601TCF
USER'S MANUAL

M/B For Socket 370 Pentium® III Processor

Trademark:

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CHAPTER 4 DRIVER & FREE PROGRAM INSTALLATION

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Manual Revision Information

Item Checklist

- ☑ 601TCF Motherboard
- ☑ Cable for IDE/Floppy
- ☑ CD for motherboard utilities
- ☑ 601TCF User's Manual

Intel® Processor Family
Thermal 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.

Vendor list for heatsink and fan of **Pentium® !!! processor**, please visit
http://developer.intel.com/design/Pentiumiii/components/index.htm

Vendor list for heatsink and fan of **Intel®Celeron™ processor**, please visit
http://developer.intel.com/design/celeron/components/index.htm

Chapter 1

Introduction of 601TCF Motherboard

1-1 Feature of motherboard

The 601TCF motherboard is design for use Intel's new generation Pentium processors, which utilize the Socket 370 supports Penitum III Coppermine/ Tualatin CPU design and the memory size expandable to 1GB (using 256Mb technology). This motherboard integrated VGA, Audio, and PC Health Function with Micro ATX form factor to support total solution for today's computer market.

This motherboard using VIA Apollo PLE133T VT8601T and VT82C686B chipset, whose 133MHz front side bus delivers a clear upgrade path to the future generation of 133MHz processors and PC-100/PC-133 SDRAM. The 601TCF motherboard offers ULTRA DMA 66/100 (ATA 100) to provide speedier HDD throughout that boosts overall system performance.

The 601TCF 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. VIA VT8601T chipset also includes integrated 3D Graphic Acceleration to provide a lower cost video display solution.

With USB control as well as capability of expanding to 4 USB connectors support four USB devices, the 601TCF meet future USB demand. Moreover, it has built-in hardware monitor function to 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: 24.4 x 19.0 cm
Chipset	∗ VIA Apollo PLE133T VT8601T and VT82C686B Chipset
Clock Generator	∗ Winbond W83194BR-39B Support 66/100/133MHz system Bus Clock (CPU Bus Clock) Support 100/133 MHz system memory clock Support 33MHz PCI Bus clock
CPU Socket	∗ Support Pentium® III 500~1GHz processor ∗ Support Celeron™ 667M~1.2Hz processor ∗ Support 66, 100 and 133MHz CPU Bus clock ∗ Reserves support for future Intel Pentium® III processors ∗ Support VIA C3 series processors
Memory Socket	∗ 168-pin DIMM socket x2 ∗ PC-100/PC-133 SDRAM ∗ Expandable to 1GB ∗ Support 3.3V SDRAM DIMM
Expansion Slot & Headers	∗ 32-bit PCI slot x3 ∗ AMR slot x1 ∗ ISA slot x1
Integrate VGA	∗ 64-bit Signal Cycle 2D/3D Graphic Engine ∗ Support 2 to 8 Mbytes of Frame Buffer
Integrate IDE	∗ 2 channel of Bus Master IDE port supporting ULTRA DMA 33/66/100 mode 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, USB header x2 ∗ 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.)

CPU: Intel PIII® 866MHz/Celeron 667MHz FC-PGA package

DRAM: 128M SDRAM x2 (Hyundai GM72V66841ET75)

VGA Expansion Card: Onboard VGA / VIA VT82C686B

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

BIOS: Award Optimal default

OS: Win 98SE

Performance Test Report

	Pentium III 866MHz Share 8M	Celeron 667MHz Share 8M
3D Mark 99	1399	640
3D Mark 2000	752	314
3D Winbench 99 V1.2	337	144
3D Winbench 2000	13	6.47
Final Reality	3.85	2.39
Winstone 99 V1.3	28	18.8
Content Creation Winstone 2000	31.9	19.4
Content Creation Winstone 2001	35.7	20.2
Business Winstone 2001	32.3	17.9
Winbench 99 :		
CPU Mark 99	70.7	29.2
FPU Winmark 99	4590	3350
Business Disk Winmark99	4420	3930
Hi-end Disk Winmark99	15700	12500
Business Graphic Winmark	193	92
Hi-end Graphic Winmark	684	417
SYS Mark 2000 : SISMark 2000 Rating (Internet Content Creation/Office Productivity)		
Suites	154 (162/149)	79 (85/74)
Official	154 (163/148)	79 (86/74)
SISOFT Sandra 2000 :		
CPU MIPS	2342	1782
FPU MFLOPS	1159	882
CPU / Memory MB/S	208	90
FPU / Memory MB/S	221	95
QUAKE3 :		
DEMO1 FPS	16.9	8.0
DEMO2 FPS	8.3	4.7

1-4 Layout Diagram & Jumper Setting

PRINT   GAME/MIDI PORT

PS/2 MOUSE

PS/2 Keyboard

USB   COM1   VGA

LINE-IN

LINE-OUT

MIC

PS2 KB/Mouse Port

USB Port

COM2 Connector

CPU FAN

PC99 Back Panel

ATX Power Connector

CD Audio

AMR Slot

Front Panel Audio

PCI Slot

2M Flash ROM BIOS

USB2 Port

SYSTEM FAN

ISA Slot

(JMP1) CPU F.S.B. Clock

CPU Socket

PC133 DIMMX2

Floppy Connector

VIA 8601T Chip

ATA 100 IDE Connector

(JBAT1) Clear CMOS

VIA VT 82C686B Chip

Front Panel Connector

IR Connector

Wake On LAN

Jumpers

Jumper	Name	Description	Page

JMP1	CPU Front Side Bus Frequency Setting	2x4-pin Block	p.7
JBAT1	CMOS RAM Clear	3-pin Block	p.8

Connectors

Connector	Name	Description	Page
ATX	ATX Power Connector	20-pin Block	p.13
PS1	PS/2 Mouse & PS/2 Keyboard Connector	6-pin Female	p.13
USB1	USB Port Connector	4-pin Connector	p.14
PRINT	Parallel Port Connector	25-pin Female	p.14
VGA1	VGA Port Connector	15-pin Female	p.14
AGC	Audio/Game Connector	3 phone jack+15-pin Connector	p.14
COM1	Serial Port COM1 Connector	9-pin Connector	p.14
FDD	Floppy Driver Connector	34-pin Block	p.14
IDE1	Primary IDE Connector	40-pin Block	p.15
IDE2	Secondary IDE Connector	40-pin Block	p.15

Headers

Header	Name	Description	Page
COM2	COM2 Headers	9-pin Block	p.16
USB2	USB Port Headers	9-pin Block	p.16
HDLED	IDE activity LED	2-pin Block	p.16
TRBLED	Turbo LED switch	2-pin Block	p.16
RESET	Reset switch lead	2-pin Block	p.16
SPKE	Speaker connector	4-pin Block	p.16
PWLED	Power LED	2-pin Block	p.16
PWRIN	Power switch	2-pin Block	p.17
JFAN1, FAN2	FAN Speed Headers	3-pin Block	p.17
J1	IR infrared module Headers	5-pin Block	p.17
CD_IN	CD Audio-In Headers	4-pin Block	p.18
WOL1	Wake On LAN Connector	3-pin Block	p.18

Expansion Sockets

Socket/Slot	Name	Description	Page
ZIF Socket 370	CPU Socket	370-pin FC-PGA/PPGA CPU Socket	p.9
DIMM1, DIMM2	DIMM Module Socket	168-pin DIMM Module Socket	p.11
PCI1, PCI2, PCI3	PCI Slot	32-bit PCI Local Bus Expansion slots	p.13
AMR1	AMR Slot	Support Audio Modem Riser Card	

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 F.S.B. Clock setting: JMP1

The motherboard's CPU Front Side Bus clock adjusted through jumper JPM1. This motherboard is jumper-less design. When you set JMP1 to AUTO, no jumper or switch are needed, you can then set CPU Frequency through the BIOS setup.

BIOS Setup>Miscellaneous Control>Host clock at Next Boot is

Table as below:

CPU (MHz)	1-2	3-4	5-6	7-8	
AUTO	ON	ON	OFF	OFF	* Default
66 MHz	OFF	OFF	ON	ON	
100 MHz	OFF	OFF	OFF	ON	
133 MHz	OFF	OFF	OFF	OFF	
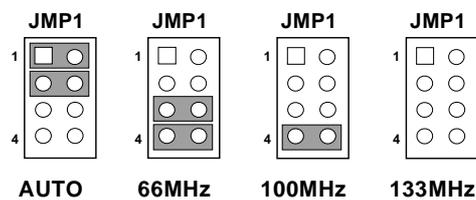
CPU F.S.B. Clock Setting

(2) CMOS RAM Clear (3-pin): JBAT1

A battery must be used to retain the motherboard configuration in CMOS RAM short 1-2 pins of JBAT1 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 JBAT1 and short pins 2-3 for a few seconds
4. Return JBAT1 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*

JBAT1   JBAT1

1   1
3   3

1-2 closed   Normal   2-3 closed   Clear CMOS
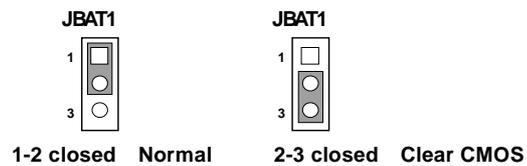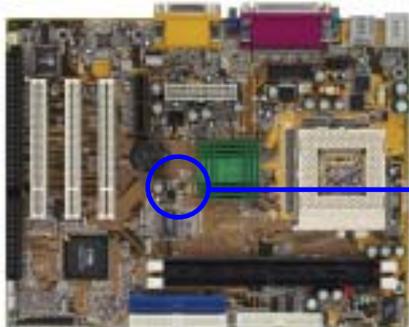
CMOS RAM Clear Setting

2-3 Install CPU

2-3-1 About Pentium® III & Celeron™ 370-pin CPU

This motherboard supports both Pentium III & Celeron 370 pins CPU.

The way to recognize the specification of CPU from the packing Pentium III 370 pins FC-PGA

On the surface of the CPU as shown on the right picture, under the word of "PENTIUM III" the code is:

RB 80526 P2 866 256

RB : FC–PGA packing
P2 : P2–133MHz front side bus frequency
        PY–100MHz front side bus frequency
866 : CPU internal frequency, where here is 866MHz
256 : the size of L2 cache, where here is 256K

Celeron FC–PGA

On the surface of the CPU as shown on the right picture, under the word of "Celeron" the code is:

566/128/66/1.5V

566 **:** CPU internal frequency, where here is 566MHz

128 **:** the size of L2 cache, where here is 128K

66 **:** front side bus frequency, where here is 66MHz

1.5V : the voltage for the CPU

2-3-2 Setting CPU Bus Clock Jumper

Setting the CPU Front Side Bus Frequency
The motherboard uses jumper JMP1 for the front side bus frequency setting as shown from the table below:

CPU (MHz)	1-2	3-4	5-6	7-8	
AUTO	ON	ON	OFF	OFF	*** Default**
66 MHz	OFF	OFF	ON	ON	
100 MHz	OFF	OFF	OFF	ON	
133 MHz	OFF	OFF	OFF	OFF	

Example: **Using a Pentium ® III 866 CPU with front side bus frequency of 133MHz and PC-133 SDRAM module, the setting of JPM1 will be all OFF. Will form CPU BUS CLOCK be 133MHz.**

For experience user looking for over clocking, please refer to sec 2-3-4

2-3-3 Install CPU

This motherboard provides a ZIF socket 370.   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.

Colden Arrow

Pentium® III

Socket 370

CPU ZIF Socket 370
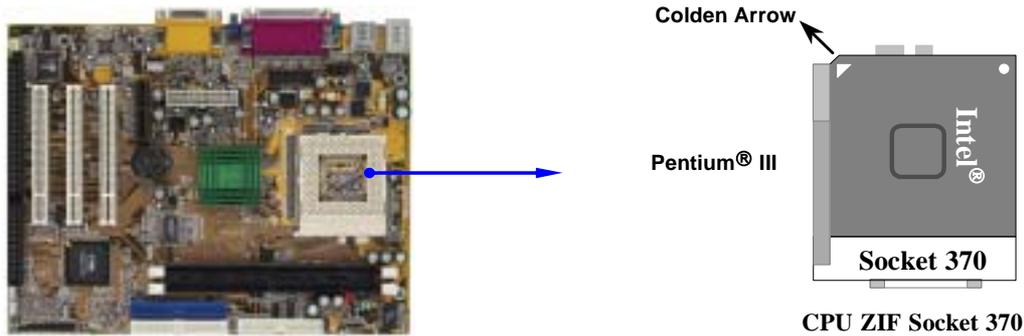
When you put the CPU into the ZIF socket. No forces require to insert of the CPU, then press the level to locate position slightly without any extra force.

2-3-4 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.

After setting the Jumper JMP1 you 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.

You can choose the situation you want to try.

```
            CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                              Miscellaneous Control

    CyrixIII Clock Ratio            Default              Item Help
    Auto Detect DIMM/PCI Clock      Enabled
    Spread Spectrum                 Disabled
    ** Current Host Clock is 66MHz **                Menu Level >
    Host Clock at Next Boot is [66MHz/33MHz]
    ** Current DRAM Clock is 66Mhz **
    DRAM Clock at Next Boot is [66]MHz



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

In "Host Clock at Next Boot is" item you can step by step change CPU Host Clock to approach over clocking.

2-4 Install Memory

This motherboard provides two 168-pin DUAL INLINE MEMORY MODULES (DIMM) sites for memory expansion available from minimum memory size over 32MB to maximum memory size of 1GB SDRAM.

Valid Memory Configurations

| DIMM1 | DIMM2 | System Accept or Not | Total Memory |
			Min. ~ Max.
DS/SS		Accept	32MB~512MB
	DS/SS	Accept	32MB~512MB
DS/SS	DS/SS	Accept	32MB~1GB

DS : Double Sided DIMM   SS : Single Sided DIMM

NOTE! Make sure the total installed memory does not exceeds 1GB, otherwise the system may hang during startup.

Generally, installing SDRAM modules to your motherboard is very easy, you can refer to figure 2-4 to see what a 168-Pin PC100 & PC133 SDRAM module looks like.

DIMM1 (BANK0+ BANK1)
DIMM2 (BANK2+ BANK3)
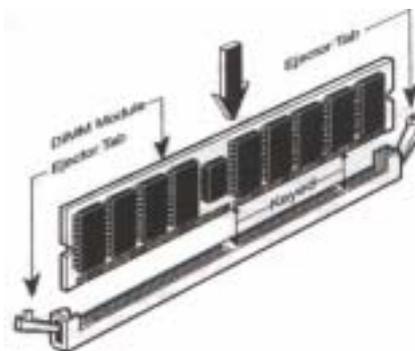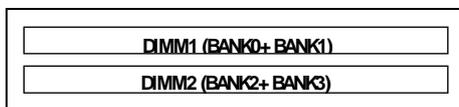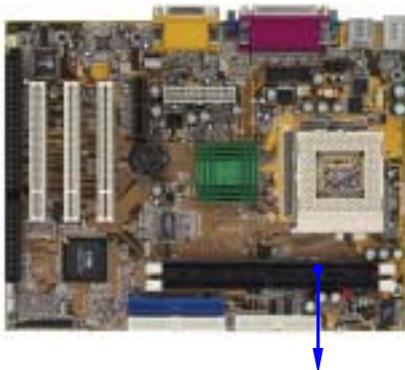
Figure 2-4

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! If the SDRAM CLOCK is set at 133MHz, you must use only PC133-compliant DIMMs. When this motherboard operate at 133Mhz, most system will not even boot if non-compliant SDRAM modules are used because of the strict timing issues, if your DIMM are not PC133-compliant, set the SDRAM clock to 100MHz to ensure system's 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	1	System Timer
1	2	Keyboard Controller
2	N/A	Programmable Interrupt
3 *	11	Communications Port (COM2)
4 *	12	Communications Port (COM1)
5 *	13	Sound Card (sometimes LPT2)
6	14	Floppy Disk Controller
7 *	15	Printer Port (LPT1)
8	3	System CMOS/Real Time Clock
9 *	4	ACPI Mode when enabled
10 *	5	IRQ Holder for PCI Steering
11 *	6	IRQ Holder for PCI Steering
12 *	7	PS/2 Compatible Mouse Port
13	8	Numeric Data Processor
14 *	9	Primary IDE Channel
15 *	10	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
PCI slot1	Not Shared	—	—	—
PCI slot2	—	—	—	Shared
PCI slot3	—	—	Not Shared	—
Onboard LAN	—	Shared	—	—

Onboard VGA	—	—	—	—
AC97/MC97	—	Shared	—	—
Onboard USB	—	—	—	Shared

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) : ATX
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.
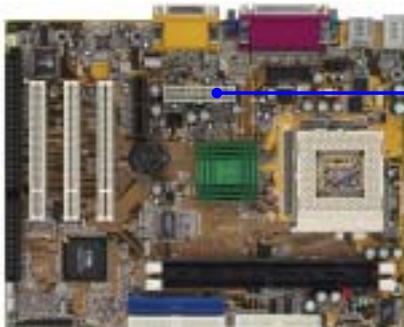
Pin 1 →

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) PS/2 Mouse & PS/2 Keyboard Connector: PS1
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: USB1
The connectors are 4-pins connector that connect USB devices to the system board.

(4) Parallel Port Connector (25-pin female): PRINT
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.

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

This connector is for on board VGA display connection only. If you insert any external VGA card in PCI slot, you should have the connection to your VGA card's connector. And you have to set "Init Display First" to PCI under Integrated Peripherals option in BIOS Setup Utility to get display from PCI VGA card.

(6) Audio and Game Connector: AGC

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

(7) Serial Port COM1: COM1

COM1 is 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.

PS/2 MOUSE   PRINT   GAME/MIDI PORT

PS/2 Keyboard   COM1   VGA

MIC

LINE-IN

LINE-OUT

USB
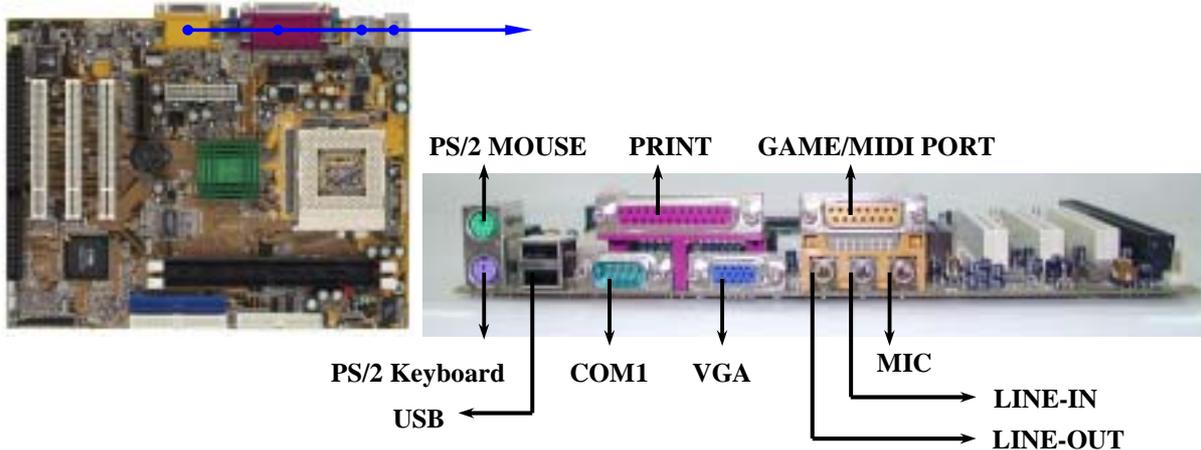
(8) Floppy Drive Connector (34-pin block): FDD

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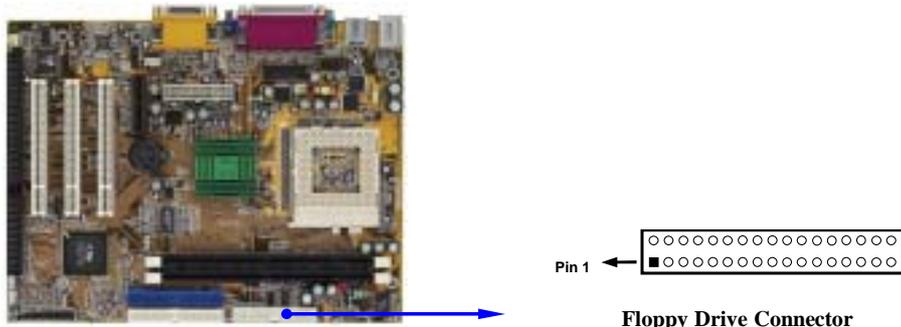
(9) Primary IDE Connector (40-pin block): IDE1

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.

Primary IDE Connector

Pin 1
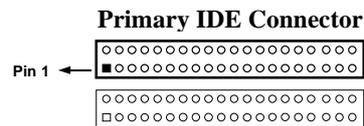
(10) Secondary IDE Connector (40-pin block): IDE2
This connector connects to the next set of Master and Slave hard disks. Follow the same procedure described for the primary IDE connector. You may also configure two hard disks to be both Masters using one ribbon cable on the primary IDE connector and another ribbon cable on the secondary IDE connector.

Pin 1

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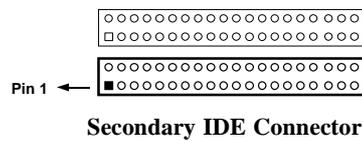
- Two hard disks can be connected to each connector. The first HDD is referred to as the "Master" and the second HDD is referred to as the "Slave".

- 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) COM2 Headers (9-pin header) : COM2
This board has another serial port COM2, it come with cable providing serial port COM2.
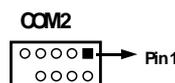
COM2

Pin1

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

(2) USB Port Headers (9-pin header): 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.
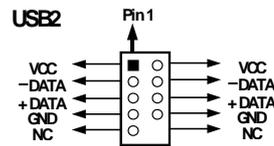
USB Port Headers

(3) IDE Activity LED: HDLED

This connector connects to the hard disk activity indicator light on the case.

(4) Turbo LED switch: TRBLED

Since the motherboard's turbo function is always on. The turbo LED will remain constantly on while the system power is on. You may wish to connect the Power LED from the system case to this lead. See the figure below.

(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: SPKE

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

(7) Power LED: PW 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: PWRIN

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

System Case Connections
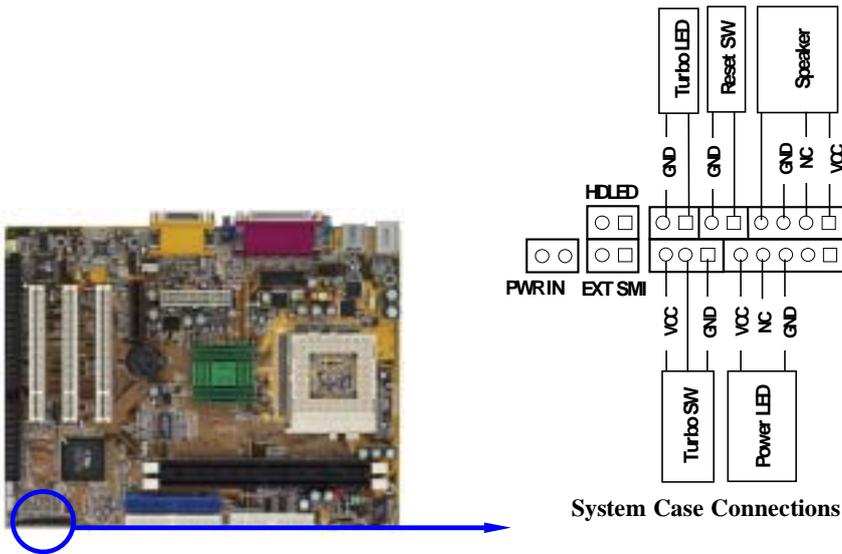
(9) FAN Speed Headers (3-pin) : JFAN1, FAN2

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.
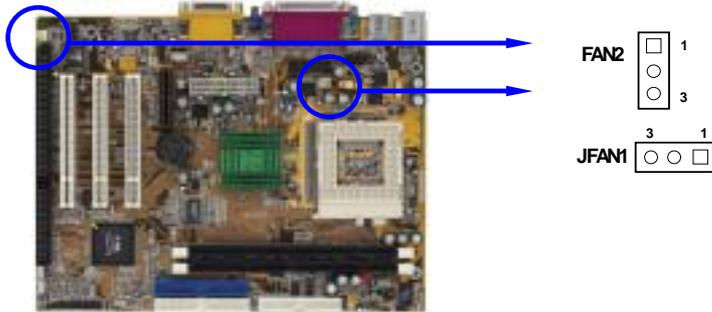
(10) IR infrared module Headers (10-pin) : J1

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.

Infrared Module Headers
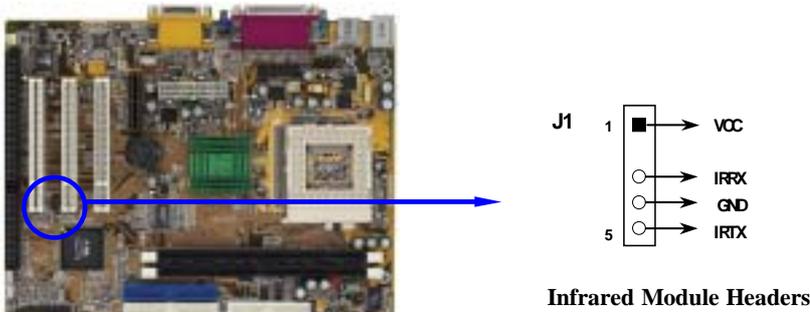
(11) CD Audio-In Headers (4-pin) : CD_IN

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

4   1

CD-IN   ☐☐☐☐
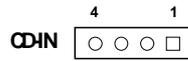
CD Audio-In Headers

(12) Wake On-LAN Headers (3-pin) : WOL1

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 BIOS Wake-Up by PCI Card is enabled.

WOL1

3 ○ → WOL
○ → GND
1 ☐ → 5VSB
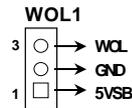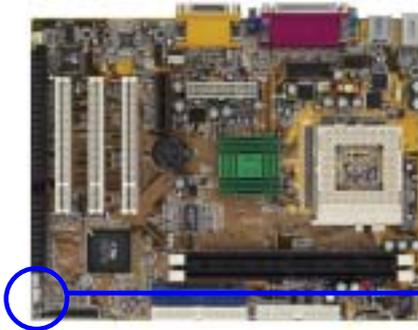
Wake-On-LAN Headers

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 tests 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) 1984-2001 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 that are factory settings for optimal performances system operations. It is provided for the convenience of power user who wants to push the motherboard to get better performance. The Optimized setting does not go through all the detail reliability and compatibility test, it is tested only with limited configuration and loading (for example, a system that contains only a VGA card and one DIMM. Use Optimized setting only when you fully understand the items in chipset setup menu.

Load Standard Defaults

Use this menu to load the BIOS default values for the optimum system performance. Standard Defaults setting are relatively safer than Optimized Defaults. All the product verification, compatibility test report and manufacture quality control are based on "Load Standard Defaults". We recommend to use this setting for normal operation. "Load Standard Defaults" is not slowest setting for this motherboard. If you need to verify an unstable problem, you may manually set the parameter in "Advanced Chipset Features" get slowest and safer setting.

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) 1984-2001 Award Software
                     Standard CMOS Features
```

```
Date (mm:dd:yy)            Thu, Apr, 26 2001          Item Help
Time (hh:mm:ss)            13 : 45 : 03

IDE Primary Master         Press Enter None       Menu Level >
IDE Primary Slave          Press Enter None
IDE Secondary Master       Press Enter None       Change the day, moth,
IDE Secondary Slave        Press Enter None       year and century

Drive A                    1.44M, 3.25 in.
Drive B                    None

Video                      EGA/VGA
Halt On                    All Errors

Base Memory                    640K
Extended Memory               64512K
Total Memory                  65536
```
```
     :Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
     F5:Previous Values        F6:Optimized Defaults     F7:Standard Defaults
```

3-5 Advanced BIOS Features

```
              CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                               Advanced BIOS Features
```
```
Virus Warning                [Disabled]              Item Help
Recovery Genius               Enabled
CPU Internal Cache            Enabled
External Cache                Enabled             Menu Level >
CPU L2 Cache ECC Checking     Disabled
Processor Number Feature      Disabled            Allows you to choose
Quick Power On Self Test      Enabled             the VIRUS warning
First Boot Device             Floppy              feature for IDE Hard
Second Boot Device            HDD-0               disk boot sector
Third Boot Device             CDROM               protection. If this
Boot Other Device             Enabled             function is enabled
Swap Floppy Drive             Disabled            and someone attempt to
Boot Up Floppy Seek           Enabled             write data into this
Boot Up NumLock Status        On                  area, BIOS will show a
Gate A20 Option               Normal              warning message on
Typematic Rate Setting        Disabled            screen and alarm beep
Typematic Rate (Chars/Sec)    6                   enabled copies Video
Typematic Delay (Msec)        250                 BIOS to shadow RAM
Security Option               Setup               improves performance
OS Select For DRAM > 64MB     Non-OS2
HDD S.M.A.R.T. Capability     Disabled
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
```

Virus Warning

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.

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) 1984-2001 Award Software
                        Advanced Chipset Features
┌─────────────────────────────────────────────────┬──────────────────────────┐
│  Advanced DRAM Control       [Press Enter]       │        Item Help         │
│  Advanced AGP  Control        Press Enter        │                          │
│  Memory Hole                  Disabled           ├──────────────────────────┤
│  System BIOS Cacheable        Disabled           │  Menu Level >            │
│  Video RAM Cacheable          Disabled           │                          │
│  Memory Parity/ECC Check      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.

Advanced DRAM Control
Please refer to section 3-6-1

3-6-1 Advanced DRAM Control

The "Advanced DRAM Control" includes settings for the chipset dependents features. These features are related to system performance. Make sure you fully understand the items contained in this menu before you try to change anything. You may change the

parameter settings to improve system performance. However, it may cause your system to be unstable if the setting is not correct for your system configuration.

```
              CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                              Advanced DRAM Control
┌─────────────────────────────────────────────────────────┬──────────────────────┐
│    Auto Configuration          [Optimized]               │                      │
│    Precharge Command            3T                        │      Item Help       │
│    Active to CMD Command        6T                        │                      │
│    Write Recovery Time          2T                        ├──────────────────────┤
│    SDRAM Cycle Length           By SPD                    │                      │
│    Bank Interleave              By SPD                    │   Menu Level >>      │
│    DRAM Drive Strength          Auto                      │                      │
│    Delay DRAM Read Latch        1.0 ns                    │                      │
│    Memory Data Drive            Normal                    │                      │
│    Memory CMD Drive             Strong                    │                      │
│    DDSKEW/REFCLK Delay          No Delay                  │                      │
│    In-Order Queue               1-Level                   │                      │
│    P2C/C2P Concurrency          Disabled                  │                      │
│    Fast R-W Turn Around         Disabled                  │                      │
│    I/O Recovery Time            Disabled                  │                      │
│    CPU to PCI Write Buffer      Enabled                   │                      │
│    PCI Dynamic Bursting         Disabled                  │                      │
│    PCI Master 0 WS Write        Disabled                  │                      │
│    PCI Delay Transaction        Disabled                  │                      │
│    PCI#2 Access #1 Retry       [Disabled]                 │                      │
├─────────────────────────────────────────────────────────┴──────────────────────┤
│      :Move   Enter:Select  +/-/PU/PD:Value  F10:Save   ESC:Exit  F1:General Help │
│    F5:Previous Values       F6:Optimized Defaults     F7:Standard Defaults       │
└─────────────────────────────────────────────────────────────────────────────────┘
```

Precharge Command

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: 2 and 3.

Active Command

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: 2 and 3.

Active to CMD Command

Select the number of SCLKs for an access cycle. The settings are: 5/7 and 6/8.

SDRAM Cycle Length

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. The settings are: 2 and 3.

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) 1984-2001 Award Software
                           Integrated Peripherals
┌──────────────────────────────────────────────┬───────────────────────────┐
│  > OnChip IDE Function          [Press Enter] │         Item Help         │
│  > OnChip DEVICE Function        Press Enter  │                           │
│  > OnChip SUPERIO 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

OnChip SUPERIO 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) 1984-2001 Award Software
                           OnChip IDE Function
┌──────────────────────────────────────────────┬───────────────────────────┐
│    OnChip IDE Channel0          [Enabled]     │         Item Help         │
│    OnChip IDE Channel1           Enabled      │                           │
```

```
   IDE 32bit Transfer Mode        Disabled
   Primary Master    PIO          Auto              Menu Level >>
   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 HDD Block Mode             Enabled
   IDE Prefetch Mode              Disabled




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

3-7-2   OnChip DEVICE Function

```
        CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                        OnChip DEVICE Function

   OnChip AUDIO Function         [Press Enter]          Item Help
   OnChip USB                    Enabled
   USB Keyboard Support          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
```

3-7-3   OnChip SUPERIO Function

```
        CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                        OnChip SUPERIO Function
```

```
 Onboard FDD Function          [Enable]              Item Help
 Onboard Serial Port 1         Auto
 Onboard Serial Port 2         Auto
 UART 2 Mode                   Normal            Menu Level >>
 IR Duplex Mode                Half
 TX,RX Inverting enable        Ho, Yes
 Onboard Parallel Port         378/IRQ7
 Onboard Parallel Mode         SPP
 ECP Mode Use DMA              3
 Parallel Port EPP Type        EPP1.9

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

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) 1984-2001 Award Software
                       Power Management Setup

   ACPI Function              [Enabled]             Item Help
 > Power Management            Press Enter
   PM Control by APM           Yes
   Video off Option            Suspend -> Off    Menu Level >
   Video Off Method            V/H SYNC+Blank
   MODEM Use IRQ               3
   Soft-Off by PWRBTN          Instant-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
```

Wake-Up Events
Please refer to section 3-8-2

3-8-1 Power Management

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

```
    Power Management              [User Define]              Item Help
    HDD Power Down                 Disabled
    Doze Mode                      Disabled
    Suspend Mode                   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
```

3-8-2 Wake Up Events

```
            CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                              Wake Up Events
      VGA                          [OFF]                    Item Help
      LPT & COM                    LPT/COM
      HDD & FDD                    ON
      PCI Master                   OFF                 Menu Level >>
      Modem Ring Resume            Disabled
      RTC Alarm Resume             Disabled
    x Date (of Month)                0
    x Resume Time (hh:mm:ss)       0 : 7 : 0
    > IRQs Activity Monitoring     Press Enter




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

IRQs Activity Monitoring

Please refer to section 3-8-2.1

3-8-2.1 IRQs Activity Monitoring

```
            CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                          IRQs Activity Monitoring
```

```
    Primary INTR                    [ON]                        Item Help
    IRQ3   (COM 2)                   Enabled
    IRQ4   (COM 1)                   Enabled
    IRQ5   (LPT 2)                   Enabled            Menu Level >>>
    IRQ6   (Floppy Disk)             Enabled
    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)             Enabled
    IRQ14  (Hard Disk)               Enabled
    IRQ15  (Reserved)                Disabled

      Move Enter:Select Item +/-/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) 1984-2001 Award Software
                        PnP/PCI Configurations

    PNP OS Installed            [No]                      Item Help
    Reset Configuration Data    Disabled

    Resources Controlled By     Auto(ESCD)        Menu Level >
  x IRQ Resources               Press Enter
  x DMA Resources               Press Enter       Default is Disabled.
                                                  Select Enabled to
    PCI/VGA Palette Snoop        Disabled         reset Extended System
    Assign IRQ For VGA           Enabled          Configuration Data
    Assign IRQ For USB           Enabled          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 OS
                                                  cannot boot

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

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) 1984-2001 Award Software
                                PC Health Status
┌────────────────────────────────────────────┬─────────────────────────────┐
│   Show PC Health in Post       [Enabled]    │         Item Help           │
│   Vcore                         1.91V        │                             │
│    2.5V                         2.50V        ├─────────────────────────────┤
│    3.3V                         3.40V        │   Menu Level >              │
│     5V                          5.10V        │                             │
│    12V                         11.95V        │                             │
│   Current CPU Temp.            33°C/91°F     │                             │
│   Current System Temp.         21°C/69°F     │                             │
│   Current FAN1 Speed           5100 RPM      │                             │
│   Current CPUFAN2 Speed          0           │                             │
│                                              │                             │
│                                              │                             │
│                                              │                             │
├──────────────────────────────────────────────────────────────────────────┤
│      :Move   Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help│
│    F5:Previous Values       F6:Optimized Defaults     F7:Standard Defaults │
└──────────────────────────────────────────────────────────────────────────┘
```

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/Vtt/Vcc3.3/+5V/+12V/-12V/-5V (V)
This will show the CPU/FAN/System voltage chart and FAN Speed.

3-11 Miscellaneous Control

This section is for setting CPU Frequency Control.

```
              CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                              Miscellaneous Control

   CyrixIII Clock Ratio              Default
   Auto Detect DIMM/PCI Clock        Enabled                    Item Help
   Spread Spectrum                   Disabled
   ** Current Host Clock is 66MHz **                       Menu Level >
   Host Clock at Next Boot is [66MHz/33MHz]
   ** Current DRAM Clock is 66Mhz **
   DRAM Clock at Next Boot is [66]MHz



        :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 Clock

This item allows you to enable/disable auto detect DIMM/PCI Clock.
The settings are: Enabled, Disabled.

Spread Spectrum

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

Host Clock at Next Boot is

This item allows you to step by step setting CPU/HOST Frequency, USE PageDown/ PageUp key user can change the frequency to approach overclocking.

DRAM Clock at Next Boot is

This item allows you to select SDRAM Frequency to add or to decrease.

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/ME/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 8 selections:
1. IDE   install VIA IDE/AGPVXD/IRQ ROUTING/INF driver
2. VGA   install on-board VGA driver
3. SOUND   install AC97 Audio Codec Installing driver
4. PC-HEALTH   install VIA PC-HEALTH hardware monitor driver
5. Magic BIOS   install BIOS Live Update Utility
6. PC-CILLIN   install PC-CILLIN 2000 anti-virus program
7. BROWSE CD   to browse the contents of the CD
8. EXIT   to exit from MAGIC INSTALL menu
Each selection is illustrated as below:

4-1 IDE   Install VIA IDE/AGPVXD IRQ ROUTING/INF Driver

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
NEXT

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

NOTE: MAGIC INSTALL will auto detect file path X:\VIA
This driver supports WINDOWS 95/98/98SE/NT4.0/2000

4-2 VGA   Install VIA 8601 VGA Driver

A. For WINDOWS 95/98/98SE/ME/NT4.0/2000

1. Click VGA when MAGIC INSTALL MENU appears

2. Click NEXT when VIA Display Driver Setup appears

3. Click FINISH to Restart Computer

NOTE: **The path of the file**
           For WINDOWS 95/98/98SE is X:\VIA\8601VGA\WIN9X\SETUP.EXE
           For WINDOWS ME is X:\VIA\8601VGA\WINME\SETUP.EXE
           For NT4.0 is X:\VIA\8601VGA\NT4\SETUP.EXE

           For WINDOWS 2000 is X:\VIA\8601VGA\WIN2000\SETUP.EXE

4-3 SOUND   Install ALC Audio Codec Driver for VIA

1. Click SOUND when Magic Install MENU appears

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

3. Click Next to Install Avance for VIA Audio Driver

4. When ask Remove old Device Driver, Click OK

5. Click Go

6. Click Finish and Restart windows
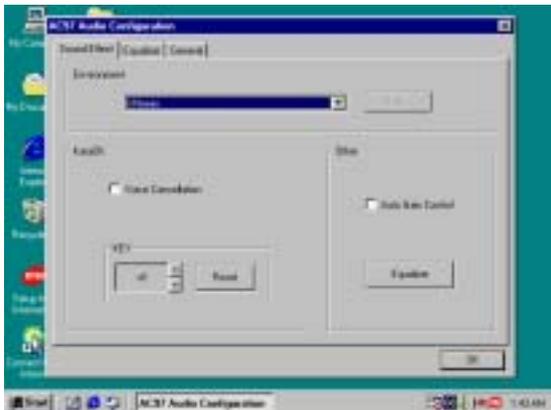
7. Sound Effect select and KaraOK Mode Function
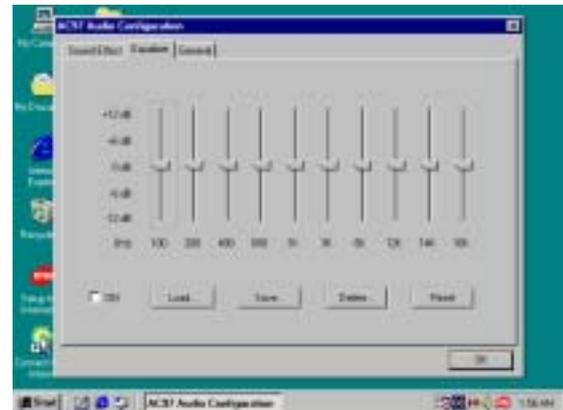
8. Manual Sound Effect Setting

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**

4-4 PC-HEALTH   Install VIA Hardware Monitor Driver

1. Click PC-HEALTH when Magic Install MENU appears

2. Click NEXT when VIA Hardware Monitor Wizard appears

3. Click Next to install Driver in C:\VIAHM

4. Click Next to use default Program Folders name

4-4-1 How To Use VIA Hardware Monitor Application Software
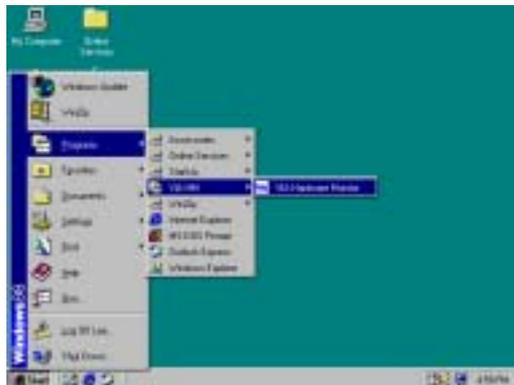
1. Click Programs, VIA HM and will show next screen

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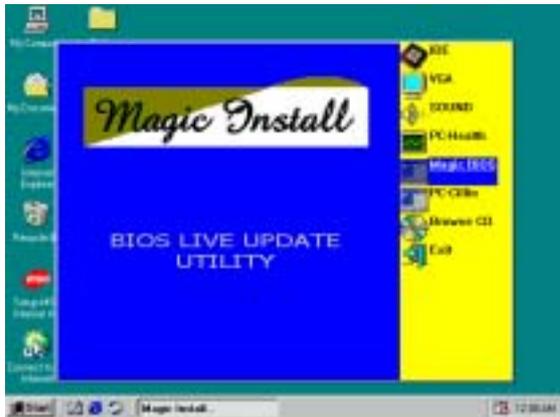
1. Click Magic BIOS when Magic Install MENU appears

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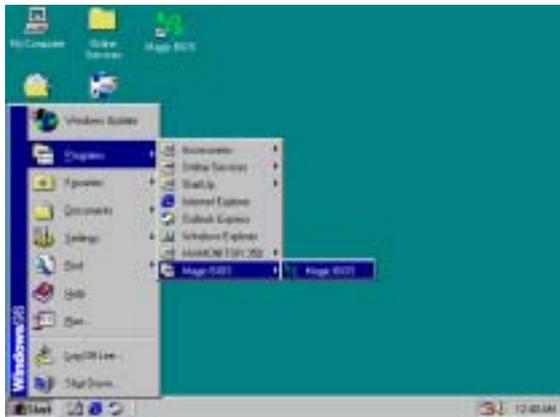
3. After finish Setup you will have a Magic BIOS icon in your screen

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
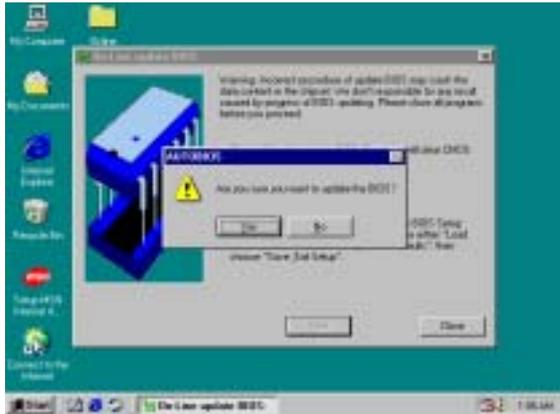
7. Click Yes if you want to update the BIOS otherwise choose No to exit
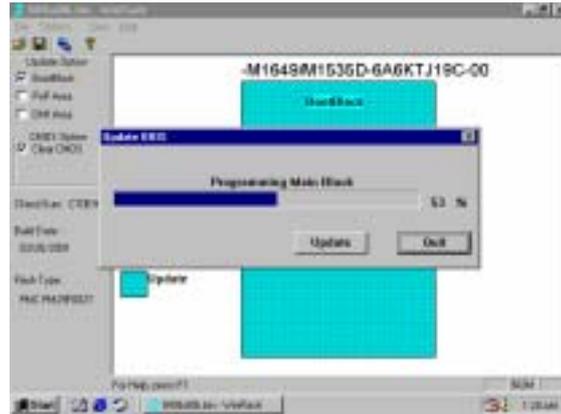
8. When System programming BIOS don't turn off power, after finish update BIOS, the system will clear CMOS and automatically Restart
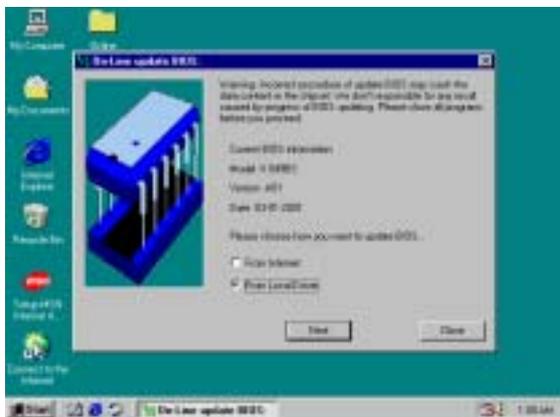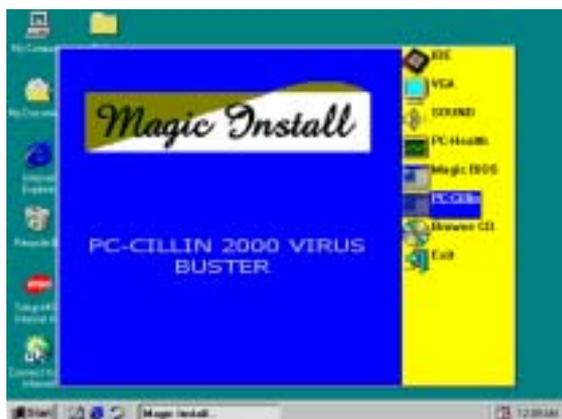

9. When choose From Local Driver to update BIOS, you must have the correct BIOS file in your Local Driver

10. Choose the correct BIOS file to update BIOS

4-6 PC-CILLIN   Install PC-CILLIN 2000 Anti-virus program

1. Click PC-CILLIN when MAGIC INSTALL MENU Appears

2. Click NEXT when PC-CILIN 2000 SETUP APPEARS. Then click YES when the announcement of copyright appears. Software is starting to detect HDD for virus

3. Click NEXT and Enter User Information, Click NEXT or choose BROWSE to change the path For the file to be stored
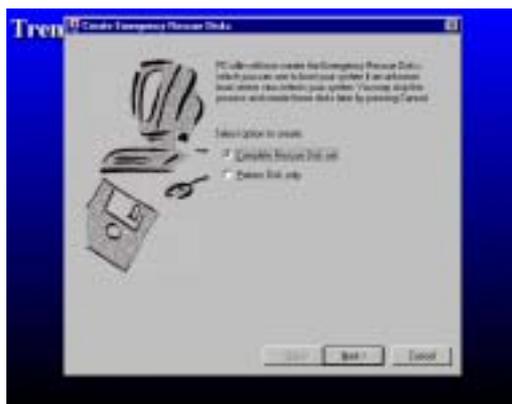
4. Click NEXT and Choose all Internet Protection

5. Click OK and If You Have Proxy Server, Enter Your Setting.

6. Click NEXT when Start Copy Files, Start to install the software.

7. If you want to make a rescue disc, insert a 1.44 MB disc

8. Setup Complete and click Finish

9. Enter Your name and E-mail address Register PC-cillin 2000 or Click Cancel Register Later

10. After install PC-cillin 2000 complete we recommend select update item to download newest virus code and setting Auto refresh virus code

4-7 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

4-8 HOW TO UPDATE BIOS

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 601TCF from our web site to your boot disc.

STEP 4. Insert your boot disc into A:,

start the computer, type "Awdflash A:\601TCFxxx.BIN/SN/PY/CC/R"

601TCFxxx.BIN is the file name of latest BIOS it can be 601TCFA3.BIN or 601TCFB2.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.