P4XFB/P4XFBU
USER'S MANUAL

M/B For Socket 478 Pentium 4 Processor

Trademark:

TABLE OF CONTENT

USER'S NOTICE

Manual Revision Information

Reversion	Revision History	Date
1.0	First Release	September 2002

Item Checklist

☑ P4XFB/P4XFBU motherboard

☑ Cable for IDE/Floppy

☑ CD for motherboard utilities

☐ Cable for USB Port 3/4(Option)

☑ P4XFB/P4XFBU User's Manual

Intel Pentium 4 Processor Family
Cooling Solutions

As processor technology pushes to faster speeds and higher performance, thermal management becomes increasingly crucial when building computer systems. Maintaining the proper thermal environment is key to reliable, long-term system operation. The overall goal in providing the proper thermal environment is keeping the processor below its specified maximum case temperature. Heatsinks induce improved processor heat dissipation through increased surface area and concentrated airflow from attached fans. In addition, interface materials allow effective transfers of heat from the processor to the heatsink. For optimum heat transfer, Intel recommends the use of thermal grease and mounting clips to attach the heatsink to the processor.

When selecting a thermal solution for your system, please refer to the website below for collection of heatsinks evaluated and recommended by Intel for use with Intel processors. Note, those heatsinks are recommended for maintaining the specified Maximum T case requirement. In addition, this collection is not intended to be a comprehensive listing of all heatsinks that support Intel processors.

For vendor list of heatsink and fan, please visit :
http://developer.intel.com/design/Pentium4/components/index

Chapter 1

Introduction of P4XFB/P4XFBU Motherboard

1-1 Feature of motherboard

The P4XFB/P4XFBU motherboard is design for use Intel Pentium 4 Processor in 478 Pin Package Processor with the VIA P4X266E Chipset delivers a high performance and professional desktop platform solution. Which utilize the Socket 478 design and the memory size expandable to 2.0GB.

These motherboards use the newest VIA P4X266E Chipset. Supports 533MHz System Bus in data transfer rate for P4XFB. The motherboard provided 100MHz/133MHz Memory clock frequency, support PC133/PC100 SDRAM and DDR266/DDR200 DDR Module. The VIA VT8233A V-Link LPC South Bridge offer ULTRA ATA **133** to provide speedier HDD throughout that boosts overall system performance.

These motherboards also has an integrated AC'97 2.1 CODEC on board which is fully compatible with Sound Blaster Pro® that gives you the best sound quality and compatibility.

For those wanting even greater graphic performance, an AGP 4X slot is included on the board, support AGP 2X/4X capability and Fast write Transaction.

With USB control as well as capability of expanding to 4x USB2.0 function ports delivering 480Mb/s bandwidth, and 2x USB1.1 function ports delivering 12Mb/s bandwidth in P4XFBU, 4x USB1.1 function ports in P4XFB delivering 2x12Mb/s bandwidth and rich connectivity, these motherboards meet future USB demand also has built-in hardware monitor function to monitor and protect your computer.

A useful software tool "Magic BIOS" examines the BIOS version automatically with the correct version available on the web, links the site for users to download the latest version of BIOS and updates the BIOS. Use "Magic BIOS", users can download and update BIOS automatically and completed under the OS easily.

These motherboards provide high performance & meets future specification demand. It is really wise choice for your computer.

1-2 Specification

Spec	Description
Design	* ATX form factor 4 layers PCB size: 30.5x21.0cm
Chipset	* VIA P4X266E North Bridge Chipset * VIA VT8233A South Bridge Chipset
CPU Socket (mPGA478B Socket)	* Support Intel Pentium 4 478 Pin package utilizes Flip-Chip Pin Grid Array (FC-PGA2) package processor * Support 1.5G~2.66G 478 Pin Pentium 4 processor * Reserves support for future Intel Pentium 4 processors
Memory Socket	* 168-pin SDR SDRAM module socket x1 and 184-pin DDR Module socket x 2 * Support 1 pcs PC133/PC100 SDRAM Module expandable to 1.0GB, or 2 pcs DDR266/DDR200 DDR Modules Expandable to 2.0GB
Expansion Slot & **Headers**	* AGP slot x1 support AGP 2.0 & 4X mode * 32-bit PCI slot x5
Integrate IDE	* Two PCI IDE controllers support PCI Bus Mastering, ATA PIO/DMA and the ULTRA DMA 33/66/100/133 functions that deliver the data transfer rate up to 133 MB/s
USB2.0 **(Only for P4XFBU)**	* VIA VT 6202 USB2.0 chip * Provided 4xUSB2.0 ports support 480Mb/s bandwidth for USB2.0 devices .
Audio	* AC'97 Digital Audio controller integrated * AC'97 Audio CODEC on board * Audio driver and utility included
BIOS	* Award 2MB Flash ROM
Multi I/O	* PS/2 keyboard and PS/2 mouse connectors * Floppy disk drive connector x1 * Parallel port x1 * Serial port x2 * USB connector x2 for P4XFB/P4XFBU * USB headers x2 (connecting cable option) for P4XFB * USB headers x 4 (connecting cable option) for P4XFBU * Audio connector (Line-in, Line-out , MIC & Game Port)

1-3 Performance List

The following performance data list is the testing result of some popular benchmark testing programs. These data are just referred by users, and there is no responsibility for different testing data values gotten by users (the different Hardware & Software configuration will result in different benchmark testing results.)

Performance Test Report

CPU: Intel Pentium 4 1.9GHz mPGAB package

DRAM: 256MB DDR266 x1 (SAMSUNG K4H280838B-TCB0)
                            256MB SDRAM x1 (KINGMAX KSV684T4A1A-06)

VGA Expansion Card: NVDIA Geforce2 MX-400 64MB (1024x768xHi-color)

Hard Disk Driver: IBM DTLA-305040 (ATA-100)

BIOS: Award Optimal default

OS: Win 98SE

		DDR266	PC133 SDRAM
3D Mark 2000		5432	5360
3D Mark 2001		2509	2479
3D Winbench 2000		104	102
Final Reality		9.99	9.06
Content Creation Winstone 2000		43.2	41.5
Content Creation Winstone 2001		50.3	49.5
Content Creation Winstone 2002		20.1	18.6
Business Winstone2001		44.1	42.8
Winbench 99:			
CPU Mark 99		111	101
FPU Winmark 99		6610	6610
Business Disk Winmark99		7150	7090
Hi-end Disk Winmark99		18800	18500
Business Graphic Winmark		434	428
Hi-end Graphic Winmark		1260	1230
SYS Mark 2000/2001 : SISMark 2000/2001 Rating (Internet Content Creation / Office Productivity)			
SISMark 2000		208 (226/195)	200 (217/188)
SISMark 2001		150 (175/129)	142 (160/126)
SISOFT Sandra 2001 :			
Dhrystone ALU	MIPS	3626	3630
Whetstone FPU	MFLOPS	1137/2371	1135/2368
Int ALU/RAM	MB/S	1181	701
Float FPU/RAM	MB/S	1183	701
Integer SSE2	IT/S	7547	7554
Floating-Point SSE2	IT/S	9352	9350
QUAKE3 DEMO1	FPS	169.1	146.7
DEMO2	FPS	169.7	146.1
WCPUID System/CPU Clock		101/1918.93	101/1918.93

1-4 Layout Diagram & Jumper Setting

PS/2 MOUSE   PRINT   GAME/MIDI PORT

4

PS/2

MIC

K/B Power ON Jumper **(JP1)**

PS2 KB/Mouse Port

USB Port

PC99 Back Panel

Front Panel Audio

ATX P9 Power Conn.

CD Audio

PCI Slot

VIA VT6202 Chip

**USB3 Port
(for P4XFBU)**

USB1 Port

Winbond W83697HF Chip

ATX 12V Power Conn.

ATX Power Conn.

CPU FAN

CPU Socket

SDR SDRAM DIMM x1

DDR SDRAM DIMM x2

VIA P4X266E Chip

System FAN

AGP Slot

VIA VT8233A Chip

ATA 133 IDE Conn.

Floppy Connector

Clear CMOS **(JBAT)**

Front Panel Connector

IR Connector

Speaker Conn.

System FAN1

2MBit Flash ROM BIOS

Wake On LAN

Jumpers

Jumper	Name	Description	Page

| JBAT | CMOS RAM Clear | 3-pin Block | P.7 |
| JP1 | Keyboard Power On Enable/Disabled | 3-pin Block | P.7 |

Connectors

Connector	Name	Description	Page
ATXPWR	ATX Power Connector	20-pin Block	P.12
ATX12V	ATX 12V Power Connector	4-pin Block	P.12
ATXP9	ATX P9 Power Connector	6-pin Block	P.13
PS2KBM	PS/2 Mouse & PS/2 Keyboard Connector	6-pin Female	P.13
CN1	USB1.1 Port Connector for P4XFB USB2.0 Port Connector for P4XFBU	4-pin Connector	P.13
COM_LP	Parallel Port Connector	25-pin Female	P.13
AUDIO_GAME	Audio/Game Connector	3 phone jack+15-pin Connector	P.13
COM1/COM2	Serial Port COM1/2 Connector	9-pin Connector	P.13
FDD	Floppy Driver Connector	34-pin Block	P.14
IDE1/IDE2	Primary/Secondary IDE Connector	40-pin Block	P.14

Headers

Header	Name	Description	Page
AUDIO	SPEAKER, MIC header	9-pin Block	P.15
USB1	USB1.1 Port Headers	9-pin Block	P.15
USB3 **(for P4XFBU)**	USB2.0 Port Headers	9-pin Block	P.15
HD-LED	IDE activity LED	2-pin Block	P.15
RESET	Reset switch lead	2-pin Block	P.16
SPEAK	PC Speaker connector	4-pin Block	P.16
PWR-LED	Power LED	2-pin Block	P.16
PWR-BTN	Power switch	2-pin Block	P.16
WOL	Wake On-LAN Headers	3-pin Block	P.16
SFAN1, SYSFAN, CPUFAN	FAN Headers	3-pin Block	P.17
IR	IR infrared module Headers	5-pin Block	P.17
CD_IN	CD Audio-In Headers	4-pin Block	P.17

Expansion Sockets

Socket/Slot	Name	Description	Page
ZIF Socket 478 Pin	CPU Socket	478-pin mPGA CPU Socket	P.9
SDR1	SDRAM Module Socket	168-pin SDR SDRAM Module Expansion Socket	P.9
DDR1, DDR2	DDR Module Socket	184-pin DDR Module expansion Socket	P.9
PCI1 ~ PCI5	PCI Slot	32-bit PCI Local Bus Expansion slots	P.10
AGP	AGP 4X Mode Slot	AGP Expansion Slot	P.11

Chapter 2

Hardware installation

2-1 Hardware installation Steps

Before using your computer, you had better complete the following steps:
1. Check motherboard jumper setting
2. Install CPU and Fan
3. Install System Memory (DIMM)
4. Install Expansion cards
5. Connect IDE and Floppy cables, Front Panel /Back Panel cable
6. Connect ATX Power cable
7. Power-On and Load Standard Default
8. Reboot
9. Install Operating System
10. Install Driver and Utility

2-2 Checking Motherboard's Jumper Setting

(1) CMOS RAM Clear (3-pin) : JBAT

A battery must be used to retain the motherboard configuration in CMOS RAM short 1-2 pins of JBAT to store the CMOS data.

To clear the CMOS, follow the procedure below:
1. Turn off the system and unplug the AC power
2. Remove ATX power cable from ATX power connector
3. Locate JBAT and short pins 2-3 for a few seconds
4. Return JBAT to its normal setting by shorting pins 1-2
5. Connect ATX power cable back to ATX power connector

Note: When should clear CMOS
1. Troubleshooting
2. Forget password
3. After over clocking system boot fail

JBAT 1-2 closed   Normal   JBAT 2-3 closed   Clear CMOS

CMOS RAM Clear Setting
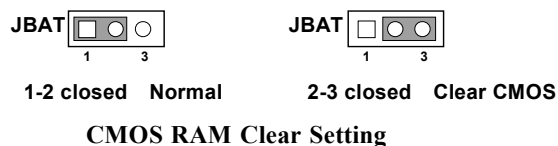
(2) Keyboard Power On function Enabled/Disabled: JP1

When setting Enabled you can using keyboard by key in password to power on system.

JP1

1

3

1-2 closed **K/B Power ON Disable**
(Default)

JP1

1

3

2-3 closed **K/B Power ON Enabled**
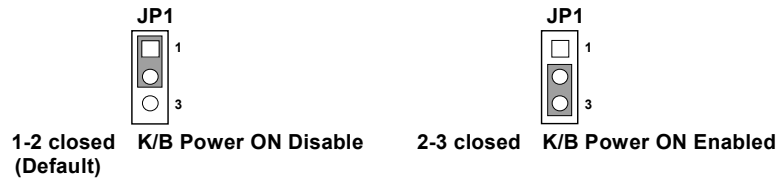
Keyboard Power On Setting

2-3 Install CPU

2-3-1 Glossary

Chipset (or core logic) - two or more integrated circuits which control the interfaces between the system processor, RAM, I/O devises, and adapter cards.

Processor slot/socket - the slot or socket used to mount the system processor on the motherboard.

Slot (AGP, PCI, ISA, RAM) - the slots used to mount adapter cards and system RAM.

AGP - **A**ccelerated **G**raphics **P**ort - a high speed interface for video cards; runs at 1X (66MHz), 2X (133MHz), or 4X (266MHz).

PCI - **P**eripheral **C**omponent **I**nterconnect - a high speed interface for video cards, sound cards, network interface cards, and modems; runs at 33MHz.

ISA - **I**ndustry **S**tandard **A**rchitecture - a relatively low speed interface primarily used for sound cards and modems; runs at approx. 8MHz.

Serial Port - a low speed interface typically used for mouse and external modems.

Parallel Port - a low speed interface typically used for printers.

PS/2 - a low speed interface used for mouse and keyboards.

USB - **U**niversal **S**erial **B**us - a medium speed interface typically used for mouse, keyboards, scanners, and some digital cameras.

Sound (interface) - the interface between the sound card or integrated sound connectors and speakers, MIC, game controllers, and MIDI sound devices.

LAN (interface) - **L**ocal **A**rea **N**etwork - the interface to your local area network.

BIOS (**B**asic **I**nput/**O**utput **S**ystem) - the program logic used to boot up a computer and establish the relationship between the various components.

Driver - software, which defines the characteristics of a device for use by another device or other software.

Processor - the "central processing unit" (CPU); the principal integrated circuit used for doing the "computing" in "personal computer"

Front Side Bus Frequency - the working frequency of the motherboard, which is generated by the clock generator for CPU, DRAM and PCI BUS.

CPU L2 Cache - the flash memory inside the CPU, normal it depend on CPU type.

2-3-2 About Intel Pentium 4 478-pin CPU

This motherboard provides a 478-pin surface mount, Zero Insertion Force (ZIF) socket, referred to as the mPGA478B socket supports Intel Pentium 4 processor in the 478 Pin package utilizes Flip-Chip Pin Grid Array (FC-PGA2) package technology.

The CPU that comes with the motherboard should have a cooling FAN attached to prevent overheating. If this is not the case, then purchase a correct cooling FAN before you turn on your system.

WARNING!	Be sure that there is sufficient air circulation across the processor's heatsink and CPU cooling FAN is working correctly, otherwise it may cause the processor and motherboard overheat and damage, you may install an auxiliary cooling FAN, if necessary.

To install a CPU, first turn off your system and remove its cover. Locate the ZIF socket and open it by first pulling the level sideways away from the socket then upward to a 90-degree angle. Insert the CPU with the correct orientation as shown below. The notched corner should point toward the end of the level. Because the CPU has a corner pin for two of the four corners, the CPU will only fit in the orientation as shown.

mPGA478B

Colden Arrow

CPU ZIF mPGAB Socket
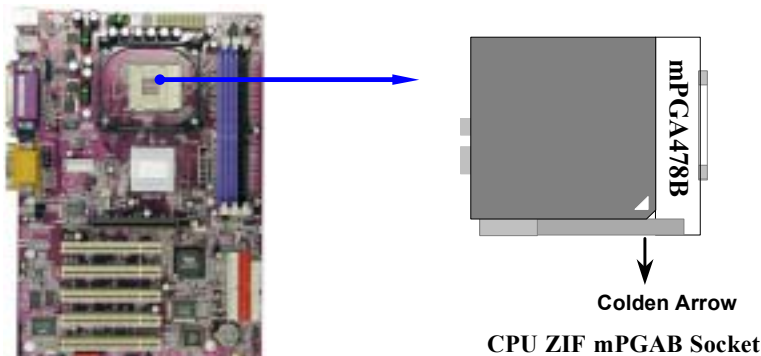
When you put the CPU into the ZIF socket. No force require to insert of the CPU, then press the level to Locate position slightly without any extra force.

2-4 Install Memory

This motherboard provides two 184-pin DDR DUAL INLINE MEMORY MODULES (DIMM) sites for DDR memory expansion available from minimum memory size of 64MB to maximum memory size of 2.0GB SDR SDRAM, or one 168-pin SDR DIMM sites for SDRAM memory for maximum memory size of 1.0GB.

Valid Memory Configurations

Bank	184-pin DDR DIMM		Total Memory
Bank 0, 1 (DDR1)	DDR266/DDR200 DDR DRAM Module	X1	64MB~1.0GB
Bank 2, 3 (DDR2)	DDR266/DDR200 DDR DRAM Module	X1	64MB~1.0GB
Total	System Memory (Max. 2.0GB)	X2	64MB~2.0GB
Bank	**168-pin SDR DIMM**		**Total Memory**
Bank 0, 1 (SDR1)	PC133/PC100 SDR DRAM Module	X1	64MB~1.0GB
Total	System Memory (Max. 1.0GB)	X1	64MB~1.0GB

Generally, installing SDR/DDR SDRAM modules to your motherboard is very easy, you can refer to figure 2-4 to see what a 168-pin SDR/184-pin DDR SDRAM module looks like.
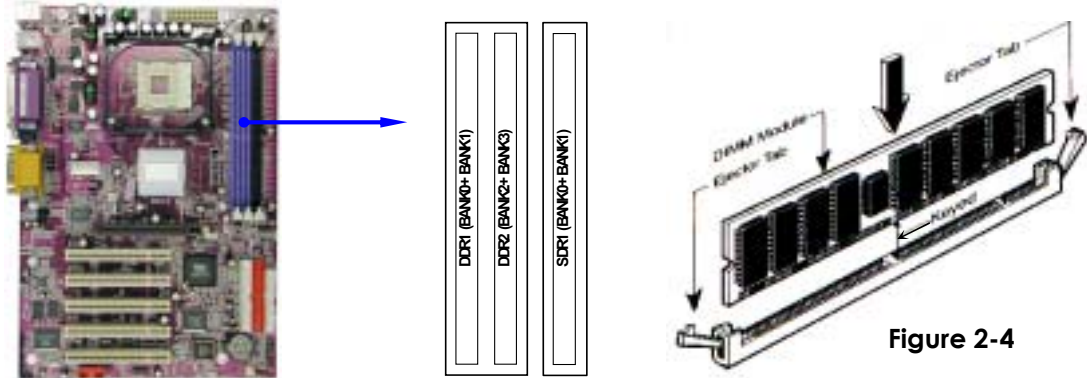
Figure 2-4

NOTE!	When you install DIMM module fully into the DIMM socket the eject tab should be locked into the DIMM module very firmly and fit into its indention on both sides.
WARNING!	For the SDR SDRAM CLOCK is set at 133MHz, use only PC133/DDR266-compliant SDR/DDR Modules. When this motherboard operate at 133Mhz, most system will not even boot if non-compliant modules are used because of the strict timing issues, if your SDR/DDR Modules are not PC133/DDR266-compliant, set the SDRAM clock to 100MHz to ensure system stability.

NOTE!	It is only can install either SDRAM or DDR Module at one time. Don't install both DDR Module and SDR Module at same time, it will have risk to damage your Memory and Motherboard.

2-5 Expansion Cards

WARNING!	Turn off your power when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both your motherboard and expansion cards.

2-5-1 Procedure For Expansion Card Installation

1. Read the documentation for your expansion card and make any necessary hardware or software setting for your expansion card such as jumpers.
2. Remove your computer's cover and the bracket plate on the slot you intend to use.
3. Align the card's connectors and press firmly.
4. Secure the card on the slot with the screen you remove above.
5. Replace the computer system's cover.
6. Set up the BIOS if necessary.
7. Install the necessary software driver for your expansion card.

2-5-2 Assigning IRQs For Expansion Card

Some expansion cards need an IRQ to operate. Generally, an IRQ must exclusively assign to one use. In a standard design, there are 16 IRQs available but most of them are already in use.

Standard Interrupt Assignments

IRQ	Priority	Standard function
0	N/A	System Timer
1	N/A	Keyboard Controller
2	N/A	Programmable Interrupt
3 *	8	Communications Port (COM2)
4 *	9	Communications Port (COM1)
5 *	6	Sound Card (sometimes LPT2)
6 *	11	Floppy Disk Controller
7 *	7	Printer Port (LPT1)
8	N/A	System CMOS/Real Time Clock
9 *	10	ACPI Mode when enabled
10 *	3	IRQ Holder for PCI Steering
11 *	2	IRQ Holder for PCI Steering
12 *	4	PS/2 Compatible Mouse Port
13	N/A	Numeric Data Processor
14 *	5	Primary IDE Channel
15 *	1	Secondary IDE Channel

* These IRQs are usually available for ISA or PCI devices.

2-5-3 Interrupt Request Table For This Motherboard

Interrupt request are shared as shown the table below:

	INT A	INT B	INT C	INT D	INT E	INT F	INT G	INT H
Slot 1	√							
Slot 2		√						
Slot 3			√					
Slot4				√				
Slot5					√			
Onboard USB 1					√			
Onboard USB 2								√
AC97/MC97			√					

> **IMPORTANT!** If using PCI cards on shared slots, make sure that the drivers support "Shared IRQ" or that the cards don't need IRQ assignments. Conflicts will arise between the two PCI groups that will make the system unstable or cards inoperable.

2-5-4 AGP Slot

This motherboard provides an AGP Slot, support the 2X/4X AGP VGA card.

2x notch   4x notch

AGP SLOT
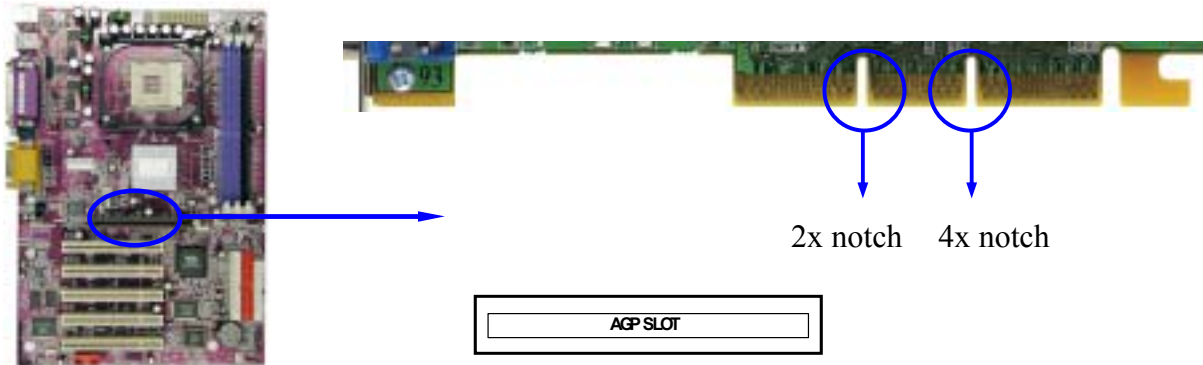
2-6 Connectors, Headers
2-6-1 Connectors
(1)   Power Connector (20-pin block) : ATXPWR

ATX Power Supply connector. This is a new defined 20-pins connector that usually comes with ATX case. The ATX Power Supply allows to use soft power on momentary switch that connect from the front panel switch to 2-pins Power On jumper pole on the motherboard. When the power switch on the back of the ATX power supply turned on, the full power will not come into the system board until the front panel switch is momentarily pressed. Press this switch again will turn off the power to the system board.

Pin 1 →

PIN	ROW2	ROW1
1	3.3V	3.3V
2	-12V	3.3V
3	GND	GND
4	Soft Power On	5V
5	GND	GND
6	GND	5V
7	GND	GND
8	-5V	Power OK
9	+5V	+5V (for Soft Logic)
10	+5V	+12V
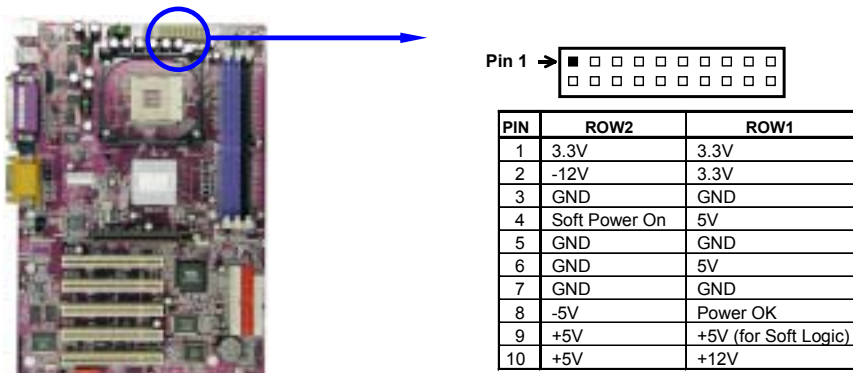
(2)   ATX 12V Power Connector (4-pin block) : ATX12V

This is a new defined 4-pins connector that usually comes with ATX Power Supply. The ATX Power Supply which fully support Pentium 4 processor must including this connector for support extra 12V voltage to maintain system power consumption. Without this connector might cause system unstable because the power supply can not provide sufficient current for system.

Pin 1
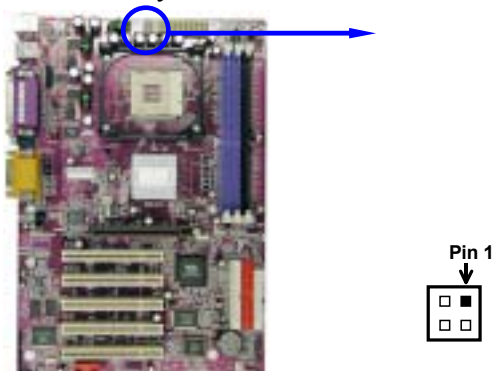
(3) **ATX P6 Power Connector (6-pin block) : ATXP9**

This is a new defined 6-pins connector that usually comes with ATX Power Supply. The ATX Power Supply which fully support Pentium 4 processor   must including this connector for support extra 3.3V and 5V voltage to maintain system power consumption. Without this connector might cause system unstable because the power supply can not provide sufficient current for system.

Power Connector on Motherboard   Power Plugs from Power Supply
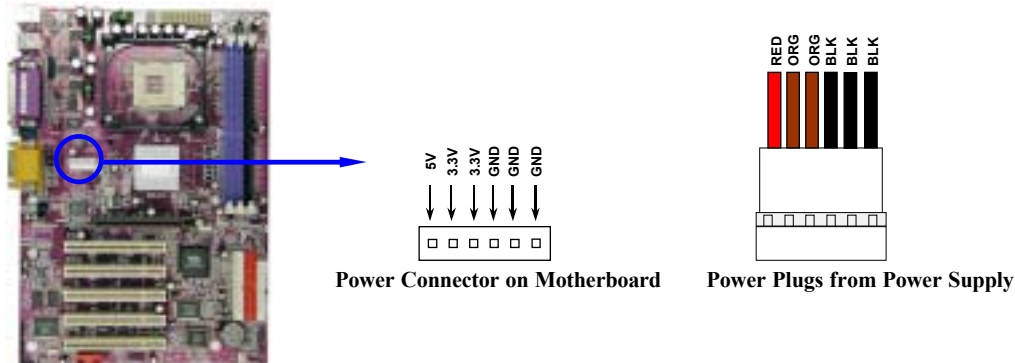
(4) **PS/2 Mouse & PS/2 Keyboard Connector: PS2KBM**

The connectors for PS/2 keyboard and PS/2 Mouse.

(5) **USB Port connector: CN1**

The connectors are 4-pin connector that connect USB devices to the system board.

(6) **Parallel Port Connector (25-pin female): COM_LP**

Parallel Port connector is a 25-pin D-Subminiature Receptacle connector. The On-board Parallel Port can be disabled through the BIOS SETUP. Please refer to Chapter 3 "INTEGRATED PERIPHERALS SETUP" section for more detail information.

(7) **Audio and Game Connector : AUDIO_GAME**

This Connector are 3 phone Jack for LINE-OUT, LINE-IN, MIC and a 15-pin D-Subminiature Receptacle Connector for joystick/MIDI Device.

Line-out :   Audio output to speaker
Line-in :   Audio input to sound chip
MIC :   Microphone Connector
Game/MIDI :   For joystick or MIDI Device

(8) **Serial Port COM1, COM2 : COM1, COM2**

COM1, COM2 are the 9-pin D-Subminiature mail connector. The On-board serial port can be disabled through BIOS SETUP. Please refer to Chapter 3 "INTEGRATED PERIPHERALS SETUP" section for more detail information.
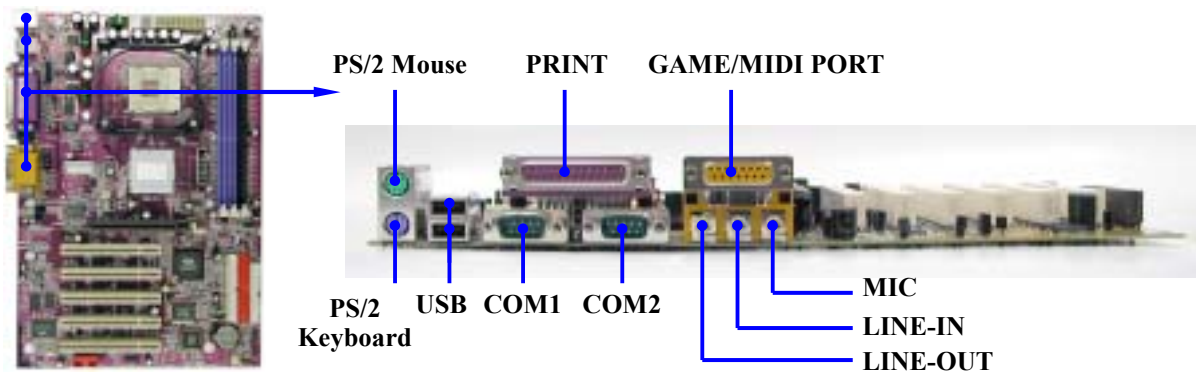
(9) Floppy drive Connector (34-pin block): FDD

This connector supports the provided floppy drive ribbon cable. After connecting the single plug end to motherboard, connect the two plugs at other end to the floppy drives.

Pin 1

Floppy Drive Connector
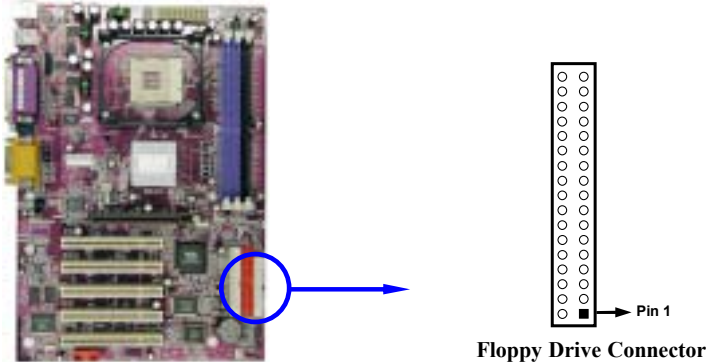
(10) Primary IDE Connector (40-pin block): IDE1

This connector supports the provided IDE hard disk ribbon cable. After connecting the single plug end to motherboard, connect the two plugs at other end to your hard disk(s). If you install two hard disks, you must configure the second drive to Slave mode by setting its jumpers accordingly. Please refer to the documentation of your hard disk for the jumper settings.

Pin 1

Primary IDE Connector
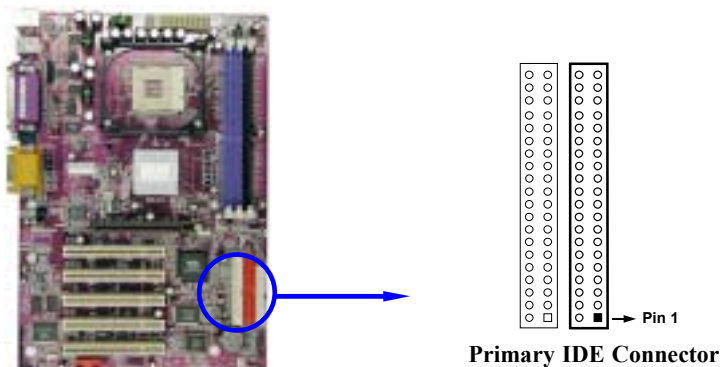
(11) Secondary IDE Connector (40-pin block): IDE2

This connector connects to the next set of Master and Slave hard disks. Follow the same procedure described for the primary IDE connector. You may also configure two hard disks to be both Masters using one ribbon cable on the primary IDE connector and another ribbon cable on the secondary IDE connector.

Pin 1

Secondary IDE Connector
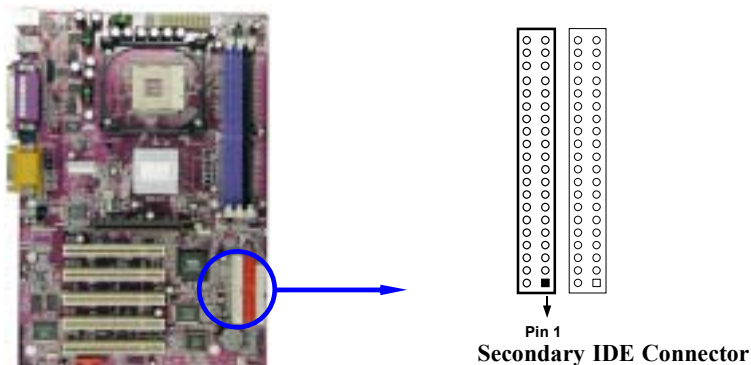
- Two hard disks can be connected to each connector. The first HDD is referred to as the "Master" and the second HDD is referred to as the "Slave".

- For performance issues, we strongly suggest you don't install a CD-ROM or DVD-ROM drive on the same IDE channel as a hard disk. Otherwise, the system performance on this channel may drop.

2-6-2 Headers

(1) Line-Out/MIC Header for Front Panel (9-pin): AUDIO
This header connect to Front Panel Line-out, MIC connector with cable.
Without install the cable, this header default setting is 5-6 short, 9-10 short. When you install the cable you have take off these jumpers.

AUDIO Pin1

AUD–MIC → ← AUD–GND
AUD–MIC–BIAS → ← AUD–VCC
AUD–FPOUT–R → ← AUD–RET–R
HP–ON →
AUD–FPOUT–L → ← AUD–RET–L
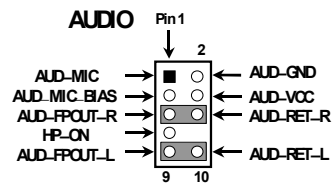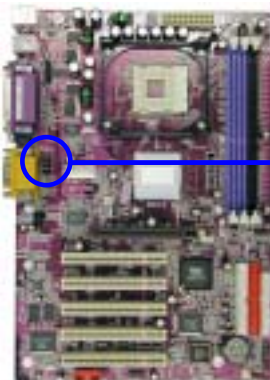
Line-Out, MIC Headers

(3) USB1.1 Port Headers (9-pin): USB1,
   USB2.0 Port Headers (9-pin): USB3 (for P4XFBU only)
These headers are used for connecting the additional USB port plug. By attaching an option USB cable, your can be provided with two additional USB plugs affixed to the back panel.

USB3   VCC -DATA +DATA GND CC

Pin1 →

VCC -DATA +DATA GND

USB1   VCC -DATA +DATA GND CC

Pin1 →

VCC -DATA +DATA GND
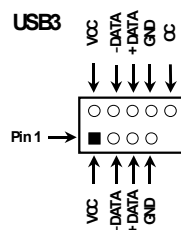
USB2.0 Port Headers   **USB1.1 Port Headers**
(for P4X533U only)
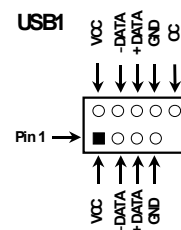
(4) IDE Activity LED: HD-LED
This connector connects to the hard disk activity indicator light on the case.

(5) Reset switch lead: RESET

This 2-pin connector connects to the case-mounted reset switch for rebooting your computer without having to turn off your power switch. This is a preferred method of rebooting in order to prolong the lift of the system's power supply. See the figure below.

(6) Speaker connector: SPEAK

This 4-pin connector connects to the case-mounted speaker. See the figure below.

(7) Power LED: PWR-LED

The Power LED is light on while the system power is on. Connect the Power LED from the system case to this pin.

(8) Power switch: PWR-BTN

This 2-pin connector connects to the case-mounted power switch to power ON/OFF the system.

System Case Connections
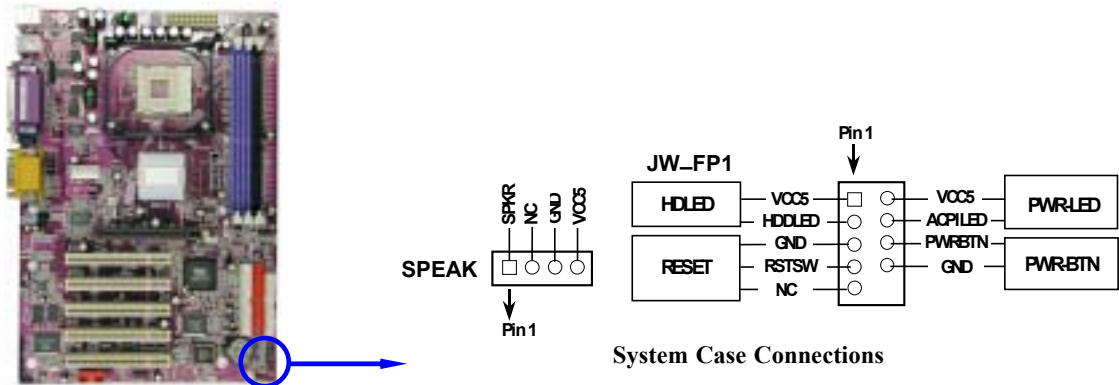
(9) Wake On-LAN Headers (3-pin) : WOL

This connector connects to a LAN card with a WAKE ON-LAN output. This connector power up the system when a wake up signal is received through the LAN card.

NOTE: This feature requires that Wake On LAN or Ring In Wake up is enabled.

Wake-On-LAN Headers
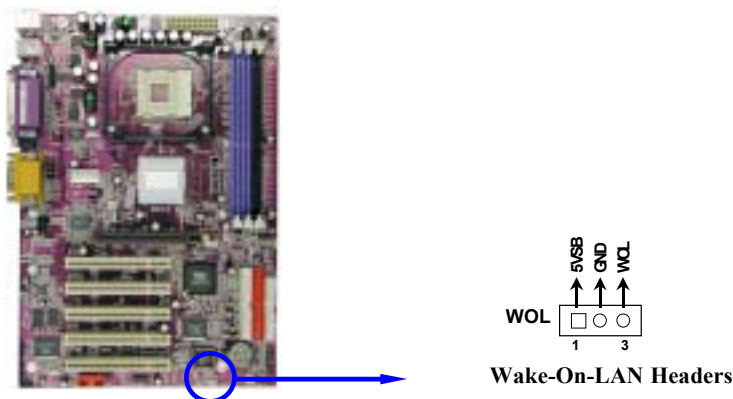
(10) FAN Headers (3-pin) : SFAN1, SYSFAN, CPUFAN

These connectors support cooling fans of 350mA (4.2 Watts) or less, depending on the fan manufacturer, the wire and plug may be different. The red wire should be positive, while the black should be ground. Connect the fan's plug to the board taking into consideration the polarity of connector.

CPUFAN

SYSFAN

SFAN1

FAN Speed Headers
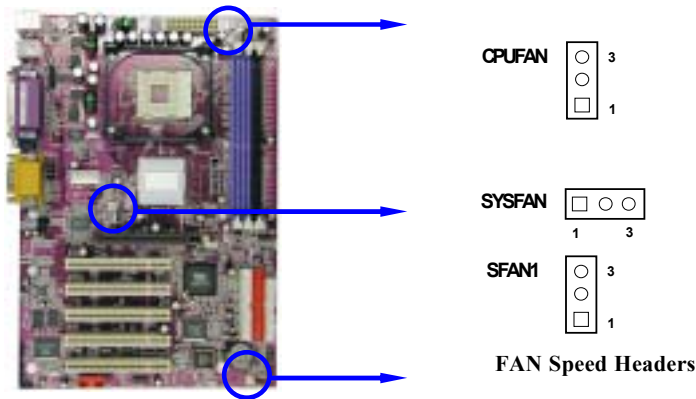
(11) IR infrared module Headers (5-pin) : IR

This connector supports the optional wireless transmitting and receiving infrared module. You must configure the setting through the BIOS setup to use the IR function.

IR   Pin 1

NC
VCC5
IRTX
GND
IRRX

IR infrared module Headers
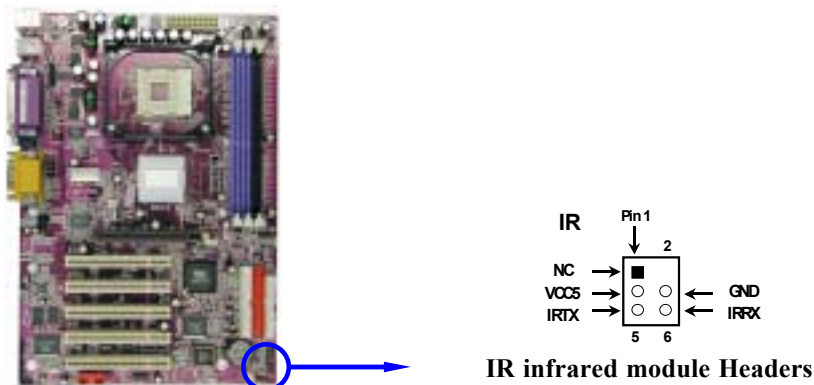
(12) CD Audio-In Headers (4-pin) : CD_IN

CD_IN are the connectors for CD-Audio Input signal. Please connect it to CD-ROM CD-Audio output connector.

CD_IN

CD Audio-In Headers
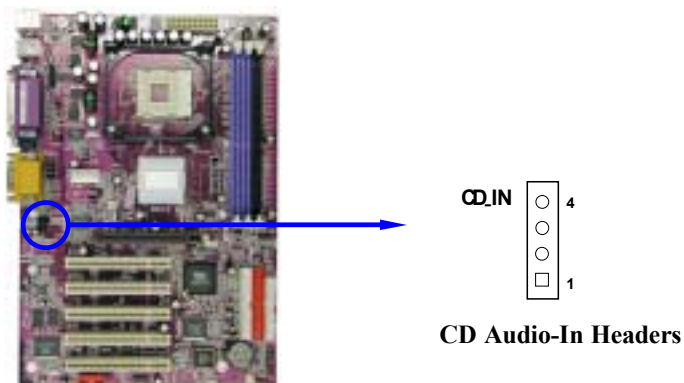
2-7 Starting Up Your Computer

1. After all connection are made, close your computer case cover.

2. Be sure all the switch are off, and check that the power supply input voltage is set to proper position, usually in-put voltage is 220V~240V or 110V~120V depending on your country's voltage used.

3. Connect the power supply cord into the power supply located on the back of your system case according to your system user's manual.

4. Turn on your peripheral as following order:
   a. Your monitor.
   b. Other external peripheral (Printer, Scanner, External Modem etc…)
   c. Your system power. For ATX power supplies, you need to turn on the power supply and press the ATX power switch on the front side of the case.

5. The power LED on the front panel of the system case will light. The LED on the monitor may light up or switch between orange and green after the system is on. If it complies with green standards or if it is has a power standby feature. The system will then run power-on test. While the test are running, the BIOS will alarm beeps or additional message will appear on the screen.

   If you do not see any thing within 30 seconds from the time you turn on the power. The system may have failed on power-on test. Recheck your jumper settings and connections or call your retailer for assistance.

Beep	Meaning
One short beep when displaying logo	No error during POST
Long beeps in an endless loop	No DRAM install or detected
One long beep followed by three short beeps	Video card not found or video card memory bad
High frequency beeps when system is working	CPU overheated System running at a lower frequency

6. During power-on, press <Delete> key to enter BIOS setup. Follow the instructions in BIOS SETUP.

7. **Power off your computer:** You must first exit or shut down your operating system before switch off the power switch. For ATX power supply, you can press ATX power switching after exiting or shutting down your operating system. If you use Windows 9X, click **"Start"** button, click **"Shut down"** and then click **"Shut down the computer?"** The power supply should turn off after windows shut down.

Chapter 3

Introducing BIOS

The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program gain control. The BIOS first operates an auto-diagnostic test called POST (power on self test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization. Only when these tasks are completed done it gives up control of the computer to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performance as its best.

In the BIOS Setup main menu of Figure 3-1, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press <Esc> to quit the BIOS Setup.
- Press ↑↓←→ (up, down, left, right) to choose, in the main menu, the option you want to confirm or to modify.
- Press <F10> when you have completed the setup of BIOS parameters to save these parameters and to exit the BIOS Setup menu.
- Press Page Up/Page Down or +/− keys when you want to modify the BIOS parameters for the active option.

3-1 Entering Setup

Power on the computer and by pressing <Del> immediately allows you to enter Setup.
If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to
    Press <F1> to continue, <Ctrl-Alt-Esc> or <Del> to enter Setup

3-2 Getting Help

Main Menu
The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu/Option Page Setup Menu
Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <Esc>.

3-3 The Main Menu

Once you enter Award® BIOS CMOS Setup Utility, the Main Menu (Figure 3-1) will appear on the screen. The Main Menu allows you to select from fourteen setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

```
         CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
 ┌───────────────────────────────────┬──────────────────────────────────┐
 │                                     │                                   │
 │  Standard CMOS Features             │  Miscellaneous Control            │
 │                                     │                                   │
 │  Advanced BIOS Features             │  Load optimized Defaults          │
 │                                     │                                   │
 │  Advanced Chipset Features          │  Load Standard 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                              ↑ ↓ → ←    : Select Item       │
 │  F10 : Save & Exit Setup                                               │
 ├──────────────────────────────────────────────────────────────────────┤
 │                    Time, Date, Hard Disk Type...                       │
 └──────────────────────────────────────────────────────────────────────┘
```

Figure 3-1

Standard CMOS Features
Use this Menu for basic system configurations.

Advanced BIOS Features
Use this menu to set the Advanced Features available on your system.

Advanced Chipset Features
Use this menu to change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals
Use this menu to specify your settings for integrated peripherals.

Power Management Setup
Use this menu to specify your settings for power management.

PnP/PCI configurations
This entry appears if your system supports PnP/PCI.

PC Health Status
This entry shows your PC health status.

Miscellaneous Control
Use this menu to specify your settings for Miscellaneous control.

Load Optimized Defaults

Use this menu to load the BIOS default values these are setting for optimal performances system operations for performance use.

Load Standard Defaults

Use this menu to load the BIOS default values for the stable performance system operation that are factory settings for normal use.

Set Supervisor/User Password

Use this menu to set User and Supervisor Passwords.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

3-4 Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into several categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

```
                CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                                Standard CMOS Features
┌─────────────────────────────────────────────────────┬──────────────────────────┐
│   Date (mm:dd:yy)          Thu, Sep, 12 2002          │       Item Help          │
│   Time (hh:mm:ss)          16 : 48 : 35               │                          │
│                                                       ├──────────────────────────┤
│ > IDE Primary Master       Press Enter None           │                          │
│ > IDE Primary Slave        Press Enter None           │  Menu Level >            │
│ > IDE Secondary Master     Press Enter None           │                          │
│ > IDE Secondary Slave      Press Enter None           │  Change the day, month,  │
│                                                       │  year and century        │
│   Drive A                  1.44M, 3.25 in.            │                          │
│   Drive B                  None                       │                          │
│                                                       │                          │
│   Video                    EGA/VGA                    │                          │
│   Halt On                  All,But Keyboard           │                          │
│                                                       │                          │
│   Base Memory                 640K                    │                          │
│   Extended Memory           56320K                    │                          │
│   Total Memory              57344K                    │                          │
├─────────────────────────────────────────────────────┴──────────────────────────┤
│  ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help       │
│       F5:Previous Values    F6:Optimized Defaults   F7:Standard Defaults         │
└─────────────────────────────────────────────────────────────────────────────────┘
```

Date

The date format is <day><month><date><year>.

> **Day**   Day of the week, from Sun to Sat, determined by BIOS. Read-only.
> **Month**   The month from Jan. through Dec.
> **Date**   The date from 1 to 31 can be keyed by numeric function keys.
> **Year**   The year depends on the year of the BIOS.

Time

The time format is <hour><minute><second>.

Primary Master/Primary Slave
Secondary Master/Secondary Slave
Press PgUp/<+> or PgDn/<–> to select Manual, None, Auto type. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Manual to define your own drive type manually.

If you select Manual, related information is asked to be entered to the following items. Enter the information directly from the keyboard. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is SCSI, the selection shall be "None".

If the controller of HDD interface is CD-ROM, the selection shall be "None"

Access Mode   The settings are Auto Normal, Large, and LBA.
Cylinder   number of cylinders
Head   number of heads
Precomp   write precomp
Landing Zone   landing zone
Sector   number of sectors

3-5 Advanced BIOS Features

```
             CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                           Advanced BIOS Features

    Anti-Virus Protection       Disabled
    CPU L1 Cache                Enabled                  Item Help
    CPU L2 Cache                Enabled
    Quick Power On Self Test    Enabled
    First Boot Device           Floppy              Menu Level >
    Second Boot Device          HDD-0
    Third Boot Device           CDROM
    Boot other Device           Enabled
    Swap Floppy Drive           Disabled
    Boot Up Floppy Seek         Enabled
    Boot Up NumLock Status      On
    Typematic Rate Setting      Disabled
    Typematic Rate (Chars/Sec)  6
    Typematic Delay (Msec)      250
    Security Option             Setup
    OS Select For DRAM > 64MB   Non-OS2
    HDD S.M.A.R.T. Capability   Disabled
    Report No FDD For Windows   Yes
    Video BIOS Shadow           Enabled

    ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help
        F5:Previous Values   F6:Optimized Defaults   F7:Standard Defaults
```

Anti-Virus Protection

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

    Disabled (default) No warning message to appear when anything attempts to access the boot sector or hard disk partition table.

    Enabled   Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector of hard disk partition table.

CPU Internal Cache

The default value is Enabled.

    Enabled (default) Enable cache

    Disabled   Disable cache

Note: The internal cache is built in the processor.

External Cache

Choose Enabled or Disabled. This option enables the Level 2 cache memory.

CPU L2 Cache ECC Checking

Choose Enabled or Disabled. This option enables the Level 2 cache memory ECC (error check correction).

Quick Power On Self-Test

This category speeds up Power On Self Test (POST) after you power on the computer. If this is set to Enabled. BIOS will shorten or skip some check items during POST.

    Enabled (default) Enable quick POST

    Disabled   Normal POST

First/Second/Third/Fourth Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The settings are Floppy, LS/ZIP, HDD-0/HDD-1/HDD-3, SCSI, CDROM, LAD and Disabled.

Swap Floppy Drive

Switches the floppy disk drives between being designated as A and B. Default is Disabled.

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

Boot Up NumLock Status

The default value is On.

    On (default)   Keypad is numeric keys.

    Off   Keypad is arrow keys.

Typematic Rate Setting

Keystrokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected. The settings are: Enabled/Disabled.

Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a keystroke when you hold the key down. The settings are: 6, 8, 10, 12, 15, 20, 24, and 30.

Typematic Delay (Msec)
Sets the delay time after the key is held down before is begins to repeat the keystroke. The settings are 250, 500, 750, and 1000.

Security Option
This category allows you to limit access to the system and Setup, or just to Setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup (default)	The system will boot, but access to Setup will be denied if the correct password is not entered prompt.

OS Select For DRAM > 64MB
Allows OS2® to be used with >64MB or DRAM. Settings are Non-OS/2 (default) and OS2. Set to OS/2 if using more than 64MB and running OS/2®.

3-6 Advanced Chipset Features

The Advanced Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

```
            CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                          Advanced Chipset Features
 ╔════════════════════════════════════════════════════════════════════════╗
 ║  > DRAM Timing Settings     Press Enter  │                              ║
 ║  > AGP Timing Settings      Press Enter  │         Item Help            ║
 ║  > PCI Timing Settings      Press Enter  │                              ║
 ║    System BIOS Cacheable    Disabled     │                              ║
 ║    Video RAM Cacheable      Disabled     │    Menu Level >              ║
 ║    Memory Hole              Disabled     │                              ║
 ║                                          │                              ║
 ║                                          │                              ║
 ║                                          │                              ║
 ╠════════════════════════════════════════════════════════════════════════╣
 ║   ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help ║
 ║       F5:Previous Values    F6:Optimized Defaults   F7:Standard Defaults   ║
 ╚════════════════════════════════════════════════════════════════════════╝
```

DRAM Timing Settings
Please refer to section 3-6-1

AGP Timing Settings
Please refer to section 3-6-2

PCI Timing Settings
Please refer to section 3-6-3

System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The settings are: Enabled and Disabled.

Video RAM Cacheable
Select Enabled allows caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The settings are: Enabled and Disabled.

Memory Hole
You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements. The settings are: Enabled and Disabled.

3-6-1 DRAM Timing Settings

```
            CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                             DRAM Timing Settings
┌──────────────────────────────────────────────────────────────────────────────┐
│    Auto Configuration         Standard       │                                │
│    RAS Active Time            6T             │          Item Help             │
│    RAS Precharge Time         3T             │                                │
│    RAS to CAS Delay           3T             │                                │
│    CAS Latency                2.5T           │      Menu Level >>             │
│    Bank Interleave            Disabled       │                                │
│    DRAM Command Rate          2T Command     │                                │
│                                              │                                │
│                                              │                                │
├──────────────────────────────────────────────────────────────────────────────┤
│  ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help     │
│     F5:Previous Values    F6:Optimized Defaults   F7:Standard Defaults         │
└──────────────────────────────────────────────────────────────────────────────┘
```

RAS Active Time
This field let's you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. *Fast* gives faster performance; and *Slow* gives more stable performance. This field applies only when synchronous DRAM is installed in the system. The settings are: 2T and 3T.

RAS Precharge Time
If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain date. *Fast* gives faster performance; and *Slow* gives more stable performance. This field applies only when synchronous DRAM is installed in the system. The settings are: 2T and 3T.

CAS Latency
When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. The settings are: 2T and 2.5T.

3-6-2 AGP Timing Settings

```
        CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                        AGP Timing Settings
┌─────────────────────────────────────────────┬──────────────────────┐
│   AGP Transfer Aperture Size    64M          │      Item Help       │
│   AGP Mode                      Auto         │                      │
│   AGP Driving Control           Auto         ├──────────────────────┤
│ * AGP Driving Value             DA           │  Menu Level >>       │
│   AGP Fast Write                Disabled     │                      │
│   AGP Master 1 WS Write         Enabled      │                      │
│   AGP Master 1 WS Read          Enabled      │                      │
│   CPU to AGP Post Write         Disabled     │                      │
│   AGP Delay Transaction         Disabled     │                      │
│                                              │                      │
├─────────────────────────────────────────────┴──────────────────────┤
│ ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│     F5:Previous Values   F6:Optimized Defaults    F7:Standard Defaults │
└─────────────────────────────────────────────────────────────────────┘
```

Note: Change these settings only if you are familiar with the chipset.

3-6-3 PCI Timing Settings

```
        CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                        PCI Timing Settings
┌─────────────────────────────────────────────┬──────────────────────┐
│   PCI Master 1 WS Write         Disabled     │      Item Help       │
│   PCI Master 1 WS Read          Disabled     │                      │
│   CPU to PCI Write Buffer       Enabled      ├──────────────────────┤
│   PCI Delay Transaction         Disabled     │  Menu Level >>       │
│                                              │                      │
│                                              │                      │
│                                              │                      │
├─────────────────────────────────────────────┴──────────────────────┤
│ ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│     F5:Previous Values   F6:Optimized Defaults    F7:Standard Defaults │
└─────────────────────────────────────────────────────────────────────┘
```

PCI Delay Transaction
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. The settings are: Enabled and Disabled.

3-7 Integrated Peripherals

```
        CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                        Integrated Peripherals
┌─────────────────────────────────────────────┬──────────────────────┐
│ > OnChip IDE Function          Press Enter   │      Item Help       │
│ > OnChip Device Function       Press Enter   │                      │
│ > Onboard Super IO Function    Press Enter   ├──────────────────────┤
│   Init Display First           PCI Slot      │  Menu Level >       │
│                                              │                      │
│                                              │                      │
│                                              │                      │
├─────────────────────────────────────────────┴──────────────────────┤
│ ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│     F5:Previous Values   F6:Optimized Defaults    F7:Standard Defaults │
└─────────────────────────────────────────────────────────────────────┘
```

OnChip IDE Function

Please refer to section 3-7-1

OnChip Device Function
Please refer to section 3-7-2

Onboard Super IO Function
Please refer to section 3-7-3

Init Display First
This item allows you to decide to activate whether PCI Slot or AGP VGA first. The settings are: PCI Slot, AGP Slot.

3-7-1 OnChip IDE Function

```
              CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                              OnChip IDE Function
┌─────────────────────────────────────────────────┬─────────────────────────┐
│  OnChip IDE Channel0          Enabled            │       Item Help         │
│  OnChip IDE Channel1          Enabled            │                         │
│  Primary Master    PIO        Auto               ├─────────────────────────┤
│  Primary Slave     PIO        Auto               │                         │
│  Secondary Master  PIO        Auto               │    Menu Level >>        │
│  Secondary Slave   PIO        Auto               │                         │
│  Primary Master    UDMA       Auto               │                         │
│  Primary Slave     UDMA       Auto               │                         │
│  Secondary Master  UDMA       Auto               │                         │
│  Secondary Slave   UDMA       Auto               │                         │
│  IDE 32-bit Transfer Mode     Enabled            │                         │
│  IDE HDD Block Mode           Enabled            │                         │
│  IDE Prefetch Mode            Enabled            │                         │
│  Delay For HDD (Secs)          0                 │                         │
│                                                  │                         │
├──────────────────────────────────────────────────┴─────────────────────────┤
│   ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│        F5:Previous Values   F6:Optimized Defaults    F7:Standard Defaults   │
└─────────────────────────────────────────────────────────────────────────────┘
```

OnChip IDE Channal0/Channel1
The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately. The settings are: Enabled and Disabled.

Primary/Secondary Master/Slave PIO
The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device. The settings are: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

Primary/Secondary Master/Slave UDMA
Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33 and Ultra DMA/66, select Auto to enable BIOS support. The settings are: Auto, Disabled.

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support. The settings are: Enabled, Disabled.

3-7-2　OnChip Device Function

```
              CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                            OnChip Device Function
┌─────────────────────────────────────────────┬─────────────────────────┐
│   AC97 Sound Device          Auto            │       Item Help         │
│   Game Port Address          201             │                         │
│   Midi Port Address          Disabled        ├─────────────────────────┤
│   Midi Port IRQ              10              │                         │
│   AC97 Modem Device          Auto            │   Menu Level >>         │
│   USB Host Controller        Enabled         │                         │
│   USB Keyboard Legacy Support Disabled       │                         │
│                                              │                         │
│                                              │                         │
│                                              │                         │
│                                              │                         │
│                                              │                         │
│                                              │                         │
├─────────────────────────────────────────────┴─────────────────────────┤
│ ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│      F5:Previous Values   F6:Optimized Defaults   F7:Standard Defaults    │
└────────────────────────────────────────────────────────────────────────┘
```

AC97 Sound Device
This item allows you to decide to enable/disable the chipset family to support AC97 Audio. The settings are: Enabled, Disabled.

Game Port Address/Midi Port Address
This will determine which Address the Game Port/Midi Port will use.

AC97 Modem Device
This item allows you to decide to enable/disable the chipset family to support AC97 Modem. The settings are: Auto, Disabled.

USB Host Controller
Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB peripherals. The settings are: Enabled, Disabled.

USB Keyboard Support
Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard. The settings are: Enabled, Disabled.

3-7-3　Onboard Super IO Function

```
                CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                            Onboard Super IO Function
 ┌──────────────────────────────────────────────┬───────────────────────────┐
 │  Onboard FDD Controller        Enabled        │                           │
 │  Onboard Serial Port 1         3F8/IRQ4        │        Item Help          │
 │  Onboard Serial Port 2         2F8/IRQ3        ├───────────────────────────┤
 │  UART2 Mode                    Normal          │                           │
 │  RxD, TxD Active               Hi, Lo          │    Menu Level >>          │
 │  IR Duplex Mode                Half            │                           │
 │  Use IR Pins                   IRRX/IRTX       │                           │
 │  Onboard Parallel Port         378/IRQ7        │                           │
 │  Parallel Mode                 SPP             │                           │
 │  EPP Mode Select               EPP1.7          │                           │
 │  ECP Mode Use DMA              3               │                           │
 │                                                │                           │
 ├──────────────────────────────────────────────┴───────────────────────────┤
 │  ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
 │      F5:Previous Values   F6:Optimized Defaults    F7:Standard Defaults    │
 └───────────────────────────────────────────────────────────────────────────┘
```

Onboard FDD Controller

Select Enabled if your system has a floppy disk controller (FDD) installed on the system board and you wish to use it. If you install add-on FDC or the system has no floppy drive, select Disabled in this field. The settings are: Enabled and Disabled.

Onboard Serial Port 1/Port 2

Select an address and corresponding interrupt for the first and the second serial ports. The settings are: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

UART2 Mode

This item allows you to determine which InfraRed(IR) function of the onboard I/O chip, this functions uses.

Onboard Parallel Port

There is a built-in parallel port on the on-board Super I/O chipset that Provides Standard, ECP, and EPP features. It has the following option:

    Disabled
    (3BCH/IRQ7)/   Line Printer port 0
    (278H/IRQ5)/   Line Printer port 2
    (378H/IRQ7)   Line Printer port 1

Parallel Port Mode

    SPP   : Standard Parallel Port
    EPP   : Enhanced Parallel Port
    ECP   : Extended Capability Port

    SPP/EPP/ECP/ECP+EPP

    To operate the onboard parallel port as Standard Parallel Port only, choose "SPP." To operate the onboard parallel port in the EPP modes simultaneously, choose "EPP." By choosing "ECP", the onboard parallel port will operate in ECP mode only. Choosing "ECP+EPP" will allow the onboard parallel port to support both the ECP and EPP modes simultaneously. The ECP mode has to use the DMA channel, so choose the onboard parallel port with the ECP feature. After selecting it, the following message will appear: "ECP Mode Use DMA" at this time, the user can choose between DMA channels 3 to 1. The onboard parallel port is EPP Spec. compliant, so after the user chooses the onboard parallel port with the EPP function, the following message will be displayed on the screen: "EPP Mode Select." At this time either EPP 1.7 spec. or EPP 1.9 spec. can be chosen.

3-8 Power Management Setup

The Power Management Setup allows you to configure your system to most effectively save energy saving while operating in a manner consistent with your own style of computer use.

```
              CMOS Setup Utility - Copyright(C) 1984-2002 Award Software
                               Power Management Setup
╔═══════════════════════════════════════════════════════════════════════════════╗
║    ACPI Function              Enabled              ┌─────────────────────────┐  ║
║    Video Off Option           Always off          │        Item Help        │  ║
║    Video off Method           V/H SYNC+Blank       ├─────────────────────────┤  ║
║    MODEM Use IRQ              3                     │ Menu Level >            │  ║
║    Power Button Function      Instant-Off          │                         │  ║
║    Power After Power Failure  Off                  │                         │  ║
║ >  Wake Up Events             Press Enter          │                         │  ║
║                                                    │                         │  ║
║                                                    │                         │  ║
║                                                    │                         │  ║
║                                                    │                         │  ║
║                                                    └─────────────────────────┘  ║
╠═══════════════════════════════════════════════════════════════════════════════╣
║    ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help    ║
║        F5:Previous Values    F6:Optimized Defaults   F7:Standard Defaults       ║
╚═══════════════════════════════════════════════════════════════════════════════╝
```

ACPI Function

This item allows you to Enabled/Disabled the Advanced Configuration and Power Management (ACPI). The settings are Enabled and Disabled.

Video Off Option

This determines the manner in which the monitor is blanked. The choice are Suspend → off, All Modes → Off, and Always On.

Video Off Method

This determines the manner in which the monitor is blanked.

DPMS (default)	Initial display power management signaling.
Blank Screen	This option only writes blanks to the video buffer.
V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Modem Use IRQ

This determines the IRQ in which the MODEM can use.
The settings are: 3, 4, 5, 7, 9, 10, 11, NA.

Power Button Function

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state. The settings are: Delay 4 Sec, Instant-Off.

Wake Up Events

Please refer to section 3-8-1

3-8-1 Wake up Events

```
            CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                              Wake Up Events
┌────────────────────────────────────────────────┬─────────────────────────┐
│   VGA                          OFF              │       Item Help         │
│   LPT & COM                    LPT/COM          │                         │
│   HDD & FDD                    ON               ├─────────────────────────┤
│   PCI Master                   OFF              │   Menu Level >>         │
│   Wake-Up on Ring/LAN          Disabled         │                         │
│   Wake-Up on PCI PME           Disabled         │                         │
│   Wake-Up on RTC Alarm         Disabled         │                         │
│ x Date of Month Alarm             0             │                         │
│ x Time (hh:mm:ss) Alarm          0 : 0 : 0      │                         │
│ > IRQs Activities              Press Enter      │                         │
├────────────────────────────────────────────────┴─────────────────────────┤
│  ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│      F5:Previous Values    F6:Optimized Defaults   F7:Standard Defaults    │
└───────────────────────────────────────────────────────────────────────────┘
```

Wake Up On Ring/PME

During Disabled, the system will ignore any incoming call from the modem. During Enabled, the system will boot up if there's an incoming call from the modem.

Wake-Up on RTC Alarm

This function is for setting date and time for your computer to boot up. During Disabled, you cannot use this function. During Enabled, choose the Date and Time Alarm:

Date(of month) Alarm

You can choose which month the system will boot up. Set to 0, to boot every day.

Time(hh:mm:ss) Alarm

You can choose what hour, minute and second the system will boot up.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.

IRQs Activities

Please refer to section 3-8-1.1

3-8-1.1 IRQs Activities

```
            CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                              IRQs Activities
┌────────────────────────────────────────────────┬─────────────────────────┐
│   Primary INTR                 ON               │       Item Help         │
│   IRQ3   (COM 2)               Enabled          │                         │
│   IRQ4   (COM 1)               Enabled          ├─────────────────────────┤
│   IRQ5   (LPT 2)               Enabled          │                         │
│   IRQ6   (Floppy Disk)         Enabled          │   Menu Level >>>        │
│   IRQ7   (LPT 1)               Enabled          │                         │
│   IRQ8   (RTC Alarm)           Disabled         │                         │
│   IRQ9   (IRQ2 Redir)          Disabled         │                         │
│   IRQ10  (Reserved)            Disabled         │                         │
│   IRQ11  (Reserved)            Disabled         │                         │
│   IRQ12  (PS/2 Mouse)          Enabled          │                         │
│   IRQ13  (Coprocessor)         Disabled         │                         │
│   IRQ14  (Hard Disk)           Enabled          │                         │
│   IRQ15  (Reserved)            Disabled         │                         │
├────────────────────────────────────────────────┴─────────────────────────┤
│  ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│      F5:Previous Values    F6:Optimized Defaults   F7:Standard Defaults    │
└───────────────────────────────────────────────────────────────────────────┘
```

3-9 PnP/PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

```
           CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                            PnP/PCI Configurations
 ╔═══════════════════════════════════════════════════════════════════════════╗
 ║   PnP OS Installed              No                                         ║
 ║   Reset Configuration Data      Disabled              Item Help           ║
 ║                                                                           ║
 ║   Resources Controlled By       Manual                                    ║
 ║ x IRQ Resources                 Press Enter                               ║
 ║   PCI/VGA Palette Snoop         Disabled    ──────────────────────────────║
 ║   Assign IRQ For VGA            Enabled                                    ║
 ║   Assign IRQ For USB            Enabled        Menu Level >                ║
 ║                                                                           ║
 ║                                                                           ║
 ║                                                                           ║
 ║                                                                           ║
 ║                                                                           ║
 ╠═══════════════════════════════════════════════════════════════════════════╣
 ║  ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help ║
 ║      F5:Previous Values    F6:Optimized Defaults   F7:Standard Defaults    ║
 ╚═══════════════════════════════════════════════════════════════════════════╝
```

Reset Configuration Data
Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system can not boot. The settings are: Enabled and Disabled.

Resource Controlled By
The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95/98. If you set this field to "manual" choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a ">").

The settings are: Auto(ESCD), Manual.

IRQ Resources
When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.
Please refer to section 3-9-1

PCI/VGA Palette Snoop
Leave this field at *Disabled.* The settings are Enabled, Disabled.

3-9-1 IRQ Resources

```
            CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                                IRQ Resources

     IRQ3    assigned to          PCI Device              Item Help
     IRQ4    assigned to          PCI Device
     IRQ5    assigned to          PCI Device
     IRQ7    assigned to          PCI Device          Menu Level >>
     IRQ9    assigned to          PCI Device
     IRQ10   assigned to          PCI Device
     IRQ11   assigned to          PCI Device
     IRQ12   assigned to          PCI Device
     IRQ14   assigned to          PCI Device
     IRQ15   assigned to          PCI Device

     ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help
          F5:Previous Values    F6:Optimized Defaults   F7:Standard Defaults
```

3-10 PC Health Status

This section shows the Status of you CPU, Fan, Warning for overall system status. This is only available if there is Hardware Monitor onboard.

```
            CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                               PC Health Status

     Shutdown Temperature         Disabled               Item Help
     CPU Warning Temperature      Disabled
     Show PC Health in Post       Enabled
     Current System Temperature   25ºC               Menu Level >
     Current CPU Temperature      38ºC
     CPUFAN                       5000 rpm
     SYSFAN                       5000 rpm
     Vcore                        1.78V
     Vcc3.3                       3.31V
     + 5V                         4.98V
     +12V                         12.22V
     -12V                         -12.36V
     -5V                          -5.09V
     VBAT(V)                      3.21V
     5VSB(V)                      5.02V

     ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help
          F5:Previous Values    F6:Optimized Defaults   F7:Standard Defaults
```

Shutdown Temperature
This item can let users setting the Shutdown temperature, when CPU temperature over this setting the system will auto shutdown to protect CPU.

Show PC Health in Post
During Enabled, it displays information list below. The choice is either Enabled or Disabled

Current CPU Temperature/Current System Temp/Current FAN1, FAN2 Speed/Vcore/Vdd/3.3V/+5V/+12V/-12V/VBAT(V)/5VSB(V)
This will show the CPU/FAN/System voltage chart and FAN Speed.

Detect CPUFAN in Post
During Enabled, system will warn the user if CPU Fan is not functioning.

3-11 Miscellaneous Control

This section is for setting CPU Frequency/Voltage Control.

```
              CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                              Miscellaneous Control

    CPU Clock Ratio                  8X              Item Help
    Auto Detect DIMM/PCI Clk         Enabled
    Spread Spectrum                  Disabled
    ** Current Host/PCI Clock is 100/33MHz **        Menu Level >
    Host/PCI Clock at Next Boot is      100/33MHz
    ** Current DRAM Clock is 133MHz **
    DRAM Clock at next Boot is 133MHz
    AGP VddQ Select                  1.5V (Default)
    VDIMM Select                     Default




    ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help
        F5:Previous Values   F6:Optimized Defaults   F7:Standard Defaults
```

Auto Detect DIMM/PCI Clk
This item allows you to enable/disable auto detect DIMM/PCI Clock.

Spread Spectrum
This item allows you to set the CPU Host/PCI clock and Spread Spectrum.
The settings are: Enabled, Disabled.

Host/PCI Clock at next Boot is
This item allows you to select CPU frequency step by step increasing
The choice are: 100MHz~132MHz, 133MHz~200MHz.

DRAM Clock at next Boot is
This field displays the capability of the memory modules that you can use
The choice is either 100MHz or 133MHz (only select CPU Frequency 100MHz.)

AGP VddQ Select
This item allows you to select 1.5V of the AGP 4X VGA card. The choice are: 1.5V, 1.6V.

VDIMM Select
This item allows you to select 2.5V of the DDR Module. The choice are: 2.5V, 2.6V

3-12 Load Standard/Optimized Defaults

Load Standard Defaults

When you press <Enter> on this item, you get confirmation dialog box with a message similar to:

Load Standard Defaults (Y/N)? N

Pressing <Y> loads the BIOS default values for the most stable, minimal-performance system operations.

Load Optimized Defaults

When you press <Enter> on this item, you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N)? N

Pressing <Y> loads the default values that are factory settings for optimal performance system operations.

3-13 Set Supervisor/User Password

You can set either supervisor or user password, or both of them. The differences are:

Supervisor password: Can enter and change the options of the setup menus.

User password: Can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters in length, 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 and not enter a password.

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

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to "System", the password will be required both at boot and at entry to Setup. If set to "Setup", prompting only occurs when trying to enter Setup.

Chapter 4

DRIVER & FREE PROGRAM INSTALLATION

Check your package and there is A MAGIC INSTALL CD included. This CD consists of all DRIVERS you need and some free application programs and utility programs. In addition, this CD also include an auto detect software which can tell you which hardware is installed, and which DRIVERS needed so that your system can function properly. We call this auto detect software MAGIC INSTALL.

MAGIC INSTALL supports WINDOWS 9X/ME/NT4.0/2000/XP

Insert CD into your CD-ROM drive and the MAGIC INSTALL Menu should appear as below. If the menu does not appear, double-click MY COMPUTER / double-click CD-ROM drive or click START / click RUN / type X:\SETUP.EXE (assuming X is your CD-ROM drive).

From MAGIC INSTALL MENU you may make 9 selections:
1. VIA 4 IN 1   install VIA Service Pack 4 IN 1 driver
2. SOUND   install AC97 Audio Codec Installing driver
3. USB2.0   install USB 2.0 driver **(Only for P4XFBU)**
4. PC-HEALTH   install Winbond PC-HEALTH hardware monitor Software
5. MAGIC BIOS   install BIOS Live Update Utility
6. PC-CILLIN   install PC-CILLIN2002 anti-virus program
7. DIRECTX8   install Microsoft DirectX 8.0 driver
8. BROWSE CD   to browse the contents of the CD
9. EXIT   to exit from MAGIC INSTALL menu

4-1 IDE   Install VIA Service Pack 4 IN 1 Driver

* **The path of the file is X:\VIA\DRIVER\SETUP.EXE**

IDE : VIA ATAPI VENDOR SUPPORT DRIVER IS USED TO FIXED COMPATIBILITY ISSUE FOR IDE DEVICES

AGPVXD : VIA AGPVXD DRIVER IS TO BE INSTALLED, IF YOU ARE USING AN AGP VGA CARD, VIAGART.VXD WILL PROVIDE SERVICE ROUTINES TO YOUR VGA DRIVER AND INTERFACE DIRECTLY TO HARDWARE, PROVIDING FAST GRAPHIC ACCESS

IRQ ROUTING : VIA PCI IRQ MINIPORT DRIVER IS TO BE INSTALLED UNDER WIN98 ONLY, IT WILL FIX PCI IRQ ROUTING SEQUENCE

INF : VIA REGISTRY DRIVER IS TO BE INSTALLED UNDER WINDOWS
THE DRIVER WILL ENABLE VIA POWER MANAGERMENT CONTROLLER

1. Click IDE when MAGIC INSTALL MENU appears

2. Click NEXT when VIA Service Pack Wizard appears

3. This is to announce the Copy Write, click Yes

4. Click NEXT to choose all driver

5. Click NEXT to Install ATAPI Vender Support Driver

6. Click NEXT to choose enabled DMA Mode

7. Click NEXT to Install VIA AGP VXD Driver

8. Click NEXT to Install VIA IRQ Routing Mini port Driver

9. Click Finish to restart computer

4-2 Sound Install ALC Audio Codec Driver

1. Click SOUND when MAGIC INSTALL MENU appears

2. Then auto detect operation system language edition, click OK, start to install DRIVER

3. Click Finish and Restart Windows
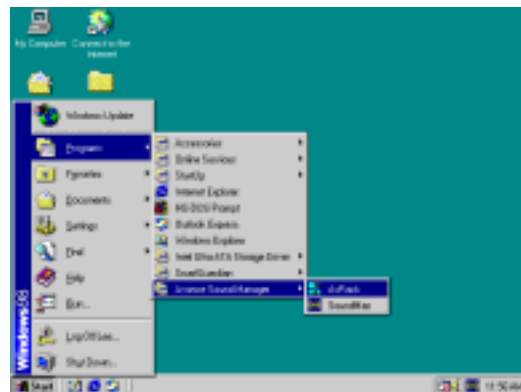
4. Click Start→Program→Avance Sound Manager→AvRack. Then AVRACK Windows appears
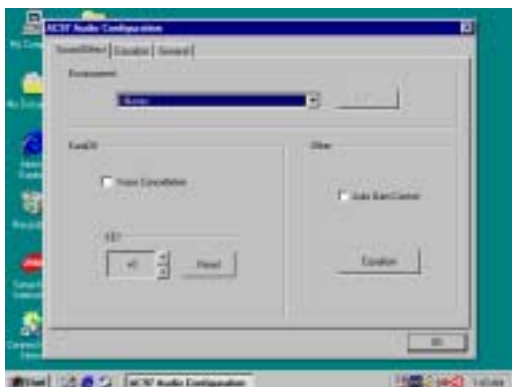
5. Sound Effect select and KaraOK Mode Function

6. Manual Sound Effect Setting

Note: The path of the file
For WIN98/NT4.0/WIN2K is X:\CODEC\ALCCODEC\SETUP.EXE
For WIN95 is X:\VIA\VIAUDIO\SETUP.EXE
For Linux is X:\VIA\VIAUDIO\Linux
For Real DOS Mode is X:\VIA\VIAUDIO\VIADOS

4-3 USB2.0 Install VIA USB2.0 Device Driver (Only for P4XFBU)

1. Click USB2.0 when MAGIC INSTALL MENU Appear

2. When USB2.0 Setup Program Appear, Click NEXT

3. Select Install USB Driver and Click NEXT

4. Select FINISH and Restart your Computer

5. Check device working properly in Device Manager

The Path of the file is X:\VIA\VIAUSB20\SETUP.EXE

4-4 PC-HEALTH Winbond Hardware Doctor Monitoring Software

The path of the file is X:\VIA\HEALTH-W\SETUP.EXE
(Support Windows 9X/ME/2K/NT/XP)

In Windows 95/98 Winbond Hardware Doctor Monitoring Software needs some system files to copy in Utility that's why it needs install PC-HEALTH twice to complete setup.

1. Click PC-Health when Magic Install Menu appears

2. Click OK when Winbond Hardware Doctor Setup Window appears

3. Click the Button to start installation

4. Select Program Group name or enter a new group name, click continue to setup and click OK after setup complete

4-4-1 How To Utilize PC-HEALTH

1. Click Program → Winbond Hardware Doctor → Hardware Doctor the Winbond Hardware Doctor will appears
You can remove the Utility in Control Panel → Add/Remove Program icon

2. After executing Winbond Hardware Doctor it supports system voltage, Fan speed and CPU/SYSTEM Temperature. Because this is a On-time Monitoring program therefore the value will change after it detected, if the value is over default setting the system will have

4-5 MAGIC BIOS Install BIOS Live Update Utility
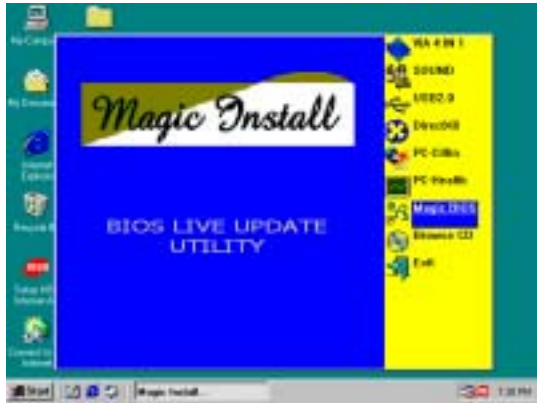
1. Click Magic BIOS when Magic Install MENU appears

2. Click Next to install the Magic BIOS in Destination Folder
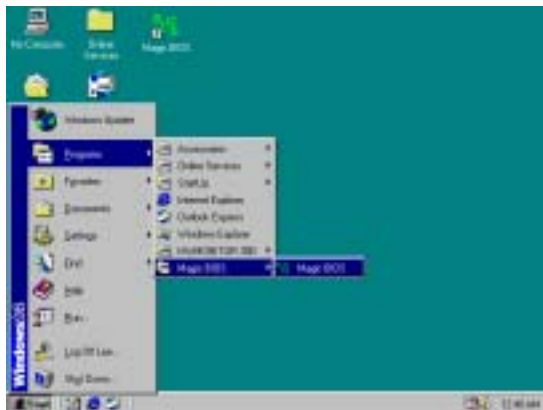
3. After finish Setup you will have a Magic BIOS icon in your screen

4. Double click the Magic BIOS icon you will have this picture, choose from internet you can upgrade BIOS On-line
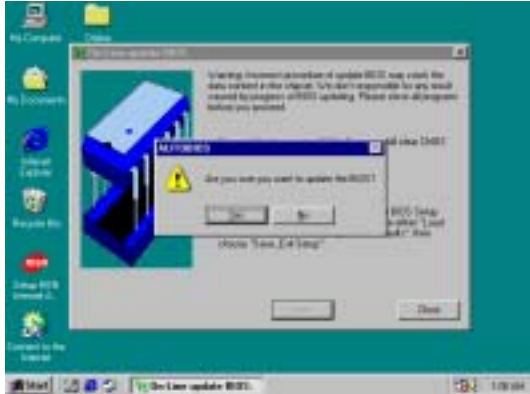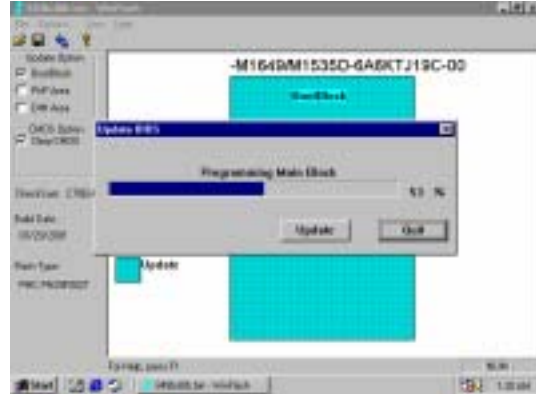

5. When On-line update BIOS the program
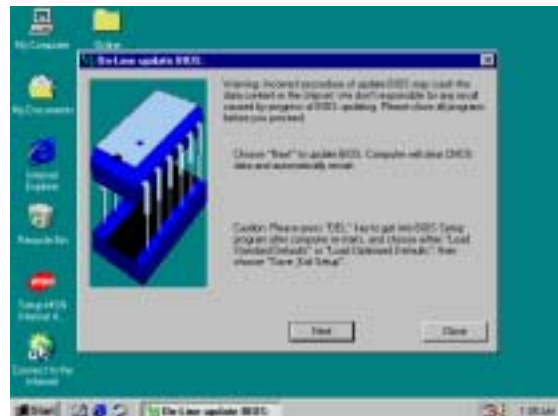
6. Click Next if you need update BIOS, after

will auto-check your BIOS version

upgrade BIOS, the system will clear CMOS and automatically restart

7. Click Yes if you want to update the BIOS otherwise choose No to exit

8. When System programming BIOS don't turn off power, after finish update BIOS, the system will clear CMOS and automatically Restart
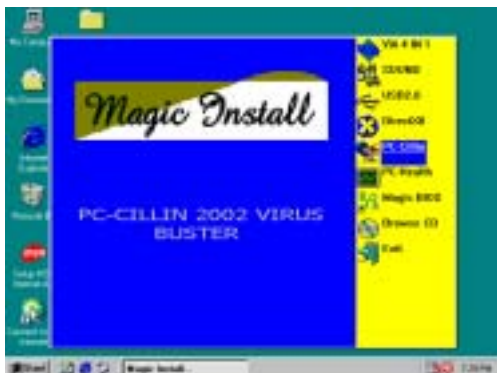

9. When choose From Local Driver to update BIOS, you must have the correct BIOS file in your Local Driver

10. Choose the correct BIOS file to update BIOS

4-6　PC-CILLIN　Install PC-CILLIN 2002 Anti-virus program

1. Click PC-CILLIN when MAGIC INSTALL MENU appear

2. (1) Click "Install PC-CILLIN" when PC-CILLIN 2002 main menu appears, and Click NEXT when "Install Shield Wizard For PC-CILLIN 2002"
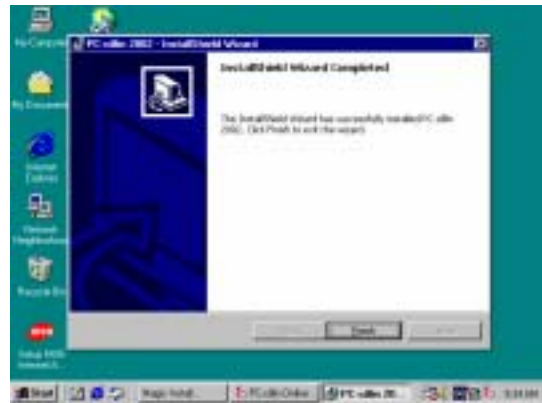
3. This is license agreement, select "I Accept the terms" and Click NEXT

4. Click NEXT and Enter your Customer Information, Click NEXT or choose Change to change the path for the file to be stored

5. Click INSTALL, Start to install the software

6. Setup Complete and click FINISH

7. After PC-CILLIN 2002 complete, Please register your information and get LICENSE KEY from TREND MICRO web site, enter your license key and click FINISH

8. finish register process, we recommend select update item ro download newest engine code and virus code

Note :   Please install ACROBAT READER, Before you read PC-CILLIN 2002 User Manual, the path at X:\acrobat\ar500eng.exe

4-7 HOW TO DISABLE ON-BOARD SOUND

Enter BIOS SETUP choose INTEGRATE PERIPHERALS choose ON-CHIP DEVICE FUNCTION choose AC97 SOUND DEVICE

Disable on-board sound function by press PAGE DOWN KEY to Disable

4-8 HOW TO UPDATE BIOS

Before update BIOS please choose Disabled in "Flash Part Write Protect" item on "Miscellaneous Control" in BIOS Setup, please refer page 34

Method 1. Use "Magic BIOS" update BIOS in Windows 98 (refer)

Method 2. In DOS Mode

STEP 1. Prepare a boot disc. (you may make one by click START click RUN type SYS A: click OK)

STEP 2. Copy utility program to your boot disc. You may copy from DRIVER CD X:\FLASH\AWDFLASH.EXE or download from our web site.

STEP 3. Copy latest BIOS for P4XFB from our web site to your boot disc.

STEP 4. Insert your boot disc into A:,

start the computer, type "Awdflash A:\P4XFBAxxx.BIN /SN/PY/CC/R"

P4XFBAxxx.BIN is the file name of latest BIOS it can be P4XFBA3.BIN or P4XFBB2.BIN

SN	means	don't save existing BIOS data
PY	means	renew existing BIOS data
CC	means	clear existing CMOS data
R	means	restart computer

STEP 5. Push ENTER and the BIOS will be updated, computer will be restarted automatically.