect the reliability of the system and introduce errors into your system. Overclocking can permanently damage the mainboard by generating excess heat in components that are run beyond the rated limits.

This mainboard has a Socket 370 processor socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.



## CPU Installation Procedure

The following illustration shows CPU installation components:



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**Note:** The pin-1 corner is marked with an arrow

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Follow these instructions to install the CPU:

1. Pull the lever sideways away from the socket then raise the lever up to a 90-degree angle.	
2. Locate Pin-1 in the socket and look for the cut edge in the CPU. Match Pin-1 with the cut edge then insert the CPU.	An isometric diagram showing the CPU being inserted into the Socket 370. The CPU is tilted, and its pins are being aligned with the socket. Labels include 'CPUFAN1', 'CPU fan connector', 'Locking lever', 'Socket 370', and 'Pin-1 corner'.
3. Swing the locking lever down and hook it under the latch on the edge of the socket.	
4. Plug the fan on the CPU and buckle it and plug the fan's power-port into the CPUFAN1 to complete the installation.	

- Notes:**
- To achieve better airflow rates and heat dissipation, we suggest that you use a high quality fan with 4800 rpm at least.
  - CPU fan and heatsink installation procedures may vary with the type of CPU fan/heatsink supplied. The form and size of fan/heatsink may also vary.

## Installing Memory Modules

This mainboard accommodates 184-pin 2.5V unbuffered Double Data Rate (DDR) SDRAM memory modules. The memory chips must be standard or registered SDRAM (Synchronous Dynamic Random Access Memory).

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**Note:** SDRAM provides 800 MBps or 1 GBps data transfer depending on whether the bus is 100MHz or 133MHz. Double Data Rate SDRAM (DDR SDRAM) doubles the rate to 1.6 GBps and 2.1 GBps. DDR SDRAM uses additional power and ground lines and requires 184-pin DIMM modules rather than the 168-pin DIMMs used by SDRAM.

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The mainboard accommodates two memory modules. You must install at least one module in any of the two slots. Each module can be installed with 64 MB to 512 GB of memory; total memory capacity is 2 GB (registered).



Do not remove any memory module from its antistatic packaging until you are ready to install it on the mainboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.

## Installation Procedure

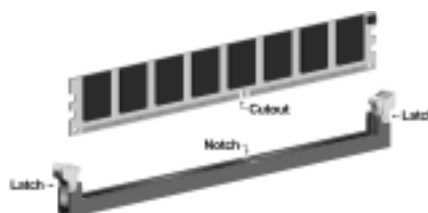
Refer to the following to install the memory modules.

1. This mainboard supports unbuffered DDR SDRAM only. Do not attempt to insert any other type of DDR SDRAM into the slots.

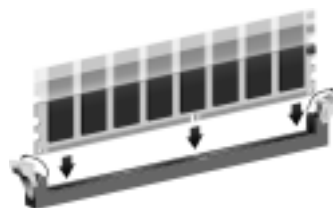


2. Push the latches on each side of the DIMM slot down.

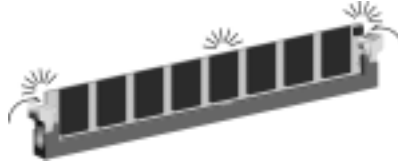
3. Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.



4. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.



5. Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.



6. Install any remaining DIMM modules.

## Installing a Hard Disk Drive/CD-ROM

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

### About IDE Devices

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

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

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

### About UltraDMA

This mainboard supports UltraDMA 66/100/133. UDMA is a technology that accelerates the performance of devices in the IDE channel. To maximize performance, install IDE devices that support UDMA and use 80-pin IDE cables that support UDMA 66/100/133.

### Installing a Hard Disk Drive

<ol style="list-style-type: none"> <li>1. Install the hard disk drive into the drive cage in your system case.</li> <li>2. Plug the IDE cable into IDE1 (A):</li> </ol> <p><b>Note:</b> Ribbon cable connectors are usually keyed so that they can only be installed correctly on the device connector. If the connector is not keyed, make sure that you match the pin-1 side of the cable connector with the pin-1 side of the device connector. Each connector has the pin-1 side clearly marked. The pin-1 side of each ribbon cable is always marked with a colored stripe on the cable.</p>	
---	--

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

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

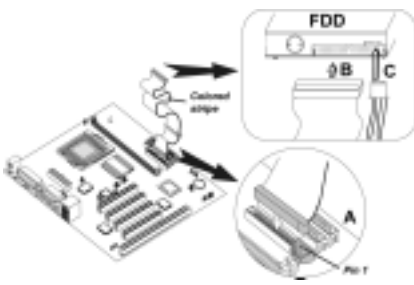
### Installing a CD-ROM/DVD Drive

- |  |  |
|--|--|
| 1. Install the CD-ROM/DVD drive into the drive cage in your system case.   |  |
| 2. Plug the IDE cable into IDE1 (A). If you have already installed an HDD, use the other connector on the IDE cable.<br><b>Note:</b> Ribbon cable connectors are usually keyed so that they can only be installed correctly on the device connector. If the connector is not keyed, make sure that you match the pin-1 side of the cable connector with the pin-1 side of the device connector. Each connector has the pin-1 side clearly marked. The pin-1 side of each ribbon cable is always marked with a colored stripe on the cable. |  |
| 3. Plug an IDE cable connector into the CD-ROM/DVD drive IDE connector (B). It doesn't matter which connector on the cable you use.  |  |
| 4. Plug a power cable from the case power supply into the power connector on the CD-ROM/DVD drive (C).   |  |
| 5. Use the audio cable provided with the CD-ROM/DVD drive to connect to the mainboard CD-in connector CDIN1 or CDIN2 (D).  |  |

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

## Installing a Floppy Diskette Drive

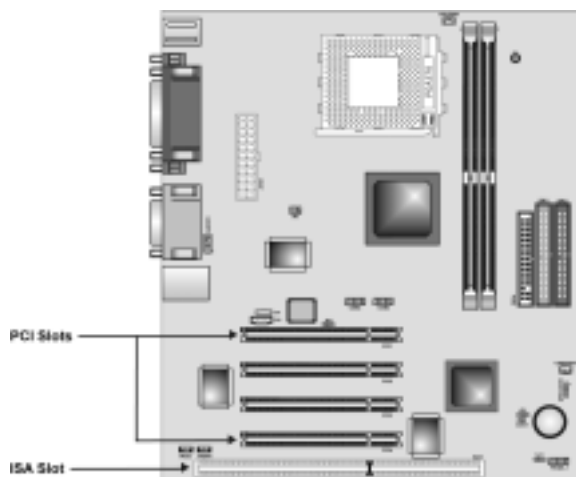
The mainboard has a floppy diskette drive (FDD) interface and ships with a diskette drive ribbon cable that supports one or two floppy diskette drives. You can install a 5.25-inch drive and a 3.5-inch drive with various capacities. The floppy diskette drive cable has one type of connector for a 5.25-inch drive and another type of connector for a 3.5-inch drive.

<p>1. Install the FDD into the drive cage in your system case.</p> <p>2. Plug the FDD cable into FLOPPY1 (A):</p> <p><b>Note:</b> Ribbon cable connectors are usually keyed so that they can only be installed correctly on the device connector. If the connector is not keyed, make sure that you match the pin-1 side of the cable connector with the pin-1 side of the device connector. Each connector has the pin-1 side clearly marked. The pin-1 side of each ribbon cable is always marked with a colored stripe on the cable.</p>	
<p>3. Plug the correct connector on the FDD cable for the 5.25-inch or 3.5-inch drive into the FDD connector (B).</p>	
<p>4. Plug a power cable from the case power supply into the power connector on the FDD (C).</p>	

When you first start up your system, go immediately to the Setup Utility to configure the floppy diskette drives that you have installed.

## Installing Add-on Cards

The slots in this mainboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the mainboard's features and capabilities. With these efficient facilities, you can increase the mainboard's capabilities by adding hardware which performs tasks that are not part of the basic system.



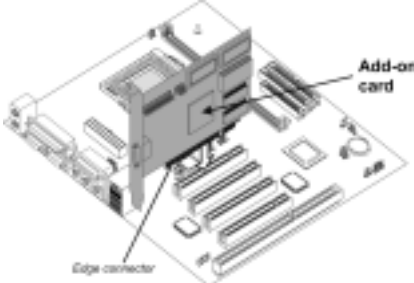
- PCI Slots** This mainboard is equipped with 4 standard PCI slots. PCI stands for peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. This PCI slot is designated as 32-bit.
- ISA Slot (optional)** The mainboard is equipped with one standard ISA slot. ISA stands for Industry Standard Architecture and was designed as a bus standard for expansion cards in the early 90's for PC XT/AT machines. This mainboard retains backward compatibility with this order and slower bus architecture.

---

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

---

Follow these instructions to install an add-on card:

- |   |   |
|---|---|
| 1. Remove a blanking plate from the system case corresponding to the slot you are going to use.   |   |
| 2. Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot. |  |
| 3. Secure the metal bracket of the card to the system case with a screw.  |   |

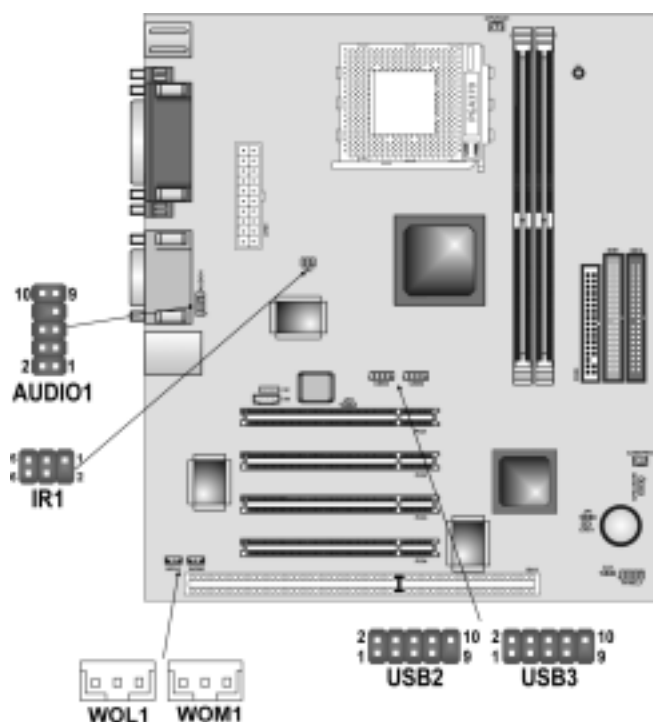
---

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

---

## Connecting Optional Devices

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



### AUDIO1: Front Panel Audio header

This header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal Name	Function
1	AUD_MIC	Front Panel Microphone input signal
2	AUD_GND	Ground used by Analog Audio Circuits
3	AUD_MIC_BIAS	Microphone Power
4	AUD_VCC	Filtered +5 V used by Analog Audio Circuits
5	AUD_FPOUT_R	Right Channel Audio signal to Front Panel
6	AUD_RET_R	Right Channel Audio signal to Return from Front Panel
7	HP_ON	Reserved for future use to control Head-phone Amplifier
8	KEY	No Pin
9	AUD_FPOUT_L	Left Channel Audio signal to Front Panel
10	AUD_RET_L	Left Channel Audio signal Return from Front Panel

## USB2 & USB3: Front panel USB ports

The mainboard has two USB ports installed on the rear edge I/O port array. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB connectors USB2 or USB3 to connect the front-mounted ports to the mainboard.

Pin	Signal Name	Function
1	VREG_FP_USBPWR0	Front Panel USB Power
2	VREG_FP_USBPWR0	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	KEY	No pin
10	USB_FP_OC0	Overcurrent signal

**Note:** Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

## IR1: Serial infrared port

The mainboard supports an Infrared (IR) data port. Infrared ports allow the wireless exchange of information between your computer and similarly equipped devices such as printers, laptops, Personal Digital Assistants (PDAs), and other computers.

Pin	Signal Name	Function
1	Not assigned	Not assigned
2	KEY	No pin
3	+5V	IR Power
4	GND	Ground
5	IRTX	IrDA serial output
6	IRRX	IrDA serial input

## WOL1: Wake On LAN

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

Pin	Signal Name	Function
1	5VSB	+5V stand by power
2	GND	Ground
3	Ring#	Wake up signal (high active)



## WOM1: Wake On Modem

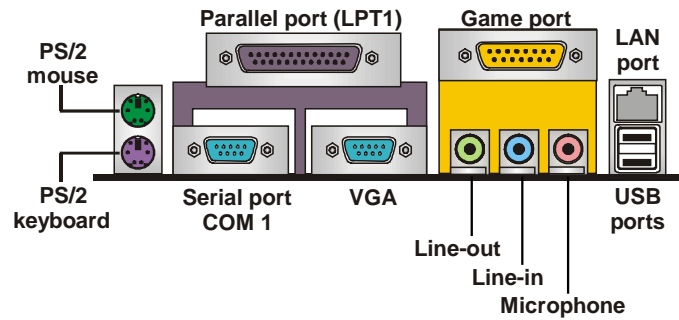
If you have installed a modem, use the cable provided with the modem to plug into the mainboard WOM1 connector. This enables the Wake On Modem (WOM1) feature. When your system is in a power-saving mode, any modem signal automatically resumes the system. You must enable this item using the Power Management page of the Setup Utility. See Chapter 3 for more information.

Pin	Signal Name	Function
1	5VSB	+5V stand by power
2	GND	Ground
3	Ring#	Wake up signal (low active)

---

## Connecting I/O Devices

The backplane of the mainboard has the following I/O ports:



**PS/2 Mouse** Use the upper PS/2 port to connect a PS/2 pointing device.

**PS/2 Keyboard** Use the lower PS/2 port to connect a PS/2 keyboard.

**USB Ports** Use the USB ports to connect USB devices.

**LPT1** Use LPT1 to connect printers or other parallel communications devices.

**COM1** Use the COM ports to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1/3.

**VGA** Connect your monitor to the VGA port.

**Game Port** Use the game port to connect a joystick or a MIDI device.

**Audio Ports** Use the three audio ports to connect audio devices. The left side jack is for a stereo line-out signal. The middle jack is for a stereo line-in signal. The right side jack is for a microphone.

**PS/2 Mouse** Use the upper PS/2 port to connect a PS/2 pointing device.

## External Connector Color Coding

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

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

This concludes Chapter 2. The next chapter covers the BIOS.

## *Chapter 3*

# Using BIOS

---

### **About the Setup Utility**

The computer uses the latest AMI BIOS with support for Windows Plug and Play. The CMOS chip on the mainboard contains the ROM setup instructions for configuring the mainboard BIOS.

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

The BIOS Setup Utility enables you to configure:

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

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

This chapter provides explanations for Setup Utility options.

### **The Standard Configuration**

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

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

## 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.



## BIOS Navigation Keys

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 exit the setup utility, press the **Escape** key. To cycle through the Setup Utility's optional color schemes press down the **F2/F3**.

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 item. Other options on the main menu page lead to dialog boxes that 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 high-performance values.

## Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ►) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ►.

## Standard CMOS Setup

*The Standard CMOS setup is used to modify basic system configuration data, such as date, time floppy and hard disk drive types, video type and keyboard.*

AMIBIOS SETUP - STANDARD CMOS SETUP									
(c)2001 American Megatrends, Inc. All Rights Reserved									
Date (mm/dd/yyyy): wed 06/06/2002					Base Memory: 0 KB				
Time (hh/mm/ss) : 18:20:36					Extd Memory: 0 MB				
Floppy Drive A:		1.44 MB 3½							
Floppy Drive B:		Not installed							
	Type	size	cyls	Head	WPCn	Sec	Mode	Mode	32Bit
Pri Master:	Auto								On
Pri Slave:	Auto								On
Sec Master:	Auto								On
Sec Slave:	Auto								On
Boot Sector Virus Protection:				Disabled					
Month: Jan - Dec					ESC:Exit F1:Sel				
Day: 01 - 31					PgUp/PgDn:Modify				
Year: 1980 - 2099					F1:Help F2/F3:color				

### Date & Time

Use these items to set the system date and time.

### 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.

### 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*.

## Advanced CMOS Setup

The Advanced CMOS setup is used to control advanced system information such as hardware access and boot settings.



### Quick Boot (Enabled)

If you enable this item, the system starts up more quickly by elimination of some of the power on test routines.

### Pri/Sec Master ARMD Emulated as (Auto)

### Pri/Sec Slave ARMD Emulated as (Auto)

These four options ensure that, if you have an ARMD attached as a master or slave device, it can properly be detected by the system.

### 1<sup>st</sup> Boot Device/2<sup>nd</sup> Boot Device/3<sup>rd</sup> Boot Device (Floppy/IDE-0/CD-DVD)

Use these items to determine the device order the computer uses to look for an operating system to load at start-up time.

### Try Other Boot Devices (Yes)

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 two locations.

### S.M.A.R.T for Hard Disks (Disabled)

Set this option to Enabled to permit the BIOS to use the SMART (System Management and Reporting Technologies) protocol for reporting server system information over a network. Enabling this feature allows you to back up your data when your hard disk is about to fail. If a password has been set for the supervisor, this item will not be visible for the user.

### BootUp Num-Lock (On)

Set this option to Off to turn the Num Lock key off when the computer is booted you can use the arrow keys in both the numeric keypad and the key-

board.

**Floppy Drive Swap (Disabled)**

This option allows the Drive A and B (floppy Drives) to be swapped i.e. Drive A becomes Drive B and vice versa without physically removing the drives.

**Floppy Drive Seek (Disabled)**

This option tells the system to search for the floppy drive. If the system does not detect one it will display a floppy drive error. If you know your system does not have a floppy drive then set this to disabled to avoid error messages.

**PS/2 Mouse Support (Enabled)**

This option allows the BIOS to auto detect whether the PS/2 mouse is installed or not.

**Primary Display (VGA/EGA)**

This option configures the type of monitor attached to the computer.

**Password Check (Setup)**

This option enables password checking every time the system boots or when you run the BIOS Setup. If you choose Always, a user password prompt appears every time the computer is turned on. If you choose Setup, the password prompt appears if the BIOS is executed.

**Ask HDD Password on Every Boot (Yes)**

This option enables the user to set a password. Without entering the password, the computer cannot boot.

**Boot To OS/2 (No)**

Set this option to Enabled if running an OS/2 operating system and using more than 64 MB of system memory on the mainboard.

**CPU MicroCode Updation (Enabled)**

This option enables the user to update the CPU MicroCode.

**CPU Serial Number (Enabled)**

This option is not for performance issue. When enabled, this allows users to view the CPU serial number during boot-up.

**L1 Cache (Enabled)**

This option is used to enable or disable the CPU's L1 (primary) cache.

**L2 Cache (Enabled)**

This option sets the type of caching algorithm used for the L2 secondary cache memory.

**System BIOS Cacheable (Disabled)**

When set to Enabled, the contents of the F0000h system memory segment can be read from or written to cache memory. If parts of the BIOS ROM are frequently used, these parts are copied to cache memory for faster execution.



## Advanced Chipset Setup

The Advanced Chipset Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer. You should leave the items on this page at their default values, if you change the values incorrectly, you may introduce fatal errors or recurring instability into your system.

AMIBIOS SETUP - ADVANCED CHIPSET SETUP (c)2001 American Megatrends, Inc. All Rights Reserved		
***** DRAM Timing *****		
Configure DDR Timing by SPD	Enabled	Available Options: Disabled ▶ Enabled
DDR Frequency	AUTO	
DDR CAS# Latency	3	
DDR Bank	Disabled	
DDR Command Rate	2T	
Memory Hole	Disabled	
AGP Mode	4x	
AGP Read Synchronization	Disabled	
AGP Fast Write	Disabled	
AGP Aperture Size	128MB	
AGP Master 1 w/S Write	Disabled	
AGP Master 1 w/S Read	Disabled	
Search for MDA Resources	Yes	
PCI Delay Transaction	Enabled	
USB Controller	Enabled	
USB 1.1 Device Legacy Support	Disabled	
Auto Detect DIMM/PCI Clk	Disabled	
Clock Spread Spectrum Enable	Enabled	
		ESC:Exit F1:Sel PgUp/PgDn:Modify F1:Help F2/F3:Color

### Configure DDR Timing by SPD (Enabled)

When this item is set to enable, the DDR timing is configured using SPD. SPD (Serial Presence Detect) is located on the memory modules, BIOS reads information coded in SPD during system boot up.

### DDR Frequency (Auto)

This item displays the memory (DRAM) frequency. This is a display-only item. You cannot make changes to this field.

### DDR CAS# Latency (3)

When synchronous DDR is installed, the number of clock cycles of CAS latency depends on the DDR timing. Do not reset this field from the default value specified by the system engineer.

### DDR Bank (Disabled)

When set to enabled, the device can drive the SERR# (System Error Enable) line.

### DDR Command Rate (2T)

This item allows user to either manually select memory timings or allow the SPD (Serial Presence Detect) to determine memory timings automatically. The manual mode allows you to choose between DRAM cycle lengths of 2 or 2.5.

### Memory Hole (Disabled)

These are the amounts below 1 Mb assigned to the AT Bus and is reserved for ISA cards.

**AGP Mode (4X)**

This option allows you to select the AGP mode.

**AGP Fast Write (Disabled)**

This option allows the data to be sent directly from the corelogic (i.e. chipset) to the AGP master instead of keeping a copy in system memory and making the AGP master fetch it. This works with 4x cards only.

**AGP Aperture Size (128MB)**

The AGP aperture size is the maximum amount of main system RAM that is dedicated to the video-subsystem as AGP RAM, which can be swapped to the video card the fastest of any other swap method.

**AGP Master 1 W/S Write (Disabled)**

Implements a single delay when reading from the AGP Bus.

**AGP Master 1 W/S Read (Disabled)**

Implements a single delay when writing from the AGP Bus.

**PCI Delay Transaction (Enabled)**

This option should be set to enable for better performance and to meet PCI 2.1 specifications. Disable it only if your PCI cards cannot work properly or if you are using an ISA card that is not PCI 2.1 compliant.

**USB Controller (Enabled)**

When set to enabled, the BIOS will automatically detect if there is USB related item installed.

**USB 1.1 Device Legacy Support (Disabled)**

Set this option to enable to support for older keyboards and mouse devices. Make user the USB option is also set to enable.

**Auto Detect DIMM/PCI Clk (Disabled)**

When set to enabled, the chipset will auto-detect if the DIMM and PCI sockets have devices attached and will send clock signals to each of them. If set to disabled, it will send clock signals to all DIMM and PCI sockets.

**Clock Spread Spectrum Enable (Enabled)**

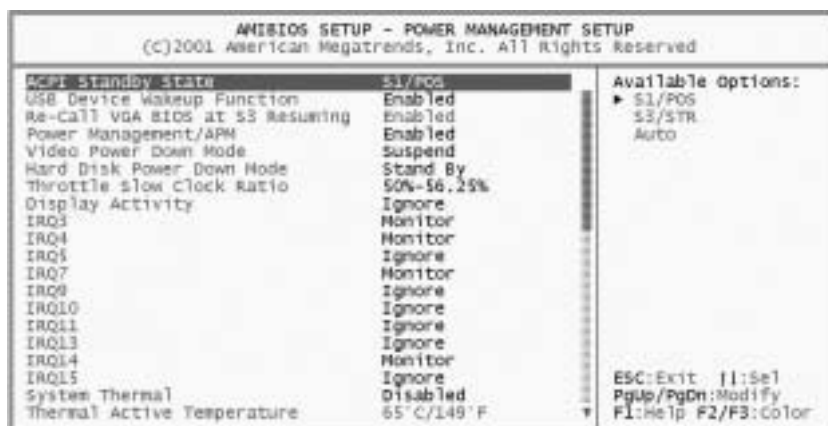
Enabling this allows the system to turn off the AGP, PCI and SDRAM signals when not in use in order to reduce the electro-magnetic interference.

**IDE UDMA66 Cable DETECT (Enabled)**

When this option is set to enabled, the BIOS will be able to detect and will show a warning message when you use the normal 40 conductor IDE cable on a UDMA66 drive.

## Power Management Setup

The Power Management Setup Menu option is used to change the values of the chipset registers for system power management.



### ACPI Standby State (S1/POS)

This item allows you to select the standby type under ACPI operating system.

### USB Device Wakeup Function (Enabled)

This item allows the activity of the USB device to wake up the system from S3 (Suspend to RAM) sleep state.

### Re-Call VGA BIOS at S3 Resuming (Enabled)

When set to disabled, the VGA BIOS will not be initiated thus minimizing the S3 wake up time.

### Power Management/APM (Enabled)

Set this option to Enabled to enable the chipset power management and APM (Advanced Power Management) features.

### Video Power Down Mode (Suspend)

When enabled, this option allows the VGA adapter to operate in a power saving mode.

<b>Disabled</b>	Monitor remains on during power-saving modes.
<b>Stand By</b>	Monitor blanked when system enters the stand by mode.
<b>Suspend</b>	Monitor blanked when system enters the suspend mode.

### Hard Disk Power Down Mode (Stand By)

After the selected period of drive inactivity, the hard disk drive powers down while all other devices remain active.

#### **Throttle Slow Clock Ratio (50%-56.25%)**

This option specifies the speed at which the system clock runs in power saving states. The settings are expressed as a ratio between the normal CPU clock speed and the CPU clock speed when the computer is in the power-conserving state.

#### **Display Activity (Ignore)**

This option specifies if BIOS is to monitor activity on the display monitor for power conservation purposes. If set to Monitor and the computer is in a power saving state, BIOS watches for video display activity. The computer enters the full on power state if any activity occurs. BIOS reloads the Standby and Suspend timeout timers if activity occurs on the specified IRQ lines. If set to Ignore, video display monitor activity is not monitored.

#### **IRQ (Monitor/Ignore)**

When set to Monitor, these options enable event monitoring on the specified hardware interrupt request line. If set to Monitor and the computer is in a power saving state, AML<sup>®</sup> BIOS watches for activity on the specified IRQ line. The computer enters the full on power state if any activity occurs.

#### **System Thermal (Disabled)**

Set this option to Monitor for CPU thermal monitoring and speed down control. The system will automatically supervise the CPU environmental temperature. If the CPU surface temperature reaches the trip point set in Hardware Monitor Setup, the thermal detection will be effective and CPU will run in throttle control manner. The overall system performance will be reduced to half. This option is a trade-off of system performance and stability and configurable by user. The default setting is Disabled. You can choose Monitor setting to enable this thermal function.

#### **Thermal Active Temperature (65°C/149°F)**

Set this option to monitor CPU thermal trip point defined by user. If the System Thermal option in CMOS setup is set to "Enabled" state and CPU surface temperature is over this critical temperature, the system will automatically enter speed down mode.

#### **Thermal Slow Clock Ratio (50%-56.25%)**

This option specifies the temperature at which the system clock runs in power saving states.

#### **Power Button Function (On/Off)**

During Suspend, if you push the switch one time, the system goes into suspend mode and if you push it more than 4 seconds, the system will be turned off. During On/Off, the system will turn off once you push the switch.

#### **Power AC resume item (Always Off)**

This sets the power state after a shutdown due to an unexpected interrupt of AC power.

**Wake On LAN/Ring (Disabled)**

This option allows you to turn on your system from remote control.

**Resume On PME# (Disabled)**

This option allows you to turn on the system through a PME signal.

**Wake-up Key (Any Key)**

This option enables the system to wake up from S3 (sleep mode) by pressing any key on the keyboard.

**Wake-Up Password (N/A)**

When enabled, you have to key in the password to enable the system to wake up from S3 (sleep mode).

**Resume On PS/2 Mouse (Disabled)**

This option allows you to use the PS/2 Mouse to turn on the system.

**Resume on RTC Alarm (Disabled)**

When Enabled, your can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.

<b>RTC Alarm Date</b>	Choose which day the system will boot up.
<b>RTC Alarm Hour</b>	Choose which hour the system will boot up.
<b>RTC Alarm Minute</b>	Choose which minute the system will boot up.
<b>RTC Alarm Second</b>	Choose which second the system will boot up.

## PCI / Plug and Play Setup

This section describes configuring the PCI bus system. PCI (Peripheral Component Interconnect) is a system, which allows I/O devices to operate at speeds nearing CPU's when they communicate with own special components.

All the options describes in this section are important and technical and it is strongly recommended that only experienced users should make any changes to the default settings.

AMIBIOS SETUP - PCI / PLUG AND PLAY SETUP (c)2001 American Megatrends, Inc. All Rights Reserved		
Plug and Play Aware O/S	No	Available options: ▶ No Yes
Clear NVRAM	No	
OnChip VGA Frame Buffer Size	32MB	
PCI Latency Timer (PCI Clocks)	32	
Primary Graphics Adapter	PCI	
PCI IDE BusMaster	Enabled	
OffBoard PCI IDE Card	Auto	
OffBoard PCI IDE Primary IRQ	Disabled	
OffBoard PCI IDE Secondary IRQ	Disabled	

ESC:Exit F1:Sel  
PgUp/PgDn:Modify  
F1:Help F2/F3:Color

### Plug and Play Aware O/S (No)

Enable this item if you are using an O/S that supports Plug and Play such as Windows 95/98/ME.

### Clear NVRAM (No)

This option can be enabled to delete all plug and play information from plug and play non-volatile storage. The option will automatically be disabled again the next time the computer boots.

### OnChip VGA Frame Buffer Size (32MB)

This option allows you to select the main memory frame size for AGP use.

### PCI Latency Timer (PCI Clocks) (32)

Please leave this field to the default setting for best performance and stability.

### Primary Graphics Adapter (PCI)

This item specifies which VGA card is your primary graphics adapter.

### PCI IDE BusMaster (Enabled)

Set this option to enable to specify that the IDE controller on the PCI bus has bus mastering capability.

### OffBoard PCI IDE Card (Auto)

This option specifies if an offboard PCI IDE controller adapter card is used in the computer. You must also specify the PCI expansion slot on the mainboard where the offboard PCI IDE controller card is installed. If an offboard PCI IDE

controller is used, the onboard IDE controller is automatically disabled.

#### OffBoard PCI IDE Primary IRQ (Disabled)

This option specifies the PCI interrupt used by the primary IDE channel on the offboard PCI IDE controller.

#### OffBoard PCI IDE Secondary IRQ (Disabled)

This option specifies the PCI interrupt used by the secondary IDE channel on the offboard PCI IDE controller.

## Peripheral Setup

The Peripheral Setup menu describes I/O resources assignment for all of the on-board peripheral devices.

AMIBIOS SETUP - PERIPHERAL SETUP (c)2001 American Megatrends, Inc. All Rights Reserved		
OnBoard FDC	Auto	Available options: ▶ Auto Disabled Enabled
OnBoard Serial PortA	3F8/COM1	
OnBoard Serial PortB	2F8/COM2	
Serial Port2 Mode	Normal	
OnBoard Parallel Port	Auto	
Parallel Port Mode	ECP	
Parallel Port IRQ	Auto	
Parallel Port DMA	Auto	
OnBoard Game Port	201	
OnBoard MIDI Port	330	
MIDI Port IRQ	10	
OnBoard IDE	Both	
RTL8100B LAN Support	Enabled	
RTL8100B Boot ROM Support	Disabled	
OnBoard Ac'97 Audio	Enabled	
		ESC:Exit F1:Sel PgUp/PgDn:Modify F1:Help F2/F3:Color

#### Onboard FDC (Auto)

If you want to install a different add-on super I/O card to connect floppy drives, set this field to disabled. Otherwise, set it to Auto to let BIOS automatically determine if the floppy controller should be enabled.

#### Onboard Serial PortA/PortB (3F8/COM1)

These fields control the resource assignments of two on-board serial interfaces SIO1 and SIO2. The following lists show current options in On Board Serial Port A/ Port B:

<b>Auto</b>	Cannot set serial I/O resources by manual operation
<b>Disabled</b>	Indicates on-board COM port function is ineffective
<b>3F8h/COM1</b>	Assign I/O address 3F8h to COM1
<b>2F8h/COM2</b>	Assign I/O address 2F8h to COM2
<b>3E8h/COM3</b>	Assign I/O address 3E8h to COM3
<b>2E8h/COM4</b>	Assign I/O address 2E8h to COM4

**Serial Port2 Mode (Normal)**

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.

**OnBoard Parallel Port (Auto)**

This option specifies the base I/O port address for the parallel port on the mainboard.

**Parallel Port Mode (ECP)**

This option specifies the parallel port mode.

**Parallel Port IRQ (Auto)**

Use this item to assign either IRQ 5 or 7 to the parallel port.

**Parallel Port DMA (Auto)**

Use this item to assign a DMA channel to the parallel port. The options are 0, 1 and 3.

**Onboard Game Port (201)**

This item allows you to select the Game Port Address.

**Onboard MIDI Port (330)**

This item allows you to configure the onboard MIDI port.

**MIDI Port IRQ (10)**

This item allows you to select the MIDI Port IRQ.

**Onboard IDE (Both)**

This option specifies the IDE channel used by the onboard IDE controller.

**RTL8100B LAN Support (Enabled)**

Enabled this item if your system supports an onboard LAN.

**RTL8100B Boot ROM Support (Disabled)**

Use this item to enable and disable the booting from the onboard LAN or a network add-in card with a remote boot ROM installed.

**Onboard AC'97 Audio (Enabled)**

Enables and disables the onboard audio-chip. Disable this item if you are going to install a PCI audio add-in card.



## Hardware Monitor Page

This section sets some of the parameters for the hardware monitoring function of this mainboard.

AMIBIOS SETUP - HARDWARE MONITOR SETUP	
(c)2001 American Megatrends, Inc. All Rights Reserved	
System Hardware Monitor	
Chassis Intrusion	Disabled
CPU Vcore	1.680 V
Vcc2.5V	1.792 V
+3.3V	3.280 V
+5V	4.811 V
+12V	12.928 V
VBAT	3.088 V
CASE FAN1	0 RPM
CPU FAN1	5111 RPM
SYSTEM Temperature	42° C/107° F
CPU Temperature	34° C/93° F
CPU Ratio Selection	3.0x

Available options:  
▶ --

ESC:Exit F1:Sel  
PgUp/PgDn:Modify  
F1:Help F2/F3:Color

### Chassis Intrusion (Disabled)

Enables or disables the alert warning message when the chassis is opened.

### System Component Characteristics

These items allow end users and technicians to monitor data provided by the BIOS on this mainboard. You cannot make changes to these fields.

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

### CPU Ratio Selection (3.0x)

This item allows you to select the multiplier at which your processor operates.

## Change Supervisor/User Password

When this function is selected, the following message appears at the center of the screen to assist you in creating a password.

### ENTER PASSWORD

Type the password, up to eight characters, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection.

To disable password, just press <Enter> when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter BIOS Setup freely.

### PASSWORD DISABLED

If you have selected "**System**" in "Security Option" of "BIOS Features Setup" menu, you will be prompted for the password every time the system reboots or any time you try to enter BIOS Setup.

If you have selected "**Setup**" at "Security Option" from "BIOS Features Setup" menu, you will be prompted for the password only when you enter BIOS Setup.

Supervisor Password has higher priority than User Password. You can use Supervisor Password when booting the system or entering BIOS Setup to modify all settings. Also you can use User Password when booting the system or entering BIOS Setup but can not modify any setting if Supervisor Password is enabled.

## Auto Configuration with Optimal Settings

If you select this item and press **Enter** a dialog box appears. If you press **Y**, and then **Enter**, the Setup Utility loads a set of fail-safe default values. These default values are not very demanding and they should allow your system to function with most kinds of hardware and memory chips.

---

**Note:** It is highly recommended that users enter this option to load optimal values for accessing the best performance.

---

## Auto Configuration with Fail Safe Settings

This option opens a dialog box that lets you install fail-safe defaults for all appropriate items in the Setup Utility:

Press <Y> and then <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The fail-safe defaults place no great demands on the system and are generally stable. If your system is not functioning correctly, try installing the fail-safe defaults as a first step in getting your system working properly again. If you only want to install fail-safe defaults for a specific option, select and display that option, and then press <F6>.

## 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 Utility. When the Save and Exit dialog box appears, press <Y> to save and exit, or press <N> to return to the main menu.

## Exit Without Saving

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

---

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

---

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the mainboard.

## Chapter 4

# Using the Mainboard Software

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### About the Software CD-ROM

The support software CD-ROM that is included in the mainboard package contains all the drivers and utility programs needed to properly run the bundled 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.

---

**Note:** Never try to install software from a folder that is not specified for use with your mainboard.

---

Before installing any software, always inspect the folder for files named README.TXT, INSTALL.TXT, or something similar. These files may contain important information that is not included in this manual.

---

### Auto-installing under Windows 98/ME/2000/XP

The Auto-install CD-ROM makes it easy for you to install the drivers and software for your mainboard.

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**Note:** If the Auto-install CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to Utility Folder Installation Notes later in this chapter.

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The support software CD-ROM disc loads automatically under Windows 98/ME/2000/XP. When you insert the CD-ROM disc in the 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.



---

**Note:** If the opening screen doesn't appear, double-click the file "setup.exe" in the root directory.

---

## Setup Tab

<b>Setup</b>	Click the <b>Setup</b> button to run the software installation program. Select from the menu which software you want to install.
<b>Browse CD</b>	<p>The <b>Browse CD</b> button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support CD.</p> <p>Before installing the software from Windows Explorer, look for a file named README.TXT, INSTALL.TXT or something similar. This file may contain important information to help you install the software correctly.</p> <p>Some software is installed in separate folders for different operating systems, such as DOS, WIN NT, or WIN98/95. Always go to the correct folder for the kind of OS you are using.</p> <p>To install the software, execute a file named SETUP.EXE or INSTALL.EXE by double-clicking the file and then following the instructions on the screen.</p>
<b>Exit</b>	The <b>Exit</b> button closes the Auto Setup window.

## Application Tab

Lists the software utilities that are available on the CD.

## Read Me Tab

Displays the path for all software and drivers available on the CD.

## Running Setup

Follow these instructions to install device drivers and software for the mainboard:

1. Click **Setup**. The installation program begins:



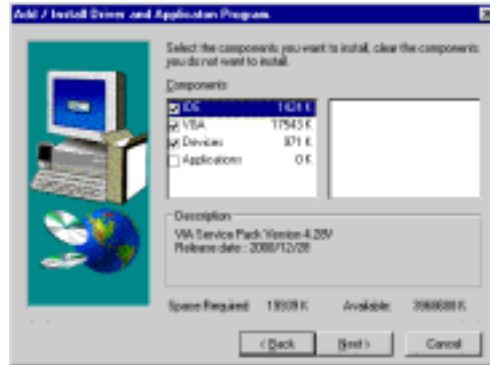
---

**Note:** The following screens are examples only. The screens and driver lists will be different according to the mainboard you are installing.

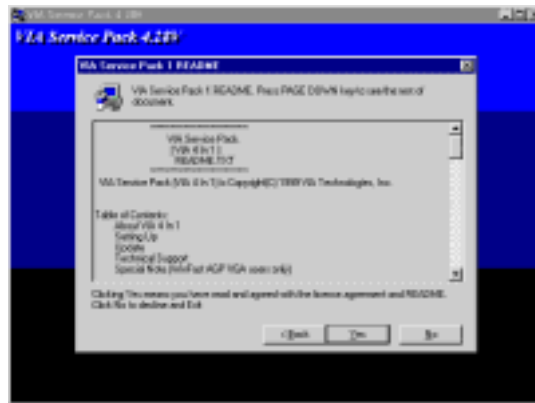
---

The mainboard identification is located in the upper left-hand corner.

2. Click **Next**. The following screen appears:



3. Check the box next to the items you want to install. The default options are recommended.
4. Click **Next** run the Installation Wizard. An item installation screen appears:



5. Follow the instructions on the screen to install the items.

Drivers and software are automatically installed in sequence. Follow the on-screen instructions, confirm commands and allow the computer to restart a few times to complete the installation.

---

## Manual Installation

Insert the CD in the CD-ROM drive and locate the PATH.DOC file in the root directory. This file contains the information needed to locate the drivers for your mainboard.

Look for the chipset and mainboard model; then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

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## Utility Software Reference

All the utility software available from this page is Windows compliant. They are provided only for the convenience of the customer. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

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**Note:** These software(s) are subject to change at anytime without prior notice. Please refer to the support CD for available software.

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### AWARD Flash Memory Utility

This utility lets you erase the system BIOS stored on a Flash Memory chip on the mainboard, and lets you copy an updated version of the BIOS to the chip. Proceed with caution when using this program. If you erase the current BIOS and fail to write a new BIOS, or write a new BIOS that is incorrect, your system will malfunction. Refer to Chapter 3, *Using BIOS* for more information.

### WinFlash Utility

The Award WinFlash utility is a Windows version of the DOS Award BIOS flash writer utility. The utility enables you to flash the system BIOS stored on a Flash Memory chip on the mainboard while in a Windows environment. This utility is currently available for WINXP\ME\2000\98SE. To install the WinFlash utility, run WINFLASH.EXE from the following directory:

UTILITY\WINFLASH 1.51

### PC-CILLIN 2002

The PC-CILLIN 2002 software program provides anti-virus protection for your system. This program is available for Windows 2000/ME/98SE/XP and Windows NT. Be sure to check the readme.txt and install the appropriate anti-virus software for your operating system.

We strongly recommend users to install this free anti-virus software to help protect your system against viruses.

## **MediaRing Talk – Telephony Software**

To install the MediaRing Talk voice modem software for the built-in modem, go to the directory \UTILITY\MEDIARING TALK, then run MRTALK-SETUP72.EXE to install the application software.

## **Super Voice – Fax/Modem Software**

To install the Super Voice voice, fax, data communication application for use with the built-in fax/modem, go the directory \UTILITY\SUPER\_VOICE, then run PICSHELL.EXE to install the application software.

## **CD Ghost**

The CD Ghost software enables you to create a virtual cabinet of CD-ROM drives on your system to help you categorize and organize your CD collection. A user-friendly interface assists you in quickly creating images of both CDs and DVDs onto your system. To install the software, run SETUP.EXE from the following directory:

\UTILITY\CDGHOST\ENG\CDGHOST

## **Recovery Genius**

The Recovery Genius software program is an innovative windows application system that protects your Hard Disk Drive from virus intrusion, accidental deletions and from system corruption. To install the Recovery Genius software program run SETUP.EXE from the following directory:

\UTILITY\RECOVERY GENIUS\ENG\RECOVERYGENIUS

## **Language Genius**

The Language Genius is a software –based product that helps you to learn new languages. To install the Language Genius software program run SETUP.EXE from the following directory:

\UTILITY\LANGUAGE GENIUS\ENGLANGUAGEGENIUS

## **PageABC**

The PageABC application software enables you to create your very own home page. To install the PageABC, go to the directory \UTILITYPageABC, and then run SETUP.EXE to install the application software.

This concludes Chapter 4.