625EMPxxx/625EMWxxx
(Serial Motherboard)
USER'S MANUAL

M/B For VIA BravoGiga processor

NO. G03-625EMW

Rev:1.0

Release date: November 2003

Trademark:

TABLE OF CONTENT

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Manual Revision Information

Reversion	Revision History	Date
1.0	First Release	November 2003

Item Checklist

- ☑ Motherboard
- ☑ Cable for IDE/Floppy
- ☑ CD for motherboard utilities
- ☐ Cable for USB Port 2/3 (Option)
- ☑ User's Manual
- ☐ Cable for COM2 Serial Port (Option)
- ☐ Cable for S-Video/RCA Composite TV-Out (Option for 625EMWxxx)

Chapter 1

Introduction of 625EMPxxx/625EMWxxx Motherboard

1-1 Feature of motherboard

The 625EMPxxx/625EMWxxx motherboard is design for use VIA new generation C3 processors, which embedded EBGA VIA C3 processor on board and the memory size expandable to 2GB.(**The –xxx indicate the CPU Frequency**)

The motherboard uses the newest VIA VT8623 (CLE266) SMA (Share Memory Architecture) North bridge chipset and VT8235 south bridge chipset. These motherboards support VIA C3 processors whose 133MHz front side bus & 133MHz memory interface delivers a clear upgrade path to the future generation of 133MHz processors and DDR266 DRAM memory. It offers ULTRA DMA 133MB/sec (ATA 133) to provide speedier HDD throughout that boosts overall system performance.

For these motherboards, with integrated 3D Graphic Acceleration, makes this board lower cost alternative to a video card. The motherboard also integrated PCI LAN Controller supports 10/100 BASE-T Transfer rate for those whom require faster LAN function for net work. 625EMWxxx embedded VIA VT1622A TV Encoder provide S-Video/ Composite connector support NTSC/PAL system signal output.

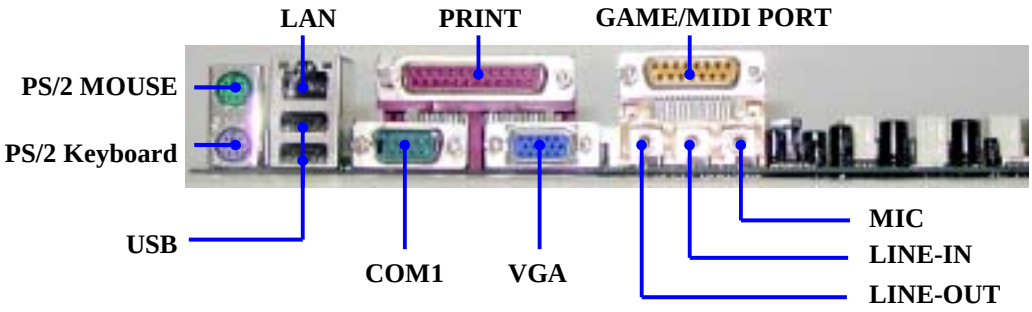
This board also integrated AC'97 2.2 CODEC on board support 6-channel Audio function, which is fully compatible with Sound Blaster Pro® that gives you the best sound quality and compatibility. With 2 USB controller as well as capability of expanding to 6 USB connectors compliant to USB2.0 provided 480Mb/sec data transfer rate, which guarantees this board to meet future USB demand. Moreover, these motherboards had built-in hardware monitor function that capable of monitor and protect your computer.

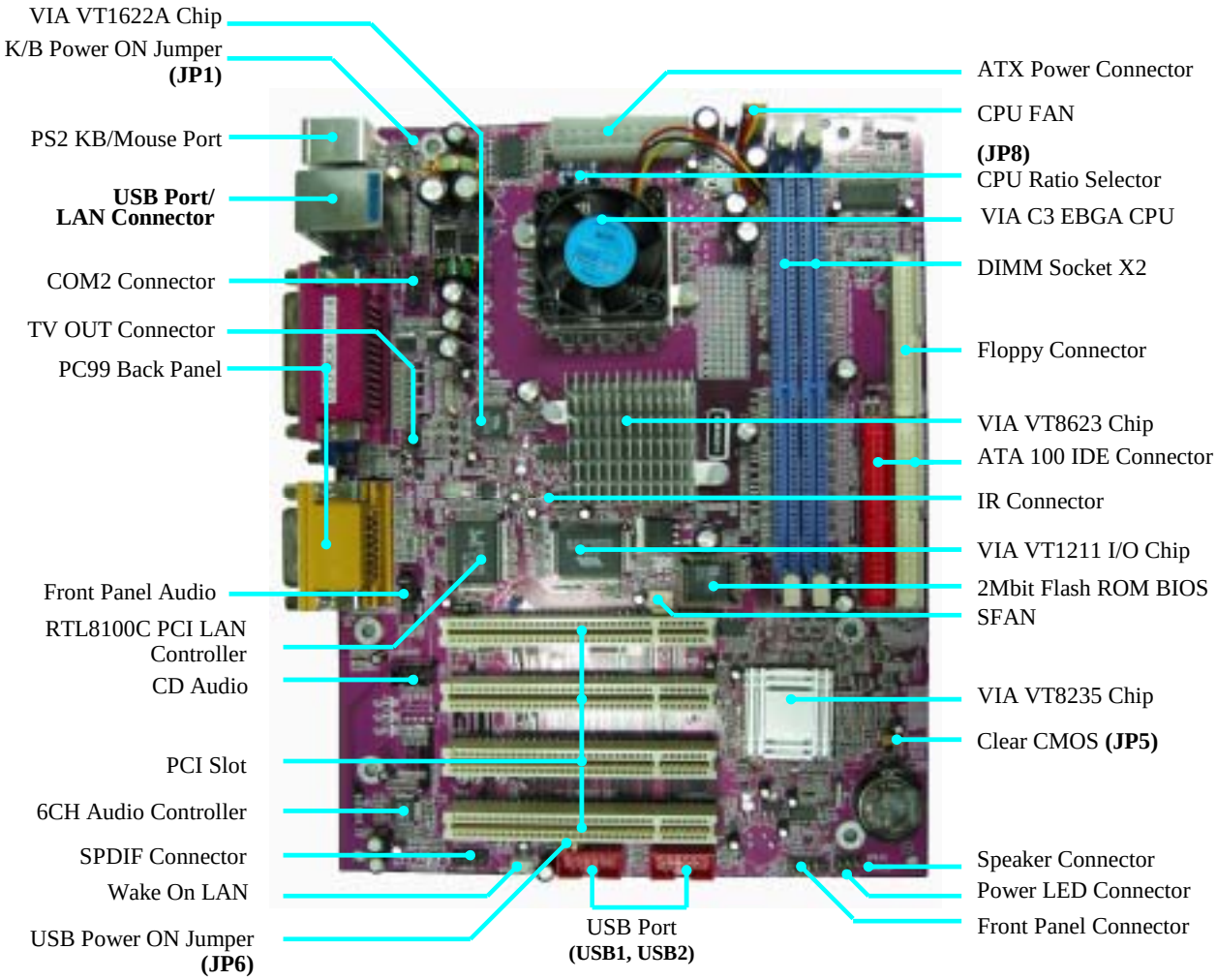
This motherboard provides high performance & meets future specification demand. It is really wise choice for your computer.

1-2 Specification

Spec	Description
Design	* Micro ATX form factor 4 layers PCB size: 24.4x19.0cm
Chipset	* VIA VT8623 SMA (Share Memory Architecture) North Bridge * VIA VT8235 South Bridge
Clock Generator	* ICS 950908 Clock Generator * Support 66/100/133MHz system Bus Clock (CPU Bus Clock) * Support CPU Frequency step by step setting in BIOS Setup * Support 100/133 MHz system Memory clock * Support 33MHz PCI Bus clock
CPU	* Embedded VIA C3 EBGA processor
Memory Socket	* 184-pin DDRDIMM socket x2 * Support DDR200/DDR266 DDR memory * Expandable to 2GB(512Mb x8/x16 DRAM technology)
Expansion Slot	* 32-bit PCI slot x4 PCI-2.2 compliant
Integrate VGA	* Integrate 2D/3D graphic Engines * 8/16/32/64MB frame buffer using system memory * Internal AGP 8x performance * Support 24-bit 250MHz RAMDAC
TV-Out (for 625EMWxxx)	* VIA VT1622A TV Encoder * Provided S-Video/Composite output for NTSC/PAL system
Integrate IDE	* 2 channel of Bus Master IDE port supporting ULTRA DMA 33/66/100/133 mode devices
Integrate LAN	* Integrated RTL8100C PCI LAN Controller * Support 10/100 BASE-T Transfer rate
Audio	* AC'97 Digital Audio controller integrated * AC'97 6-channel 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 2.0 connector x2 * USB 2.0 headers x4 (connecting cable option) * Audio connector (Line-in, Line-out, MIC, GAME)

1-3 Layout Diagram & Jumper Setting





Jumpers

Jumper	Name	Description	Page
JP8	CPU Ratio Selector	3-pin Block	p.5
JP1	Keyboard Power ON Function Setting	3-pin Block	p.6
JP6	USB Power On Function Setting	3-pin Block	p.6
JP5	CMOS RAM Clear Function Setting	3-pin Block	p.6

Connectors

Connector	Name	Description	Page
ATXPWR	ATX Power Connector	20-pin Block	p.11
KB/MS1	PS/2 Mouse & PS/2 Keyboard Connector	6-pin Female	p.11
UL_B1	USB Port Connector	4-pin Connector	p.12
LAN	LAN Connector	RJ45 Connector	p.12
LPT	Parallel Port Connector	25-pin Female	p.12
VGA	VGA Port Connector	15-pin Female	p.12
COM1	Serial Port Connector	9-pin Connector	p.12
CN2	Line-Out/Line-In/MIC Audio Connector	Phone Jack	p.12
FDD	Floppy Driver Connector	34-pin Block	p.12
IDE1	Primary IDE Connector	40-pin Block	p.13
IDE2	Secondary IDE Connector	40-pin Block	p.13

Headers

Header	Name	Description	Page
COM2	COM2 Serial Port Headers	10-pin Block	p.13
TV_OUT (for V625EMWxxx)	S-Video/RCA Composite TV-out Header	5-pin Block	p.14
AUDIO	Line-Out/MIC output Header	9-pin Block	p.14
USB1/USB2	USB2.0 Port Headers	10-pin Block	p.14
HD_LED	Hard drive LED connector	3-pin Block	p.14
RESET	Reset switch lead	2-pin Block	p.14
SPEAK	Speaker connector	4-pin Block	p.14
PWR LED	Power LED Headers	2-pin Block	p.15
PWR BTN	Power Button Headers	2-pin Block	p.15
CPUFAN, SFAN	FAN Speed Headers	3-pin Block	p.15
IR	IR infrared module Headers	5-pin Block	p.15
CDIN	CD Audio-In Headers	4-pin Block	p.16
SPDIF	SPDIF In/Out (Optical In/Out) Headers	9-pin Block	p.16

Expansion Sockets

Socket/Slot	Name	Description	Page
DDR, DDR2	DDR SDRAM Module Socket	184-pin DDR SDRAM Module Expansion Socket	p. 9
PCI1~4	PCI Slot	32-bit PCI Local Bus Expansion slots	p.10

Chapter 2
Hardware installation

2-1 Hardware installation Steps

Before using your computer, you had better complete the following steps:

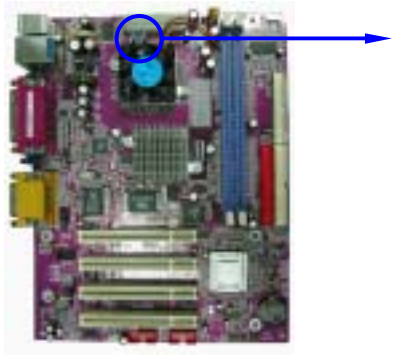
1. Check motherboard jumper setting
2. Install CPU and Fan
3. Install System Memory (DIMM)
4. Install Expansion cards
5. Connect IDE and Floppy cables, Front Panel /Back Panel cable
6. Connect ATX Power cable
7. Power-On and Load Standard Default
8. Reboot
9. Install Operating System
10. Install Driver and Utility

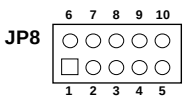
2-2 Checking Motherboard's Jumper Setting

(1) CPU Ratio Selector (10-pin) : JP8

Ratio	1-2	3-4	5-6	7-8	9-10
3.0x	OFF	ON	ON	ON	ON
3.5x	OFF	ON	OFF	ON	ON
4.0x	ON	OFF	ON	ON	ON
4.5x	ON	OFF	OFF	ON	ON
5.0x	ON	ON	ON	OFF	ON
5.5x	ON	ON	OFF	ON	ON
6.0x	OFF	OFF	ON	OFF	ON
6.5x	OFF	OFF	OFF	OFF	ON
7.0x	OFF	ON	ON	OFF	ON
7.5x	OFF	ON	OFF	OFF	ON
8.0x	ON	OFF	ON	OFF	ON
8.5x	ON	OFF	OFF	OFF	ON
9.0x	ON	ON	ON	ON	ON
9.5x	OFF	OFF	OFF	ON	ON

Ratio	1-2	3-4	5-6	7-8	9-10
10.0x	OFF	OFF	ON	ON	ON
10.5x	OFF	OFF	OFF	ON	OFF
11.0x	OFF	ON	ON	ON	OFF
11.5x	OFF	ON	OFF	ON	OFF
12.0x	ON	OFF	ON	ON	OFF
12.5x	ON	OFF	OFF	ON	OFF
13.0x	ON	ON	ON	ON	OFF
13.5x	ON	ON	OFF	ON	OFF
14.0x	OFF	OFF	ON	OFF	OFF
14.5x	OFF	OFF	OFF	OFF	OFF
15.0x	OFF	ON	ON	OFF	OFF
15.5x	OFF	ON	OFF	OFF	OFF
16.0x	ON	OFF	ON	OFF	OFF

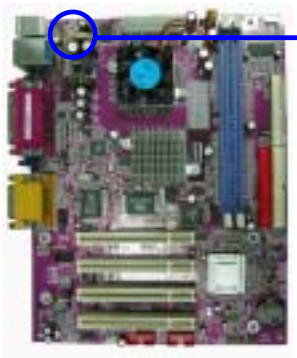


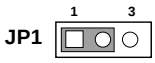


CPU Ratio Selector

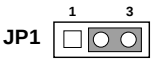
(2) Keyboard Power On function Enabled/Disabled (3-pin): JP1

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





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

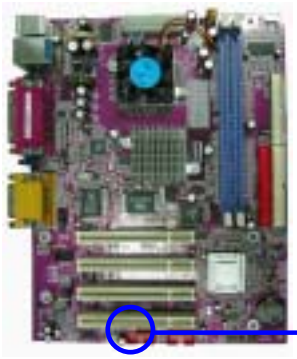


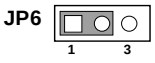
2-3 closed K/B Power ON Enabled

Keyboard Power On Setting

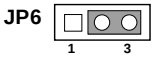
(3) USB Power On function Enabled/Disabled (3-pin): JP6

When setting Enabled you can using USB Device to power on system.





JP6 1-2 closed USB Power On Disabled (Default)



JP6 2-3 closed USB Power On Enabled

(4) CMOS RAM Clear (3-pin): JP5

A battery must be used to retain the motherboard configuration in CMOS RAM short 1-2 pins of JP5 to store the CMOS data.

To clear the CMOS, follow the procedure below:

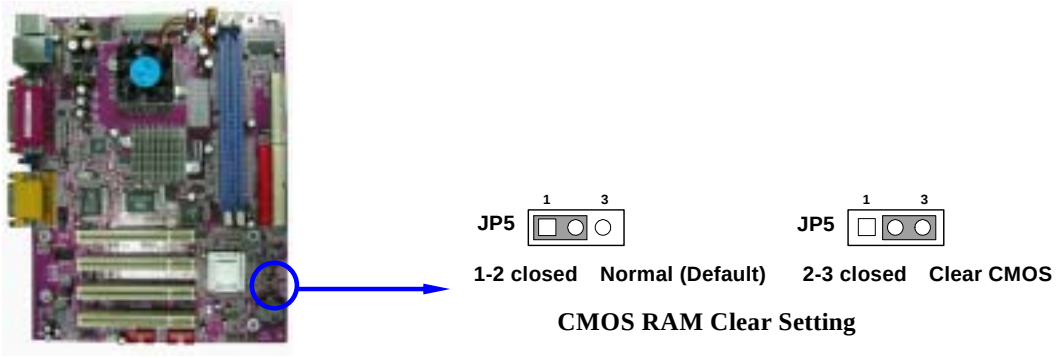
1. Turn off the system and unplug the AC power
2. Remove ATX power cable from ATX power connector
3. Locate JP5 and short pins 2-3 for a few seconds
4. Return JP5 to its normal setting by shorting pins 1-2
5. Connect ATX power cable back to ATX power connector

Note: When should clear CMOS

1. Troubleshooting

2. Forget password

3. After over clocking system boot fail



CMOS RAM Clear Setting

2-3 Glossary

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

Processor socket - the 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.

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.

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, normally Pentium III CPU has 256K or above, while Celeron CPU will have 128K.

2-3-1 Setting CPU Bus Clock & Memory Clock Jumper

Setting the front side bus frequency and SDRAM frequency

The motherboard uses jumper less function for the front side bus frequency and SDRAM frequency users don't need setting any jumper when plug the CPU in motherboard

For experience user looking for over clocking possibility, please refer to sec 2-3-2.

2-3-2 Over clock Running

WARNING!	This section is for experienced motherboard installer only. Over clocking can result in system instability or even shortening life of the processor.

Users can choose over clock running by BIOS CMOS SETUP UTILITY. When you entered CMOS SETUP UTILITY, choose "Miscellaneous Control" you will see the screen as below then.

```
CMOS Setup Utility – Copyright(C) 1984-2003 Award Software
                    Miscellaneous Control
```

VIA C3 Clock Ratio	Default	Item Help
Auto Detect PCI/DIMM Clock	Enabled	
Spread Spectrum	Disabled	Menu Level >
** Current Host/PCI Clock is		
Host/PCI Clock at Next Boot is	100	
** Current DRAM Clock is 133MHz	**	
DRAM Clock at Next Boot is	133MHz	
+2.5V Select	2.65V	

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

WARNING!	The Design of this motherboard follows chipset and CPU vender's design guideline. Any attempts to push beyond product specification are not recommended and you are taking your own risk to damage your system or important data. Before over clocking, you must make sure your components are able to tolerate such abnormal setting, especially CPU, memory, hard disks, and VGA cards.

2-4 Install Memory

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

Valid Memory Configurations

Bank	184-Pin DIMM	PCS	Total Memory
Bank 0, 1 (DDR1)	DDR200/DDR266 DDR SDRAM Module	X1	64MB~1.0GB
Bank 2, 3 (DDR2)	DDR200/DDR266 DDR SDRAM Module	X1	64MB~1.0GB
Total	System Memory (Max. 2.0GB)	2	64MB~2.0GB

Generally, installing DDR SDRAM modules to your motherboard is very easy, you can refer to figure 2-4 to see what a 184-Pin DDR200/DDR266 DDR SDRAM module looks like.

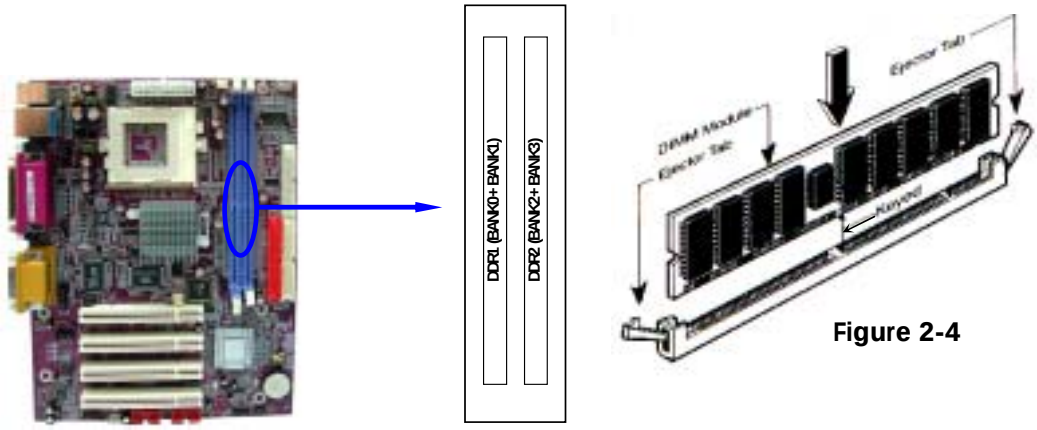


Figure 2-4

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 DDR SDRAM CLOCK is set at 133MHz, use only DDR266-compliant 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 Modules are not DDR266-compliant, set the DDR SDRAM clock to 100MHz to ensure system stability.

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		√						
Slot2			√					
Slot3				√				
Slot4					√			
Onboard VGA	√							
Onboard USB	√							
Onboard USB 1		√						
Onboard USB 2			√					
LAN			√					
AC97/MC97			√					

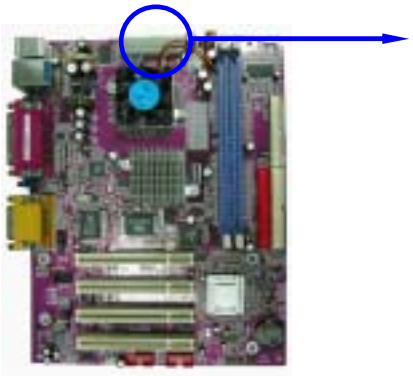
IMPORTANT!	If using PCI cards on shared slots, make sure that the drivers support "Shared IRQ" or that the cards don't need IRQ assignments. Conflicts will arise between the two PCI groups that will make the system unstable or cards inoperable.

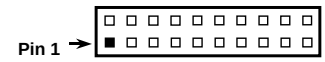
2-6 Connectors, Headers

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	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) PS/2 Mouse & PS/2 Keyboard Connector: KB/MS1

If you are using a PS/2 mouse, you must purchase an optional PS/2 mouse set which connects to the 5-pins block and mounts to an open slot on your computer's case.

(3) USB Port connector: UL_B1

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

(4) LAN Port Connector: LAN

These connectors are standard RJ45 connector for Network supports 10/100 BASE-T transfer rate.

(5) Parallel Port Connector (25-pin female): LPT

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.

(6) CMO1 Connector (9-pin male): COM1

COM1 Connector is a 9-pin D-Subminiature Receptacle connector.
This connector is for connection Serial Device with cable.

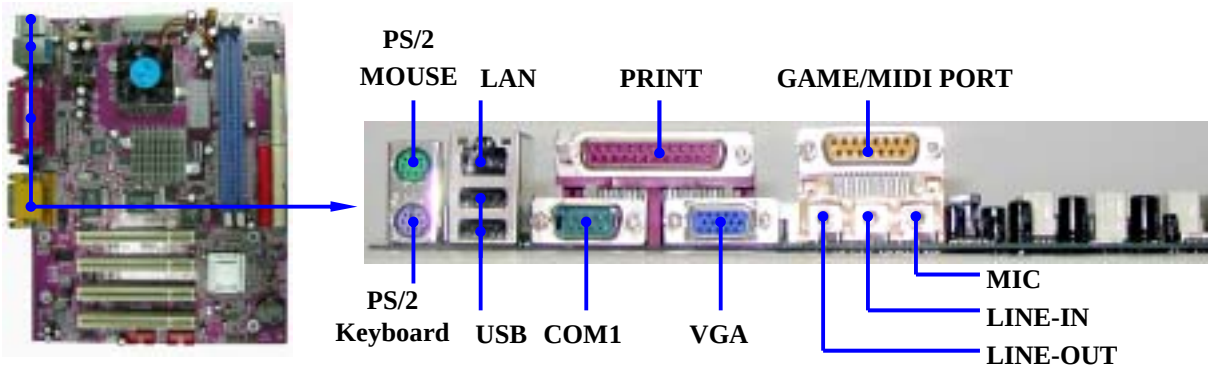
(7) VGA Connector (15-pin female): VGA

VGA Connector is a 15-pin D-Subminiature Receptacle connector.
This connector is for connection Monitor and System to display.

(8) Audio Connector: CN2 (Line-Out/ Line-IN/ MIC, GAME)

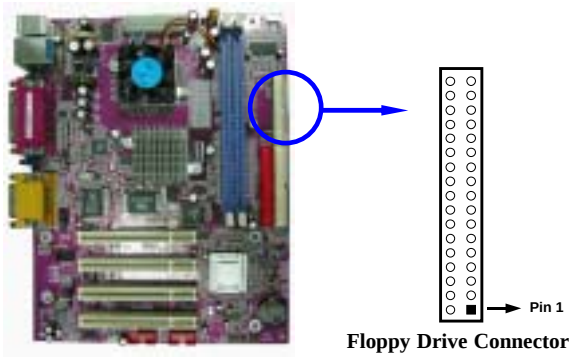
This Connector are 3 phone Jack for LINE-OUT/ LINE-IN/ MIC.

Line-out : Audio output to speaker
Line-In : Audio input to Audio controller
MIC : Microphone Connector
Game: Game/Midi Port Connector



(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.



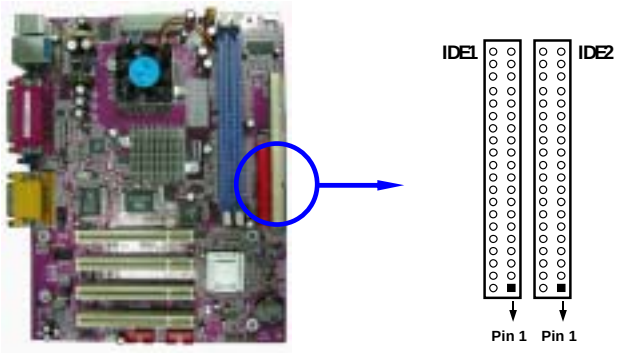
(10) Primary IDE Connector (40-pin block): IDE1

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.

(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.

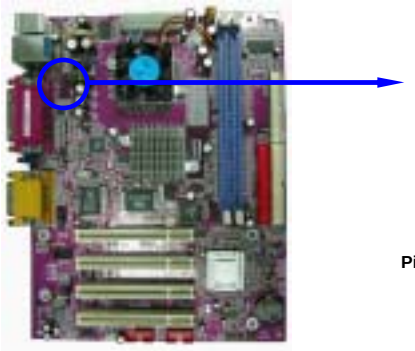


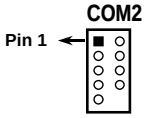
- Two hard disks can be connected to each connector. The first HDD is referred to as the "Master" and the second HDD is referred to as the "Slave".
- For performance issues, we strongly suggest you don't install a CD-ROM or DVD-ROM drive on the same IDE channel as a hard disk. Otherwise, the system performance on this channel may drop.

2-6-2 Headers

(1) COM2 Serial Port Headers (9-pin) : COM2

This board has one serial port header COM2, it come with cable providing serial port COM2. The On-board serial port can be disabled through BIOS SETUP. Please refer to Chapter 3 "INTEGRATED PERIPHERALS SETUP" section for more detail information.

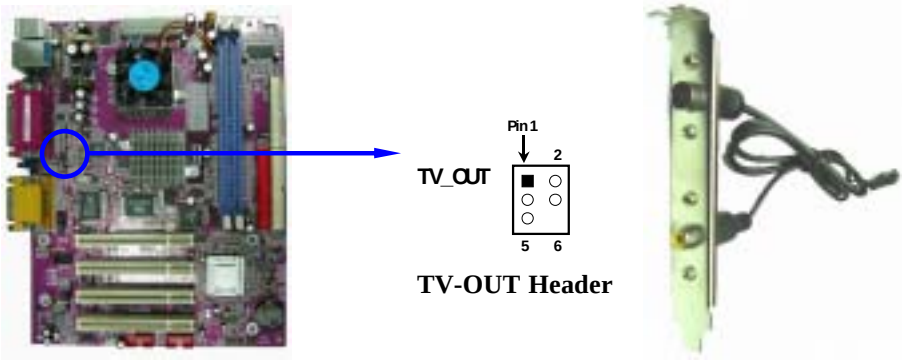




Note: Orient the read marking on the COM2 ribbon cable to pin 1

(2) TV-Out Header (5-pin): TV_OUT (for 625EMWxxx only)

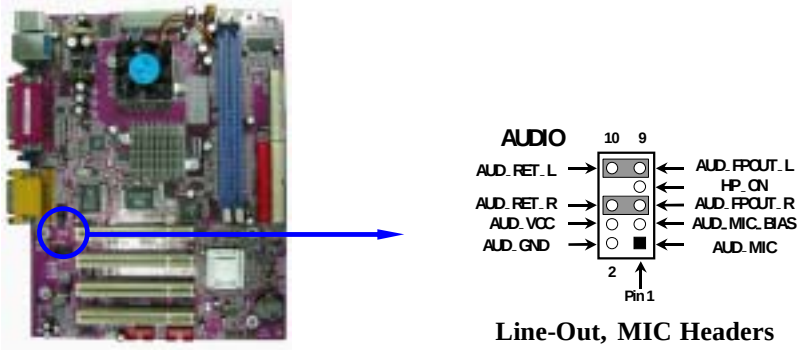
The TV-Out header is for S-Video/Composite TV-Out function. With optional Cable users can connect the TV and computer for TV-out function.



TV-OUT Header

(2) Line-Out, MIC Header (9-pin): AUDIO

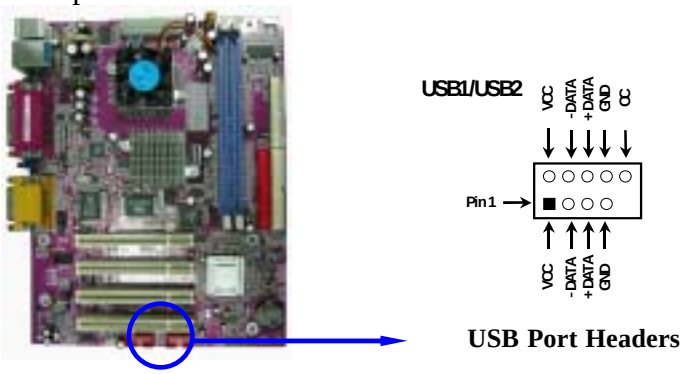
This header connect to Front Panel Line-out, MIC connector with cable.



Line-Out, MIC Headers

(3) USB Port Headers (10-pin) : USB1/USB2

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.



USB Port Headers

(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

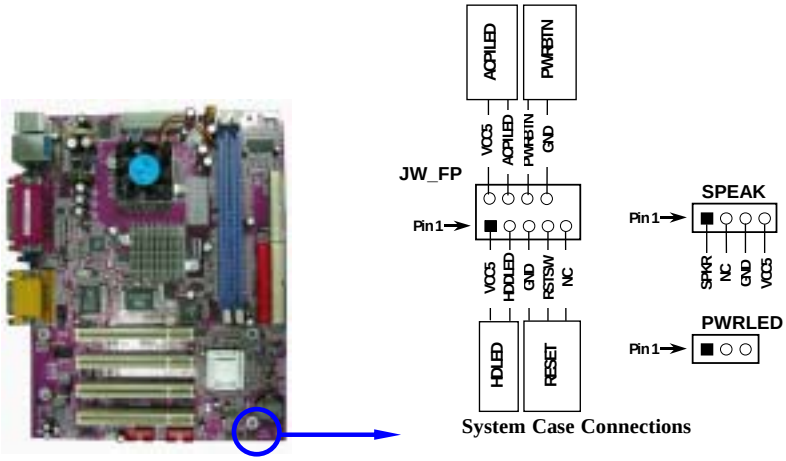
This 4-pin connector connects to the case-mounted speaker. See the figure below.

(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

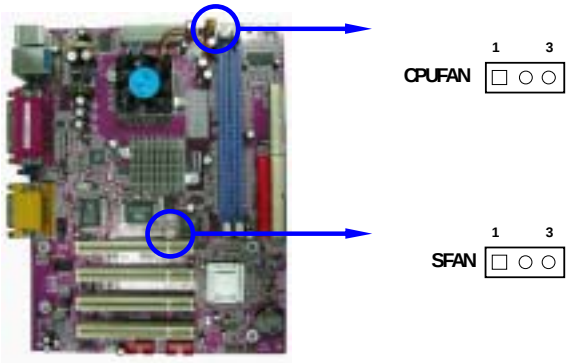
This 2-pin connector connects to the case-mounted power switch to power ON/OFF the system.



System Case Connections

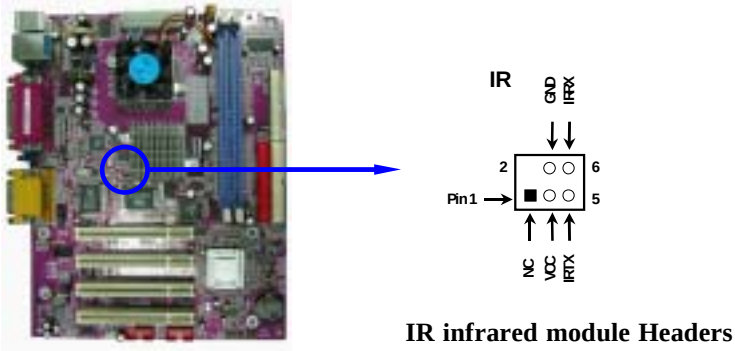
(9) FAN Speed Headers (3-pin) : CPUFAN, SFAN

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.



(10) IR infrared module Headers (5-pin) : IR

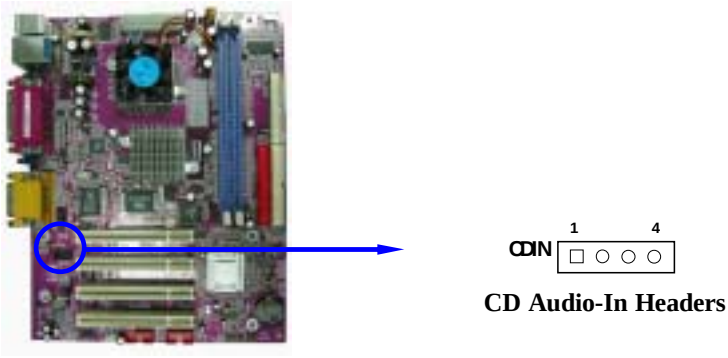
This connector supports the optional wireless transmitting and receiving infrared module. You must configure the setting through the BIOS setup to use the IR function.



IR infrared module Headers

(11) CD Audio-In Headers (4-pin) : CDIN

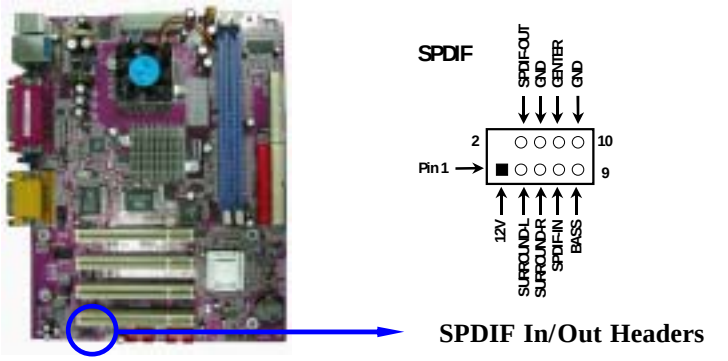
CDIN is the connectors for CD-Audio Input signal. Please connect it to CD-ROM CD-Audio output connector.



CD Audio-In Headers

(12) SPDIF In/Out Headers (9-pin) : SPDIF

This headers is for SPDIF (Sony Philip Digital InterFace) Device In/Out connector. Use this headers users can In put or Out put high quality digital signal from SPDIF devices to Computer or from computer to SPDIF devices.



SPDIF In/Out Headers

2-7 Starting Up Your Computer

1. After all connections 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.

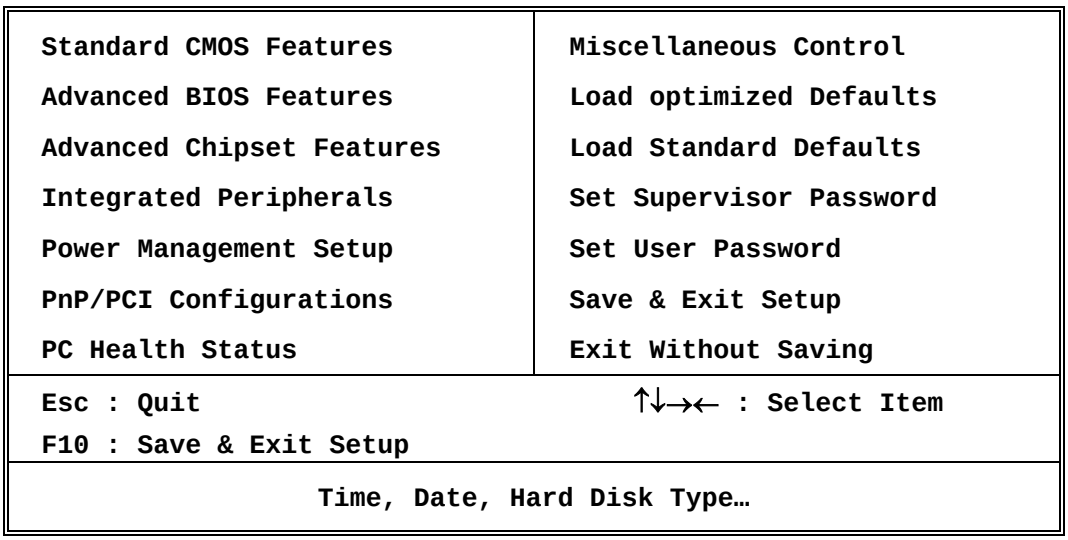


Figure 3-1

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 that are factory settings for optimal performances system operations.

Load Standard Defaults
Use this menu to load the BIOS default values for the minimal/stable performance system operation.

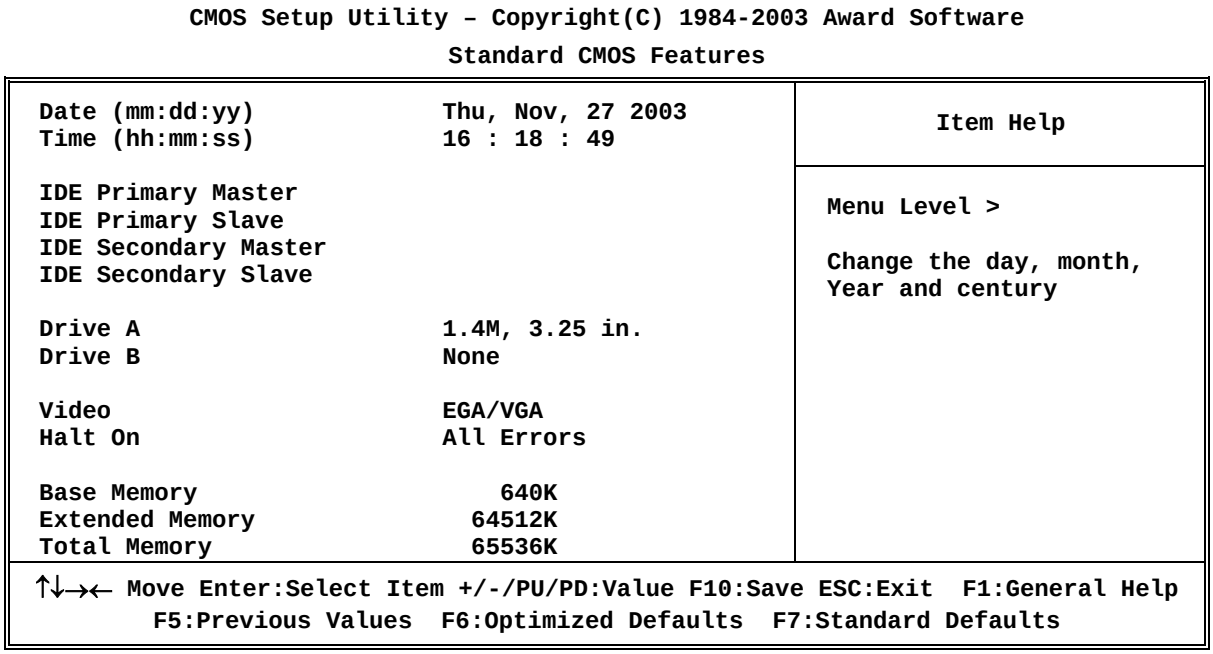
Set Supervisor/User Password
Use this menu to set User and Supervisor Passwords.

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.



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) 1984-2003 Award Software
Advanced BIOS Features
```

Anti-Virus Protection	Disabled	Item Help
CPU L1 Cache	Enabled	
CPU L2 Cache	Enabled	Menu Level >
CPU L2 Cache ECC Checking	Disabled	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
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	
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	
Gate A20 Option	Normal	
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 Item +/-/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 L1 Cache

The default value is Enabled.

Enabled (default) Enable cache

Disabled Disable cache

Note: The L1 cache is built in the processor.

CPU L2 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).

Processor Number Feature
This option is for Pentium® III processor. During Enabled, this will check the CPU Serial number. Disabled this option if you don't want the system to know the Serial number.

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, LAN 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.

Gate A20 Option

Normal The A20 signal is controlled by keyboard controller or chipset hardware.
Fast (default) The A20 signal is controlled by port 92 or chipset specific method.

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®.

Report No FDD For Windows
Whether report no FDD for Win 95 or not. The settings are: Yes, No.

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) 1984-2003 Award Software
Advanced Chipset Features

DRAM Timing Setting          Press Enter     |  Item Help
AGP Timing Setting           Press Enter     |
PCI Timing Setting           Press Enter     |  Menu Level >
Select Display Device        CRT             |
TV-Type                      NTSC            |
TV-Connector                 CVBS            |
System BIOS Cacheable        Disabled        |
Video RAM Cacheable          Enabled         |
Memory Parity/ECC Check      Disabled        |
Memory Size Hole             Disabled        |

↑↓→← Move Enter:Select Item +/-/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.

DRAM Timing Setting

Please refer to section 3-6-1

AGP Timing Setting

Please refer to section 3-6-2

PCI Timing Setting

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 BIOS 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.

3-6-1 DRAM Timing Setting

```
CMOS Setup Utility – Copyright(C) 1984-2003 Award Software
DRAM Timing Setting

   DRAM Timing                By SPD          |  Item Help
 x DRAM CAS Latency           2.5             |
   Bank Interleave            4 Banks         |  Menu Level >>
   RAS Precharge Time         3T              |
   RAS Active Time            6T              |  When set to "Auto",
   RAS to CAS Delay           3T              |  BIOS will program this
   DRAM Command Rate          2T              |  Timing mainly by the
                                              |  SPD method.  SPD means
                                              |  "Serial Presence
                                              |  Detect", which enables
                                              |  the BIOS to access
                                              |  the manufacturer
                                              |  settings stored in
                                              |  DRAM module.

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

DRAM CAS Latency

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

RAS-to-CAS Delay

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.

3-6-2 AGP Timing Settings

```
CMOS Setup Utility – Copyright(C) 1984-2003 Award Software
AGP Timing Settings

AGP Aperture Size                64MB          | Item Help
AGP Mode                         4X            |
AGP Fast Write                   Disabled      | Menu Level >>
AGP Master 1 WS Write            Disabled      |
AGP Master 1 WS Read             Disabled      |
CPU to AGP Post Write            Enabled       |
AGP Delay Transaction            Enabled       |
VGA Share Memory Size            32MB          |

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

3-6-3 PCI Timing Settings

```
CMOS Setup Utility – Copyright(C) 1984-2003 Award Software
PCI Timing Settings

PCI Master 1 WS Write            Disabled      | Item Help
PCI Master 1 WS Read             Disabled      |
CPU to PCI Post Write            Disabled      | Menu Level >>
PCI Delay Transaction            Enabled       |

↑↓→← 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) 1984-2003 Award Software
Integrated Peripherals

OnChip IDE Function              Press Enter   | Item Help
OnChip Device Function           Press Enter   |
OnChip SIO Function              Press Enter   | Menu Level >
Init Display First               PCI Slot      |

↑↓→← Move Enter:Select Item +/-/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

OnChip SIO Function

Please refer to section 3-7-3

Init Display First

This item allows you to decide to activate whether PCI Slot or on-chip VGA first. The settings are: PCI Slot, AGP Slot, On-Chip VGA.

3-7-1 OnChip IDE Function

```
CMOS Setup Utility – Copyright(C) 1984-2003 Award Software
                    OnChip IDE Function
```

		Item Help
OnChip IDE Channel 0	Enabled	
OnChip IDE Channel 1	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	
IDE DMA Transfer Access	Enabled	
IDE Prefetch Mode	Enabled	
IDE HDD Block Mode	Enabled	
Delay For HDD (Secs)	0	

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

OnChip IDE Channel 0/Channel 1

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) 1984-2003 Award Software
OnChip Device Function

RealTek LAN Function            Enabled        | Item Help
RealTek LAN BootROM             Disabled       |
AC97 Sound Device               Auto           | Menu Level >>
USB Device Function             Disabled       |
Game Port Address               200            |
Midi Port Address               Disabled       |
Midi Port IRQ                   10             |
USB 2.0 Support                 Enabled        |
USB Keyboard Leagacy Support    Disabled       |
USB Mouse Leagacy Support       Disabled       |

↑↓→← Move Enter:Select Item +/-/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, Auto.

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/Mouse Leagacy 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 OnChip SIO Function

```
CMOS Setup Utility – Copyright(C) 1984-2003 Award Software
OnChip SIO Function
```

Onboard FDD Controller	Enabled	Item Help
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	
Onboard Fast IR	Disabled	Menu Level >>
x Fast IR IRQ	11	
x Fast IR DMA	6	
Onboard Parallel Port	378/IRQ7	
Parallel Port Mode	SPP	
EPP Mode Select	EPP1.7	
ECP Mode Use DMA	3	

```
↑↓→← Move Enter:Select Item +/-/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.

Onboard Fast IR
This item allows you to Enabled Fast InfraRed (IR) function of the onboard I/O chip, when enabled this function user must install driver the driver is in CD Pack\VIA\VIAFIR.

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) 1984-2003 Award Software
Power Management Setup
```

ACPI Function	Enabled	Item Help
Video Off Option	Always Off	
Video Off Method	V/H SYNC+Blank	Menu Level >
MODEM Use IRQ	3	
Power Button Function	Instant Off	
State after Power Failure	Always Off	
> Wake Up Events	Press Enter	

↑↓→← Move Enter:Select Item +/-/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 Method
This determines the manner in which the monitor is blanked.

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

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.

State After Power Failure
This determines the manner when the power recovery after power failure. The setting are: Always Off, Always On.

3-8-1 Wake Up Events

```
CMOS Setup Utility – Copyright(C) 1984-2003 Award Software
                    Wake Up Events
```

VGA	Off	Item Help
LPT&COM	LPT/COM	
HDD&FDD	ON	Menu Level >>
PCI Master	OFF	
Wake-Up on Ring/LAN	Disabled	
Wake-Up on PCI PME	Disabled	
PS2KB Wakeup Selection	Hot Key	
PS2KB Wakeup from S1-S5	Disabled	
Wake-Up on RTC Alarm	Disabled	
x Date of Month Alarm	0	
x Time (hh:mm:ss)	0:0:0	
IRQS Activities	Press Enter	

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

Wake Up by PCI PME
This will enable the system to wake up to PCI LAN Card.
The settings are: Enabled and Disabled.

Power On by Ring/LAN
During Disabled, the system will ignore any incoming call from the modem/LAN. During Enabled, the system will boot up if there's an incoming call from the modem/LAN.

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.

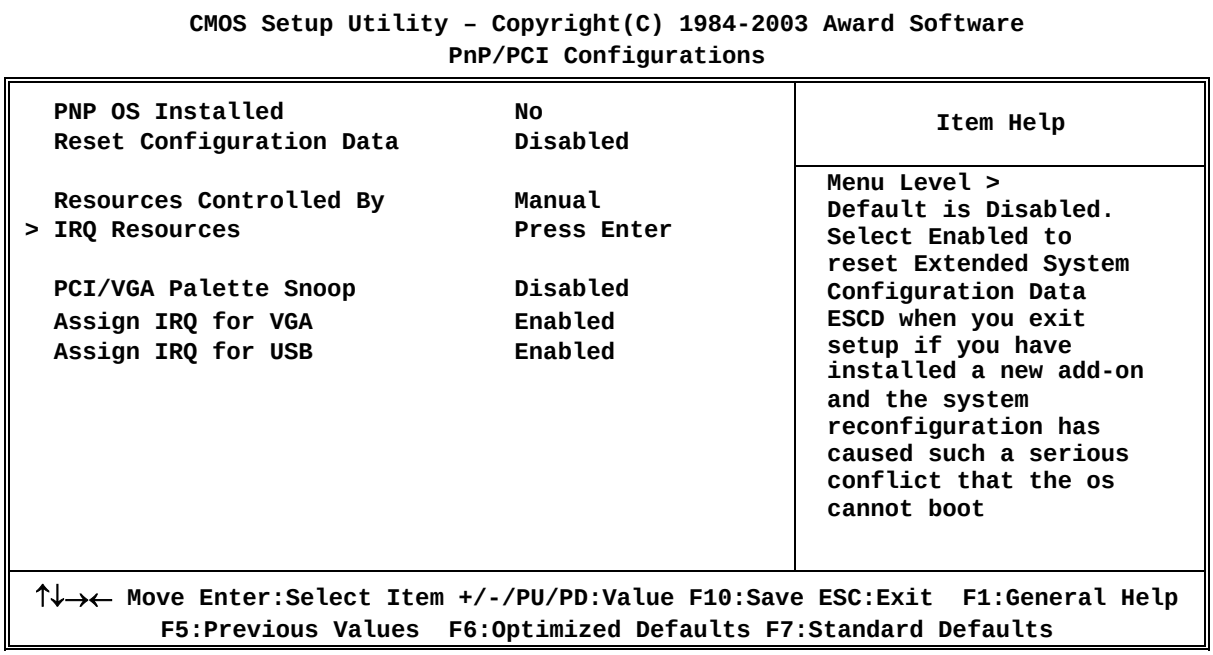
Time(hh:mm:ss) Alarm
You can choose what hour, minute and second the system will boot up.

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.

3-9 PnP/PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer

Interconnect, 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.



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.

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

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) 1984-2003 Award Software
PC Health Status

Current Fan 1 Speed          4964 RPM      | Item Help
Current Fan 2 Speed             0 RPM      |
CPU Vcore                    1.450V        | Menu Level >
3.3V                         3.208V        |
+12V                        12.256V        |
Internal VCC                 3.200V        |

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

Current FAN1, FAN2 Speed/CPU Vcore/3.3V/+12V/Internal VCC
This will show the CPU/FAN/System voltage chart and FAN Speed.

3-11 Miscellaneous Control

This section is for setting CPU Miscellaneous Control.

```
CMOS Setup Utility – Copyright(C) 1984-2003 Award Software
Miscellaneous Control

VIA C3 Clock Ratio           Default       | Item Help
Auto Detect PCI/DIMM Clock   Enabled       |
Spread Spectrum              Disabled      | Menu Level >
** Current Host/PCI Clock is               |
Host/PCI Clock at Next Boot is  100        |
** Current DRAM Clock is 133MHz **         |
DRAM Clock at Next Boot is   133MHz        |
+2.5V Select                 2.65V         |

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

CPU Clock Ratio
This item allows you to select the CPU ratio.
Auto Detect PCI/DIMM Clock
This item allows you to enable/disable auto detect PCI/DIMM Clock.
The settings are: Enabled, Disabled.
Spread Spectrum
This item allows you to set the Spread Spectrum.
Host/PCI Clock at Next Boot is
This item allows you to select the CPU/PCI Clock, refer to Page 8.
By press PageDown/PageUp key you can change the CPU Host/PCI Clock
When jumper setting CPU Host Clock 66MHz you can choose 66/33~99/49MHz
When jumper setting CPU Host Clock 100MHz you can choose 100/33~132/44MHz
When jumper setting CPU Host Clock 133MHz you can choose 133/33~200/50MHz

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 95/98/98SE/NT4.0/2000

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 10 selections:

1. VIA 4 IN 1 install VIA Service Pack 4 IN 1 driver
2. VGA install VIA VGA driver
3. SOUND install ALC Audio Codec driver
4. LAN install RT810X LAN Controller driver
5. USB2.0 install USB 2.0 driver
6. DIRECTX9 install Microsoft DirectX 9 driver
7. PC-CILLIN install PC-CILLIN2002 anti-virus program
8. MAGIC BIOS install BIOS Live Update Utility
9. BROWSE CD to browse the contents of the CD
10. EXIT to exit from MAGIC INSTALL menu

Each selection is illustrated as below:

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

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

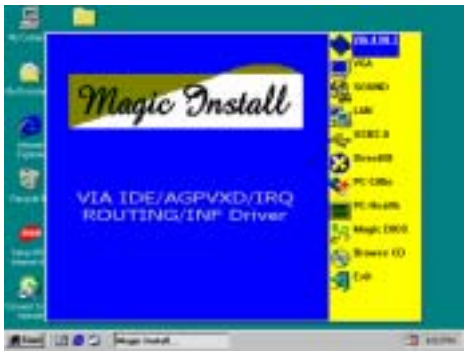
IDE : VIA ATAPI VENDOR SUPPORT DRIVER IS USED TO FIXED COMPATIBILITY ISSUE FOR IDE DEVICES

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 VGA install VIA VGA Driver

For WINDOWS 9X/ME/NT4.0/2000/XP

1. Click VGA when MAGIC INSTALL MENU appears

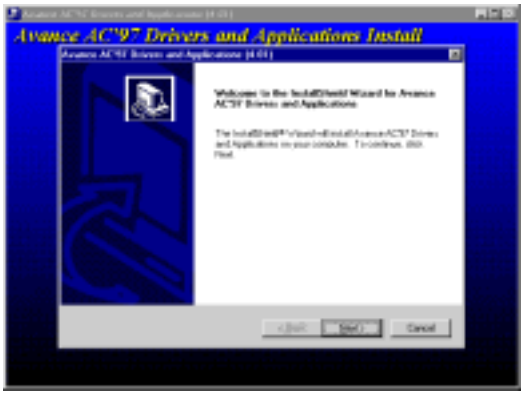
2. Click NEXT When ProSavageDDR Driver Install Setup Wizard Appears

3. Click NEXT to Install Driver File

4. Click Finish to Restart Computer

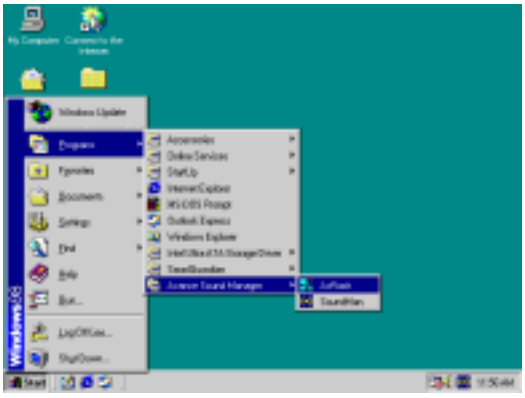
4-3 SOUND install ALC AC97' Codec Audio Driver

1. Click SOUND when MAGIC INSTALL MENU appears

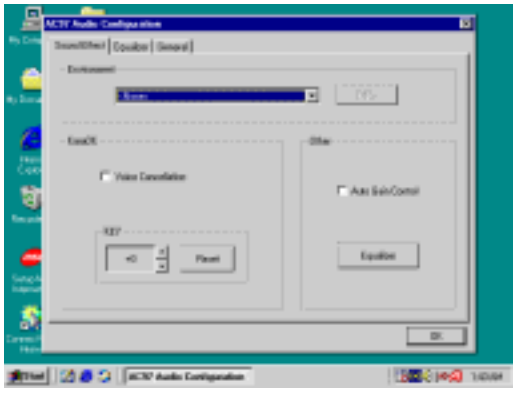


2. Then auto detect operation system language edition, click OK, start to install DRIVER

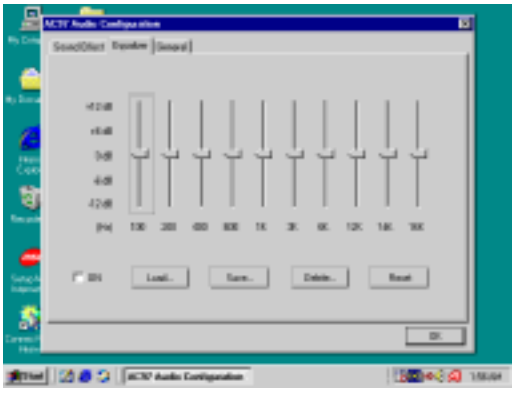
3. Click Finish and Restart Windows



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/XP is X:\CODEC\ALC\SETUP.EXE

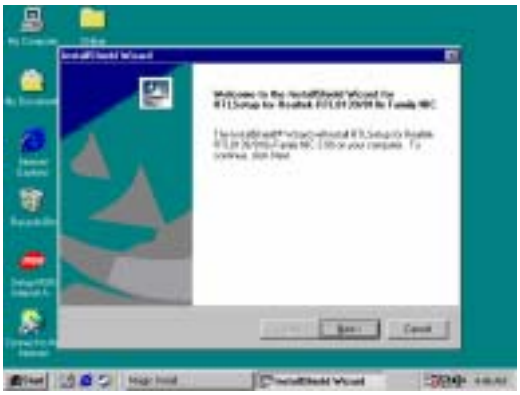
Note: In Win2K/WinME users have to click Control Panel\System\Device Manager\ DVD\CD-ROM drives to Enabled digital CD Audio for the CD-ROM Device when use the SPDIF-Out digital signal.

4-4 LAN Install RTL810X LAN Controller Driver

The path of the file:
for WINDOWS 98SE is X:\RTLLAN\WIN98
for WINDOWS 98ME is X:\RTLLAN\WINME
for WINDOWS NT4.0 is X:\RTLLAN\WINNT4
for WINDOWS 2000 is X:\RTLLAN\WIN2000
for WINDOWS XP is X:\RTLLAN\WINXP

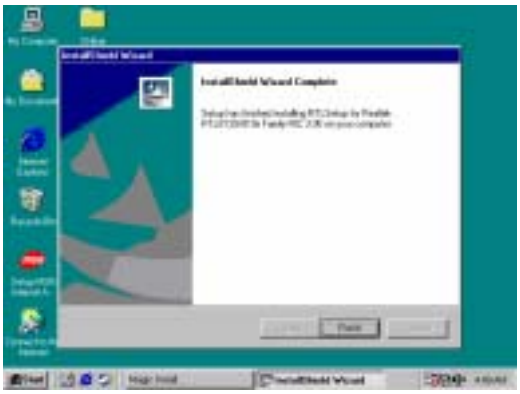
WINDOWS 98SE/98ME/2000/XP Setup

1. Click LAN when Magic Install Menu appears



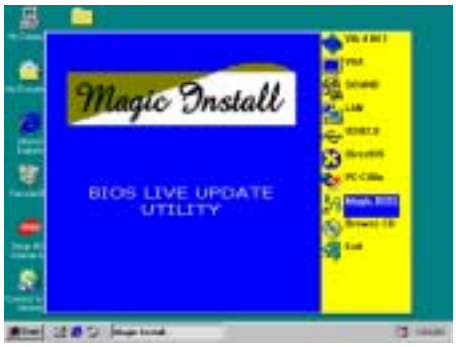
2. Click NEXT when Realtak InstallShied Wizard appears

3. Window can find Realtek RTL8139/810X family fast Ethernet NIC, when OS ask CAT file path, change the directory to X:\RTLLAN\WIN98 (If OS is win9X)

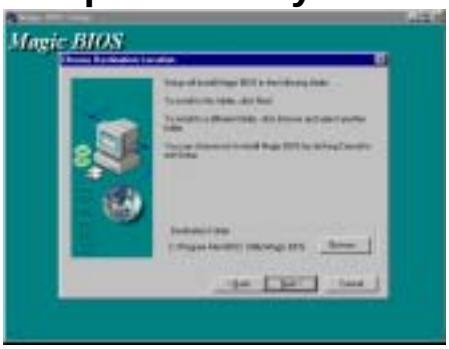


4. Click FINISH and restart your computer

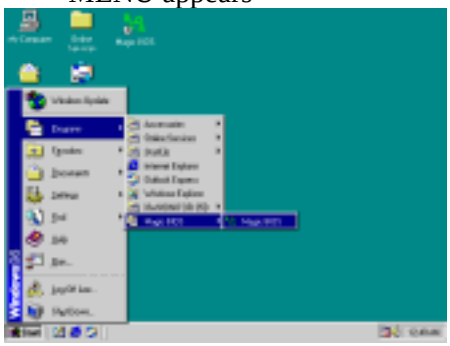
4-5 MAGIC BIOS Install BIOS Live Update Utility



1. Click Magic BIOS when Magic Install MENU appears



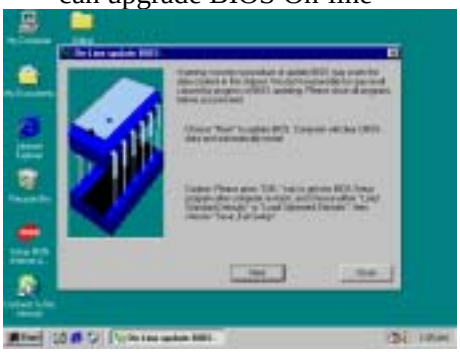
2. Click Next to install the Magic BIOS in Destination Folder



3. After finish Setup you will have a Magic BIOS icon in your screen

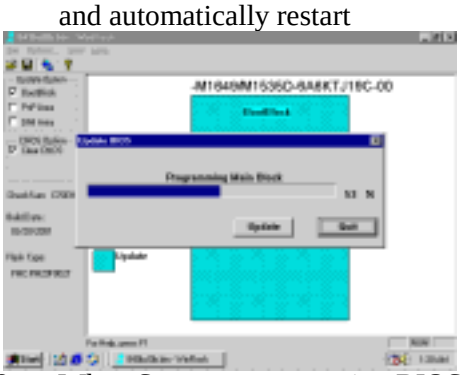
4. Double click the Magic BIOS icon you will have this picture, choose from internet you can upgrade BIOS On-line

5. When On-line update BIOS the program will auto-check your BIOS version



6. Click Next if you need update BIOS, after 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

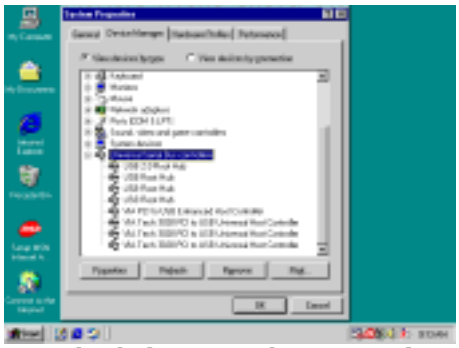
4-6 USB2.0 Install VIA USB2.0 Device Driver

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

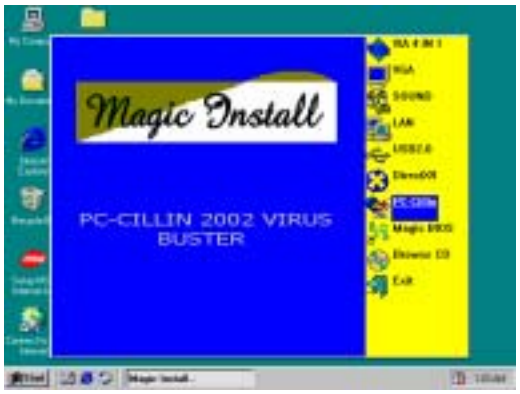
4. Select FINISH and Restart your Computer



5. Check device working properly in Device Manager

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

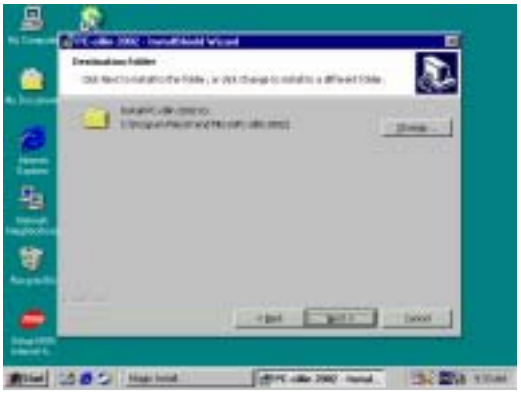
4-7 PC-CILLIN Install PC-CILLIN 2002 Anti-virus program



1. Click PC-CILLIN when MAGIC INSTALL MENU appear

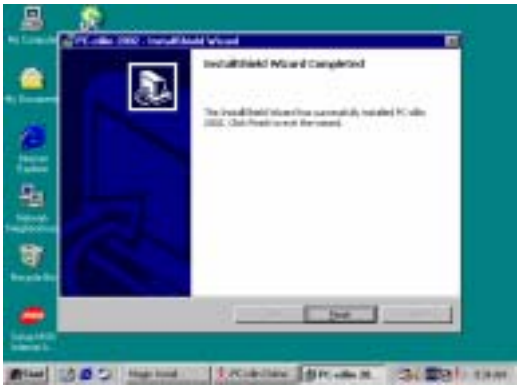
2. (1) Click "Install PC-CILLIN" when PC-CILLIN 2002 main menu appears, and Click NEXT when "Install Shield Wizard For PC-CILLIN 2002"
   (2) Click Open Manual. you can learn PC-CILLIN 2002 how to use

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 to 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

4-8 HOW TO DISABLE ON-BOARD SOUND

Enter BIOS SETUP choose INTEGRATE PERIPHERALS choose ON-CHIP DEVICE FUNCTION choose AC97 AUDIO
Disable on-board sound function by press PAGE DOWN KEY to Disable

4-9 HOW TO UPDATE BIOS

Before update BIOS users have to “Disable”, “Flash Part Write Protect” item which in “Miscellaneous Control” of BIOS SETUP. Otherwise the system the will not allow you to upgrade BIOS by Award Flash Utility.

Method 1. Use “Magic BIOS” update BIOS in Windows 98 (refer page 41)
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 625EMPxxx/625EMWxxx from our web site to your boot disc.
STEP 4. Insert your boot disc into A:,
start the computer, type “Awdflash A:\625EMPxxx.BIN /SN /PY /CC /R”
625EMPxxx.BIN is the file name of latest BIOS it can be 625EMPA3.BIN or 625EMPB2.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