

# ***623DM/623DMP/623DMW USER'S MANUAL***

***M/B For Socket 370 Pentium® III Processor***

***NO. G03-623DM***

***Rev:1.0***

**Release date: September 2003**

**Trademark:**

\* Specifications and Information contained in this documentation are furnished for information use only, and are subject to change at any time without notice, and should not be construed as a commitment by manufacturer.

# TABLE OF CONTENT

USER'S NOTICE.....	ii
MANUAL REVISION INFORMATION.....	ii
THERMAL SOLUTIONS.....	ii
<b>CHAPTER 1 INTRODUCTION OF MOTHERBOARD</b>	
1-1 FEATURE OF MOTHERBOARD.....	1
1-2 SPECIFICATION.....	2
1-3 PERFORMANCE LIST.....	3
1-4 LAYOUT DIAGRAM & JUMPER SETTING.....	4
<b>CHAPTER 2 HARDWARE INSTALLATION</b>	
2-1 HARDWARE INSTALLATION STEPS.....	6
2-2 CHECKING MOTHERBOARD'S JUMPER SETTING.....	6
2-3 INSTALL CPU.....	7
2-3-1 GLOSSARY.....	7
2-3-2 SETTING CPU BUS CLOCK & MEMORY CLOCK JUMPER.....	8
2-3-3 INSTALL CPU.....	9
2-3-4 OVERCLOCK RUNNING.....	9
2-4 INSTALL MEMORY.....	10
2-5 EXPANSION CARDS.....	11
2-5-1 PROCEDURE FOR EXPANSION CARD INSTALLATION.....	11
2-5-2 ASSIGNING IRQ FOR EXPANSION CARD.....	11
2-5-3 INTERRUPT REQUEST TABLE FOR THIS MOTHERBOARD.....	12
2-6 CONNECTORS, HEADERS.....	12
2-6-1 CONNECTORS.....	12
2-6-2 HEADERS.....	15
2-7 STARTING UP YOUR COMPUTER.....	18
<b>CHAPTER 3 INTRODUCING BIOS</b>	
3-1 ENTERING SETUP.....	19
3-2 GETTING HELP.....	20
3-3 THE MAIN MENU.....	20
3-4 STANDARD CMOS FEATURES.....	22
3-5 ADVANCED BIOS FEATURES.....	23
3-6 ADVANCED CHIPSET FEATURES.....	24
3-6-1 DRAM TIMING SETTING.....	27
3-6-2 AGP TIMING SETTINGS.....	28
3-6-3 PCI TIMING SETTINGS.....	28
3-7 INTEGRATED PERIPHERALS.....	28
3-7-1 ON-CHIP IDE FUNCTION.....	29
3-7-2 ON-CHIP DEVICE FUNCTION.....	30
3-7-3 ON-CHIP SIO FUNCTION.....	31
3-8 POWER MANAGEMENT SETUP.....	32
3-8-1 WAKE UP EVENTS.....	32
3-9 PNP/PCI CONFIGURATION SETUP.....	34
3-10 PC HEALTH STATUS.....	35
3-11 MISCELLANEOUS CONTROL.....	35
3-12 LOAD STANDARD/OPTIMIZED DEFAULTS.....	36
3-13 SET SUPERVISOR/USER PASSWORD.....	36
<b>CHAPTER 4 DRIVER &amp; FREE PROGRAM INSTALLATION</b>	
MAGIC INSTALL SUPPORTS WINDOWS 95/98/98SE/NT4.0/2000.....	37
4-1 VIA 4 IN 1      INSTALL VIA SERVICE PACK 4 IN 1 DRIVER.....	38
4-2 VGA              INSTALL VIA VGA DRIVER.....	39
4-3 SOUND            INSTALL ALC AUDIO CODEC DRIVER.....	40
4-4 LAN                INSTALL RTL810X LAN CONTROLLER DRIVER.....	41
4-5 MAGIC BIOS      INSTALL BIOS LIVE UPDATE UTILITY.....	41
4-6 USB2.0            INSTALL VIA USB2.0 DEVICE DRIVER.....	43
4-7 PC-CILLIN        INSTALL PC-CILLIN 2002 ANTI-VIRUS PROGRAM.....	43
4-8 HOW TO DISABLE ON-BOARD SOUND.....	45
4-9 HOW TO UPDATE BIOS.....	45

---

---

## USER'S NOTICE

COPYRIGHT OF THIS MANUAL BELONGS TO **THE MANUFACTURER**. NO PART OF THIS MANUAL, INCLUDING THE PRODUCTS AND SOFTWARE DESCRIBED IN IT MAY BE REPRODUCED, TRANSMITTED OR TRANSLATED INTO ANY LANGUAGE IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION OF **THE MANUFACTURER**.

THIS MANUAL CONTAINS ALL INFORMATION REQUIRED TO USE THIS MOTHER-BOARD AND WE DO ASSURE THIS MANUAL MEETS USER'S REQUIREMENT BUT WILL CHANGE, CORRECT ANY TIME WITHOUT NOTICE. **MANUFACTURER** PROVIDES THIS MANUAL "AS IS" WITHOUT WARRANTY OF ANY KIND, AND WILL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING DAMAGES FOR LOSS OF PROFIT, LOSS OF BUSINESS, LOSS OF USE OF DATA, INTERRUPTION OF BUSINESS AND THE LIKE).

PRODUCTS AND CORPORATE NAMES APPEARING IN THIS MANUAL MAY OR MAY NOT BE REGISTERED TRADEMARKS OR COPYRIGHTS OF THEIR RESPECTIVE COMPANIES, AND THEY ARE USED ONLY FOR IDENTIFICATION OR EXPLANATION AND TO THE OWNER'S BENEFIT, WITHOUT INTENT TO INFRINGE.

## Manual Revision Information

Reversion	Revision History	Date
1.0	First Release	October 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 623DMW)

## 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 623DM/623DMP/623DMW Motherboard

### 1-1 Feature of motherboard

The 623DM/623DMP/623DMW motherboard is design for use Intel's new generation Pentium processors, which utilize the Socket 370 design and the memory size expandable to 2GB.

This motherboard uses the newest VIA VT8623 (CLE266) SMA (Share Memory Architecture) North bridge chipset and VT8235 south bridge chipset. These motherboards support Intel Tualatin, Coppermine, Celeron and 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 623DM/623DMP/623DMW, with integrated 3D Graphic Acceleration, makes this board lower cost alternative to a video card. 623DMP/623DMW motherboard also integrated PCI LAN Controller supports 10/100 BASE-T Transfer rate for those whom require faster LAN function for net work. 623DMW 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
<b>Design</b>	* Micro ATX form factor 4 layers PCB size: 24.4x19.0cm
<b>Chipset</b>	* VIA VT8623 SMA (Share Memory Architecture) North Bridge * VIA VT8235 South Bridge
<b>Clock Generator</b>	* 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
<b>CPU Socket</b>	* Support Pentium® III/Tualatin up to 1.2GHz processor * Support Celeron™ up to 1.4GHz processor * Support 66, 100 and 133MHz CPU Bus clock * Reserves support for future Intel P3 processor * Support VIA C3 processors (no support Samuel1 CPU)
<b>Memory Socket</b>	* 184-pin DDRDIMM socket x2 * Support DDR200/DDR266 DDR memory * Expandable to 2GB(512Mb x8/x16 DRAM technology)
<b>Expansion Slot</b>	* 32-bit PCI slot x4 PCI-2.2 compliant
<b>Integrate VGA</b>	* Integrate 2D/3D graphic Engines * 8/16/32/64MB frame buffer using system memory * Internal AGP 8x performance * Support 24-bit 250MHz RAMDAC
<b>TV-Out (for 623DMW)</b>	* VIA VT1622A TV Encoder * Provided S-Video/Composite output for NTSC/PAL system
<b>Integrate IDE</b>	* 2 channel of Bus Master IDE port supporting ULTRA DMA 33/66/100/133 mode devices
<b>Integrate LAN (for 623DMP/623DMW)</b>	* Integrated RTL8100C PCI LAN Controller * Support 10/100 BASE-T Transfer rate
<b>Audio</b>	* AC'97 Digital Audio controller integrated * AC'97 6-channel Audio CODEC on board * Audio driver and utility included
<b>BIOS</b>	* Award 2Mb Flash ROM
<b>Multi I/O</b>	* 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 Performance List

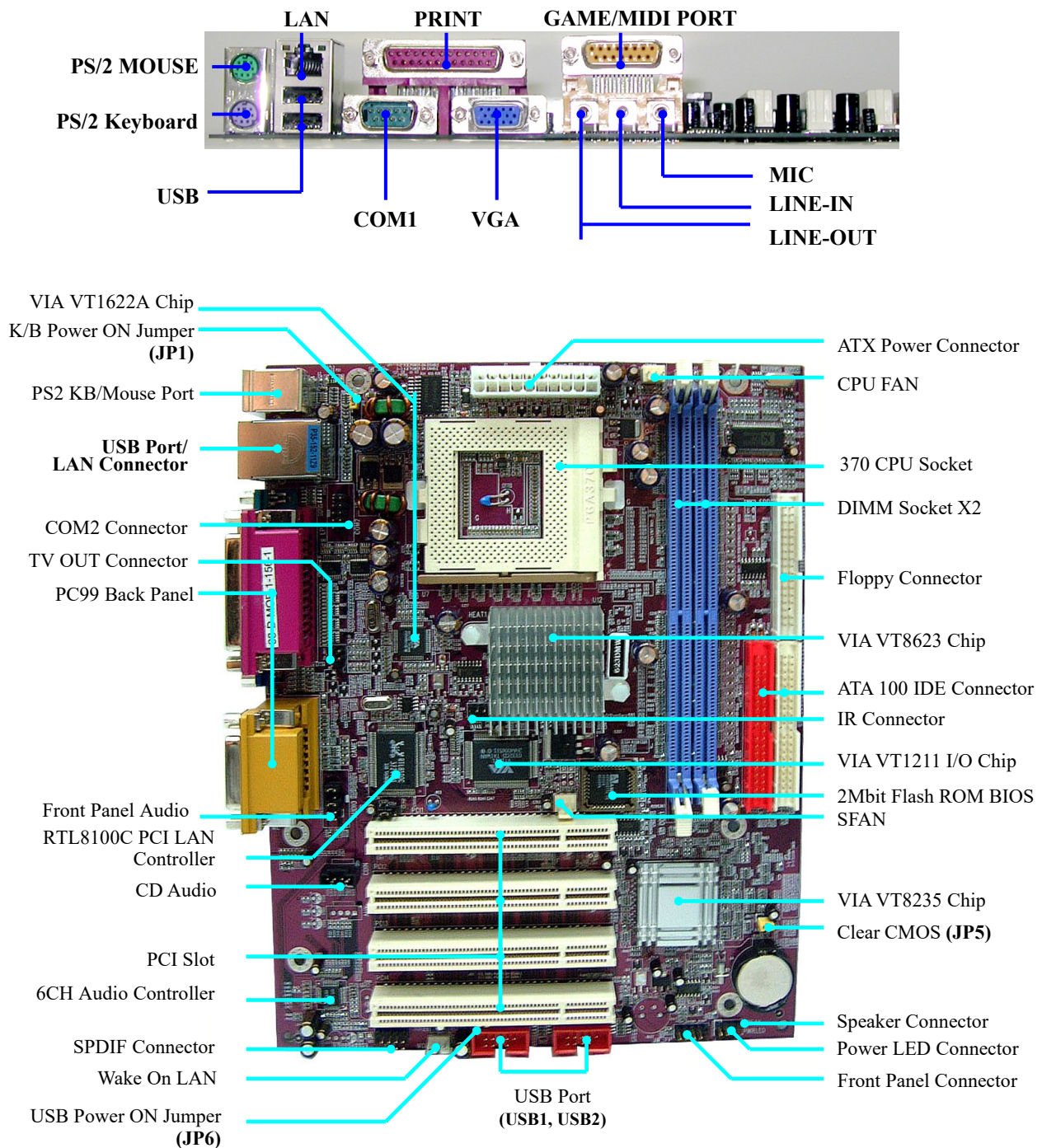
The following performance data list is the testing result of some popular benchmark testing programs. These data are just referred by users, and there is no responsibility for different testing data values gotten by users (the different Hardware & Software configuration will result in different benchmark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

**CPU:** Intel Pentium III® 1.13GHz FC-PGA  
**DRAM:** 512MB DDR266 SDRAM x1 (NANYA NT5DS32MAT-7K)  
**Hard Disk Driver:** IBM IC35L040AVVN07-0 (ATA 100)  
**On Board VGA:** Share Memory (1024x768xHi-Color)  
**BIOS:** Award Optimal default  
**OS:** Windows XP Professional

### Performance Test Report

	<b>1.13GHz</b>
3D Mark 2001SE	855
3D Mark 2003	25
3D Winbench 2000 (32/32bit)	24.1
PC Mark 2002	
CPU/Memory/HDD	3444/1419/920
Content Creation Winstone 2002	23.1
Content Creation Winstone 2003	23.6
Business Winstone 2002	21.5
Winbench 99:	
Business Disk Winmark99	9430
Hi-end Disk Winmark99	32300
Business Graphic Winmark	187
Hi-end Graphic Winmark	622
SYS Mark 2001/2002 : SISMark 2001/2002 Rating ( Internet Content Creation / Office Productivity )	
SISMark 2001	132 (132 / 132)
SISMark 2002	114 (105 / 123)
SISOFT Sandra 2003 :	
Dhrystone ALU MIPS	3064
Whetstone FPU MFLOPS	1509
RAM Int Buffered iSSE2 MB/S	882
RAM Float Buffered iSSE2 MB/S	870
Integer SSE2 IT/S	5921
Floating-Point SSE2 IT/S	7427
QUAKE3 DEMO1 FPS	354
DEMO2 FPS	33.3
Return to Castle Wolfenstein FPS	25.9
WCPUID System / CPU Clock	133.16/1131.85

## 1-4 Layout Diagram & Jumper Setting



### Jumpers

Jumper	Name	Description	Page
--------	------	-------------	------

JP1	Keyboard Power ON Function Setting	3-pin Block	p.6
JP6	USB Power On Function Setting	3-pin Block	p.7
JP5	CMOS RAM Clear Function Setting	3-pin Block	p.6

## Connectors

Connector	Name	Description	Page
ATXPWR	ATX Power Connector	20-pin Block	p.13
KB/MS1	PS/2 Mouse & PS/2 Keyboard Connector	6-pin Female	p.13
UL_B1	USB Port Connector	4-pin Connector	p.13
LAN (for V623DMP /623DMW)	LAN Connector	RJ45 Connector	p.13
LPT	Parallel Port Connector	25-pin Female	p.13
VGA	VGA Port Connector	15-pin Female	p.13
COM1	Serial Port Connector	9-pin Connector	
CN2	Line-Out/Line-In/MIC Audio Connector	Phone Jack	p.13
FDD	Floppy Driver Connector	34-pin Block	p.14
IDE1	Primary IDE Connector	40-pin Block	p.14
IDE2	Secondary IDE Connector	40-pin Block	p.14

## Headers

Header	Name	Description	Page
COM2	COM2 Serial Port Headers	10-pin Block	p.15
TV_OUT (for V623DMW)	S-Video/RCA Composite TV-out Header	5-pin Block	p.15
AUDIO	Line-Out/MIC output Header	9-pin Block	p.15
USB1/USB2	USB2.0 Port Headers	10-pin Block	p.16
HD_LED	Hard drive LED connector	3-pin Block	p.16
RESET	Reset switch lead	2-pin Block	p.16
SPEAK	Speaker connector	4-pin Block	p.16
PWR_LED	Power LED Headers	2-pin Block	p.16
PWR_BTN	Power Button Headers	2-pin Block	p.16
CPUFAN, SYSFAN	FAN Speed Headers	3-pin Block	p.16
IR	IR infrared module Headers	5-pin Block	p.17
CDIN	CD Audio-In Headers	4-pin Block	p.17
OPTICA	SPDIF In/Out (Optical In/Out) Headers	9-pin Block	p.17

## Expansion Sockets

Socket/Slot	Name	Description	Page
ZIF Socket 370	CPU Socket	370-pin FC-PGA CPU Socket	p.9
DDR, DDR2	DDR SDRAM Module Socket	184-pin DDR SDRAM Module Expansion Socket	p.10
PCI1~4	PCI Slot	32-bit PCI Local Bus Expansion slots	p.11

# Chapter 2

## Hardware installation



---

---

## 2-1 Hardware installation Steps

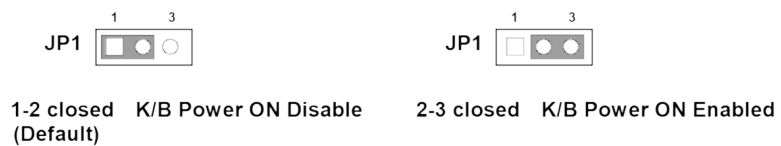
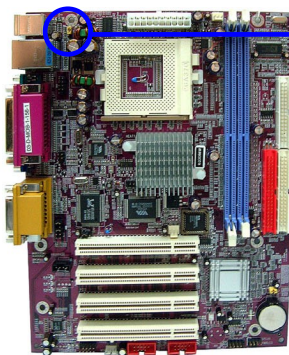
Before using your computer, you had better complete the following steps:

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

## 2.2 Checking Motherboard's Jumper Setting

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

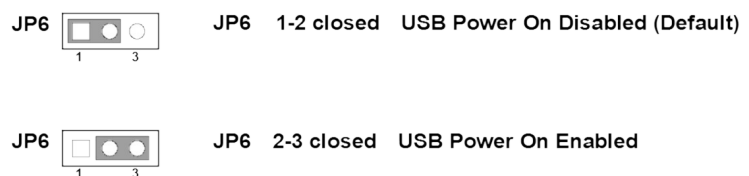
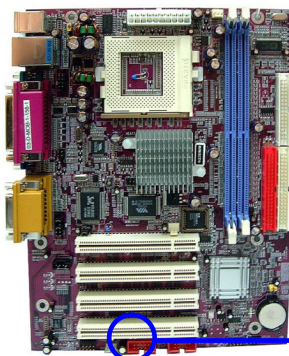
When setting Enabled you can using keyboard by key in password to power on system.



Keyboard Power On Setting

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

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



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

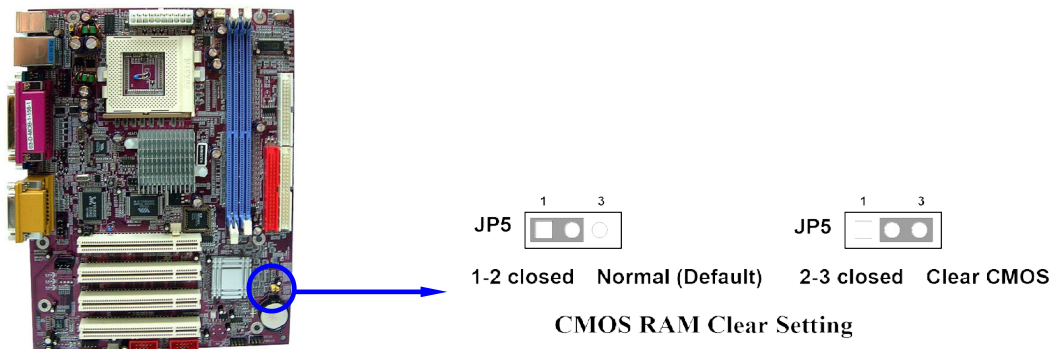
A battery must be used to retain the motherboard configuration in CMOS RAM short 1-2 pins of JP5 to store the CMOS data.

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*



## 2-3 Install CPU

### 2-3-1 Glossary

**Chipset (core logic)** - two or more integrated circuits which control the interfaces between the system processor, RAM, I/O devices, 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 - Accelerated Graphics Port** - a high speed interface for video cards; runs at 1X (66MHz), 2X (133MHz), or 4X (266MHz).

**PCI - Peripheral Component Interconnect** - 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 - Universal Serial Bus** - 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 (Basic Input/Output System)** - 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.

### **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:

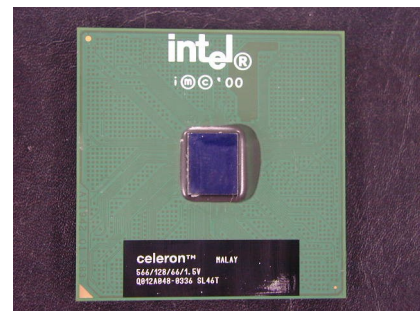
#### **566/128/66/1.5V**

**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 & 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 2-3-4.*

## **2-3-3 Install CPU**

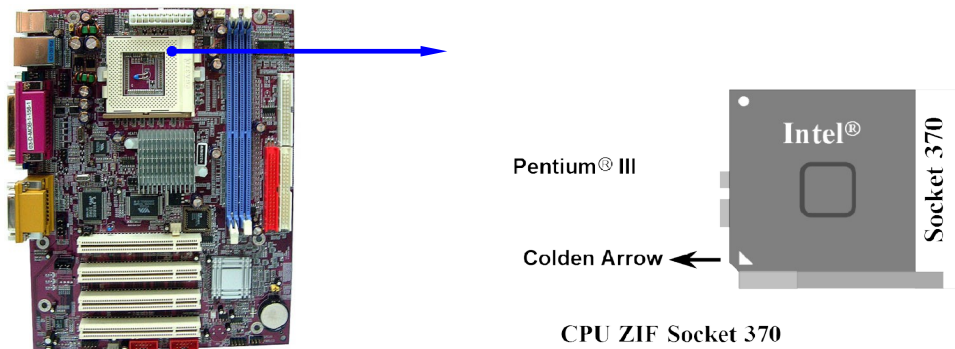
This motherboard provides a ZIF socket 370. The CPU that comes with the motherboard should have a cooling FAN attached to prevent overheating. If this is not the case, then purchase a correct cooling FAN before you turn on your system.

---

---

**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.



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.

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

Auto Detect DIMM/PCI Clk	Enabled	Item Help
Spread Spectrum	Disabled	

<b>** Current Host/PCI Clock is 133/133 MHz **</b> Host/PCI Clock at Next Boot is   133/33MHz <b>** Current DRAM Clock is 133MHz **</b> DRAM Clock at Next Boot is       133MHz +2.5V Select                       2.55V	Menu Level >
↑↓→← 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.

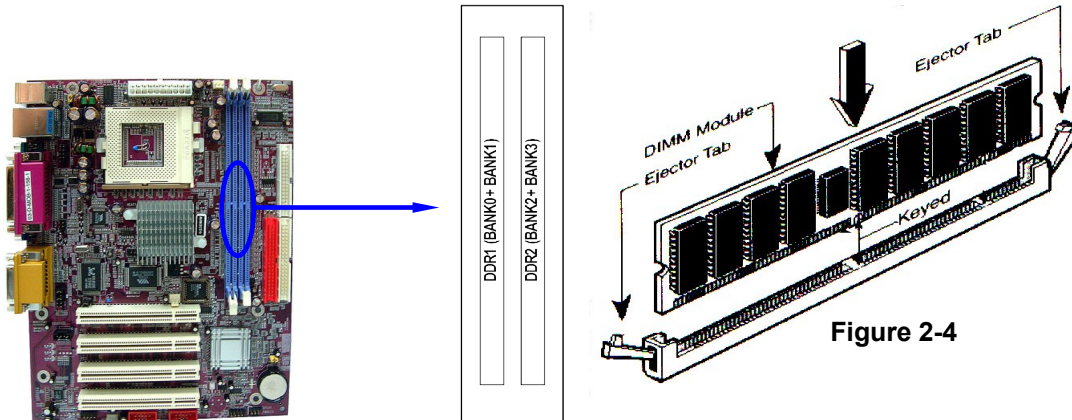


Figure 2-4

**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 indentation 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.

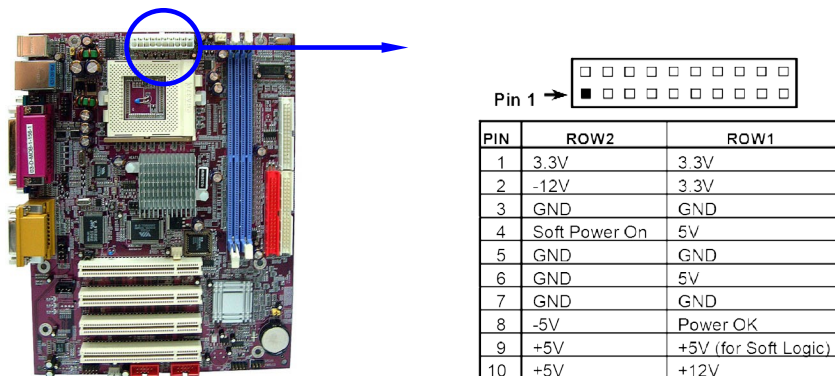
## 2-6 Connectors, Headers

### 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.



(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 (for 623DMP/ 623DMW)**

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**

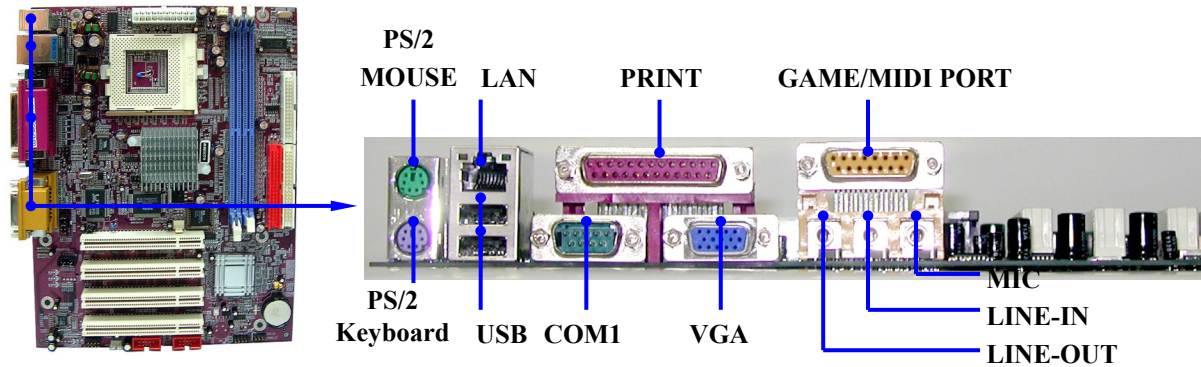
VGA Connector is a 15-pin D-Subminiature Receptacle connector. This connector is for connection Monitor and System to display.

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

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

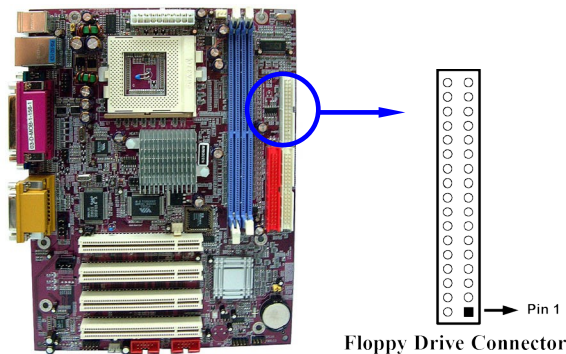
**Line-out :** Audio output to speaker  
**Line-In :** Audio input to Audio controller  
**MIC :** Microphone Connector  
**Game:** Game/Midi Port Connector





**(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.

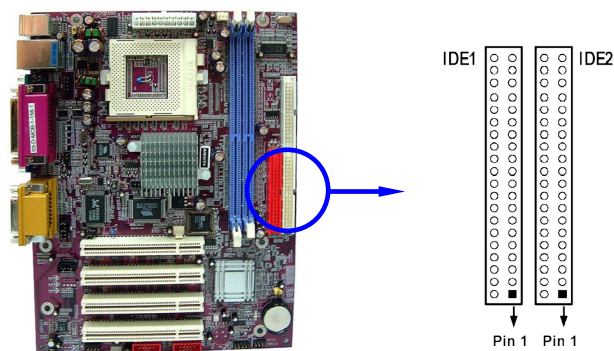


**(10) Primary IDE Connector (40-pin block): IDE1**

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.

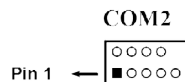
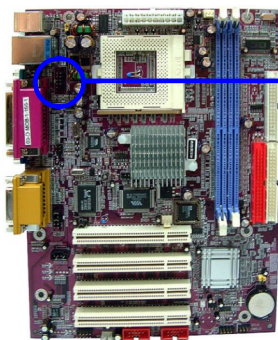


- Two hard disks can be connected to each connector. The first HDD is referred to as the “Master” and the second HDD is referred to as the “Slave”.
- For performance issues, we strongly suggest you don’t install a CD-ROM or DVD-ROM drive on the same IDE channel as a hard disk. Otherwise, the system performance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

## 2-6-2 Headers

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

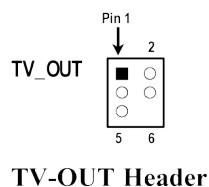
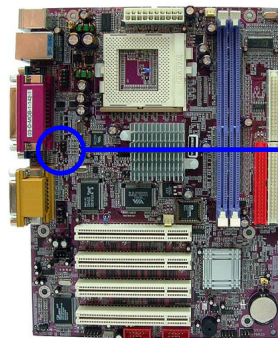
This board has one serial port header COM2, it come with cable providing serial port COM2. The On-board serial port can be disabled through BIOS SETUP. Please refer to Chapter 3 “INTEGRATED PERIPHERALS SETUP” section for more detail information.



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

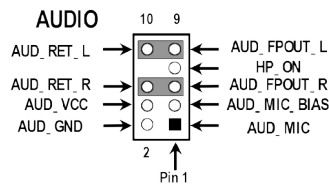
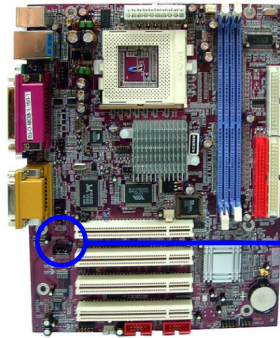
### (2) TV-Out Header (5-pin): TV\_OUT (for 623DMW only)

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.



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

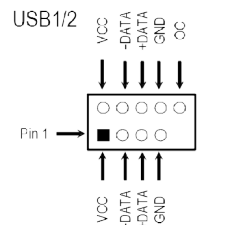
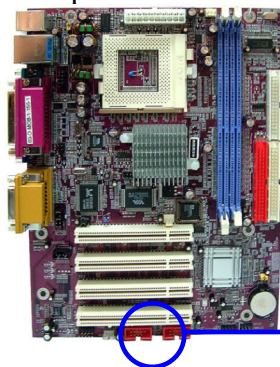
This header connect to Front Panel Line-out, MIC connector with cable.



**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 life of the system's power supply. See the figure below.

**(6) Speaker connector: SPEAK**

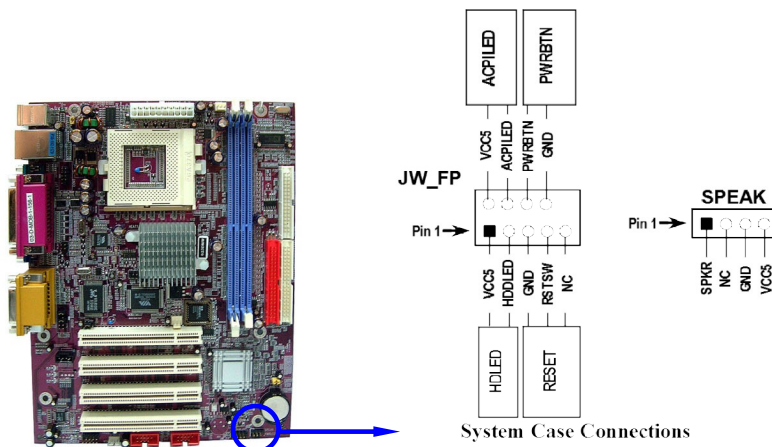
This 4-pin connector connects to the case-mounted speaker. See the figure below.

**(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.

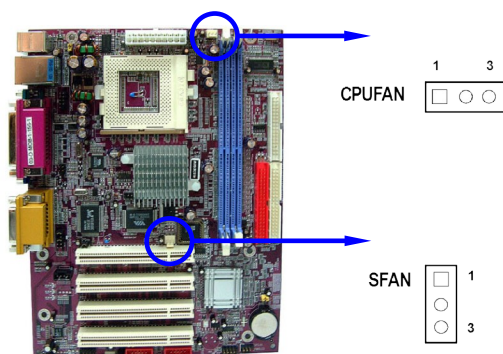
**(8) Power switch: PWR BTN**

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



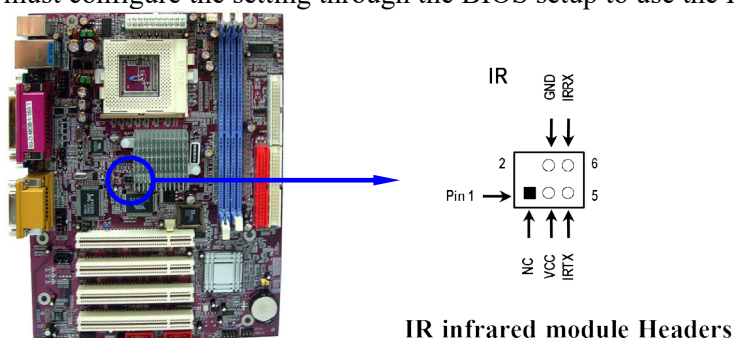
### (9) FAN Speed Headers (3-pin) : CPUFAN, SFAN

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

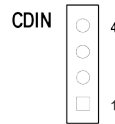
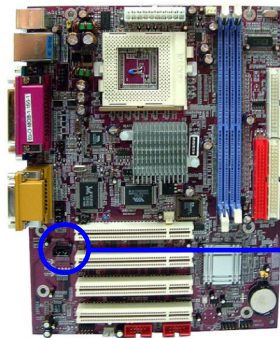
This connector supports the optional wireless transmitting and receiving infrared module. You must configure the setting through the BIOS setup to use the IR function.



### (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.



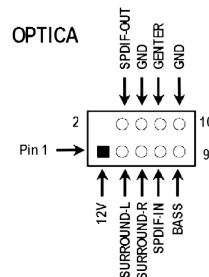
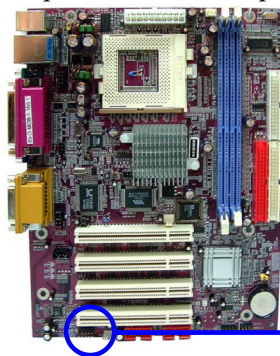


CD Audio-In Headers

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

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

- During power-on, press <Delete> key to enter BIOS setup. Follow the instructions in BIOS SETUP.
- 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) 1984-2003 Award Software

Standard CMOS Features	Miscellaneous Control
------------------------	-----------------------





---

---

## 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.

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software

### Standard CMOS Features

Date (mm:dd:yy)	Mon, Sep, 08 2003	Item Help
Time (hh:mm:ss)	16 : 18 : 49	
IDE Primary Master		Menu Level >  Change the day, month, Year and century
IDE Primary Slave		
IDE Secondary Master		
IDE Secondary Slave		
Drive A	1.4M, 3.25 in.	
Drive B	None	
Video	EGA/VGA	
Halt On	All Errors	
Base Memory	640K	
Extended Memory	64512K	
Total Memory	65536K	
↑↓→← Move Enter:Select Item +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Date

---

---

---

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

**Day** Day of the week, from Sun to Sat, determined by BIOS. Read-only.

**Month** The month from Jan. through Dec.

**Date** The date from 1 to 31 can be keyed by numeric function keys.

**Year** The year depends on the year of the BIOS.

### Time

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

### Primary Master/Primary Slave

### Secondary Master/Secondary Slave

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

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

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

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

**Access Mode** The settings are Auto Normal, Large, and LBA.

**Cylinder** number of cylinders

**Head** number of heads

**Precomp** write precomp

**Landing Zone** landing zone

**Sector** number of sectors

## 3-5 Advanced BIOS Features

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software

### Advanced BIOS Features

Anti-Virus Protection	Disabled	Item Help
CPU L1 Cache	Enabled	

CPU L2 Cache	Enabled	Menu Level >  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
CPU L2 Cache ECC Checking	Disabled	
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 it 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 at the prompt.

### OS Select For DRAM > 64MB

Allows OS2® to be used with >64MB of 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 Select Display Device TV-Type TV-Connector System BIOS Cacheable Video RAM Cacheable Memory Parity/ECC Check Memory Size Hole	Press Enter CRT NTSC CVBS Disabled Enabled Disabled Disabled	Menu Level >
↑↓→← 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 x DRAM CAS Latency Bank Interleave RAS Precharge Time RAS Active Time	By SPD 2.5 4 Banks 3T 6T	Item Help     Menu Level >>
---	--------------------------------------	--

RAS to CAS Delay                      3T DRAM Command Rate                  2T	When set to "Auto", BIOS will program this 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 data. 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	Menu Level >>
AGP Fast Write	Disabled	
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 On-Chip IDE Function

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software  
On-Chip IDE Function

OnChip IDE Channel 0	Enabled	Item Help
OnChip IDE Channel 1	Enabled	
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 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 On-Chip Device Function

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software

### On-Chip Device Function

RealTek LAN Function	Enabled	Item Help
RealTek LAN BootROM	Disabled	
AC97 Sound Device	Auto	Menu Level >>
USB Host Controller	Enabled	
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		

### 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*.

### 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*.

## 3-7-3 On-Chip SIO Function

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software

### On-Chip SIO Function

Onboard FDD Controller	Enabled	Item Help
Onboard Serial Port 1	3F8/IRQ4	

Onboard Serial Port 2	2F8/IRQ3	Menu Level >>
Onboard Fast IR	Disabled	
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.

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** This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.  
(Default)

**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 Personal Computer 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.

---



---

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software  
PnP/PCI Configurations

PNP OS Installed	No	Item Help
Reset Configuration Data	Disabled	
Resources Controlled By	Manual	Menu Level > Default is 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 os cannot boot
> IRQ Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	
Assign IRQ for VGA	Enabled	
Assign IRQ for USB	Enabled	
↑↓→← Move Enter:Select Item +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

### Reset Configuration Data

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

### Resource Controlled By

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

The settings are: Auto(ESCD), Manual.

### IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

### 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	Menu Level >
CPU Vcore	1.450V	
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
Intel CPU Ratio	Default	
Auto Detect DIMM/PCI Clk	Enabled	Menu Level >
Spread Spectrum	Disabled	
** Current Host/PCI Clock is 133/133 MHz **		
Host/PCI Clock at Next Boot is 133/33MHz		
** Current DRAM Clock is 133MHz **		
DRAM Clock at Next Boot is 133MHz		
+2.5V Select 2.55V		
↑↓↔← Move Enter:Select Item +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

### Auto Detect DIMM/PCI Clk

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

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 10](#).

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

### CPU Clock Ratio

This item allows you to select the CPU ratio.

## 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



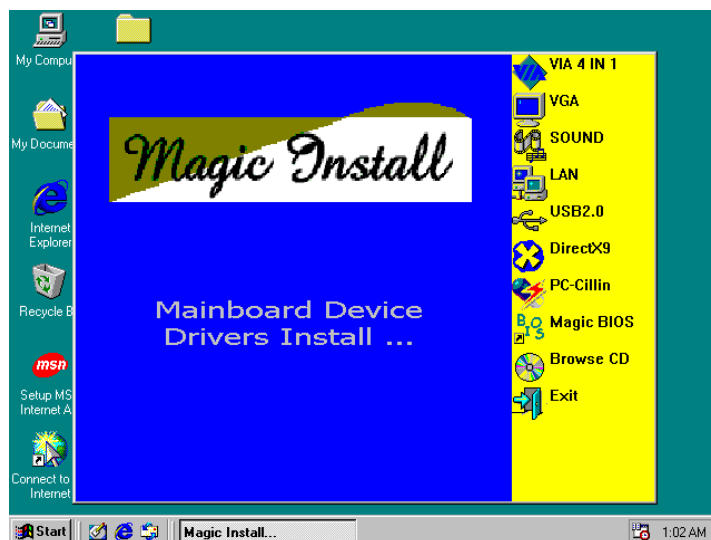
---

---

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 (for 623DMP/623DMW)
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

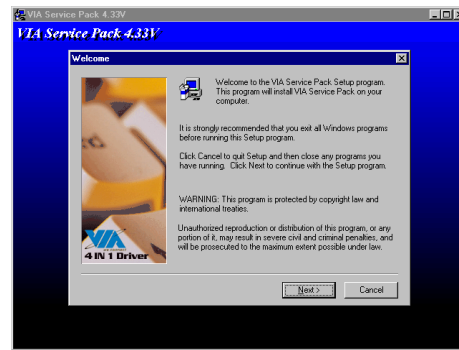
## GRAPHIC ACCESS

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

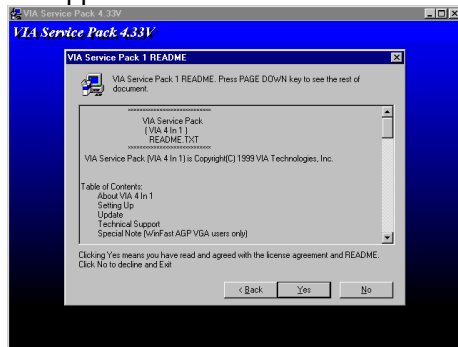
**INF :** VIA REGISTRY DRIVER IS TO BE INSTALLED UNDER WINDOWS  
THE DRIVER WILL ENABLE VIA POWER MANAGERMENT CONTROLLER



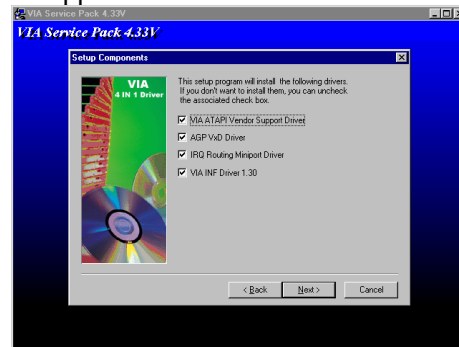
1. Click IDE when MAGIC INSTALL MENU appears



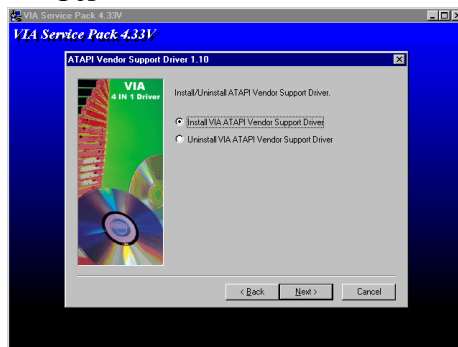
2. Click NEXT when VIA Service Pack Wizard appears



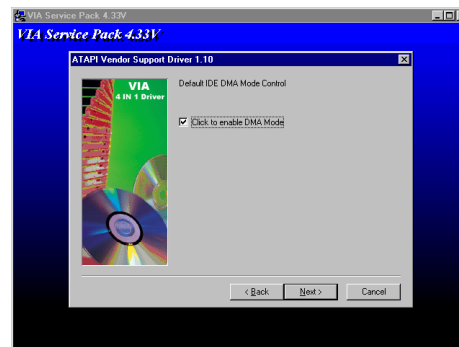
3. This is to announce the Copy Write, click Yes



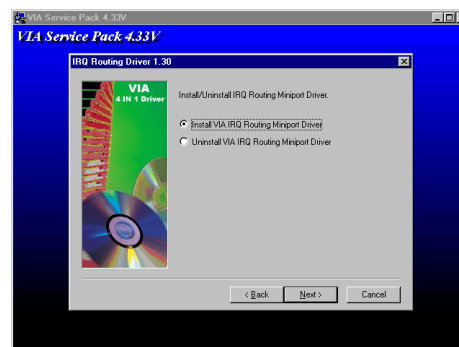
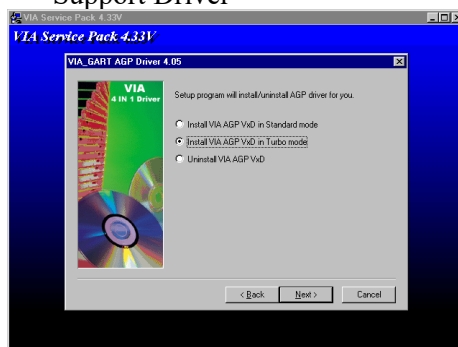
4. Click NEXT to choose all driver



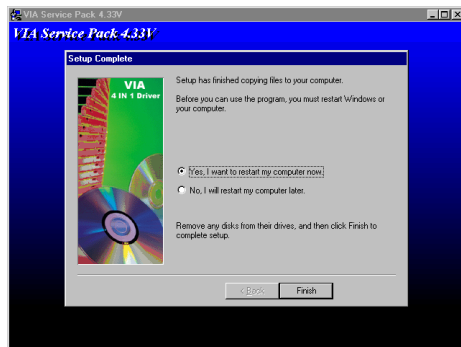
5. Click NEXT to Install ATAPI Vender Support Driver



6. Click NEXT to choose enabled DMA Mode



7. Click NEXT to Install VIA AGP VXD Driver

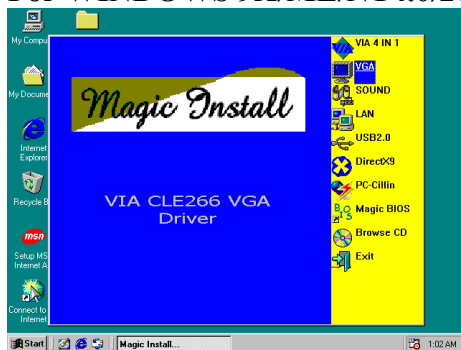


8. Click NEXT to Install VIA IRQ Routing Mini port Driver

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

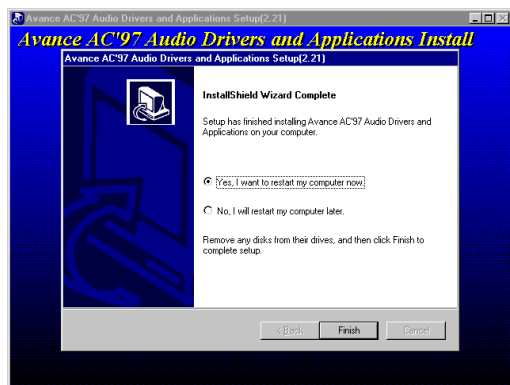
## 4-3 SOUND install ALC AC97' Codec Audio Driver



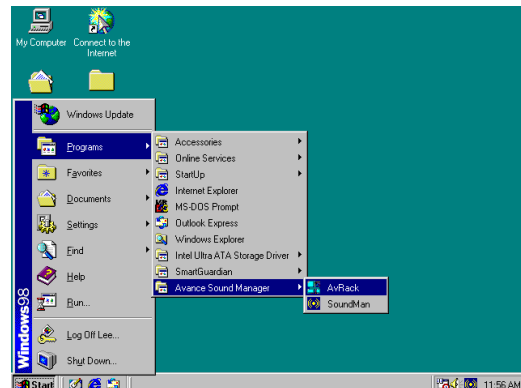
1. Click SOUND when MAGIC INSTALL MENU appears



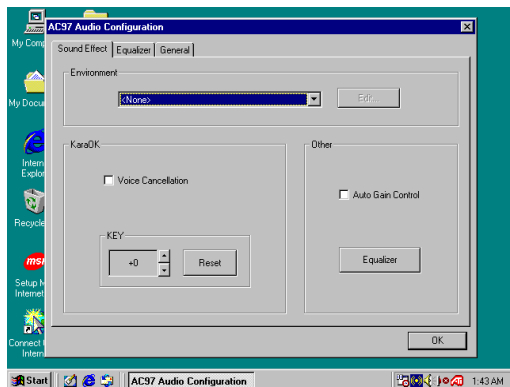
2. Then auto detect operation system language edition, click OK, start to install DRIVER



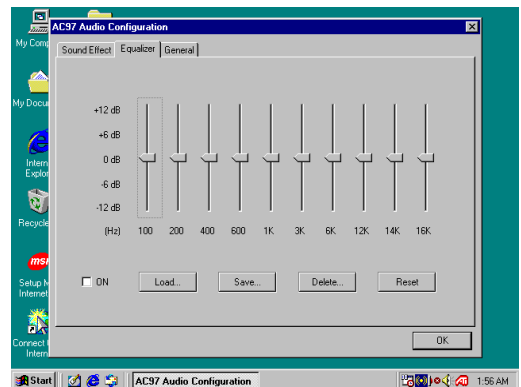
3. Click Finish and Restart Windows



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

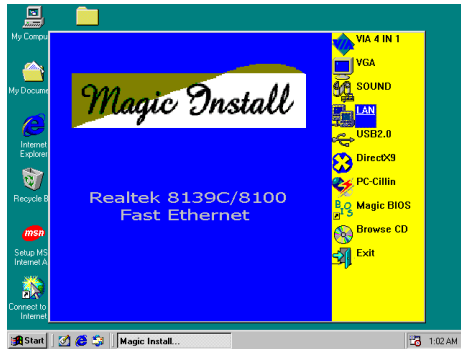
for WINDOWS 98ME is X:\RTLLAN\WINME

for WINDOWS NT4.0 is X:\RTLLAN\WINNT4

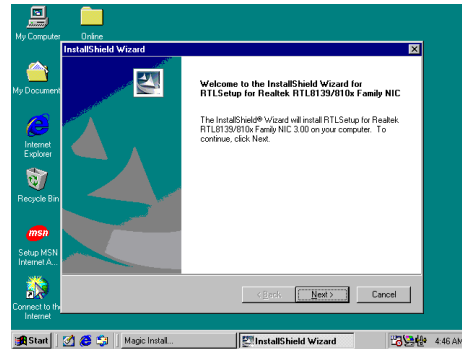
for WINDOWS 2000 is X:\RTLLAN\WIN2000

for WINDOWS XP is X:\RTLLAN\WINXP

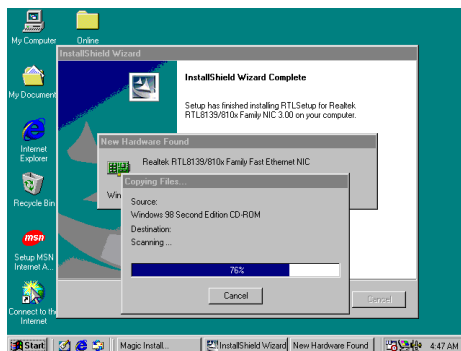
## WINDOWS 98SE/98ME/2000/XP Setup



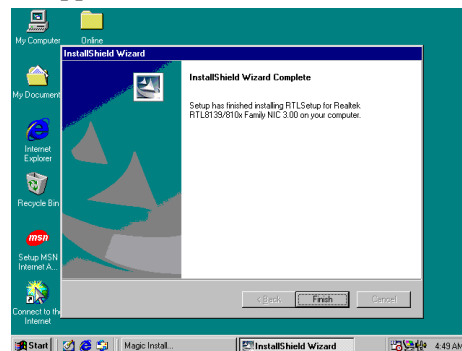
1. Click LAN when Magic Install Menu appears



2. Click NEXT when Realtek InstallShield Wizard appears

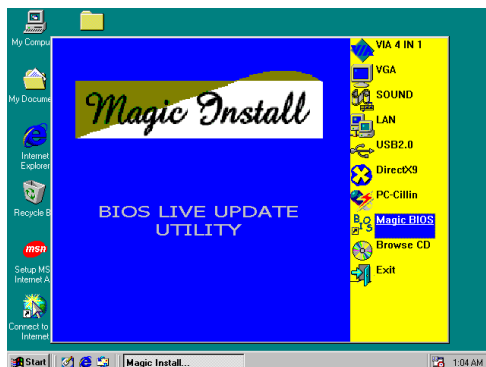


3. Window can find Realtek RTL8139/810X family fast Ethernet NIC, when OS ask CAT file path, change the directory to X:\RTLLAN\WIN98 (If OS is win9X)

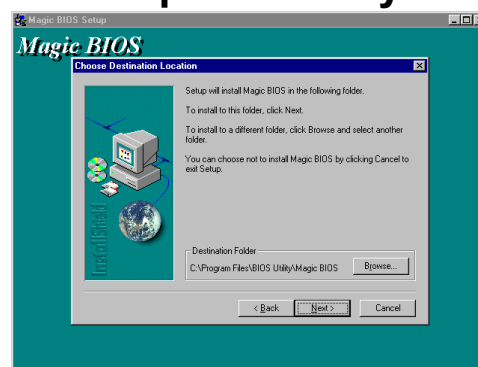


4. Click FINISH and restart your computer

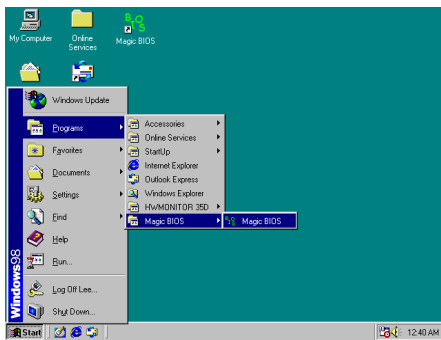
## 4-5 MAGIC BIOS Install BIOS Live Update Utility



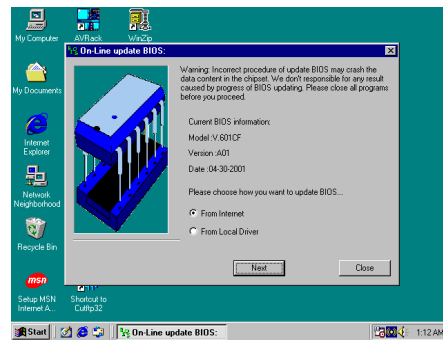
1. Click Magic BIOS when Magic Install MENU appears



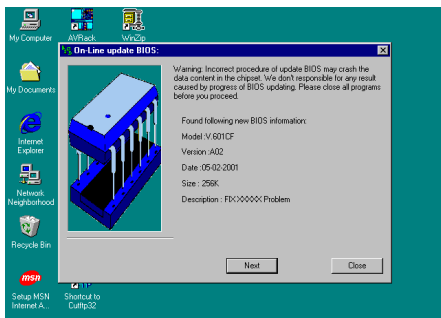
2. Click Next to install the Magic BIOS in Destination Folder



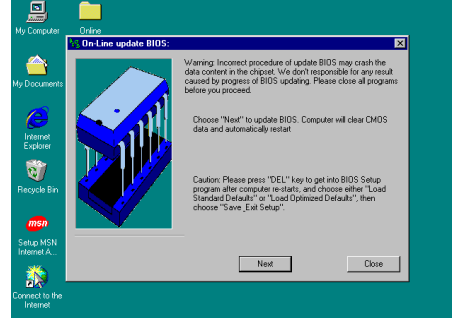
3. After finish Setup you will have a Magic BIOS icon in your screen



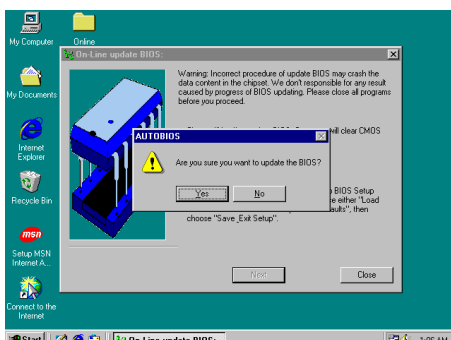
4. Double click the Magic BIOS icon you will have this picture, choose from internet you can upgrade BIOS On-line



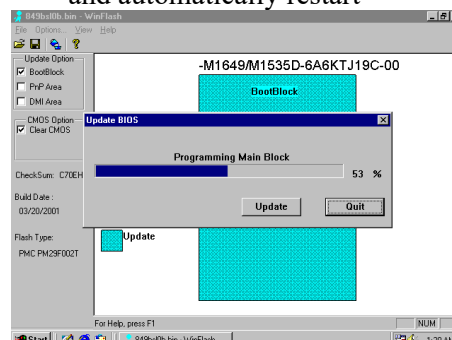
5. When On-line update BIOS the program will auto-check your BIOS version



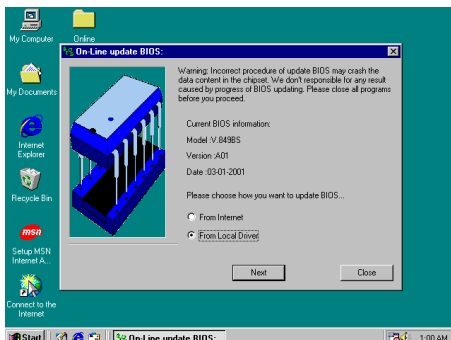
6. Click Next if you need update BIOS, after upgrade BIOS, the system will clear CMOS and automatically restart



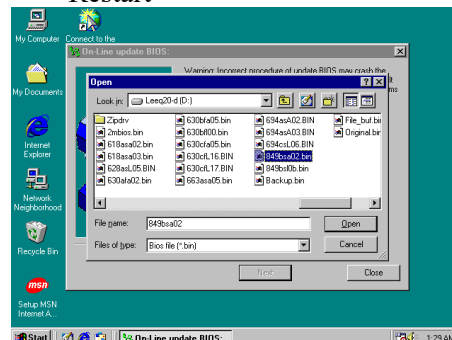
7. Click Yes if you want to update the BIOS otherwise choose No to exit



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

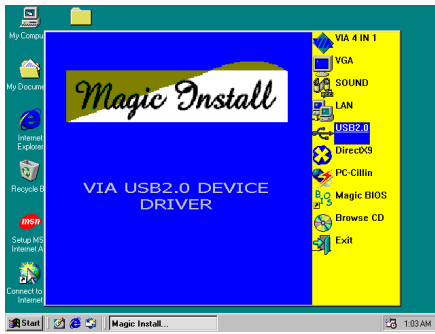


9. When choose From Local Driver to update BIOS, you must have the correct BIOS file in your Local Driver



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



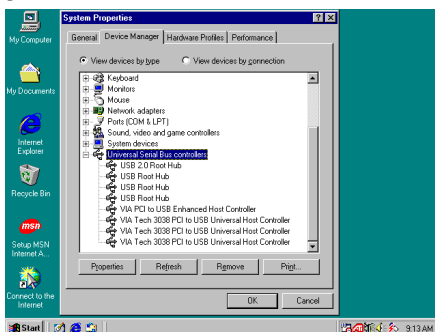
2. When USB2.0 Setup Program Appear, Click NEXT



3. Select Install USB Driver and Click NEXT



4. Select FINISH and Restart your Computer



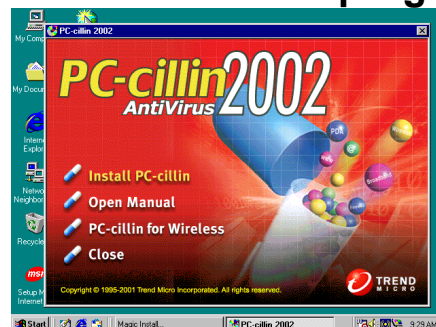
5. Check device working properly in Device Manager

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

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

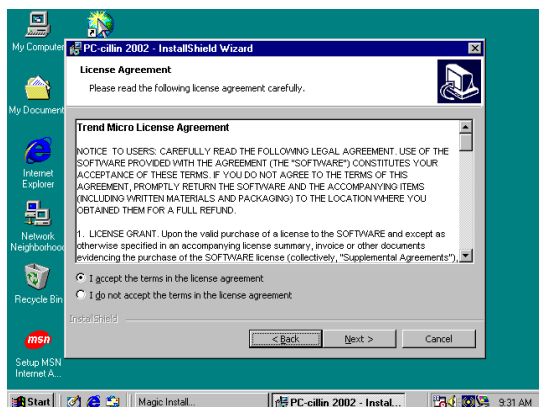


1. Click PC-CILLIN when MAGIC INSTALL MENU appear

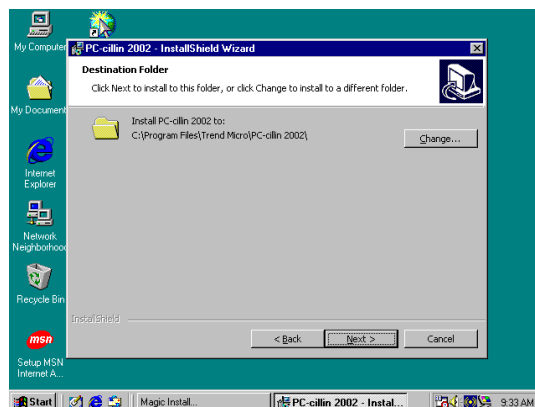


2. (1) Click "Install PC-CILLIN" when PC-CILLIN 2002 main menu appears, and Click NEXT when "Install Shield Wizard For PC-CILLIN 2002"  
(2) Click Open Manual. you can learn PC-CILLIN 2002 how to use

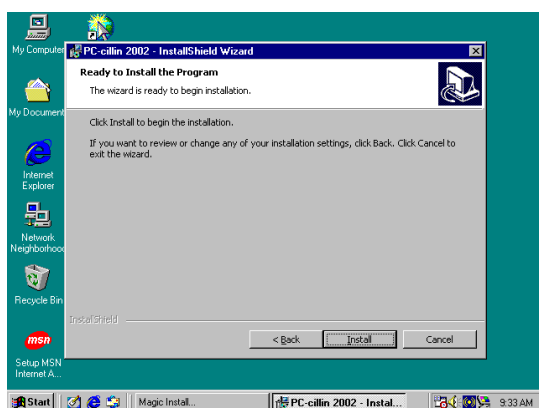




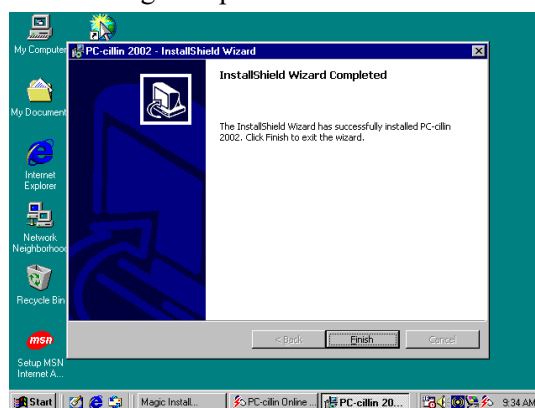
3. This is license agreement, select "I Accept the terms" and Click NEXT



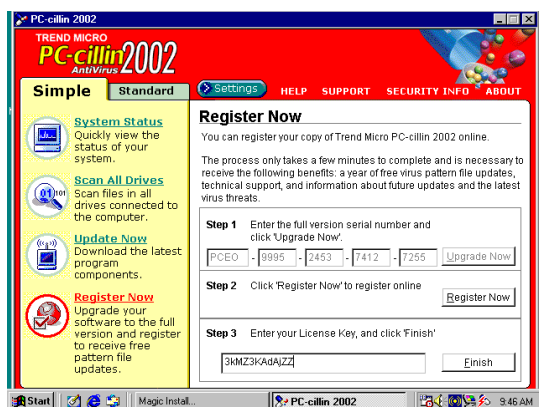
4. Click NEXT and Enter your Customer Information, Click NEXT or choose Change to change the path for the file to be stored



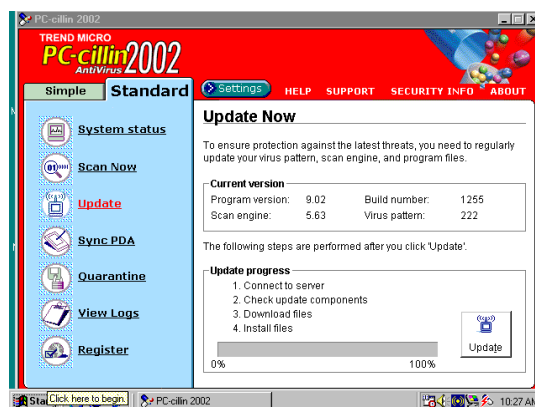
5. Click INSTALL, Start to install the software



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 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 623DM from our web site to your boot disc.

**STEP 4.** Insert your boot disc into A:,  
start the computer, type “Awdflash A:\623DMxxx.BIN /SN /PY /CC /R”  
623DMxxx.BIN is the file name of latest BIOS it can be 623DMA3.BIN or 623DMB2.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