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 Réglement sur le matériel brouilieur du Canada.

About the Manual

The manual consists of the following:

Chapter 1 **Introducing the Mainboard**	Describes features of the mainboard, and provides a shipping checklist. Go to ⟹ page 1
Chapter 2 **Installing the Mainboard**	Describes installation of mainboard components. Go to ⟹ page 8
Chapter 3 **Using BIOS**	Provides information on using the BIOS Setup Utility. Go to ⟹ page 35
Chapter 4 **Using the Mainboard Software**	Describes the mainboard software. Go to ⟹ page 67
Appendix A **Setting Jumpers**	Provides a reference to the jumpers on the mainboard. Go to ⟹ page 74

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Introducing the Mainboard

Introduction

Congratulations on purchasing the P6VXM2T mainboard. The P6VXM2T mainboard is a Micro ATX mainboard that uses a 4-layer printed circuit board and measures 244 mm x 220 mm. The mainboard features a Socket 370 that accommodates FC-PGA Celeron Pentium III and C3 processors that support frontside bus (FSB) speeds up to 133 MHz.

The P6VXM2T uses the VIA family chipset and features the AC 97 audio codec. The mainboard delivers high-level performance with a 4xAGP (Accelerated Graphics Port) slot and five PCI Bus, Master Ultra DMA (UDMA) ports that support up to four ATAPI (AT Attachment Packet Interface) devices. The PCI IDE also supports PIO Mode 3 and 4, UDMA33/66/100 IDE and an ATAPI CD-ROM.

The mainboard accommodates PC 100/133 SDRAM (Synchronous DRAM) up to 1 GB using two 3.3V unbuffered DIMM modules. The P6VXM2T also has a full set of I/O ports, such as dual channel IDE interfaces, a floppy controller, two FIFO serial port connectors, an EPP/ECP-capable bi-directional parallel port connector, a dual USB (Universal Serial Bus) connector, and PS/2 keyboard and mouse connectors.

One AGP slot, three 32-bit PCI local bus slots, one Communications Network Riser (CNR) slot and an optional one 8/16-bit ISA (Industry Standard Architecture) slot provide expandability for add-on peripheral cards.

Note: The mainboard only provides either one CNR slot or ISA slot.

Checklist

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

Standard Items

- One mainboard
- One diskette drive ribbon cable and bracket
- One IDE drive ribbon cable and bracket
- One auto-install software support CD
- This user' s manual

Features

Processor	Functioning as a platform for a value PC, the P6VXM2T features a Socket 370 that accommodates FC-PGA Celeron, VIA C3, FC-PGA2 Pentium III Tualatin, and FC-PGA2 Celeron processors. The P6VXM2T supports 66/100/133 MHz FSB speeds.
Chipset	**VIA North Bridge Chipset** This board features the VIA VT82C694T NB (North Bridge) chipset, enabling synchronous and asynchronous frequency operation between the processor and the memory over a wide frequency range. The NB chipset is optimized for Pentium III processors at 66/100/133 MHz Front Side Bus (FSB) frequency and supports 32-bit processor bus addressing. The integrated DRAM controller supports up to four double-sided DIMMs consisting of EDO, SDRAM, or VCM SDRAM. The NB chipset provides SDRAM with a 64-bit data interface. **VIA South Bridge Chipset** The VIA VT82C686B SB (South Bridge) chipset-comes in a 352-pin BGA package. The PCI to ISA Bridge has an integrated ISA bus controller with integrated DMA, timer, and interrupt controllers. The VIA VT82C686B chipset supports UDMA33/66/100.
Memory	The board has two DIMM sockets for the installation of 168-pin, 3.3V non-buffered DIMM memory modules. The DIMM memory modules can be SDRAM or VCM memory chips.
VGA	The P6VXM2T includes a 4xAGP slot that provides four times the bandwidth of the original AGP specification. AGP technology provides a direct connection between the graphics sub-system and the processor so that the graphics do not have to compete for processor time with other devices on the PCI bus.

|	The AGP design allows the graphics controller to use part of the main memory when it needs it, for example, in handling the very large texture maps required by virtual reality and 3D video games and applications.
AC' 97 Audio Codec	The AC' 97 Audio codec is compliant with the AC 97 2.1 specification, and supports 18-bit ADC (Analog Digital Converter) and DAC (Digital Analog Converter) resolution as well as 18-bit stereo full-duplex codec with independent and variable sampling rates. Further features include support for four analog line-level stereo inputs.
Expansion Options	The mainboard comes with the following expansion options: • Three 32-bit PCI slots • A 4xAGP slot • A Communication Network Riser (CNR) slot • One 8/16-bit ISA slot (optional) • Two IDE channels and a floppy disk drive interface The P6VXM2T supports Ultra DMA bus mastering with transfer rates of 33/66/100 MB/sec.
Integrated I/O	The mainboard has a full set of I/O ports and connectors: • Two PS/2 ports for mouse and keyboard • One LAN port (optional) • One serial port • One VGA port • One parallel port • One MIDI/game port • Two USB ports • Audio jacks for microphone, line-in and line-out
BIOS Firmware	This mainboard uses Award BIOS that enables users to configure many system features including the following: • Power management • Wake-up alarms • CPU parameters • CPU and memory timing The firmware can also be used to set parameters for different processor clock speeds.

Mainboard Components
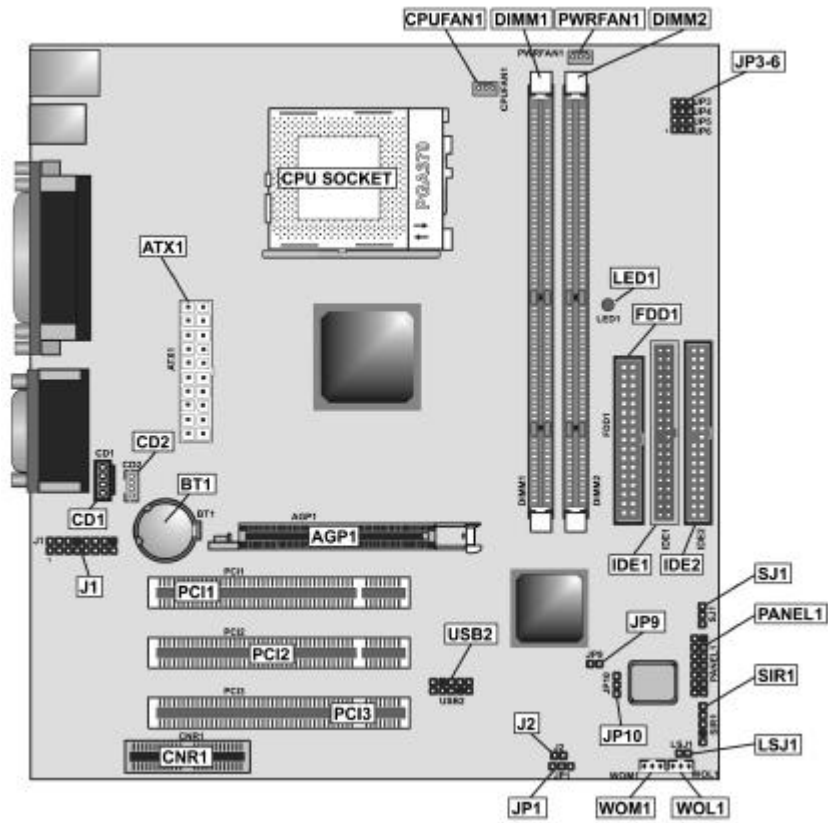
Table of Mainboard Components

Component	Description
AGP1	Accelerated Graphics Port
ATX1	Standard 20-pin ATX power connector
BT1	Three volt realtime clock battery
CPUFAN1	Power connector for CPU cooling fan
CD1	Audio connector for CD-ROM/DVD drive
CD2	Auxiliary connector for CD-ROM/DVD drive
CNR1	Communications Networking Riser slot (CNR supports modem and audio only)
CPU Socket	CPU Socket (PGA370)
DIMM1 ~ DIMM2	Two 168-pin DIMM 3.3 volt
FDD1	Connector for floppy disk drives
IDE 1	Primary IDE channel
IDE 2	Secondary IDE channel
J1	Audio header
J2	External SMI
JP1	Clear CMOS jumper
JP3~JP6	CPU clock ratio jumper
JP9	BIOS protection jumper
JP10	A/C resume jumper
LED1	LED status indicator connector
LSJ1	Single color LED header
PANEL1	Front panel connectors
PCI1~PCI3	Three 32-bit PCI slots
PWRFAN1	Power connector for case cooling fan
SIR1	SIR connector for infrared
SJ1	Single color LED header
USB2	Connector for USB port
WOL1	Connector for LAN wake up
WOM1	Connector for modem wake up

Note: The red indicator LED1 warns you that the computer is still powered on and you should not install or uninstall memory modules.

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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 244 x 220 mm. Choose a case that accommodates this form factor.

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

Chapter 2

Installing the Mainboard

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.

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:

Note: The appendix provides a quick reference for jumper settings.

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.

Short   **Open**
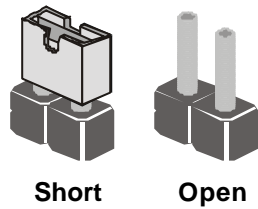
This illustration shows a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.
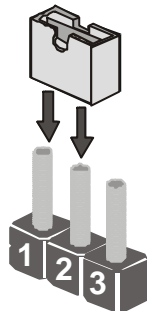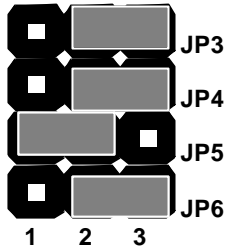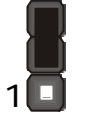
This illustration shows a 3-pin jumper. Pins 1 and 2 are SHORT.

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: Clear CMOS*	**JP1** 1 ▊▊ □
JP3~JP6	12-pin	CPU Clock Ratio	Refer to next page	JP3 JP4 JP5 JP6 1 2 3
JP9	2-pin	BIOS flash protection	Short: Enable *Open: Disable*	**JP9** ▊▊
JP10	3-pin	AC power resume	1-2: Enable *2-3: Disable*	**JP10** 1 □

Jumper 1 – Enables you to clear the BIOS. Follow these instructions:

1. Turn the system off.
2. Short pins 1 and 2 on jumper 1.
3. Return the jumper to the normal setting.
4. Turn the system on. The BIOS is returned to the default settings.

Jumper 3 ~ Jumper 6 – Use these 3 x 4 pin jumpers to manually set the CPU clock ratio. Refer to the following table to set the CPU clock ratio for your processor by shorting the pins indicated.

Fraction	Short pins			
	JP3	JP4	JP5	JP6
3.0/8.5	2-3	2-3	1-2	2-3
3.5/9.0	2-3	2-3	1-2	1-2
4.0	2-3	1-2	2-3	2-3
4.5/11.5	2-3	1-2	2-3	1-2
5.0/12	2-3	1-2	1-2	2-3
5.5/13	2-3	1-2	1-2	1-2
6.0/14.0	1-2	2-3	2-3	2-3
6.5/15.0	1-2	2-3	2-3	1-2
7.0/16.0	1-2	2-3	1-2	2-3
7.5	1-2	2-3	1-2	1-2
8.0	1-2	1-2	2-3	2-3
9.0	2-3	2-3	1-2	1-2
9.5	2-3	2-3	2-3	1-2
10.0	1-2	1-2	2-3	1-2
10.5	2-3	1-2	2-3	2-3
11.0	1-2	1-2	1-2	2-3

Jumper 9 – Use this jumper to enable or disable the BIOS flash protection on the mainboard. You should disable this jumper when you want to flash the BIOS.

Jumper 10 – Use this jumper to set the power state after an unexpected shutdown due to AC power interruption.

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 over-tighten 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.

1. Place the mainboard over the mounting brackets.
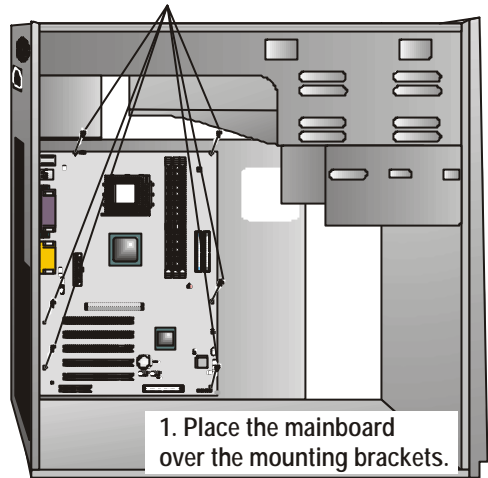
Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your mainboard.

Connecting Case Components

After you have installed the mainboard into a case, you can begin connecting the mainboard components. Refer to the following:
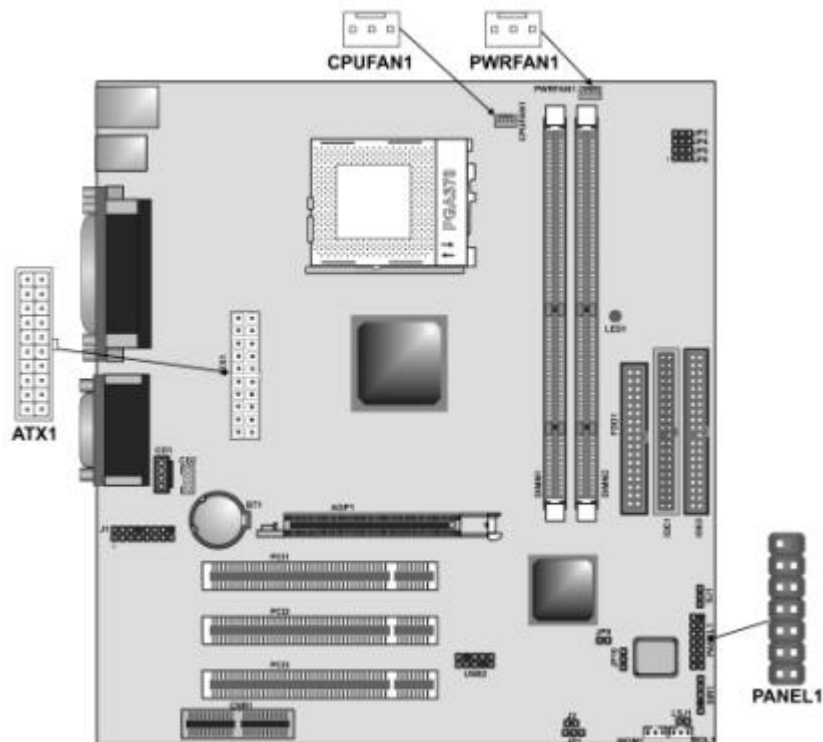
1. Connect the case power supply connector to ATX1.
2. Connect the CPU cooling fan cable to CPUFAN1.
3. Connect the case cooling fan connector to PWRFAN1.

The following page explains how to make panel connections.

The Panel Connector

The panel connector provides a standard set of switch and LED connectors commonly found on ATX or Micro ATX cases. Refer to the table below for information:

Device	Pins
Empty	7
Reset Switch	13, 14
Power Switch	5, 6
Speaker	9, 10, 11, 12
Power LED	-2 (Y), -3 (G), 4
HDD LED	+1, -8

1   8

PLEDY (Pin -2)

PLEDG (Pin -3)

PLED (Pin 4)

Power Switch (Pin 5, 6)

Cut away (Pin 7)

HDD LED (Pin +1, -8)

Case Speaker (Pin 9, 10, 11, 12)

Reset (Pin 13, 14)

7   14

Note: The plus sign (+) indicates a pin which must be connected to a positive voltage.

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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 by making changes to jumpers on the mainboard, or changing the 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:
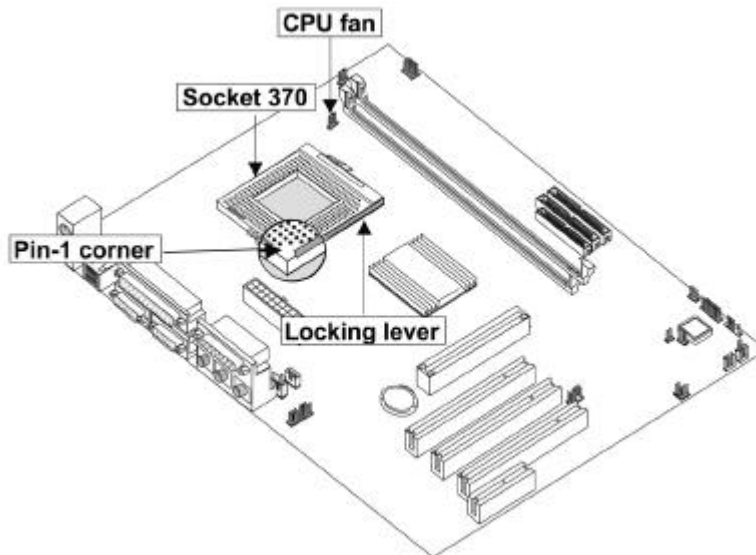
Note: The Pin-1 corner is empty on both the socket and the CPU.

Follow these instructions to install the CPU:

1. Pull the CPU socket locking lever away from the socket (A) to unhook it and raise the locking lever to the upright position (B).
2. Match the pins on the underside of the CPU with the pin holes on the Socket 370. Two adjacent corners on the Socket are missing pin holes: two corresponding corners on the CPU are missing pins. Lower the CPU onto the socket accordingly.
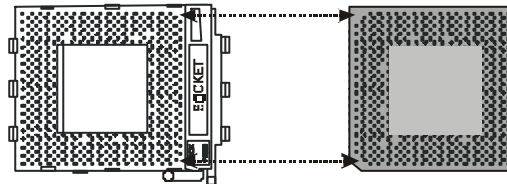
> **Note:** The socket is designed to ZIF (Zero Insertion Force) specifications which means that the CPU pins should easily drop into the socket pin holes without any exertion or pressure on the CPU.

3. Swing the locking lever down and hook it under the latch on the edge of the socket.
4. Apply thermal grease to the top of the CPU. See your dealer for more information about thermal grease.
5. Lower the CPU fan/heatsink unit onto the CPU socket.
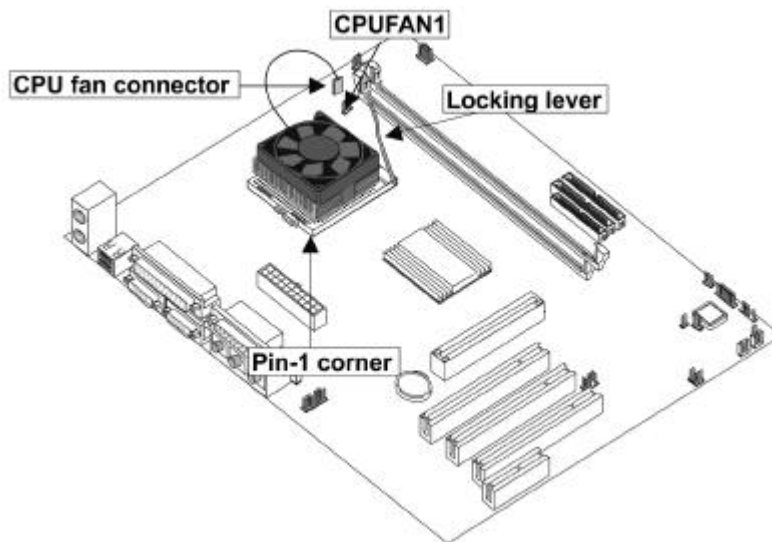
6. Secure the two retention clips on either side of the fan/heatsink unit onto the Socket 370 base.

*Fan/heatsink unit
secured to socket*
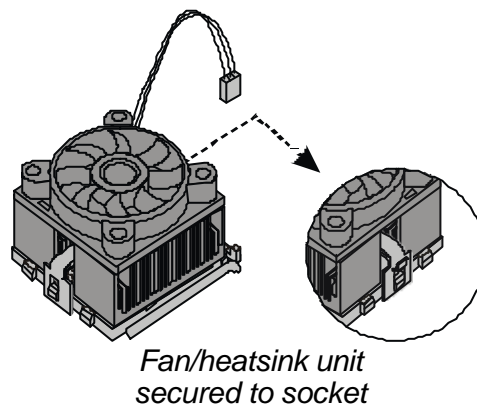
7. Connect the CPU fan power cable to the CPUFAN1 connector.

Note: The CPU fan/heatsink unit installation procedures may vary with the model of the fan/heatsink supplied. The form, size, and color of the fan/heatsink unit may also vary.

Installing Memory Modules

For this mainboard, you must use 168-pin 3.3V non-buffered Dual h-line Memory Modules (DIMMs). The memory bus can run at 66 MHz, 100 MHz or 133 MHz. If your processor operates over a 133 MHz system bus, you can install PC133 or PC100 memory that operates over a 133 or 100 MHz bus. If your processor operates over a 100 MHz system bus, you can install memory that operates over a 133MHz, 100 MHz or 66MHz bus. If your processor operates over a 66MHz, you can only install memory chips that operate at 66MHz or 100MHz.

Supported Memory Configurations

The following table shows the memory configurations supported:

Technology (Mbit)	Configuration	# of Row Addrs Bits	# of Col Addrs Bits	# of Bank Addrs Bits	Page Size (Kb)
64	8M x 8	12	8	2	4
64	4M x 16	12	9	2	2
128	32M x 4	12	11	2	16
128	16M x 8	12	10	2	8

Note: 32M x 4 128 Mbit is for registered DIMMs only, 4M x 16 64 Mbit support is for unbuffered DIMMs only.

The following table shows the maximum memory for DIMM based platforms:

DRAM Configuration		1 DIMM		2 DIMMs	
		SS (MB)	DS (MB)	SS (MB)	DS (MB)
64 Mbit	8M x 8	64	128	128	256
64 Mbit	4M x 16	32	64	64	128
128 Mbit	16M x 8	128	256	256	512
128 Mbit	32M x 4	256	512	512	1024

Note: SS = Single Sided
DS = Double Sided

Installation Procedure

There are two slots for memory modules. You must install at least one module, and it makes no difference which slot you use to install the module. Each module can be populated with from 32 MB to 512 MB of memory; total memory capacity is 1 GB.

1. Locate the DIMM slots on the mainboard.
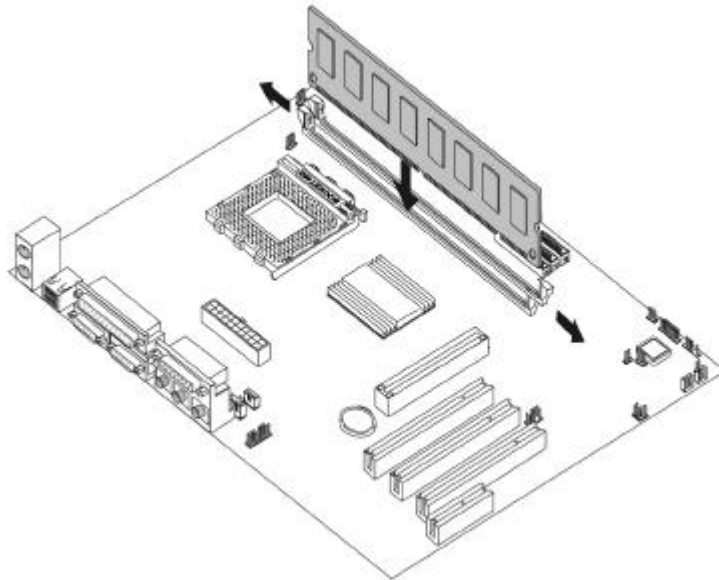
2. The DIMM slots are keyed with notches and the

DIMMs are keyed with cutouts so that they can only be installed correctly. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.

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

Latch

Cutouts

Notches
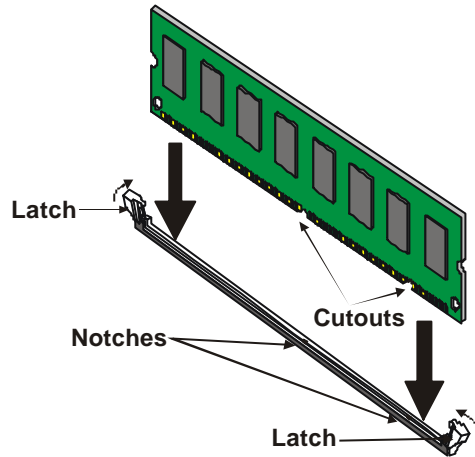
Latch

4. Install the DIMM module into the slot and press it firmly down so that it seats correctly. The latches at either side of the slot will be levered upwards and latch on to the edges of the DIMM when it is installed correctly.

Installing a Hard Disk Drive/CD-ROM

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

About IDE Devices

Your mainboard has a primary IDE channel interface (IDE1) and a secondary IDE interface (IDE2). The mainboard ships with one IDE ribbon cable that supports one or two IDE devices. All IDE devices have jumpers or switches that can be used to set the IDE device as MASTER or SLAVE.

If you install two IDE devices on one cable, you must make sure 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.

If you want to install more than two IDE devices, obtain a second IDE cable and you can add two more devices to the secondary IDE channel. If there are two devices on the cable, make one MASTER and one SLAVE.

About UltraDMA

This board supports UltraDMA 33/66 (or UDMA 100 with the optional VIA VT82C686B chipset). UDMA is a technology that speeds the performance of devices in the IDE channel. We recommend that you install IDE devices that support UDMA, and use IDE cables that support UDMA.

Note: The P6VXM2T supports two VIA South Bridge chipsets—the VIA VT82C686A and the VIA VT82C686B. The VIA VT82C686A is standard and supports UDMA33/66. The VIA VT82C686B is optional and supports UDMA100.

Installing a Hard Disk Drive

1. Install the hard disk drive into the drive cage in your system case.
2. Plug the IDE cable into IDE1 (A):
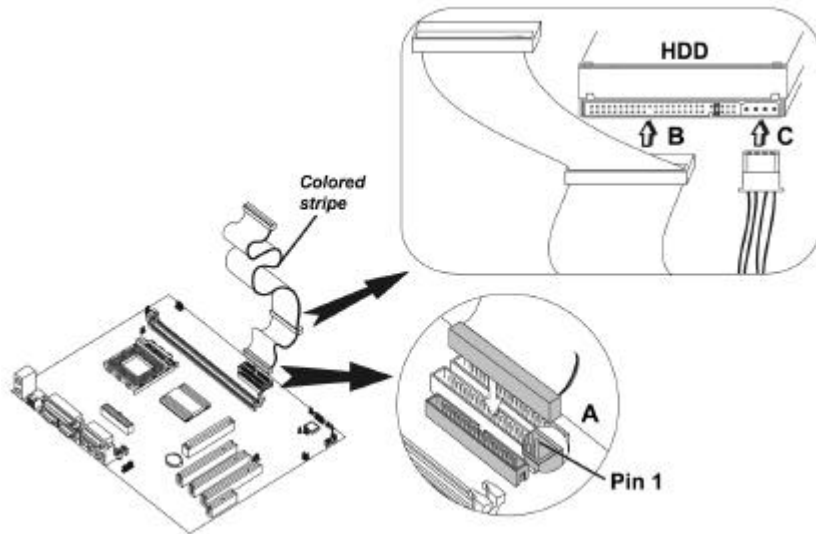
Note: Ribbon cable connectors are usually keyed so that they can only be installed correctly on the device connector. If the connector is not keyed, make sure that you match the pin-1 side of the cable connector with the pin-1 side of the device connector. Each connector has the pin-1 side clearly marked. 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 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.

Note: 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.

1. Install the FDD into the drive cage in your system case.
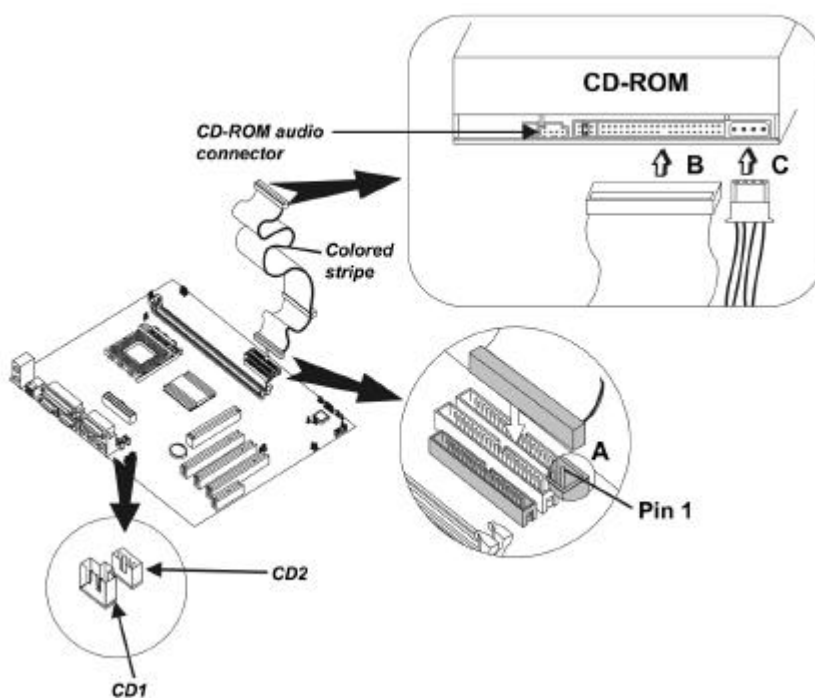2. Plug the FDD cable into FLOPPY1 (A):
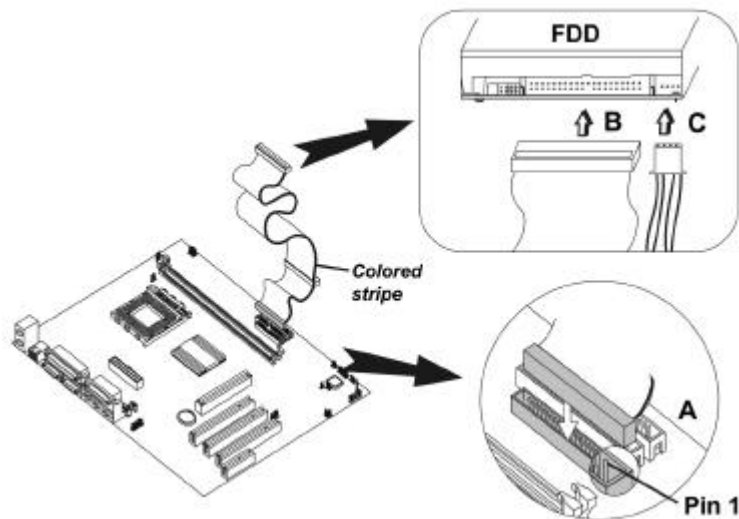
Note: Ribbon cable connectors are usually keyed so that they can only be installed correctly on the device connector. If the connector is not keyed, make sure that you match the pin-1 side of the cable connector with the pin-1 side of the device connector. Each connector has the pin-1 side clearly marked. The

> pin-1 side of each ribbon cable is always marked
> with a colored stripe on the cable.

3. Plug the correct connector on the FDD cable for the 5.25-inch or 3.5-inch drive into the FDD connector (B).

4. Plug a power cable from the case power supply into the power connector on the FDD.

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

This mainboard has three 32-bit PCI (Peripheral Components Interconnect) expansion slots, one 4xAGP slot, one Communications and Networking Riser (CNR) slot and an optional one 8/16-bit ISA (Industry Standard Architecture) slot.

PCI Slots	PCI slots are used to install expansion cards that have the 32-bit PCI interface.
4xAGP Slot	The 4xAGP slot is used to install a graphics adapter that supports the 4xAGP specification and has a 4xAGP edge connector.
CNR Slot	This slot is used to insert CNR cards with Modem and Audio functionality.
ISA Slot (optional)	The ISA slot is used to install legacy cards that have an 8/16-bit interface.

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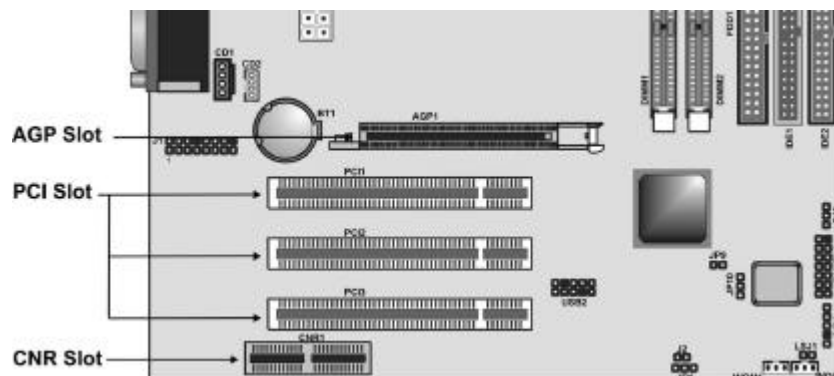
> **Note:** Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

1. Remove a blanking plate from the system 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.

Add-on card

Edge connector
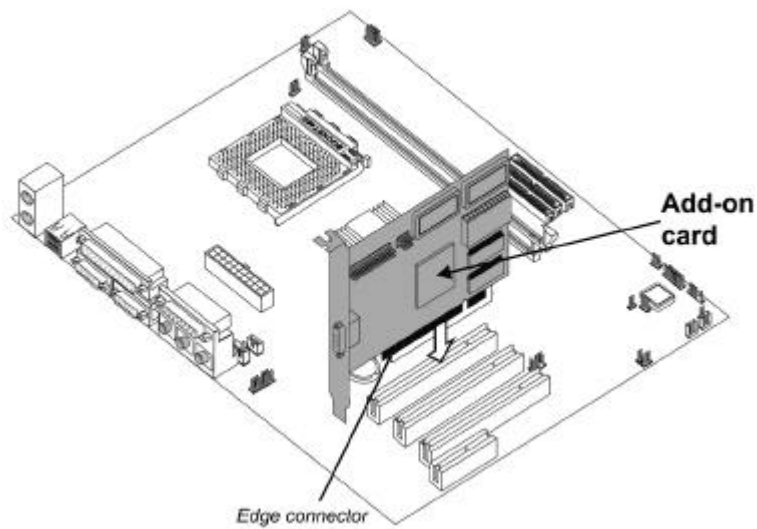
3. Secure the metal bracket of the card to the system case with a screw.

> **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 main-board's optional devices:
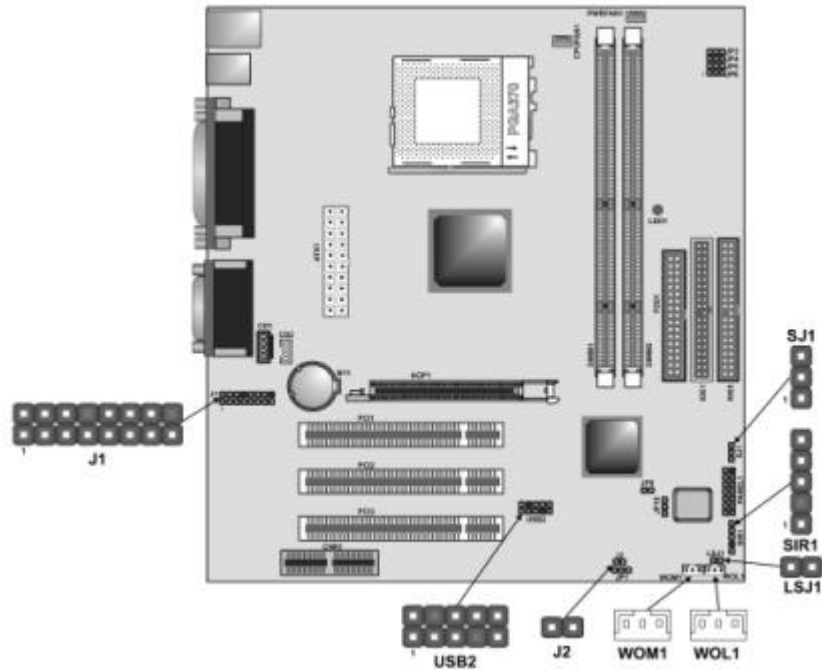
J1: Audio header

This mainboard provides a second infrared, keyboard, and mouse header, giving the option of installing second infrared, keyboard, and mouse ports on the front panel. Depending on your case and system configuration this connector may be more suitable as the sole IR port connector.

Pin	Signal Name	Pin	Signal Name
1	Active LINE Out (R)	2	Active LINE Out (L)
3	GND (aLO)	4	GND (aLO)
5	GND (+12)	6	GND (+12)
7	+12V (1A)	8	Cut away
9	MIC	10	GND (MIC)
11	Front LINE Out (R)	12	LINE Next (R)
13	Front LINE Out (L)	14	LINE Next (L)
15	GND (fLO)	16	Cut away

J2: External SMI

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

Pin	Signal Name
1	SMI
2	GMD

USB2: USB port 3, 4 connector

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 to connect the front-mounted ports to the mainboard.

Pin	Signal Name	Pin	Signal Name
1	USBVCC	2	GROUND
3	-DATA1	4	Cut away
5	+DATA1	6	+DATA3
7	Cut away	8	-DATA3
9	GROUND	10	USBVCC

SIR1: Serial infrared port

The mainboard supports a Serial Infrared (SIR) 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	Pin	Signal Name
1	VCC	4	GND
2	Cut away	5	IRTX
3	IRRX		

SJ1: Single color LED header

This header allows the user to install an LED indicator to indicate when the computer is in Suspend to RAM (STR) mode or normal mode.

Pin	Signal Name
1	SUSLED-Y
2	SUSLED-Y
3	PWLED+

LSJ1: Single color LED header

This header allows the user to install an LED indicator to indicate when the computer is in Suspend to RAM (STR) mode or normal mode.

Pin	Signal Name
1	5 VSB
2	SUSLED-G

WOL1/WOM: Wake On LAN/Wake On Modem

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
1	5VSB
2	GROUND
3	WAKE_UP

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 (WOM) feature.

When your system is in a power-saving mode, any modem signal automatically resumes the system. You must enable this item using the Power Management page of the Setup Utility. See Chapter 3 for more information.

Connecting I/O Devices

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

PS/2 mouse   **Parallel port (LPT1)**   **Game port**

PS/2 keyboard   **USB ports**   **Serial port COM 1**   **Serial port COM 2**   **Microphone**   **Line-in**   **Line-out**
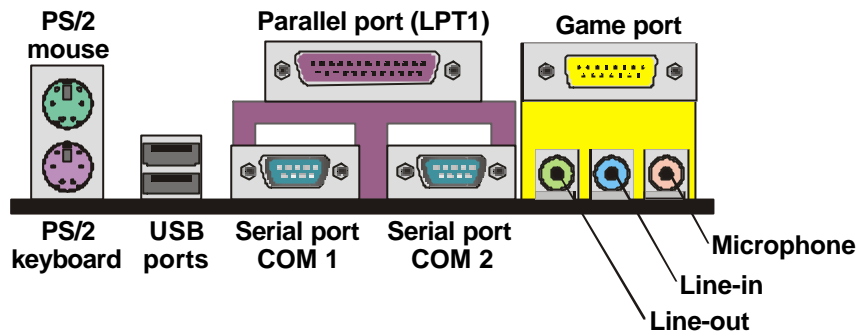
PS/2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS/2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
USB Ports	Use the USB ports to connect USB devices.
LPT1	Use LPT1 to connect printers or other parallel communications devices.
COM1	Use the COM port to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1/3.
VGA Port	Use the VGA port to connect an external monitor.
Game Port	Use the game port to connect a joystick or a MIDI device.
Audio Ports	Use the three audio ports to connect audio devices. The left side jack is for a stereo line-out signal. The middle jack is for a stereo line-in signal. The right side jack is for a microphone.

External Connector Color Coding

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

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

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

Using BIOS

About the Setup Utility

The computer uses the latest Award 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

Entering the Setup Utility

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

Press DEL to enter SETUP

Pressing the delete key ⌷ accesses the Award BIOS Setup Utility:

CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software

►Standard CMOS Features	►Frequency/Voltage Control
►Advanced BIOS Features	Load Fail-Safe Defaults
►Advanced Chipset Features	Load Optimized Defaults
►Integrated Peripherals	Set Supervisor Password
►Power Management Setup	Set User Password
►PnP/PCI Configurations	Save & Exit Setup
►PC Health Status	Exit Without Saving

Esc :   Quit   F9 :   Menu in BIOS   - ¯ ® ¬   : Select Item
F10 :   Save & Exit Setup

Time, Date, Hard Disk Type . . .

BIOS Navigation Keys

The BIOS navigation keys are listed below:

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

Updating the BIOS

You can download and install updated BIOS for this mainboard from the manufacturer's Web site. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

1. If your mainboard has a BIOS protection jumper, change the setting to allow BIOS flashing. (Refer to Appendix A for jumper settings.)
2. If your mainboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.)
3. Create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
4. Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the system diskette you created in Step 3.
5. Turn off your computer and insert the system diskette in your computer's diskette drive. (You might need to run the Setup Utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the floppy diskette drive first.)
6. At the A:\ prompt, type the Flash Utility program name and press <Enter>. You see a screen similar to the following:

```
        FLASH MEMORY WRITER V7.33
   (C) Award Software 1999 All Rights Reserved

For (MAINBOARD NAME)              DATE: 10/26/2000
Flash Type
File Name to Program :███████████████████




Error Message
```
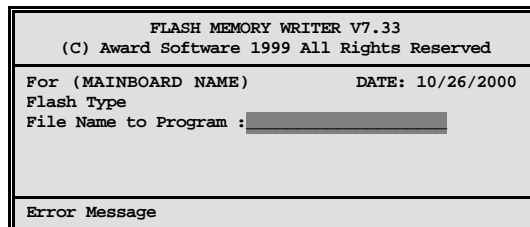
7. Type the filename of the new BIOS in the "File Name to Program" text box. Follow the onscreen directions to update the mainboard BIOS.
8. When the installation is complete, remove the floppy diskette from the diskette drive and restart your computer. If your mainboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten.

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 Features

This option displays basic information about your system.

CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software
Standard CMOS Features

Date (mm:dd:yy)	Tue, Feb 15 20000	Item Help
Time (hh:mm:ss)	12 : 8 : 59	
► IDE Primary Master	Press Enter None	Menu Level ►
► IDE Primary Slave	Press Enter None	
► IDE Secondary Master	Press Enter None	Change the day, month,
► IDE Secondary Slave	Press Enter None	year and century.
Drive A	1.44M, 3.5 in.	
Drive B	None	
Floppy 3 mode Support	Disabled	
Video	EGA/VGA	
Halt On	All Errors	
Base Memory	640K	
Extended Memory	63488	
Total Memory	64512K	

- ¯ ® ¬ : Move Enter : Select   +/-/PU/PD:Value: F10: Save ESC: Exit   F1:General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

Date and Time

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

IDE Devices (None)

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

Press <Enter> to display the IDE submenu:

CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software
IDE Primary Master

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master	Auto	Menu Level ►►
Access Mode	Auto	
Capacity	8448 MB	To auto-detect the HDD's size, head . . . on this channel
Cylinder	16368	
Head	16	
Precomp	0	
Landing Zone	16367	
Sector	63	

- ¯ ® ¬ : Move   Enter : Select   +/-/PU/PD:Value: F10: Save   ESC: Exit   F1:General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

IDE HDD Auto-Detection

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

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

IDE Primary/Secondary Master/Slave (Auto)

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

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described below.

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

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

Access Mode

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

Press <Esc> to return to the Standard CMOS Features page.

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

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

Floppy 3 Mode Support (Disabled)

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

Video (EGA/VGA)

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

Halt On (All Errors)

This item defines the operation of the system POST (Power On Self Test) routine. You can use this item to select which types of errors in the POST are sufficient to halt the system.
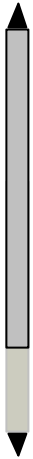
Base Memory, Extended Memory, and Total Memory

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

Advanced BIOS Setup Option

This option displays advanced information about your system.

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Advanced BIOS Features

Anti-Virus Protection	Disabled	**Item Help**
Y2K Monitor	Disabled	
H/W Reset Function	Enabled	Menu Level ►
CPU Internal Cache	Enabled	
External Cache	Enabled	Allows you to choose
CPU L2 Cache ECC Checking	Enabled	the VIRUS warning
Processor Number Feature	Enabled	feature for IDE Hard
Quick Power On Self Test	Enabled	Disk boot sector
First Boot Device	Floppy	protection. If this
Second Boot Device	HDD-0	function is enabled
Third Boot Device	LS120	and someone attempts
Boot Other Device	Enabled	to write data into this
Swap Floppy Drive	Disabled	area, BIOS will show a
Boot Up Floppy Seek	Enabled	warning message on
Boot Up NumLock Status	On	screen and alarm beep
Gate A20 Option	Normal	
Typematic Rate Setting	Disabled	
x Typematic Rate (Chars/Sec)	6	
x Typematic Delay (Msec)	250	

- ¯ ® ¬ : Move   Enter : Select   +/-/PU/PD:Value: F10: Save   ESC: Exit   F1:General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

Anti-Virus Protection (Disabled)

When this item is enabled, it provides some protection against viruses that try to write to the boot sector and partition table of your hard disk drive. This item is Disabled by default. You need to disable it so that you can install an operating system. We recommend that you enable virus warning protection as soon as you have installed your disk with an OS.

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

Y2K Monitor (Disabled)

If you enable this item, the system will monitor for errors generated by the year 2000 bug.

H/W Reset Function (Enabled)

Enables or disables the computer's hardware reset button. The default setting is Enabled.

CPU Internal Cache CPU Internal Cache (Enabled)

All the processors that can be installed in this mainboard use internal level 1 (L1) cache memory to improve performance. Leave this item at the default value Enabled for better performance.

External Cache (Enabled)

Most processors that can be installed in this system use external level 2 (L2) cache memory to improve performance.

CPU L2 Cache ECC Checking (Enabled)

This item enables or disables ECC (Error Correction Code) error checking on the CPU cache memory. We recommend that you leave this item at the default value.

Processor Number Feature (Enabled)

Some new processors are installed with a unique processor number. This number may be used for verification in Internet transactions and e-commerce. If you prefer not to use or distribute the unique processor number, set this item to Disabled to suppress the processor number.

Quick Power On Self Test (Enabled)

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

$1^{st}/2^{nd}/3^{rd}$ Boot Device (Floppy/HDD-0/LS/ZIP)

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

Boot Other Device (Enabled)

If you enable this item, the system will search all other possible locations for an operating system if it fails to find one in the devices specified under the first, second and third boot devices.

Swap Floppy Drive (Disabled)

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

Boot Up Floppy Seek (Enabled)

If this item is enabled, it checks the geometry of the floppy disk drives at start-up time. You don' t need to enable this item unless you have a legacy diskette drive with 360K capacity.

Boot Up NumLock Status (On)

This item defines if the keyboard Num Lock key is active when your system is started.

Gate A20 Option (Normal)

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

Typematic Rate Setting (Disabled)

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

Typematic Rate (Chars/Sec) (6)

If Typematic Rate Setting is enabled, you can use this item to define how many characters per second are generated by a held-down key.

Typematic Rate (Msec) (250)

If Typematic Rate Setting is enabled, you can use this item to define how many milliseconds must elapse before a held-down key begins generating repeat characters.

Security Option (Setup)

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

OS Select For DRAM > 64 MB (Non-OS2)

This item is only required if you have installed more than 64 MB of memory and you are running the OS/2 operating system. Otherwise, leave this item at the default Non-OS2.

HDD S.M.A.R.T Capability (Disabled)

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

The disk drive software monitors the internal performance of the motors, media, heads, and electronics of the drive. The host software monitors the overall reliability status of the drive. If a device failure is predicted, the host software, through the Client WORKS S.M.A.R.T applet, warns the user of the impending condition and advises appropriate action to protect the data.

Report No FDD For WIN95 (Yes)

If you are running a system with no floppy drive and using Windows 95, select Yes for this item to ensure compatibility with the Windows 95 logo certification. Otherwise, select No.

Video BIOS Shadow (Enabled)

Enable this item to copy the video BIOS to shadow RAM for improved performance.

C8000-CBFFF ~ DC000-DFFFF Shadow (Disabled)

These categories determine whether option ROMs will be copied to RAM. An example of such option ROM would be support of on-board SCSI. The default value for each item is Disabled.

Advanced Chipset Features Option

These items define critical timing parameters of the main-board. You should leave the items on this page at their default values unless you are very familiar with the technical specifications of your system hardware. If you change the values incorrectly, you may introduce fatal errors or recurring instability into your system.

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Advanced Chipset Features

		Item Help
Bank 0/1 DRAM Timing	SDRAM 8/10ns	
Bank 2/3 DRAM Timing	SDRAM 8/10ns	
SDRAM Cycle Length	3	Menu Level ►
DRAM Clock	Host CLK	
Memory Hole	Disabled	
P2C/C2P Concurrency	Enabled	
System BIOS Cacheable	Enabled	
Video RAM Cacheable	Enabled	
AGP Aperture Size	64M	
AGP-4X Mode	Enabled	
AGP Driving Control	Auto	
x AGP Driving Value	DA	
AGP Fast Write	Disabled	
OnChip USB	Enabled	
USB Keyboard Support	Disabled	
OnChip Sound	Auto	
CPU to PCI Write Buffer	Enabled	

- ¯ ® ¬ : Move Enter : Select   +/-/PU/PD:Value: F10: Save ESC: Exit   F1:General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

Bank 0/1 2/3 DRAM Timing (8/10 ns)

The DRAM timing is controlled by the DRAM Timing Registers. The timings programmed into this register are dependent on the system design. Slower rates may be required in certain system designs to support loose layouts or slower memory.

SDRAM Cycle Length (3)
This item sets the timing and wait states for SDRAM memory. We recommend that you leave this item at the default value.

DRAM Clock (Host CLK)

This item sets the DRAM Clock. We recommend that you leave this item at the default value.

Memory Hole (Disabled)

This item can be used to reserve memory space for some ISA expansion cards that require it.

P2C/C2P Concurrency

When disabled, the CPU bus is occupied during the entire PCI operation period.

System BIOS Cacheable (Enabled)/
Video RAM Cacheable (Enabled)

These items allow the video and/or system to be cached in memory for faster execution. We recommend that you leave these items at the default value.

AGP Aperture Size (64 MB)

This item defines the size of the aperture if you use an AGP graphics adapter. It refers to a section of the PCI memory address range used for graphics memory. We recommend that you leave this item at the default value.

AGP-4X Mode (Enabled)

This item allows you to enable or disable the caching of display data for the video memory of the processor. Enabling AGP-4X Mode can greatly improve the display speed. If your graphics display card does not support this feature, you need to disable this item.

AGP Driving Control (auto)

This item can be used to signal driving current on AGP cards to auto or Manual. Some AGP cards need stronger than normal driving current in order to operate. We recommend that you set this item to Auto by default.

AGP Driving Value (DA)

When the previous item AGP Driving Control is set to Manual, you can use this item to set the AGP current driving value.

AGP Fast Write (Disabled)

This item allows you to enable or disable the caching of display data for the video memory of the processor. Enabling can greatly improve the display speed. If your graphics display card does not support this feature, you need to disable this item.

OnChip USB (Enabled)

This should be enabled if your system has a USB installed on the system board and you wish to use it.

USB Keyboard Support (Disabled)

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

OnChip Sound (Auto)

When set to Disabled, the onboard audio chip is turned off.

CPU to PCI Write Buffer (Enabled)

When enabled, up to four words of data can be written to the PCI bus without interrupting the CPU. When disabled, a write buffer is not used and the CPU read cycle will not be completed until the PCI bus signals that it is ready to receive the data. The default setting is Enabled.

PCI Dynamic Bursting (Enabled)

When set to Enabled, every write transaction goes to the write buffer. Burstable transactions then "burst" on the PCI bus and nonburstable transaction do not.

PCI Master 0 WS Write (Enabled)

When set to Enabled, writes to the PCI bus are executed with zero wait states.

PCI Delay Transaction (Enabled)

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

PCI#2 Access#31 Retry (Enabled)

When set to Enabled, the AGP Bus (PCI#2) access to PCI Bus (PCI#1) is executed with the error retry feature.

PCI Master Bus Time-Out

This item allows you to select the time in which the PCI Master Bus will be force into arbitration after a period of time.

AGP Master 1 WS Write (Disabled)

This implements a single delay when writing to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability.

AGP Master 1 WS Read (Disabled)

This implements a single delay when reading to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability.

Memory Parity/ECC Check (Disabled)

Enable this item to allow BIOS to perform a parity check to the POST memory tests. Select Enabled only if the system DRAM supports parity checking.

Integrated Peripherals Option

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

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Integrated Peripherals

OnChip IDE Channel0	Enabled		Item Help
OnChip IDE Channel1	Enabled		
IDE Prefetch Mode	Enabled		Menu Level ►
Primary Master PIO	Auto		
Primary Slave PIO	Auto		
Secondary Master PIO	Auto		
Secondary Slave PIO	Auto		
Primary Master UDMA	Auto		
Primary Slave UDMA	Auto		
Secondary Master UDMA	Auto		
Secondary Slave UDMA	Auto		
Init Display First	PCI Slot		
IDE HDD Block Mode	Enabled		
Onboard FDD Controller	Enabled		
Onboard Serial Port 1	Auto		
Onboard Serial Port 2	Auto		
UART 2 Mode	Standard		
x IR Function Duplex	Half		
x TX,RX inverting enable	No, Yes		

- ‾ ® ¬ : Move Enter : Select   +/-/PU/PD:Value: F10: Save   ESC: Exit   F1:General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

On-Chip IDE Channel 0/1 (Enabled)

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

IDE Prefetch Mode (Enabled)

The onboard IDE drive interfaces supports IDE prefetching, for faster drive accesses. If you install a primary and/or secondary add-in IDE interface, set this field to Disabled if the interface does not support prefetching.

IDE Primary/Secondary Master/Slave PIO (Auto)

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

IDE Primary/Secondary Master/Slave UDMA (Auto)

Each IDE channel supports a master device and a slave de-

vice. This mainboard supports UltraDMA. UltraDMA technology provides faster access to IDE devices.

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

Init Display First (PCI Slot)

Use this item to define if your graphics adapter is installed in one of the PCI slots or select Onboard if you have a graphics system integrated on the mainboard.

IDE HDD Block Mode (Enabled)

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

Onboard FDD Controller (Enabled)

This option enables the onboard floppy disk drive controller.

Onboard Serial Port 1/Serial Port 2 (Auto)

These options are used to assign the I/O addresses for the two onboard serial ports.

UART 2 Mode (Standard)

This field is available if the Onboard Serial Port 2 field is set to any option but Disabled. UART Mode Select enables you to select the infrared communication protocol –Standard (default), HPSIR or ASKIR. HPSIR is Hewlett Packard's infrared communication protocol with a maximum baud rate up to 115.2K bps. ASKIR is Sharp's infrared communication protocol with a maximum baud rate up to 57.6K bps.

The UART mode setting depends on which type of infrared module is used in the system. When set to ASKIR or HPSIR, the UART 2 is used to support the infrared module connected on the mainboard. If this option is not set to Standard, a device connected to the COM2 port will no longer work.

IR Function Duplex (Half)

This field is available when UART 2 Mode is set to either ASKIR or HPSIR. This item enables you to determine the infrared (IR) function of the onboard infrared chip. The options

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are Full and Half (default).

Full-duplex means that you can transmit and send information simultaneously. Half-duplex is the transmission of data in both directions, but only one direction at a time.

TX, RX inverting enable (No, Yes)

Defines the voltage level for Infrared module RxD (receive) mode and TxD (transmit) mode. This setting has to match the requirements of the infrared module used in the system.

Onboard Parallel Port (378/IRQ7)

This option is used to assign the I/O address for the onboard parallel port.

Onboard Parallel Port Mode (ECP)

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

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

ECP Mode Use DMA (3)

When the onboard parallel port is set to ECP mode, the parallel port has the option to use DMA 3 (default) or DMA 1.

Parallel Port EPP Type (EPP1.7)

Sets the EPP specification. There are two options, EPP1.9 and EPP1.7.

If you make any changes to the onboard FDD controller, serial ports or parallel ports in this setup, save the changes and turn off the system. After powering up the system, ensure that the changes have taken effect.

Onboard Legacy Audio (Enable)

Enables the onboard legacy audio function. If this item is enabled the following items become available.

Sound Blaster (Disabled)

Enables or disables Sound Blaster function.

SB I/O Base Address (220H)

This item lets you set the I/O base address for the Sound Blaster card.

SB IRQ Select (IRQ 5)

This item lets you set the Interrupt Request (IRQ) for the Sound Blaster card.

SB DMA Select (DMA 1)

This item lets you select the DMA for the Sound Blaster card.

MPU-401 (Enabled)

Use this item to enable or disable the MPU-401 (MIDI) function for the game port. The default is Disabled.

MPU-401 I/O Address (330-333H)

Use this item to set the I/O address for the MPU-401 (MIDI) function.

Game Port (200-207H) (Enabled)

This item sets the I/O address for the game port.

Power Management Setup Option

This option lets you control system power management. The system has various power-saving modes including powering down the hard disk, turning off the video, suspending to RAM, and software power down that allows the system to be automatically resumed by certain events.

The power-saving modes can be controlled by timeouts. If the system is inactive for a time, the timeouts begin counting. If the inactivity continues so that the timeout period elapses, the system enters a power-saving mode. If any item in the list of Reload Global Timer Events is Enabled, then any activity on that item will reset the timeout counters to zero.

If the system is suspended or has been powered down by software, it can be resumed by a wake up call that is generated by incoming traffic to a modem, a LAN card, a PCI card, or a fixed alarm on the system realtime clock.

CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software
Power Management Setup

ACPI Function	Enabled	Item Help
► Power Management	Press Enter	
ACPI Suspend Type	S1(POS)	Menu Level ►
PM Control by APM	Yes	
Video Off Option	Suspend --> Off	
Video Off Method	DPMS Support	
MODEM Use IRQ	3	
Soft-Off by PWRBTN	Instant-Off	
AC Resume Function	Always Off	
► Wake Up Events	Press Enter	

- ¯ ® ¬ : Move   Enter : Select   +/-/PU/PD:Value: F10: Save   ESC: Exit   F1:General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

ACPI Function (Enabled)

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

> **Note:** ACPI is a power management specification that makes hardware status information available to the operating system. ACPI enables a PC to turn its pe-

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ripherals on and off for improved power manage-
ment. It also allows the PC to be turned on and off
by external devices, so that mouse or keyboard ac-
tivity wakes up the computer.

Power Management

This item enables you to choose the type of Power Manage-
ment you want. Selecting Power Management and pressing
Enter displays the following screen:

CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software
Power Management

Power Management	User Define	Item Help
HDD Power Down	Disable	
Doze Mode	Disabled	Menu Level ►►
Suspend Mode	Disable	

- ¯ ® ¬ : Move Enter : Select   +/-/PU/PD:Value: F10: Save ESC: Exit   F1:General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

This menu enables you to set the following items:

Power Management (User Define)

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

HDD Power Down (Disable)

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

Doze Mode (Disable)

The system speed will change from turbo to slow if no Power
Management events occur for a specified length of time. Full
power function will return when a Power Management event is
detected.

Suspend Mode (Disable)

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

ACPI Suspend Type (S1 (POS))

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

PM Control by APM (Yes)

This field allows you to control the PC Monitor's power management features via Intel-Microsoft Advanced Power Management software. Once you have enabled the APM interface, some settings made in the BIOS Setup program may be overridden by APM.

Video Off Option (Suspend -> Off)

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

Video Off Method (DPMS Support)

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

MODEM Use IRQ (3)

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

Soft-Off by PWRBTN (Instant-Off)

Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the normal power button on your system.

If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec. then you have to hold the power button down for four seconds to cause a software power down.

AC Resume Function (Always Off)

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

Wake Up Events

This sets the power state after a shutdown due to an unexpected interrupt of AC power. This item opens a submenu that enables you to set events that will resume the system from a power saving mode. Select Wake Up Events and press Enter to display the following menu:

CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software
Wake Up Events

		Item Help
VGA	OFF	
LPT & COM	LPT/COM	Menu Level ►►
HDD & FDD	ON	
PCI Master	OFF	
PowerOn by PCI Card	Enabled	
Wake Up On LAN/Ring	Disabled	
RTC Alarm Resume	Disabled	
x Date (of Month)	0	
x Resume Time (hh:mm:ss)	0 0 0	
Primary INTR	ON	
► IRQs Activity Monitoring	Press Enter	

- ¯ ® ¬ : Move   Enter : Select   +/-/PU/PD:Value: F10: Save   ESC: Exit   F1:General Help
                          F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

VGA (Off)

When set to On, the system power will resume the system from a power saving mode if there is any VGA activity. Default is Off.

LPT & COM (LPT/COM)

When this item is enabled, the system will restart the power-saving timeout counters when any activity is detected on the serial ports, or the parallel port.

HDD & FDD (ON)

When this item is enabled, the system will restart the power-

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saving timeout counters when any activity is detected on the hard disk drive or the floppy diskette drive.

PCI Master (Off)

When set to Off any PCI device with Master function will not power on the system.

PowerOn by PCI Card (Enabled)

Use this item to enable PCI activity to wakeup the system from a power saving mode.

Wake Up On LAN/Ring (Disabled)

Use this item to enable LAN or modem activity to wakeup the system from a power saving mode.

RTC Alarm Resume (Disabled)

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

Primary INTR (ON)

Set Primary INTR to ON to allow you to enable or disable IRQ 3 through IRQ 15 activity monitoring. Set it to OFF to disable IRQ activity monitoring.

IRQs Activity Monitoring

This item opens a submenu that enables you to set IRQs that will re-sume the system from a power saving mode. Select IRQs Activity Monitoring and press <Enter> to display the following menu:

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IRQs Activity Monitoring

IRQ 3	(COM2)	Enabled	Item Help
IRQ 4	(COM1)	Enabled	
IRQ 5	(LPT2)	Enabled	Menu Level ►►►
IRQ 6	(Floppy Disk)	Enabled	
IRQ 7	(LPT1)	Enabled	
IRQ 8	(RTC Alarm)	Disabled	
IRQ 9	(IRQ2 Redir)	Disabled	
IRQ 10	(Reserved)	Disabled	
IRQ 11	(Reserved)	Disabled	
IRQ 12	(PS/2 Mouse)	Enabled	
IRQ 13	(Coprocessor)	Disabled	
IRQ 14	(Hard Disk)	Enabled	
IRQ 15	(Reserved)	Disabled	

- ¯ ® ¬ : Move Enter : Select   +/-/PU/PD:Value: F10: Save ESC: Exit   F1:General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

Set any IRQ to Enabled to allow activity at the IRQ to wake up the system from a power saving mode.

PNP/PCI Configuration Option

These options configure how PnP (Plug and Play) and PCI expansion cards operate in your system. Both the ISA and PCI buses on the Mainboard use system IRQs (Interrupt Re-Quests) and DMAs (Direct Memory Access). You must set up the IRQ and DMA assignments correctly through the PnP/PCI Configurations Setup utility for the mainboard to work properly. Selecting PnP/PCI Configurations on the main program screen displays this menu:

CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software
PnP/PCI Configurations

		Item Help
PNP OS Installed	No	
Reset Configuration Data	Disabled	
		Menu Level ▶
Resources Controlled by	Auto(ESCD)	
x IRQ Resources	Press Enter	Select Yes if you are
x DMA Resources	Press Enter	using a Plug and Play
		capable operating
PCI/VGA Palette Snoop	Disabled	system. Select No if
Assign IRQ For VGA	Enabled	you need the BIOS to
Assign IRQ For USB	Enabled	configure non-boot
		devices.

- ¯ ® ¬ : Move Enter : Select   +/-/PU/PD:Value: F10: Save ESC: Exit   F1:General
Help   F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

PNP OS Installed (No)

Setting this option to Yes allows the PnP OS (instead of BIOS) to assign the system resources such as IRQ and I/O address to the ISA PnP device. The default setting is No.

Reset Configuration Data (Disabled)

If you enable this item and restart the system, any Plug and Play configuration data stored in the BIOS setup is cleared from memory. New updated data is created.

Resources Controlled By (Auto (ESCD))

You should leave this item at the default Auto(ESCD). Under this setting, the system dynamically allocates resources to plug and play devices as they are required.

If you cannot get a legacy ISA (Industry Standard Architecture) expansion card to work properly, you might be able to solve the problem by changing this item to Manual, and then opening up the IRQ Resources and Memory Resources sub-menus.

In the *IRQ Resources* sub-menu, if you change any of the IRQ assignations to Legacy ISA, then that Interrupt Request Line is reserved for a legacy ISA expansion card. Press <Esc> to close the IRQ Resources sub-menu.

In the *Memory Resources* sub menu, use the first item Reserved Memory Base to set the start address of the memory you want to reserve for the ISA expansion card. Use the second item Reserved Memory Length to set the amount of reserved memory. Press <Esc> to close the Memory Resources sub-menu.

PCI/VGA Palette Snoop (Disabled)

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

Assign IRQ for VGA/USB (Enabled)

Names the interrupt request (IRQ) line assigned to the USB/VGA (if any) on your system. Activity of the selected IRQ always awakens the system.

PCI Health Status Option

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

CMOS Setup Utility – Copyright (C) 1984 – 2000 Award Software
PC Health Status

Shutdown Temperature	Disabled	**Item Help**
Current CPU Temp.		
Current System Temp.		Menu Level ►
CPU Fan Speed		
Power Fan Speed		
Voltage core		
2.5V		
3.3V		
5.0V		
12.0V		

- ‾ ® ¬ : MoveEnter : Select   +/-/PU/PD:Value: F10: Save   ESC: Exit   F1:General
Help   F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

Shutdown Temperature (Disabled)

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

System Component Characteristics

These fields provide you with information about the systems current operating status. You cannot make changes to these fields. The following information is displayed:

- CPU temperature in degrees Fahrenheit and Celsius
- System temperature in degrees Fahrenheit and Celsius
- CPU fan speed (in RPMs)
- Power fan speed (in RPMs)
- Vcore (CPU core voltage)
- VCC SRAM (CPU L2 cache voltage)
- Vcc3 (onboard 3.3 volt)
- Power supply's ± 5 volt
- Power supply's ±12 volt

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Frequency/Voltage Control

This item enables you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.

Auto Detect DIMM/PCI Clk	Enabled	Item Help
Spread Spectrum	Disabled	
CPU Host/PCI Clock	Default	Menu Level ►

- ˉ ® ¬ : Move   Enter : Select   +/-/PU/PD:Value: F10: Save   ESC: Exit   F1:General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

Auto Detect DIMM/PCI Clk (Enabled)

When this item is enabled, BIOS will disable the clock signal of free DIMM and PCI slots.

Spread Spectrum Modulated (Disabled)

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

CPU Host/SDRAM/PCI Clock (Default)

These items appear if you have set the *CPU Internal Core Speed* to Manual. Use the *CPU/DIMM/PCI Clock* to set the frontside bus frequency for the installed processor (usually 133 MHz, 100 MHz or 66 MHz). Then use *CPU Clock Ratio* to set a multiple.

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Load Fail-Safe Defaults Option

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

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

Load Optimized Defaults Option

This option opens a dialog box that lets you install optimized 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 optimized defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. You can cause fatal errors or instability if you install the optimized defaults when your hardware does not support them. If you only want to install setup defaults for a specific option, select and display that option, and then press <F7>.

Set Supervisor and User Passwords Options

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

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

```
Enter Password:
```

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

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

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

```
Confirm Password:
```

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

Save & Exit Setup Option

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

Exit Without Saving

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

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

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

Using the Mainboard Software

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

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

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.

The support software CD-ROM disc loads automatically under Windows 98. 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.
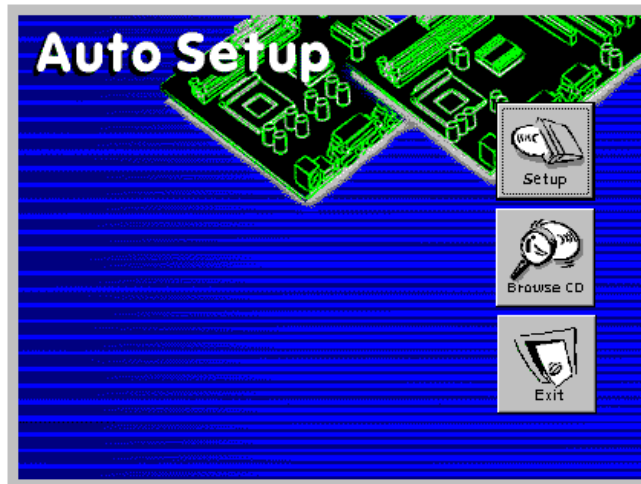
Note: If the opening screen doesn't appear, double-click the file "setup.exe" in the root directory.

Setup

Click the Setup button to run the software installation program. Select from the menu which software you want to install.

Browse CD

The Browse CD button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support CD.

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.

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.

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.

Exit

The Exit button closes the Auto Setup window.

Running Setup

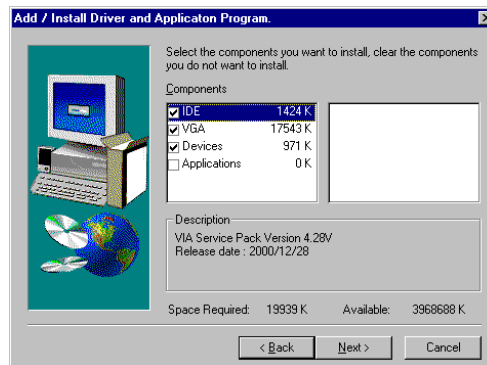Follow these instructions to install device drivers and software for the mainboard:

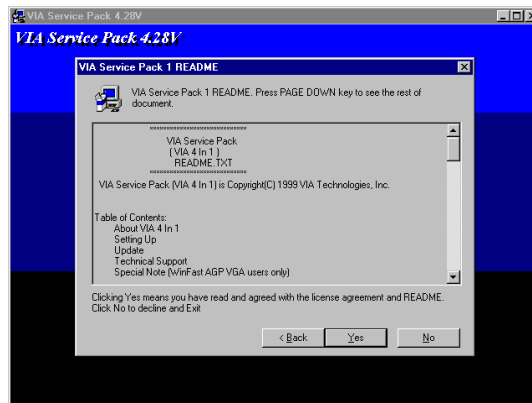1. Click **Setup**. The installation program begins:

Mainboard ID

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

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

3. Check the items you want to install. The default options are recommended.

4. Click **Next** to 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 onscreen instructions, confirm commands and allow the computer to restart after each 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 sub-folder.

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.

Utility Software Reference

All the utility software available on the CD-ROM is Windows compliant. It is provided only for the convenience of customers. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

Note: The software in these folders is subject to change at anytime without prior notice. Please refer to the support CD for available software.

Award Flash Memory Utility

This utility enables you to 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.

PC-CILLIN

The PC-CILLIN software program provides anti-virus protection for your system. This program is available for Windows 2000/ME/98SE 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.

Note: Update your virus software regularly to protect
against new viruses.

MediaRing Talk – Telephony Software

To install the MediaRing Talk voice modem software for the built-in modem, run MRTALK-SETUP72.EXE from the following directory:

\UTILITY\MEDIARING TALK

Super Voice – Fax/Modem Software

To install the Super Voice voice, fax, data communication application for use with the built-in fax/modem, run PICSHELL.EXE from the following directory:

\UTILITY\SUPER VOICE

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 win-

dows application system that protects your Hard Disk Drive from virus intrusion, accidental deletions, and 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\ENG\LANGUAGEGENIUS

PageABC

The PageABC application software enables you to create your own home page. To install the PageABC, run SETUP.EXE from the following directory:
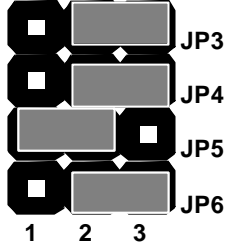
\UTILITY\PageABC

This concludes Chapter 4.

Setting Jumpers

Jumper Settings

Jumper	Type	Description	Setting (*default*)	
JP1	3-pin	Clear CMOS	1-2: Normal *2-3: Clear CMOS*	**JP1** 1 ▮▮ ▢
JP3~JP6	12-pin	CPU Clock Ratio	Refer to next page	JP3 JP4 JP5 JP6 1 2 3
JP9	2-pin	BIOS flash protection	Short: Enable *Open: Disable*	**JP9** ▮▮
JP10	3-pin	AC power resume	1-2: Enable *2-3: Disable*	**JP10** ▮ 1 ▢

Jumper 1 – Enables you to clear the BIOS. Follow these in-structions:

1. Turn the system off.
2. Short pins 1 and 2 on jumper 1.
3. Return the jumper to the normal setting.
4. Turn the system on. The BIOS is returned to the default settings.

Jumper 3 ~ Jumper 6 – Use these 3 x 4 pin jumpers to manually set the CPU clock ratio. Refer to the following table to set the CPU clock ratio for your processor by shorting the pins indicated.

Fraction	Short pins			
	JP3	JP4	JP5	JP6
3.0/8.5	2-3	2-3	1-2	2-3
3.5/9.0	2-3	2-3	1-2	1-2
4.0	2-3	1-2	2-3	2-3
4.5/11.5	2-3	1-2	2-3	1-2
5.0/12	2-3	1-2	1-2	2-3
5.5/13	2-3	1-2	1-2	1-2
6.0/14.0	1-2	2-3	2-3	2-3
6.5/15.0	1-2	2-3	2-3	1-2
7.0/16.0	1-2	2-3	1-2	2-3
7.5	1-2	2-3	1-2	1-2
8.0	1-2	1-2	2-3	2-3
9.0	2-3	2-3	1-2	1-2
9.5	2-3	2-3	2-3	1-2
10.0	1-2	1-2	2-3	1-2
10.5	2-3	1-2	2-3	2-3
11.0	1-2	1-2	1-2	2-3

Jumper 9 – Use this jumper to enable or disable the BIOS flash protection on the mainboard. You should disable this jumper when you want to flash the BIOS.

Jumper 10 – Use this jumper to set the power state after an unexpected shutdown due to AC power interruption.

The Panel Connector

The panel connector provides a standard set of switch and LED connectors commonly found on ATX or Micro ATX cases. Refer to the table below for information:

Device	Pins
Empty	7
Reset Switch	13, 14
Power Switch	5, 6
Speaker	9, 10, 11, 12
Power LED	-2 (Y), -3 (G), 4
HDD LED	+1, -8

1   8

HDD LED (Pin +1, -8)

PLEDY (Pin -2)

PLEDG (Pin -3)

PLED (Pin 4)

Case Speaker (Pin 9, 10, 11, 12)

Power Switch (Pin 5, 6)

Reset (Pin 13, 14)

Cut away (Pin 7)

7   14

Note: The plus sign (+) indicates a pin which must be connected to a positive voltage.

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