

***USER'S MANUAL  
Of  
AMD 770 Chipset  
&  
AMD SB710 Chipset Based  
M/B for AM3 Processor***

***NO. G03-XBLUE77A4-F***

***Rev: 1.0***

**Release date: May, 2010**

**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.

## Environmental Protection Announcement

Do not dispose this electronic device into the trash while discarding. To minimize pollution and ensure environment protection of mother earth, please recycle.



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# TABLE OF CONTENT

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USER'S NOTICE .....	iv
MANUAL REVISION INFORMATION .....	iv
ITEM CHECKLIST .....	iv
COOLING SOLUTIONS .....	iv
<b>CHAPTER 1 INTRODUCTION OF AMD 770 MOTHERBOARDS</b>	
1-1 FEATURES OF MOTHERBOARD .....	1
1-1.1 SPECIAL FEATURES OF MOTHERBOARD .....	2
1-2 SPECIFICATION .....	3
1-3 PERFORMANCE LIST .....	4
1-4 LAYOUT DIAGRAM .....	5
<b>CHAPTER 2 HARDWARE INSTALLATION</b>	
2-1 HARDWARE INSTALLATION STEPS .....	7
2-2 CHECKING MOTHERBOARD'S JUMPER SETTING .....	7
2-3 INSTALL CPU .....	8
2-3-1 GLOSSARY .....	8
2-3-2 ABOUT AMD Athlon64 Socket AM2 .....	9
2-4 INSTALL MEMORY .....	10
2-5 EXPANSION CARDS .....	10
2-5-1 PROCEDURE FOR EXPANSION CARD INSTALLATION .....	10
2-5-2 ASSIGNING IRQS FOR EXPANSION CARD .....	11
2-5-3 PCI-EXPRESS2.0 SLOT .....	11
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 .....	19
3-3 THE MAIN MENU .....	20
3-4 STANDARD BIOS FEATURES .....	21
3-5 ADVANCED BIOS FEATURES .....	22
3-5-1 CPU CONFIGURATION .....	23
3-6 ADVANCED CHIPSET FEATURES .....	23
3-6-1 MEMORY CONFIGURATION .....	24
3-6-2 PCI EXPRESS CONFIGURATION .....	25
3-7 INTEGRATED PERIPHERALS .....	25
3-8 POWER MANAGEMENT SETUP .....	27
3-9 MISCELLANEOUS CONTROL .....	28
3-10 PC HEALTH STATUS .....	28
3-10-1 SMART FAN CONFIGURATION .....	29
3-11 THERMAL THROTTLING OPTIONS .....	30
3-12 POWER USER OVERCLOCK SETTING .....	30
3-13 BIOS SECURITY FEATURES .....	32
3-14 LOAD OPTIMAL/STANDARD DEFAULTS .....	33
3-15 SAVE CHNGES AND EXIT/DISCARD AND EXIT .....	33
<b>CHAPTER 4 DRIVER &amp; FREE PROGRAM INSTALLATION</b>	
4-1 ATI INSTALL ATI DRIVER PACK .....	35
4-2 SOUND INSTALL ALC HD AUDIO DRIVER .....	35
4-3 REALTEK INSTALL REALTEK LAN CONTROLLER DRIVER .....	37
4-4 WIFI_N INSTALL RT2770 WIRELESS NETWORK .....	37
4-5 WIFI_BG INSTALL RTL8187 WIRELESS NETWORK .....	38
4-6 RAID INSTALL SATA RAID DRIVER AND UTILITY .....	39

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4-7	NORTON	INSTALL NORTON ANTI-VIRUS TRIAL PROGRAM.....	39
4-8	PC-HEALTH	INSTALL MYGUARD HARDWARE MONITOR UTILITY .....	40
4-9	OVERCLOCK	INSTALL OVERCLOCK DRIVER UTILITY .....	40
4-10	FUSION	INSTALL FUSION DRIVERS AND TOOLS.....	41
4-11	HOW TO UPDATE BIOS .....		42
4-12	AMD PLATFORM RAID FUNCTION INSTALLATION .....		42
4-13	PRO MAGIC PLUS FUNCTION INSTRUCTION .....		45
4-14	G.P.I.FUNCTION INSTALLATION STEPS.....		47
4-15	G.P.I. LED DISPLAY .....		49
APPENDIX.....			50



## **CAUTION** Safety Environmental Instruction

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- Avoid the dusty, humidity and temperature extremes. Do not place the product in any area where it may become wet.
- 0 to 40 centigrade is the suitable temperature. (The figure comes from the request of the main chipset)
- Generally speaking, dramatic changes in temperature may lead to contact malfunction and crackles due to constant thermal expansion and contraction from the welding spots' that connect components and PCB. Computer should go through an adaptive phase before it boots when it is moved from a cold environment to a warmer one to avoid condensation phenomenon. These water drops attached on PCB or the surface of the components can bring about phenomena as minor as computer instability resulted from corrosion and oxidation from components and PCB or as major as short circuit that can burn the components. Suggest starting the computer until the temperature goes up.
- The increasing temperature of the capacitor may decrease the life of computer. Using the close case may decrease the life of other device because the higher temperature in the inner of the case.
- Attention to the heat sink when you over-clocking. The higher temperature may decrease the life of the device and burned the capacitor.

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## Manual Revision Information

Reversion	Revision History	Date
1.0	First Edition	May, 2010

### Item Checklist

- ☒ AMD 770 Chipset based motherboard
- ☒ User's Manual
- ☒ DVD for Motherboard Utilities
- ☒ I/O Back Panel Shield
- ☒ SATA Cable

## AMD Processor Family Cooling Solutions

As processor technology pushes to faster speeds and higher performance with increasing operation clock, thermal management becomes increasingly crucial while building computer systems. Maintaining the proper computing environment without thermal increasing is the key to reliable, stable, and 24 hours system operation. The overall goal is keeping the processor below its specified maximum case temperature. Heatsinks induce improved processor heat dissipation through increasing surface area and concentrated airflow from attached active cooling fans. In addition, interface materials allow effective transfers of heat from the processor to the heatsink. For optimum heat transfer, AMD recommends the use of thermal grease and mounting clips to attach the heatsink to the processor.

Please refer to the website below for collection of heatsinks evaluated and recommended for Socket AM2+ processors by AMD. In addition, this collection is not intended to be a comprehensive listing of all heatsinks that support Socket AM3 processors.

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# Chapter 1

## Introduction of AMD 770Motherboards

### 1-1 Features of motherboard

The AMD 770 chipset motherboard series are based on the latest AMD 770 Chipset and the SB710 chipset which supports the innovative AMD AM3 series Phenom™ II x 6 , Phenom™ II x 4 , Phenom™ II x 3 , Phenom™ II x2 , AthlonII™ x4 , Athlon II™ x3 , Athlon II™ x2 and Sempron™ processor under 95W power consumption. With an integrated low-latency high-bandwidth DDRIII memory controller and a highly-scalable Hyper Transport technology-based system bus up to HT 3.0. AMD770Platform Processor Chipset motherboard series deliver the outstanding system performance and professional desktop platform solution processors.

The AMD770 Series motherboards support new generation AM3 processors with integrated DDRIII memory controller for two dual channel DDRIII 800/ DDRIII 1066/DDRIII 1333 modules up to 8GB. The motherboard is embedded with SB710 chipset of providing ULTRA ATA 133 connectors and Serial ATA2 with RAID 0, 1, 10, JBOD functions which support up to two IDE devices and six Serial ATA2 devices to accelerate hard disk drives and guarantee the data security without failure in advanced computing performance.

The AMD 770 motherboards provide 10/100/1000 LAN function with Gigabit LAN chip which supports optional 10/100/1000Mbps data transfer rate. And the embedded HD 6-channel ALC662 HD Audio CODEC is fully compatible with Sound Blaster Pro standards that offer you with the home cinema quality and satisfying software compatibility.

The AMD 770 Series motherboards deliver outstanding value and performance for gamers, with a true bandwidth design for Multi-GPU configurations. This high bandwidth architecture in the AMD 770 chipset is combined with the flexibility for single or dual card configurations.

This motherboard series offers one PCI-Express 2.0 x16 By 16-lane graphics slot, one PCI-Express 2.0 x16 By 4-lane graphics slots and one PCI-Express 2.0 x1 graphics slot for astonishing performance with brilliant and intense 3D graphics. The motherboard also carries two 32-bit PCI slots guarantee the rich connectivity for the I/O peripheral devices.

Embedded USB controllers as well as capability of expanding to 8 of USB2.0 functional ports delivering 480Mb/s bandwidth of rich connectivity, these motherboards meet the future USB demands which are also equipped with hardware monitor function on system to monitor and protect your system and maintain your non-stop business computing.

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Some special features--- **CPU Thermal Throttling/ CPU VID / /CPU Vcore OC CON /G.P.I Function/WI-FI Header/Power-on Button/Reset Button** on this motherboard are designed for power user to use the over-clocking function in more flexible ways. But please be caution that the over-clocking maybe causes the fails in system reliabilities. This motherboard provides the guaranteed performance and meets the demands of the next generation computing. But if you insist to gain more system performance with variety possibilities of the components you choose, please be careful and make sure to read the detailed descriptions of these value added product features, please get them in the coming section.

## **1-1.1 Special Features of Motherboard**

### **CPU Thermal Throttling Technology---** (The CPU Overheat Protection Technology)

To prevent the increasing heat from damage of CPU or accidental shutdown while at high workload, the CPU Thermal Throttling Technology will force CPU to enter partially idle mode from 87.5% to 12.5% according to preset CPU operating temperature in BIOS (from 40°C to 90°C). When the system senses the CPU operating temperature reaching the preset value, the CPU operating bandwidth will be decreased to the preset idle percentage to cool down the processor. When at throttling mode the beeper sound can be optionally selected to indicate it is in working. (For detail operating please read Section 3-11 Bi-turbo Configuration)

### **CPU VID---** (Shift to Higher Performance)

The CPU voltage can be adjusted for the precisely over-clocking of extra demanding computing performance.

### **CPU Vcore OC-CON ---** ( High-polymer Solid Electrolysis Aluminum Capacitors )

CPU Vcore input/output adopt OC-CON solid capacitors. The working temperature is from 55 degrees Centigrade below zero to 125 degrees Centigrade, OC-CON capacitors possess superior physical characteristics that can be while reducing the working temperature between 20 degrees Centigrade each time, intact extension 10 times of effective product operation lives, at not rising degrees Centigrade of working temperatures each time a relative one, life of product decline 10% only too.

### **G.P.I Function**—(Green power indicator function)

The full name of G.P.I technology is Green Power Indicator technology, obviously technology utilized to low power consumption. G.P.I is a technology with remarkable power saving function:

### **WI-FI Technology**

WI-FI--Full name is wireless Fidelity. It has been used in notebook, mobile phone, PDA, digital cameras and Mobile Terminals widely. With WI-FI. We do not need to worry about the speed and high spending when we are dialing long-distance calls, browsing web pages, receiving and sending E-mails, loading music, delivering digital photos.

### **Power-on Button**

You can easily start the computer by pressing down this button for a few seconds, without troubling yourself to locate the front panel jumpers to find the Power on jumper.

### **Reset Button**

You can easily restart the computer by pressing down this button for a few seconds, without troubling yourself to locate the front panel jumpers to find the reset jumper.

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### 3D Audio

OP with two-stage Butterworth filter and quadruple noninverting amplifier enhances bass effect under the 100MHz range to perfect audio effect, brings you stunning shock experience in video game, true-to-life simulated feeling when watching films and the greatest touch as that in the concert.

## 1-2 Specification

Spec	Description
<b>Design</b>	<ul style="list-style-type: none"><li>● ATX form factor; PCB size: 29.5cm x20.0cm</li></ul>
<b>Chipset</b>	<ul style="list-style-type: none"><li>● AMD 770 North Bridge Chipset</li><li>● AMD SB710 South Bridge Chipset</li></ul>
<b>CPU Socket</b>	<ul style="list-style-type: none"><li>● AMD AM3 series Phenom™ II x 6, Phenom™ II x 4 , Phenom™ II x 3, Phenom™ II x2 , AthlonII™ x4 , Athlon II™ x3 , Athlon II™ x2 and Sempron™ processor</li><li>● CPU Power consumption should be under 95 W</li><li>● Support HT 3.0</li></ul>
<b>Memory Socket</b>	<ul style="list-style-type: none"><li>● 240-pin DDRIII Module socket x 2</li><li>● Support 2pcs DDRIII800/ 1066/ 1333 Modules Expandable to 8GB</li><li>● Dual channel supported</li></ul>
<b>Expansion Slot</b>	<ul style="list-style-type: none"><li>● PCI-Express2.0 x16 by 16 Lane 1pcs</li><li>● PCI-Express2.0 x16 by 4 Lane 1pcs</li><li>● PCI-Express2.0 x1 slot 1pcs</li><li>● 32-bit PCI slot x 2pcs</li></ul>
<b>Integrate IDE and Serial ATA2 RAID</b>	<ul style="list-style-type: none"><li>● One IDE controllers support PCI Bus Mastering, ATA PIO/DMA and the ULTRA DMA 33/66/100/133 functions that deliver the data transfer rate up to 133 MB/s for 2 IDE Devices and for 6 Serial ATA2 ports providing 300 MB/sec data transfer rate with RAID 0, 1, 10 and JBOD functions</li></ul>
<b>Gigabit LAN</b>	<ul style="list-style-type: none"><li>● Integrated PCI-E Gigabit LAN chip.</li><li>● Support Fast Ethernet LAN function of providing 10Mb/100Mb/1000 Mb/s data transfer rate</li></ul>
<b>6 CH-Audio</b>	<ul style="list-style-type: none"><li>● ALC 662 6-channel HD Audio Codec integrated</li><li>● Audio driver and utility included</li></ul>
<b>BIOS</b>	<ul style="list-style-type: none"><li>● AMI 8MB Flash ROM BIOS</li></ul>
<b>Multi I/O</b>	<ul style="list-style-type: none"><li>● PS/2 keyboard and PS/2 mouse connectors</li><li>● SPDIF_OUT connector x1</li><li>● Serial port connector x1</li><li>● USB2.0 port connector x 4 and headers x 2</li><li>● RJ-45 LAN Connector x1</li><li>● Audio connector x1 (Line-in, Line-out, MIC/6CH Audio)</li><li>● Floppy disk drive connector x1/ Hard disk drive connector x1</li><li>● HDMI_SPDIF header x1/ IR Connector x1</li><li>● WI-FI Header x1</li></ul>



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## 1-3 Performance List

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

### Performance Test Report

**CPU:** HDZ555WFK2DGM

**DRAM:** APACER2GB 1333

**VGA Card:** HD3850

**Hard Disk Driver:** MAXTOR80GB

**BIOS:** T02 12-24-2009

3DMark Vantage	30771
3D Mark 2006	9275
3D Mark 2005	18588
<b>PCMark2005</b>	
System / CPU / Memory	7143/7733/5663
Graph / HDD	8902/5029
Content Creation Winstone 2004	51.5
Business Winstone 2004	27.2
<b>Winbench 99 V2.0:</b>	
Business/Hi-end	20700
<b>SISMark 2004: SISMark Rating(Internet Content Creation / Office Productivity )</b>	
SISMark 2004	470
3D Creation/2D Creation	407/569
Web publication	447
Communication/ Document	196/366
Data Analysis	287
<b>SISOFT Sandra 2004 : 1.CPU Arithmetic Benchmark 2.Memory bandwidth Benchmark 3.CPU Multi-Media Benchmark</b>	
1.Dhrystone ALU GIPS	20.95
Whetstone FPU iSSE2 GFLOPS	20.82
2.Int/Float Buffered iSSE2 MB/S	60.84/27.21/14.89
3.Integer/Floating-Point IT/S	10.78/10.78
UT2003 Benchmark (flyby/botmatch)	528.554199/170.406433
Quake3 DEMO1 /DEMO2 FPS	747.4710.5
Super Pi (1M) Second	0.21.641"
CPUZ System / CPU Clock	200*16 2000

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## Jumpers

Jumper	Name	Description
JP1	Keyboard/USB Power On Enabled/Disabled	3-pin Block
JBAT	CMOS RAM Clear	2-pin Block

## Connectors

Connector	Name	Description
ATXPWR1	ATX Power Connector	24-pin Block
ATX12V1	ATX 12V Power Connector	8-pin Block
KB1	PS/2 Mouse & PS/2 Keyboard Connector	6-pin Female
USB from CN1, UL1	USB2.0 Port Connector	4-pin Connector
RJ-45LAN from UL1	Gigabit LAN Port Connector	8-pin Connector
J2	CrossFire Power Connector	4-Pin Block
AUDIO : CN2	6-CH HD Audio Connector	3- phone jack Conn.
FDD1	Floppy Driver Connector	34-pin Block
IDE1	Primary/Secondary IDE Connector	40-pin Block
SATA1~SATA6	Serial ATAII IDE Connectors	7-pin Connector
SPDIF_OUT1	Coaxial SPDIF_OUT Connector	1-phone Connector
COM1	Serial Port Connector	9-pin Block

## Headers

Header	Name	Description
AUDIO1	SPEAKER, MIC header	9-pin Block
USB1, USB2	USB Port Headers	9-pin Block
SPEAK1	PC Speaker connector	4-pin Block
PWR LED1	Power LED	3-pin Block
JW_FP1 (Reset/HDLED/Power Button/PWR LED)	Front Panel Header (including IDE activity LED/Reset switch / Power On Button lead)	9-pin Block
SYSFAN1/2	FAN Headers	3-pin Block
CPUFAN	FAN Header	4-pin Block
IR1	IR infrared module Headers	5-pin Block
HDMI SPDIF	SPDIF Out header	2-pin Block
WI-FI1	Wi-Fi header	11-pin Block

## Expansion Sockets

Socket/Slot	Name	Description
ZIF Socket AM2	CPU Socket	940-pin mPGAB AMD CPU Socket
DDRIII1~2	DDRIII Module Socket	240-pin DDRII Module Socket
PCI1~ PCI2	PCI Slots	32-bit PCI Local Bus Expansion slots
PE2	PCI-Express2.0 x1Slot	PCI-Express2.0 x1 Expansion Slots
PE1, PE3	PCI-Express2.0 x16 Slot	PCI-Express2.0 x16 Expansion Slots

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## Chapter 2

### Hardware Installation

**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.

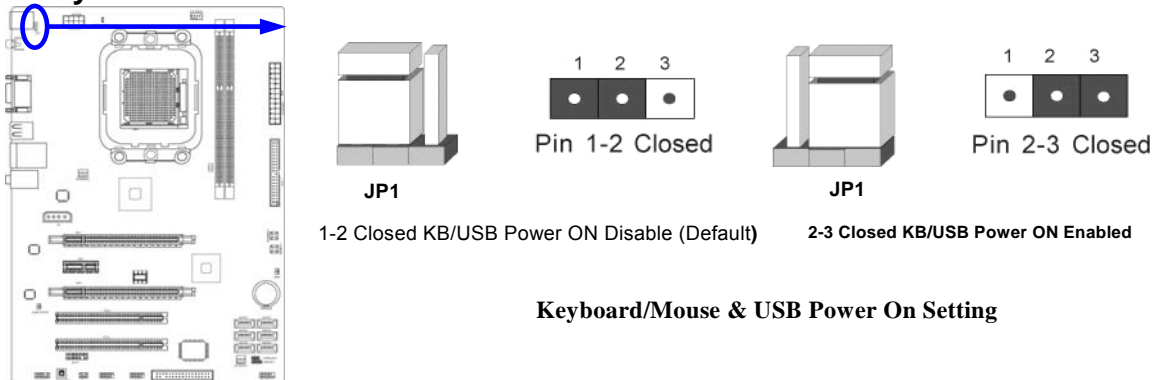
#### 2-1 Hardware installation Steps

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 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/USB function Enabled/Disabled: JP1



##### (2) CMOS RAM Clear (2-pin): JBAT

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

**WARNING: Please remove or turn off the power supply before CMOS clear!**

To clear the CMOS, follow the procedure below:

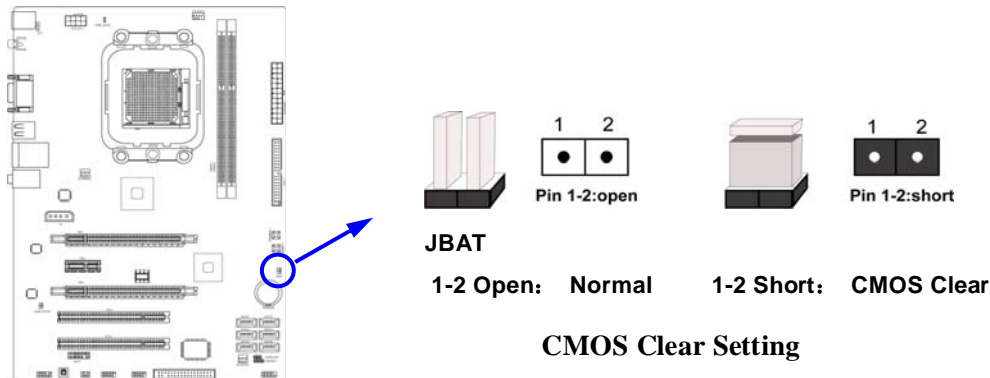
1. Turn off the system and unplug the AC power
2. Remove ATX power cable from ATX power connector
3. Locate JBAT and short pins 1-2 for a few seconds, if shorted with the jump cap, short for a few seconds then pull out the hat.
4. Connect ATX power cable back to ATX power connector

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

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

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

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

**PCI Express**- Peripheral Component Interconnect Express- a high speed interface for video cards, sound cards, network interface cards, and modems.

**PCI Express2.0**- Peripheral Component Interconnect Express2.0, developed in 2003, the speed of each line doubled from the previous PCI-E of 2.5Gbps to 5 Gbps.

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

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

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

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

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

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

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

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

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

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

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

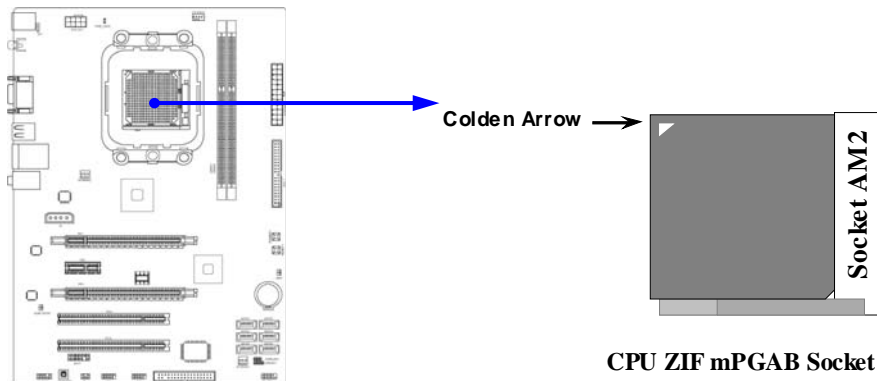
### 2-3-2 About CPU Socket

This motherboard provides a surface mount, Zero Insertion Force (ZIF) socket, referred to as the mPGA940 socket supports AMD Athlon64 processor in the package utilizes Flip-Chip Pin Grid Array package technology.

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

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

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



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

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## 2-4 Install Memory Modules

This motherboard provides two 240-pin DDR III SDRAM DUAL INLINE MEMORY MODULES sockets for DDR III memory (DDRIII1, DDRIII2) SDRAM expandable to maximum memory volume of 8 GB.

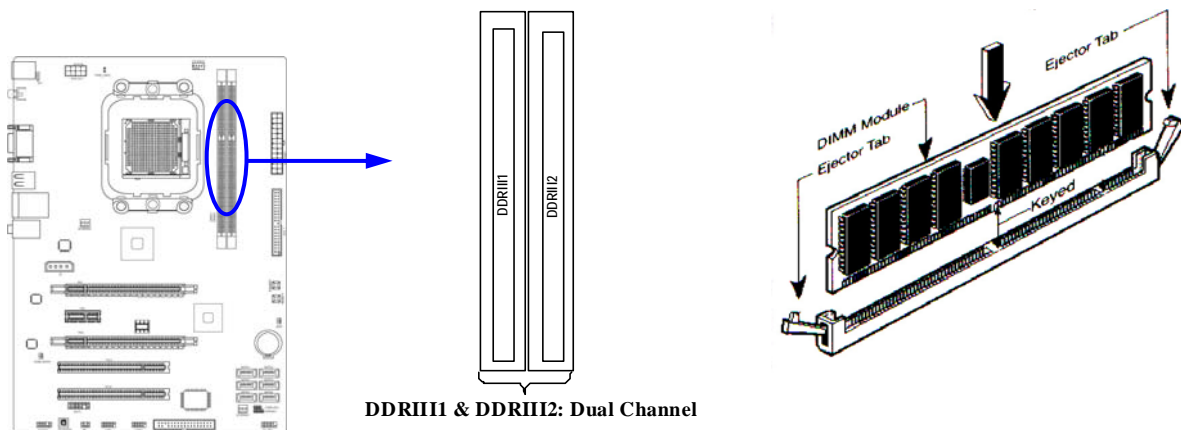
### Valid Memory Configuration for DDR III

Bank	240-Pin DIMM	PCS	Maximum Capacity
DDR III 1	DDR III 800/ 1066/1333	X1	4 GB
DDR III 2	DDR III 800/ 1066/1333	X1	4 GB
Total	System Memory (Max. 4 GB)	2	8 GB

#### NOTICE!

1. Dual channel function only supports when 2 DIMM Modules plug in either both DDR III 1 & DDR III 2.
2. Memory modules installed must be of the same type, same size, and same frequency for dual channel function.

Install modules to your motherboard is not difficult, you can refer to figure below to see how to install a 240-Pin a DDRIII 800/ 1066 / 1333 SDRAM module.



#### NOTICE!

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.

## 2-5 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.

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## 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

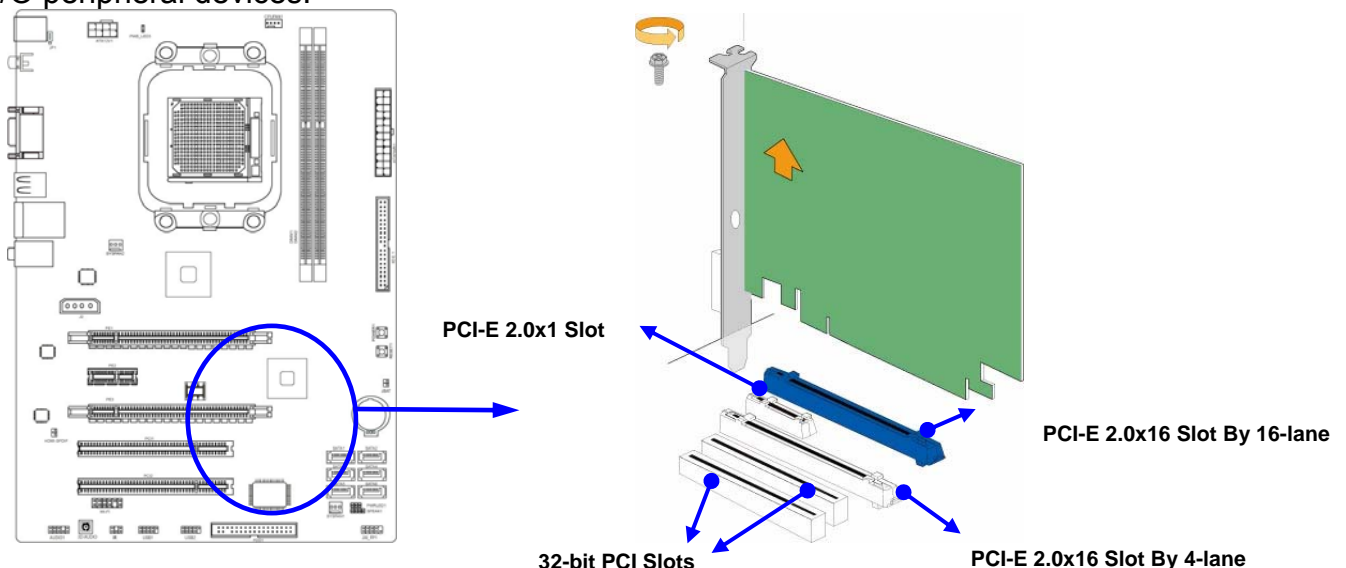
\* These IRQs are usually available for ISA or PCI devices.

#### IMPORTANT!

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

## 2-5-3 Expansion Slots

This motherboard series offers one PCI-Express2.0 x16 By 16-lane graphics slot, one PCI-Express2.0 x16 By 4-lane graphics slots and one PCI-Express2.0 x1 graphics slot for astonishing performance with brilliant and intense 3D graphics. The motherboard also carries two 32-bit PCI slots guarantee the rich connectivity for the I/O peripheral devices.





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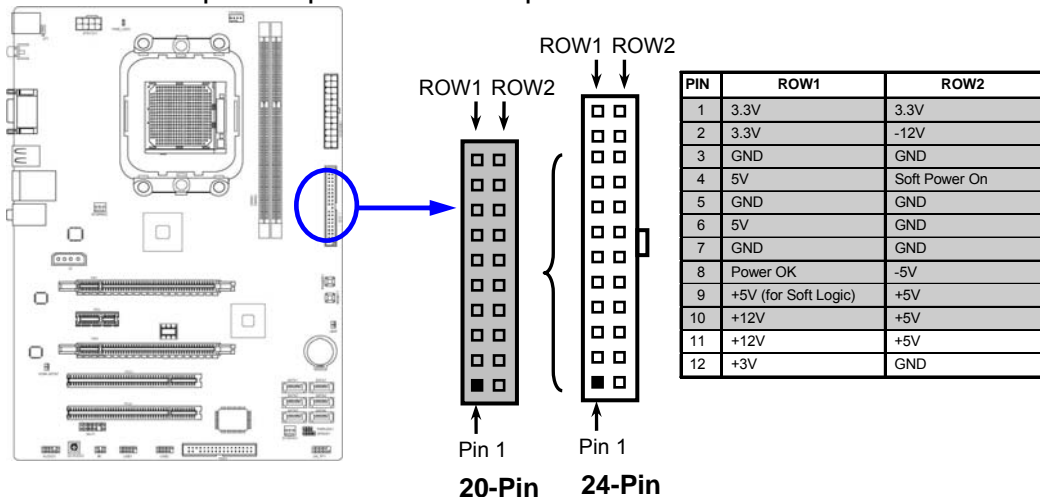
## 2-6 Connectors, Headers

### 2-6-1 Connectors

#### (1) Power Connector (24-pin block) : ATXPWR1

ATX Power Supply connector: This is a new defined 24-pins connector that usually comes with ATX case. The ATX Power Supply allows using 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.

- \*\* We recommend that you use an ATX 12V Specification 2.0-compliant power supply unit (PSU) with a minimum of 350W power rating. This type has 24-pin and 4-pin power plugs.
- \*\* If you intend to use a PSU with 20-pin and 4-pin power plugs, make sure that the 20-pin power plug can provide at least 15A on +12V and the power supply unit has a minimum power rating of 350W. The system may become unstable or may not boot up if the power is inadequate.



- \*\* If you are using a 20-pin power plug, please refer to Figure1 for power supply connection. Power plug form power supply and power connectors from motherboard both adopt key design to avoid mistake installation. You can insert the power plug into the connector with ease only in the right direction. If the direction is wrong it is hard to fit in and if you make the connection by force it is possible.

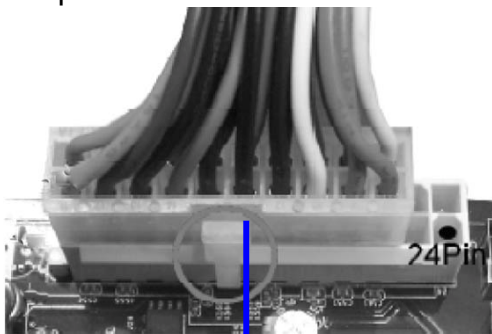


Figure1: 20-pin power plug

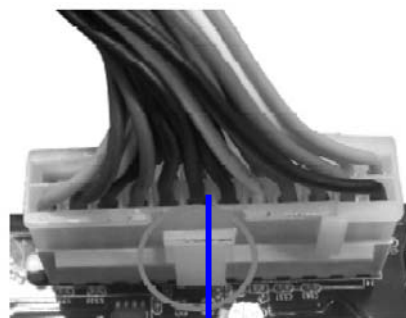


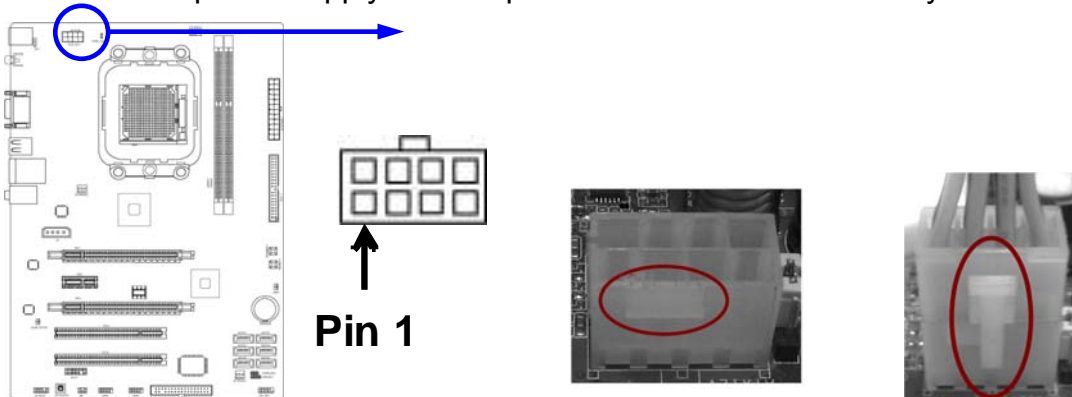
Figure 2: 24-pin power plug

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**(2) ATX 12V Power Connector (8-pin block) : ATX12V1**

This is a new defined 8-pins connector that usually comes with ATX Power Supply. The ATX Power Supply which fully supports Socket AM2+ processor must including this connector for support extra 12V voltage to maintain system power consumption. Without this connector might cause system unstable because the power supply can not provide sufficient current for system.



**(3) PS/2 Mouse & PS/2 Keyboard Connector: KB1**

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

**(4) USB Port connector: USB from CN1, UL1**

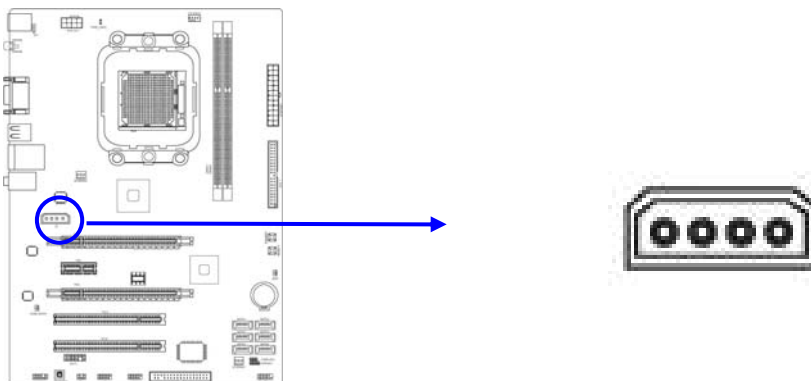
The connectors are 4-pin connector that connects USB devices to the system board.

**(5) LAN Port connector: RJ-45 LAN from UL1**

This connector is standard RJ45 connector for Network which supports 10M/100Mb/1000Mbps data transfer rate

**(6) Large 4-Pin Power Connector: J2 Power Connector**

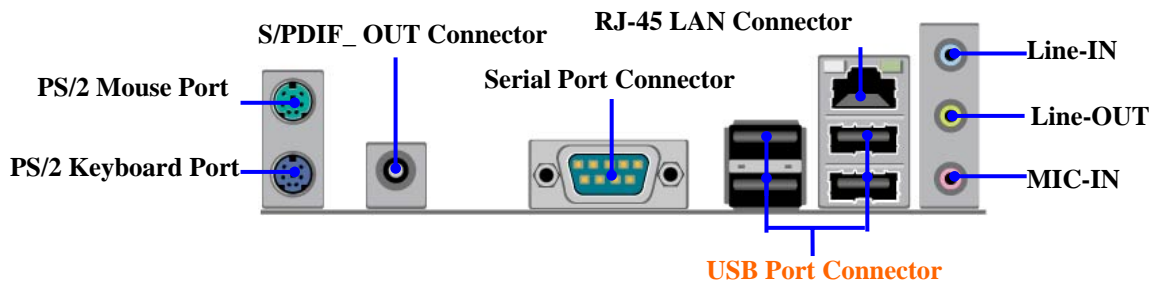
The connectors are 4-pin connector that supports extra 12V / 5V power to your system .



**(7) Audio Line-In, Lin-Out, MIC Connector : CN2 for Audio**

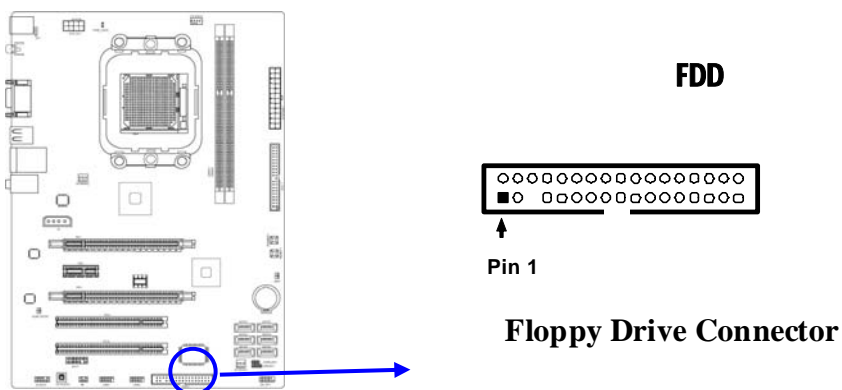
These Connectors are 3 Phone-Jack for LINE-OUT, LINE-IN, MIC audio connections.

**Line-out :** Audio output to speaker  
**Line-in :** Audio input to sound chip  
**MIC :** Microphone Connector



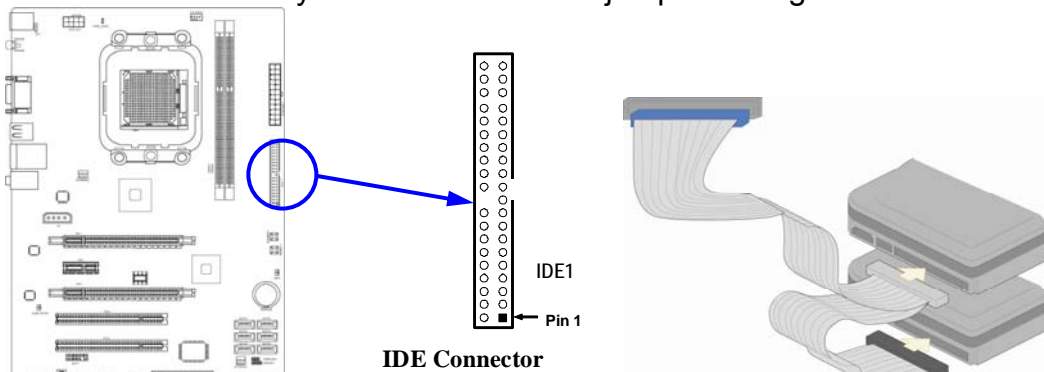
#### (8) Floppy drive Connector (34-pin block): FDD1

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.



#### (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.



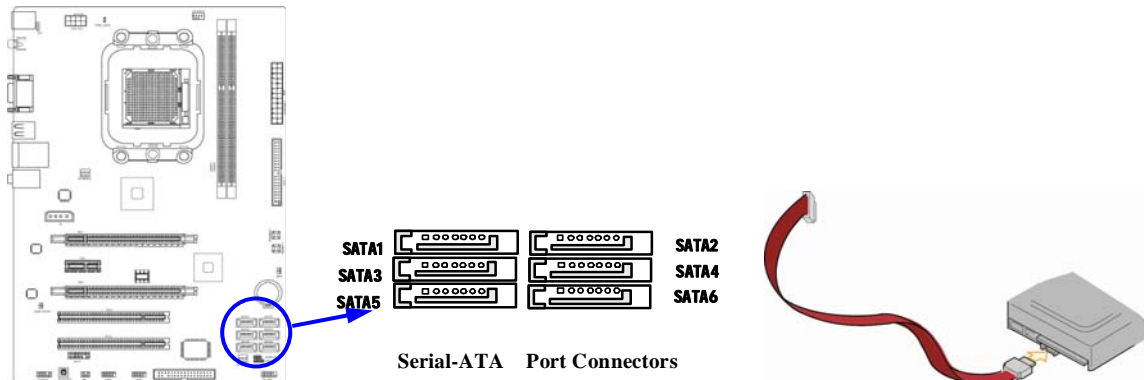
- Two hard disks can be connected to each connector. The first HDD is referred to as the “Master” and the second HDD is referred to as the “Slave”.
- For performance issues, we strongly suggest you don’t install a CD-ROM or DVD-ROM drive on the same IDE channel as a hard disk. Otherwise, the system performance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

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**(10) Serial-ATA Port connector:SATA1~SATA6**

These connectors support the provided Serial ATA2 hard disk cables to connecting the motherboard with serial ATAII hard disks.



**(11)Coaxial SPDIF\_OUT connector: SPDIF\_OUT1**

The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby digital decoder. Use this feature only when your stereo system has digital input function.

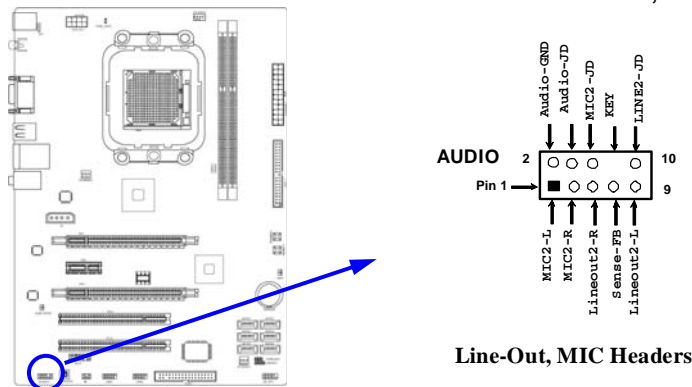
**(12) Serial COM Port: COM1**

COM1 is the 9-pin connector. The On-board serial port can be disabled through BIOS SETUP.

## 2-6-2 Headers

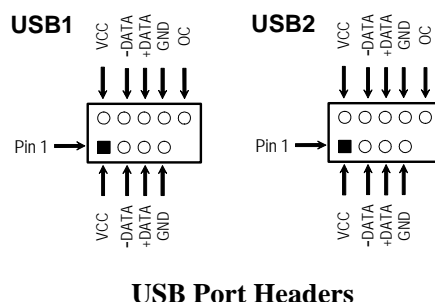
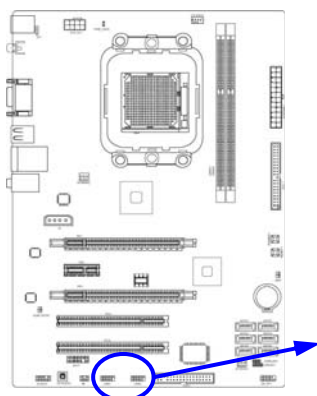
**(1) Line-Out/MIC Header for Front Panel (9-pin): AUDIO1**

These headers connect to Front Panel Line-out, MIC connector with cable.



**(2) USB Port Headers (9-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.



**(3) Speaker connector: SPEAK1**

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

**(4) Power LED: PWR LED1/ 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.

**(5) IDE Activity LED: HD LED**

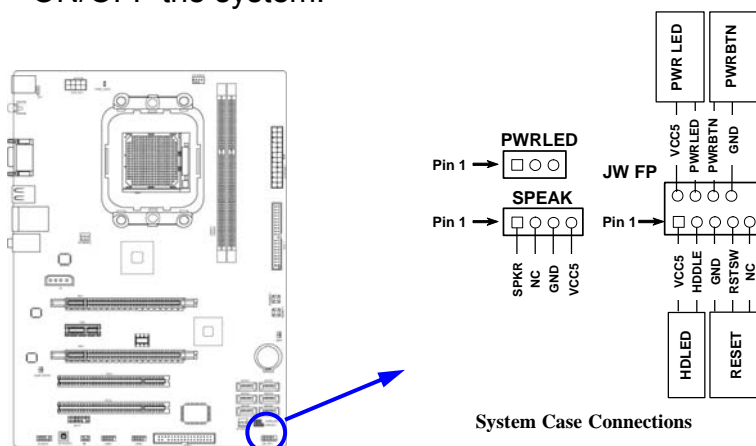
This connector connects to the hard disk activity indicator light on the case.

**(6) 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.

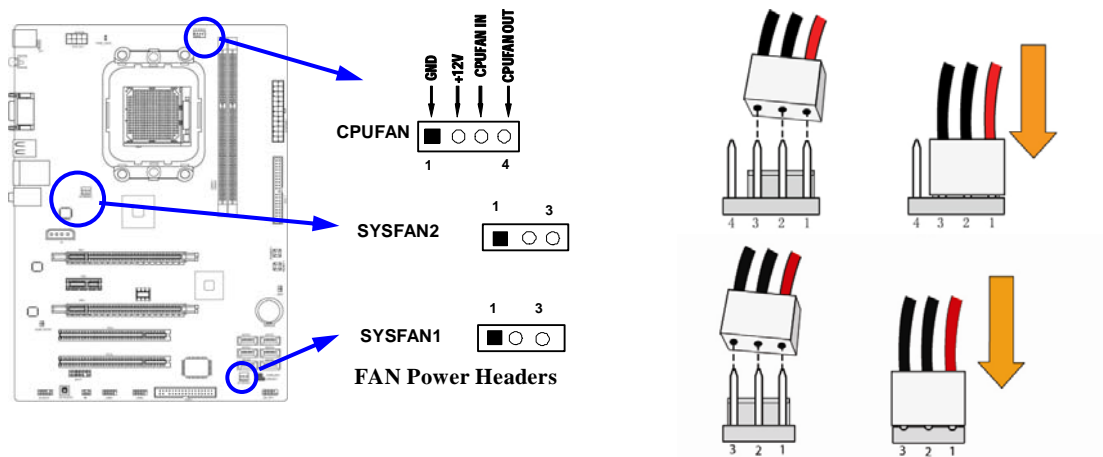
**(7) Power switch: PWR BTN**

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



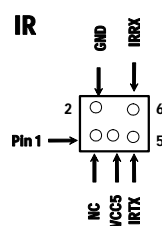
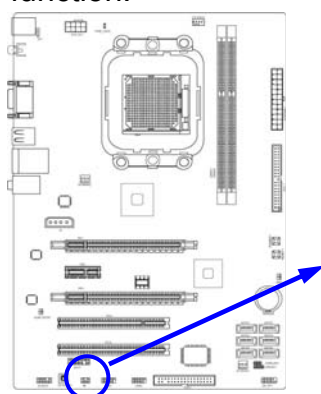
**(8) FAN Power Headers: SYSFAN1, SYSFAN2 (3-pin); CPUFAN (4-pin)**

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.



### (9) IR infrared module Headers (5-pin): IR1

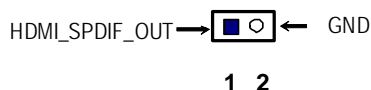
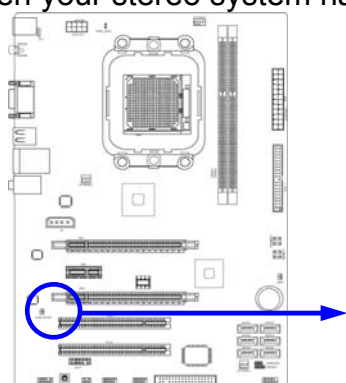
This connector supports the optional wireless transmitting and receiving infrared module. You must configure the setting through the BIOS setup to use the IR function.



IR infrared module Headers

### (10) HDMI\_SPDIF Out header: HDMI\_SPDIF

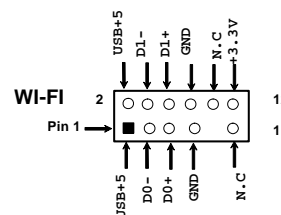
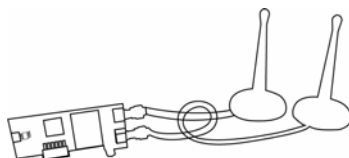
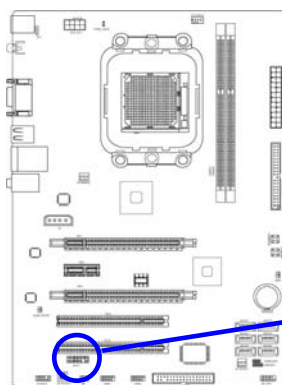
The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby digital decoder. Use this feature only when your stereo system has digital input function.



HDMI\_SPDIF Header

### (11) WI-FI Header: WI-FI1

This header supports WI-FI Function. Connect the wireless local area network adapter to this header. It allows you to create a wireless environment and enjoy the convenience of wireless network connectivity.



WI-FI Headers

## 2-7 Starting Up Your Computer

1. After all connection are made, close your computer case cover.
2. Be sure all the switch are off, and check that the power supply input voltage is set to proper position, usually in-put voltage is 220V~240V or 110V~120V depending on your country's voltage used.
3. Connect the power supply cord into the power supply located on the back of your system case according to your system user's manual.
4. Turn on your peripheral as following order:
  - a. Your monitor.
  - b. Other external peripheral (Printer, Scanner, External Modem etc...)
  - c. Your system power. For ATX power supplies, you need to turn on the power supply and press the ATX power switch on the front side of the case.
5. The power LED on the front panel of the system case will light. The LED on the monitor may light up or switch between orange and green after the system is on. If it complies with green standards or if it is has a power standby feature. The system will then run power-on test. While the test is 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.

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.



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## 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 will 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 <+>/<-> 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    <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



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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 AMI BIOS Setup Utility, the Main Menu (Figure 3-1) will appear on the screen. The Main Menu allows you to select from 12 setup functions and 2 exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

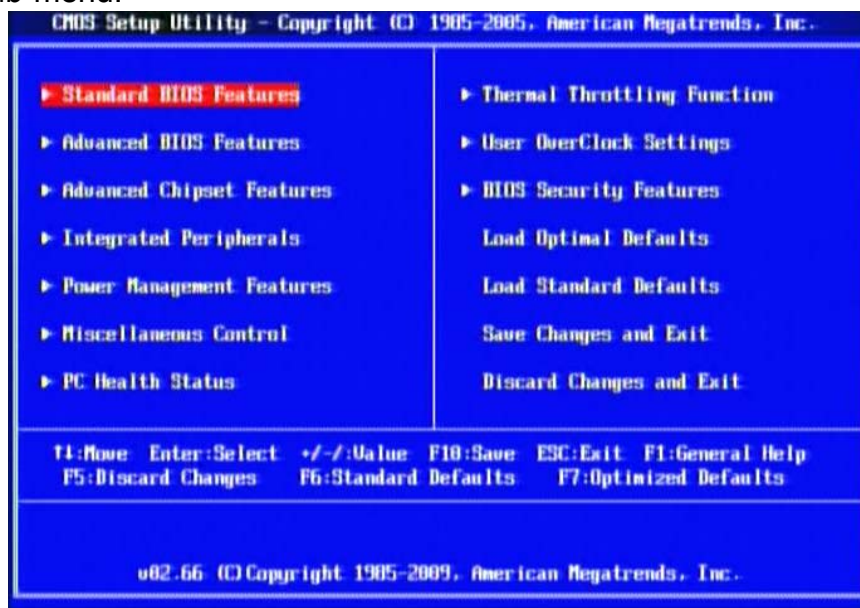


Figure 3-1

#### **Standard BIOS 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 Features**

Use this menu to specify your settings for power management.

#### **Miscellaneous Control**

Use this menu to specify your settings for Miscellaneous Control.

#### **PC Health Status**

This entry shows your PC health status.

#### **Thermal Throttling Function**

The selection is set for activating the active CPU Thermal Protection by flexible CPU loading adjustment in the range of temperature you define.

#### **User Overclock Settings**

Use this menu to specify your settings (frequency, Voltage) for overclocking demand.

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## BIOS Security Features

This entry for setting Supervisor password and User password

## Load Optimal Defaults

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

## Load Standard Defaults

This menu uses a minimal performance setting, but the system would run in a stable way.

## Save Changes and Exit

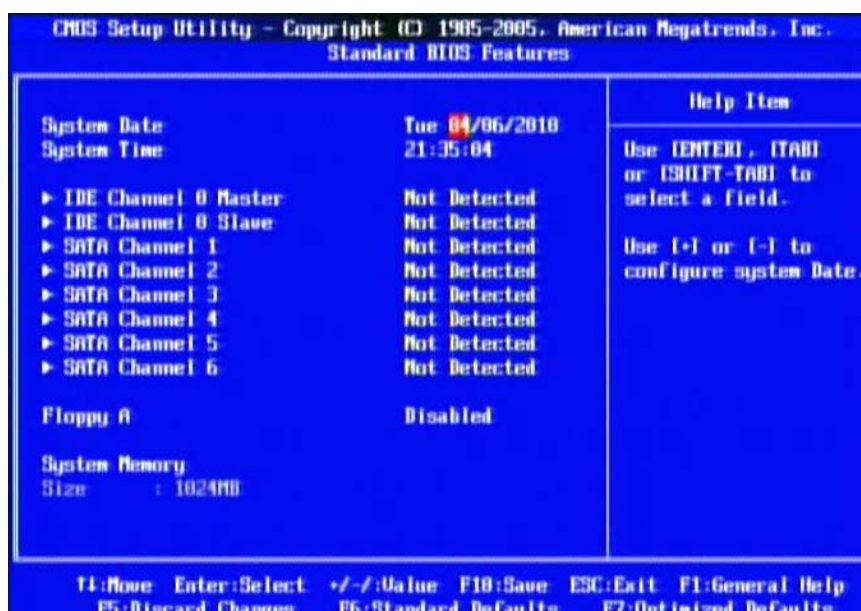
Save CMOS value changes to CMOS and exit setup.

## Discard Changes and Exit

Abandon all CMOS value changes and exit setup.

## 3-4 Standard BIOS Features

The items in Standard BIOS 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 <+> or <-> and numerical keyboard keys to select the value you want in each item.



### System 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.

### System Time

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

### Primary IDE 0 Master / Slave

### SATA Channel 1, 2, 3, 4, 5, 6

While entering setup, BIOS auto detect the presence of IDE devices. This displays the status of auto detection of IDE devices.

**Type:** The optional settings are: Not Installed; Auto; CD/DVD and ARMD

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**LBA/Large Mode:** The optional settings are Auto; Disabled.

**Block (Multi-Sector Transfer):** The optional settings are: Disabled and Auto.

**PIO Mode: the optional settings are:** Auto, 0, 1, 2, 3 and 4.

**DMA MODE:** the optional settings are Auto, SWDMAn, MWDMAn , UDMAn.

**S.M.A.R.T.:** This option allows you to enable the HDD S.M.A.R.T Capability (Self-Monitoring, Analysis and Reporting Technology). The optional settings are Auto; Disabled; and Enabled.

**32 Bit Data Transfer:** the optional settings are: Disabled and Enabled.

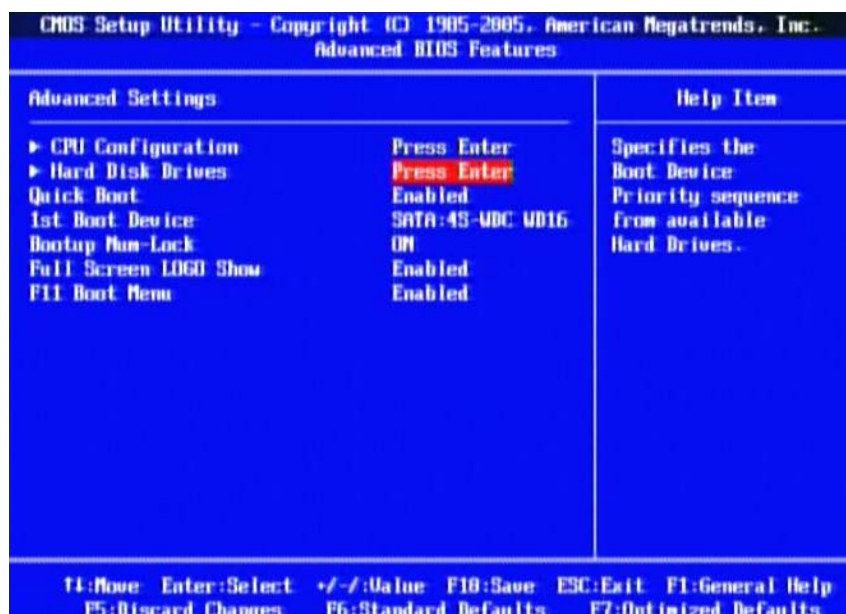
### **Floppy A**

This item is for specific floppy disk drive settings. Select according to the specification of the floppy disk you use.

### **System Memory**

This item will show information about the memory modules(s) installed.

## **3-5 Advanced BIOS Feature**



### **Quick Boot**

Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.

### **Hard Disk Drives**

Specify the boot sequence from the available devices.

### **Bootup Num-Lock**

The default value is On.

**On** (default) Keypad is numeric keys.

**Off** Keypad is arrow keys.

### **Full Screen LOGO Show**

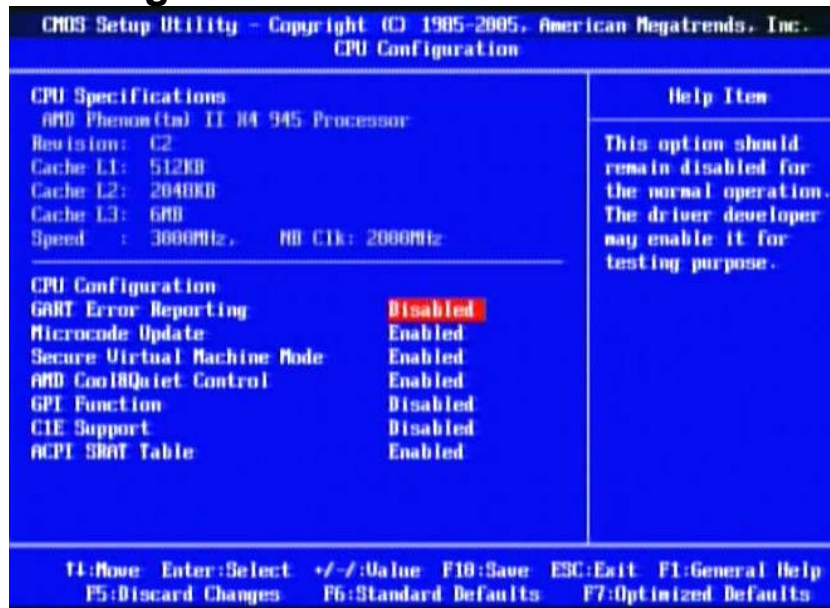
Disabled: Display normal POST messages.

Enabled: Displays OEM logo instead of POST messages.

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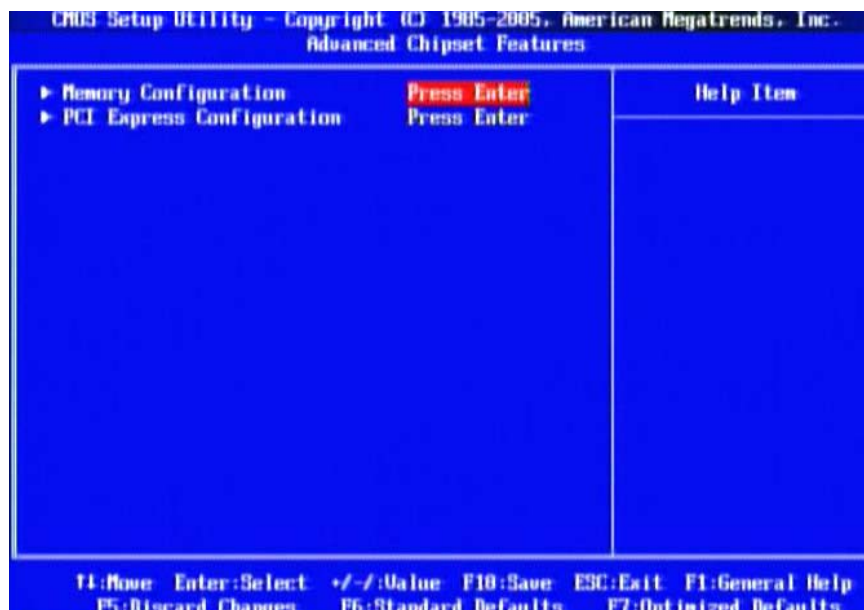
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### 3-5-1 CPU Configuration



### 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.



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## 3-6-1 Memory Configuration



### DRAM Timing Mode

The optional settings are: Auto; DCT0; DCT1; Both.

### Bank Interleaving

Use this item to enable bank memory interleaving.

### Channel Interleaving

Use this item to enable channel interleaving.

### Enable Clock to All DIMMs

Enable unused clocks to DIMMS when memory slots are not populated.

### Mem CLK Tristate during C3/Alt VID.

Enable and disable Mem CLK Tri-stating during C3 and Alt VID

### Memory Hole Remapping

Enable Memory Remapping around Memory Hole.

### DCT Unganged Mode

This allows selection of unganged DRAM mode (64- bit width).

Auto=Ganged Mode; Always= Unganged Mode.

### Power Down Enable

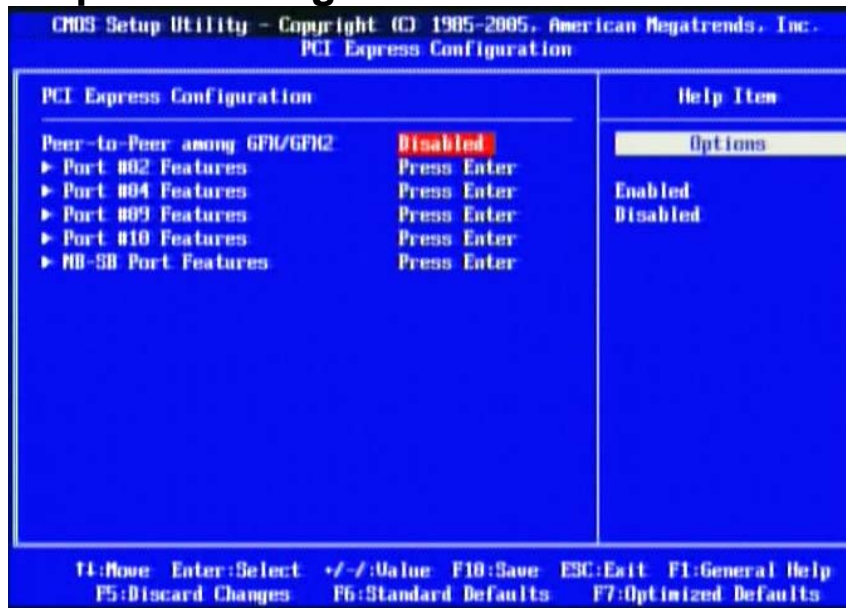
Enable or Disable power down mode.



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## 3-6-2 PCI Express Configuration



### Port #02 Features

Press Enter and set values in the sub-items as Ge2 High Speed Mode, Link ASPM, Link width, etc..

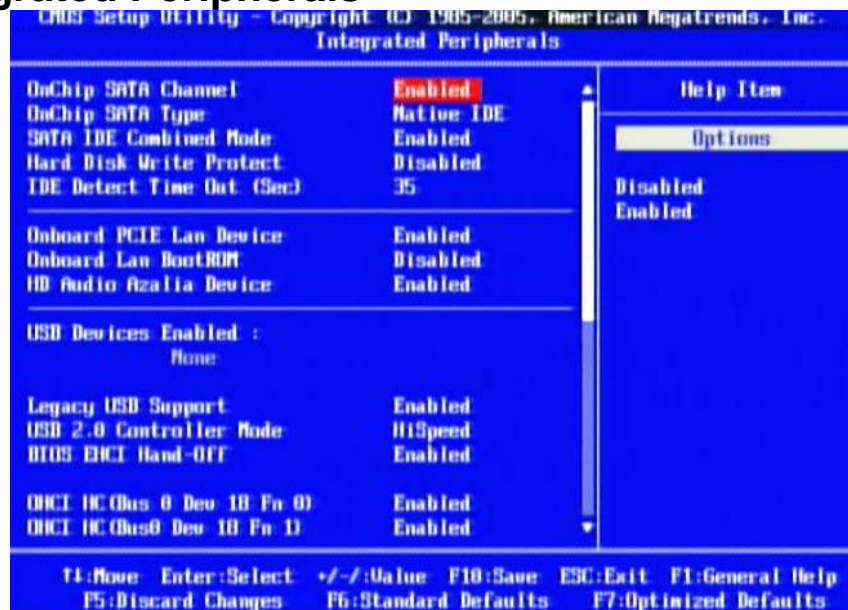
### Port #04 Features/ Port #09 Features/ Port #10 Features

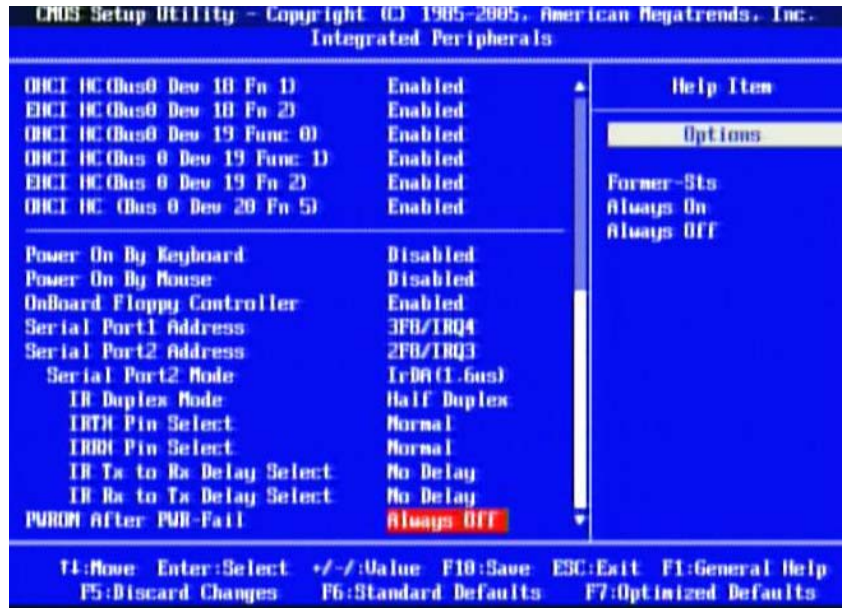
Press Enter and set values in the sub-items as Ge2 High Speed Mode, Link ASPM, etc..

### NB-SB Port Features

Press Enter and set values in the sub-items as NB-SB Link ASPM,;NP NB-SB VC1 Traffic Support, etc..

## 3-7 Integrated Peripherals





### OnChip SATA Channel

Press Enter to enable or disable OnChip SATA Channel.

### On Chip SATA Type

Press Enter to select the SATA type. The optional settings are: Native IDE; RAID; AHCI; Legacy IDE; IDE→AHCI.

### Hard Disk Write Protect

Use this item to Disable/Enable device write protection. This will be effective only if device is accessed through BIOS.

### IDE Detect time Out(Sec)

Use this item to select the time out value for detecting ATA/ATAPI device(s).

### Onboard PCI E Lan Device

Use this item to enable or disable Onboard PCI E Lan

### HD Audio Azalia Device

This item allows you to decide to enable/disable the chipset family to support HD Audio. The optional settings are: Auto; Enabled and Disabled.

### USB Configuration

Press Enter to set values for sub-items as: Legacy USB Support, USB 2.0 Controller Mode and BIOS EHCI Hand-OFF.

### Onboard Floppy 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.

### Serial Port1 Address/ Serial Port2 Address

Use this item to select serial port address for serial port one and serial port two.

### Serial Port2 Mode

This item allows BIOS to select mode for serial port 2.

The optional settings are: Normal; IrDA(1.6 ns) and IrDA (3/16 bit).

### IrDA Duplex Mode

This item allows BIOS to select full or half duplex for serial port 2(IR Mode).The optional settings are: Full Duplex; Half Duplex.

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### IrTX Pin Select

The optional settings are: Normal and Inverse.

This item allows BIOS to select transmit pin in a normal condition or inverse the IRTX(IR Mode).

### IrRX Pin Select

The optional settings are: Normal and Inverse.

This item allows BIOS to select receiver pin in normal condition or inverse the IRRX(IR mode).

### IRTX to RX Delay Select

The optional settings are: No Delay and Reception Delay.

This item allows BIOS to select IR from RX to TX 4 characters time delay for serial port2(IR mode)

### IRRX to TX Delay Select

The optional settings are: No Delay and Transmission Delay.

PWRON After PWR Fail

The optional settings are: Former-Sts; Always On; Always Off.

## 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) 1985-2005, American Megatrends, Inc.		
Power Management Features		
Power Management Features		Help Item
Power Management/APM	Enabled	Enable/Disable SMI based power management and APM support.
Suspend Time Out	Disabled	
Power Button Mode	On/Off	
Video Power Down Mode	Suspend	
Hard Disk Power Down Mode	Suspend	
Hard Disk Time Out (Minute)	Disabled	
PowerOn by PCI Card	Disabled	
Wake-up by PCIE	Disabled	
RTC Resume	Disabled	
F1:Move Enter:Select +/-:Value F10:Save ESC:Exit F1:General Help		
F5:Discard Changes F6:Standard Defaults F7:Optimized Defaults		

### Power Management/APM

Use this item to enable or disable AMI based power management and APM support.

### Suspend Time Out

If it is set Enabled and no activity during this time period, the BIOS will place the system into suspend low power state. The optional settings are: Enable; 1~64 minutes.

### Power Button Mode

Select power button functionality.The optional settings are: On/Off; Suspend.

### Video Power Down Mode

The optional settings are: Disabled; Standby and Suspend.

### Power-On by PCI Card/ Power-On by PCIE/RTC Resume

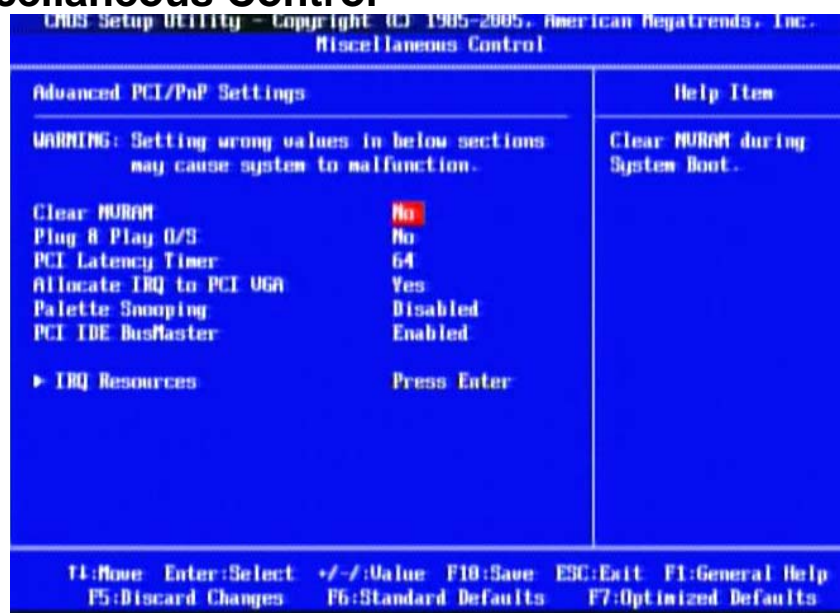


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Use these items to disable or enable PCI card/LAN GPI/RTC to generate a wake event.

### 3-9 Miscellaneous Control



#### Plug & Play O/S

The optional settings are: No; Yes

No: Let the BIOS configure all the devices in the system.

Yes: Let the operating system configure Plug and Play devices, not required for boot if your system has a Plug and Play system.

#### Allocate IRQ for PCI VGA

The optional settings are: No; Yes.

Yes: Assigns IRQ to PCI VGA card if card requests IRQ.

No: Does not assign IRQ to PCI VGA card even card requests an IRQ.

#### Palette Snooping

The optional settings are: Enabled; Disabled.

Enabled: inform the PCI device that an ISA graphics devices is installed in the system so the card will function correctly.

#### PCI IDE Bus Master

The optional settings are: Enabled; Disabled.

Enable: BIOS uses PCI busmastering for reading/writing IDE devices.

### 3-10 PC Health Status

This section shows the Status of you CPU, Fan, and Warning for overall system status.

This is only available if there is Hardware Monitor onboard.

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.		
PC Health Status		
PC Health Status ▶ SMART FAN Configuration <b>Press Enter</b>		Help Item
H/W Health Function                      Enabled		
CPU Temperature                      : 54°C/129°F		
SYS Temperature                      : 37°C/98°F		
CPUFAN1 Speed                      : 2035 RPM		
SYSFAN1 Speed                      : N/A		
SYSFAN2 Speed                      : N/A		
VLDT                      : 1.200 V		
VDIMM                      : 1.622 V		
Vcore                      : 1.376 V		
VNB                      : 1.120 V		
↑↓:Move    Enter:Select    +/-:Value    F10:Save    ESC:Exit    F1:General Help F5:Discard Changes    F6:Standard Defaults    F7:Optimized Defaults		

## H/W Health Function

it displays information list below when set as below. The choice is either Enabled or Disabled.

**CPU Temperature/ SYS Temperature/CPUFAN1 Speed/SYSFAN1 Speed/SYSFAN2 Speed /VLDT/ VDIMM/VCORE/VNB**

This will show the CPU/ /System voltage chart and FAN Speed, etc.

## 3-10-1 Smart FAN Configuration

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.		
SMART FAN Configuration		
FAN 1 Mode Setting		Auto Fan by Duty
Temperature 1 Limit of Highes		050
Temperature 1 Limit of Second		040
Temperature 1 Limit of Third		030
Temperature 1 Limit of Lowest		020
		Help Item
		Fan configuration mode setting
↑↓:Move    Enter:Select    +/-:Value    F10:Save    ESC:Exit    F1:General Help F5:Discard Changes    F6:Standard Defaults    F7:Optimized Defaults		

## FAN1 Mode Setting

The optional settings are: Auto Fan by RPM; Auto Fan by DutyCCycle; Manual Mode by RPM; Manual Mode by DutyCycle.

---

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## 3-11 Thermal Throttling Options



### CPU Thermal Throttling

Use this item to enable or disable CPU thermal Throttling. The optional settings are: Enable; Disabled. When set as Enabled, the two following items will show.

### CPU Thermal Throttling Temp.

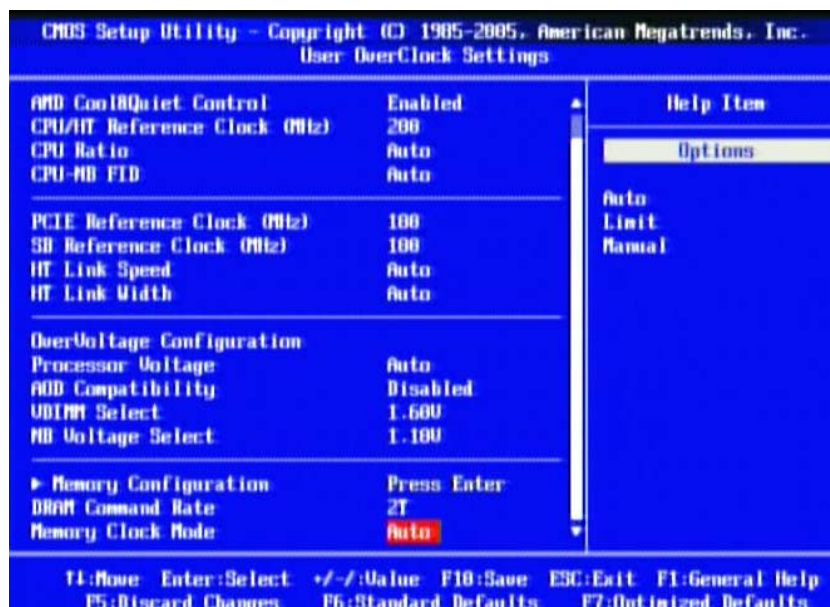
Use this item to set CPU thermal Throttling temperature. The selectable arrange is from 40 to 100 °C.

### CPU Thermal Throttling Duty

Use this item to set CPU Thermal Throttling Duty. The selectable range is from: 12.5% to 87.5%.

## 3-12 User Overclock Setting





## Advanced Clock Calibration

The optional values are: Disabled; Auto; All Cores; Per Core.

### CPU/HT Reference Clock(MHz)

Use this item to set CPU/HT Reference Clock. The optional setting range is:190~400 MHz.

### CPU Ratio

The optional settings are: Auto; x4.0~x15.0.

### CPU-NB FID

The optional settings are: Auto; x4.0~x10.0.

### PCI E Reference Clock

The optional setting range is:90~250 MHz.

### SB Reference Clock

The optional setting range is:90~150 MHz.

### HT Link Speed

The Hyper Transport link will run at this speed if it is slower than or equal to the system clock and the board is capable.The optional setting range is 200Mhz to 2.0GHz and Auto.

### HT Link Width

The HyperTransport link will run at the set width. The optional settings are: Auto; 4 Bit; 8 Bit; 16 Bit.

### Processor Voltage

The optional settings are: Auto; 0.800V~1.350V.

### VDIMM Select

Use this item to set memory voltage.

### NB Voltage Select

This item is used for setting Northbridge voltage.

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## 3-13 BIOS Security Features



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.

### **Boot Sector Virus Protection**

The selection Allow 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.



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## 3-14 Load Optimal/Standard Defaults

### Load Optimal Defaults

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



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

### Load Standard Defaults

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

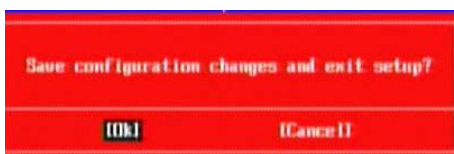


Pressing <OK> loads the standard default values that are factory settings for stable performance system operations.

## 3-15 Save Changes and Exit / Discard and Exit

### Save Changes and Exit

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



Pressing <OK> save the values you made previously and exit BIOS setup.

### Discard and Exit

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



Pressing <OK> to leave BIOS setting without saving previously set values.

Notice!	The BIOS options in this manual are for reference only. Different configurations may lead to difference in BIOS screen and BIOS screens in manuals are usually the first BIOS version when the board is released and may be different from your purchased motherboard . Users are welcome to download the latest BIOS version form our official website.
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## 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 Xp/Vista/7**

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).

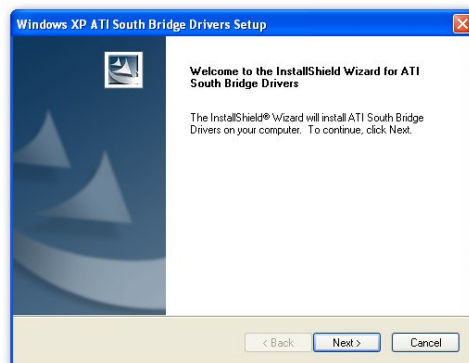
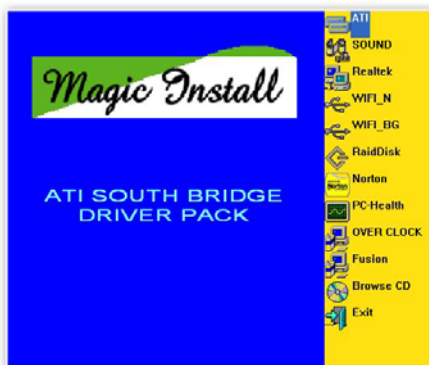


From MAGIC INSTALL MENU you may take 12 options:

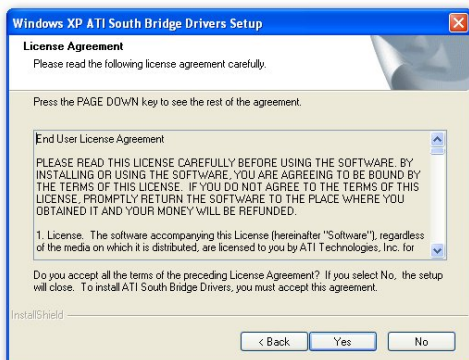
- |               |   |
|---------------|---|
| 1. ATI        | install ATI driver pack                   |
| 2. SOUND      | install ALC 662 HD Audio driver           |
| 3. Realtek    | install LAN Controller Driver             |
| 4. WIFI_N     | install RTL Wireless Network              |
| 5. WIFI_BG    | install RTL 8187 Wireless Network         |
| 6. RaidDisk   | install SATA RAID Driver and Utility      |
| 7. Norton     | install Norton 2009 anti-virus program    |
| 8. PC-HEALTH  | install My Guard hardware monitor utility |
| 9. OVERCLOCK  | install OVERCLOCK Drive Utility           |
| 10. Fusion    | install Fusion Drivers and Tools          |
| 11. BROWSE CD | to browse the contents of the CD          |
| 12. EXIT      | to exit from MAGIC INSTALL menu           |

---

## 4-1 ATI Install ATI Driver Pack

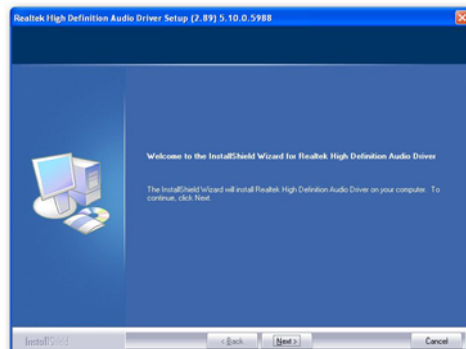


1. Click ATI appears on the MAGIC INSTALL MENU.
2. Click NEXT when ATI software driver pack appears.



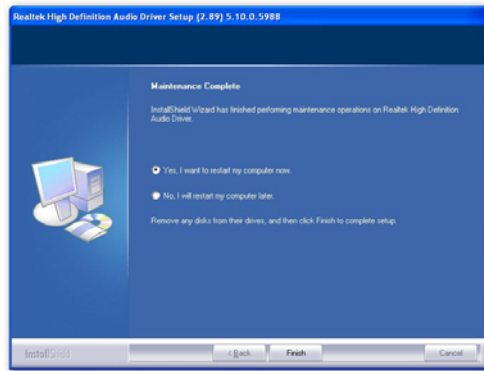
3. Click "Yes" to accept the license agreement and start installation.
4. Choose whether you would like to restart and click Finish to complete installation.

## 4-2 SOUND Install ALC662 HD Audio Driver



1. Click SOUND when MAGIC INSTALL MENU appears.
2. Click Next When High Definition Audio driver windows appear.





3. Click Finish and restart your computer.



4. Manual Sound Effect Setting.



5. Devices and mixer setting.



6. Audio input and output setting.



7. Microphone effect setting.



8. 3D demo setting.

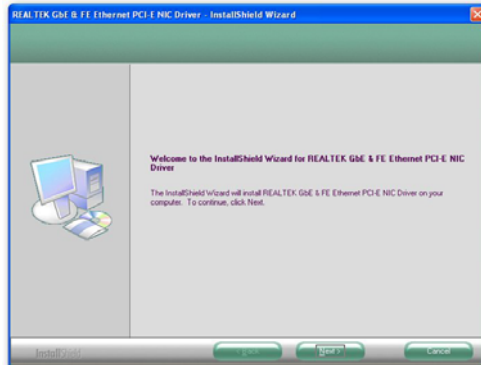
**NOTE: Please upgrade your Windows XP to Service Pack 3 before you the HD Audio CODEC driver.**

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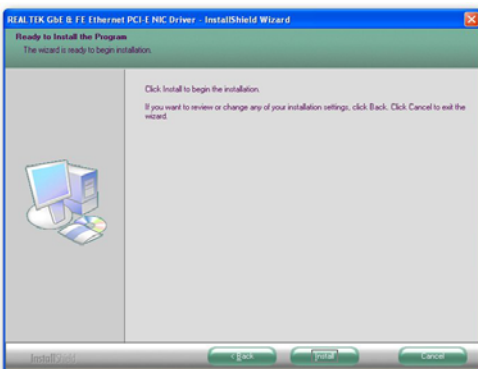
## 4-3 Realtek Install Realtek LAN Controller Driver



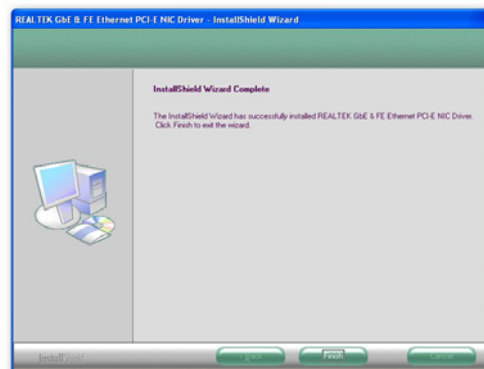
1. Click Realtek when Magic Install Menu appears.



2. Click Next to install LAN Driver.



3. Click Install to begin the installation.

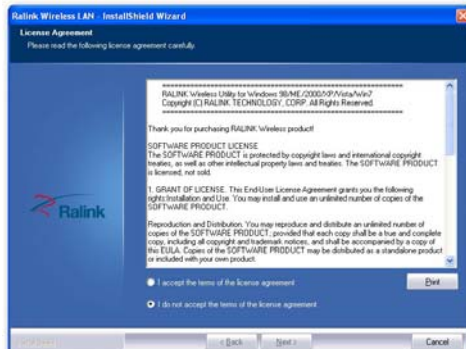


4. After driver installation completed, Click Finish.

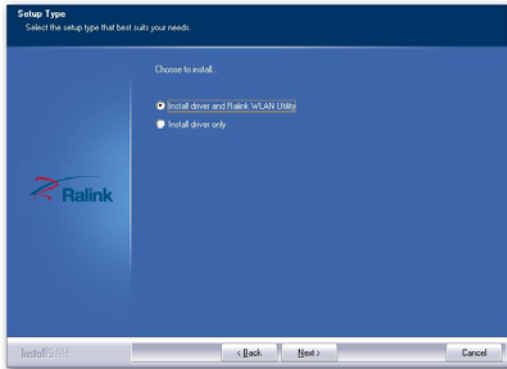
## 4-4 WIFI\_N Install RT2770 Wireless Network



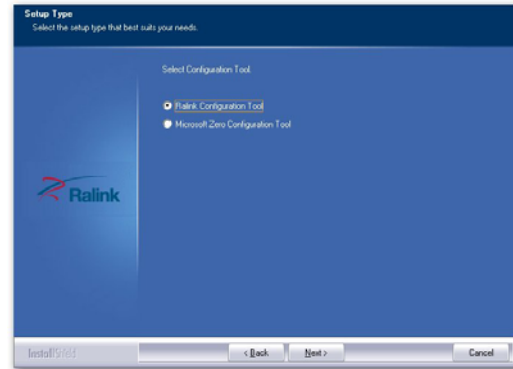
1. Click WIFI\_N on Magic Install menu..



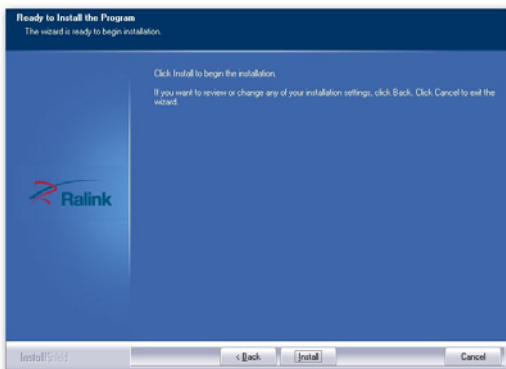
2. Click "I accept the terms of the license agreement".



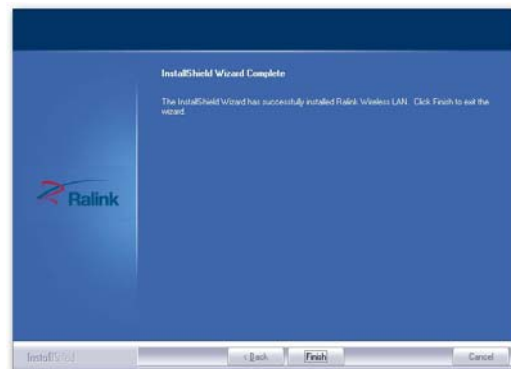
3. Select the setup type, then click Next.



4. Select the configuration tool and then click Next.



5. Click install to begin installation.

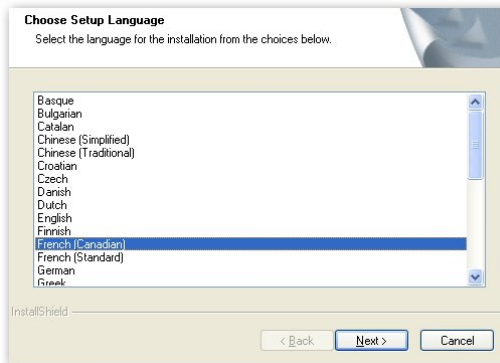


6. Click Finish to complete installation.

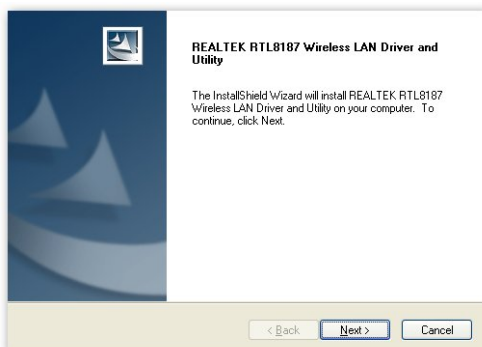
## 4-5 WIFI\_BG Install RTL8187 Wireless Network



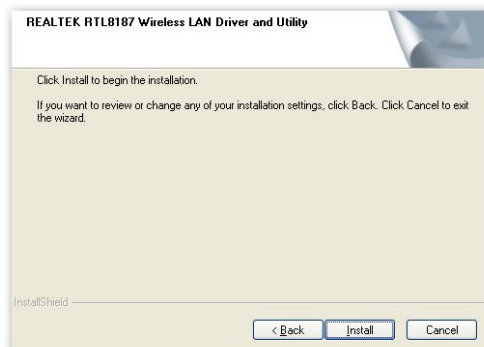
1. Click WIFI\_BG on Magic Install menu..



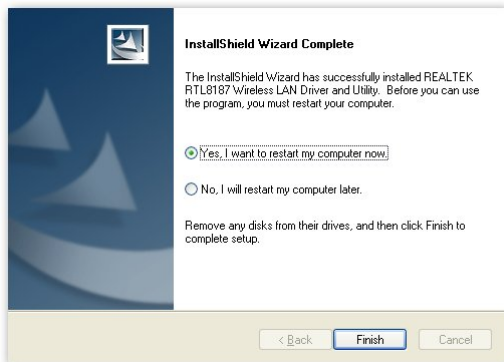
2. Choose setup language, then click Next.



3. Click Next.



4. Click Install.

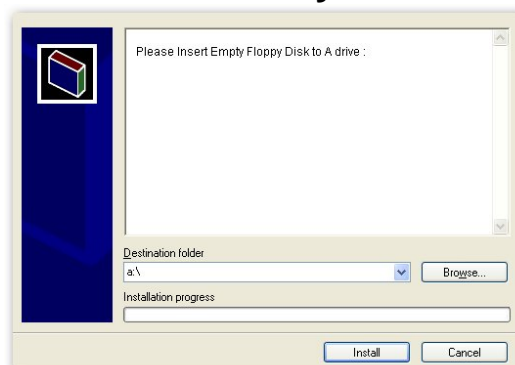


5. Decide if you wish to restart the computer then click Finish to complete the installation.

## 4-6 RAID Install SATA RAID Driver and Utility



1 Click RAIDDisk when MAGIC INSTALL MENU appears



2. Copy the files to floppy disk and restart the computer with floppy disk as the first booting disk and then follow the steps shown on the screen to finish RAID function settings.

## 4-7 Norton Install Norton 2010 Anti-virus program



1 Click Norton when Magic Install menu appears.

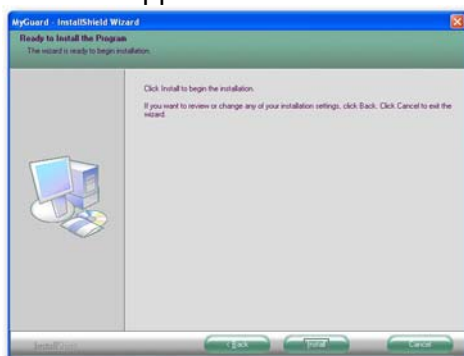


2. Click Agree & Install after reading Unser License Agreement.

## 4-8 PC-HEALTH Install MyGuard Hardware Monitor Utility



1. Click PC-HEALTH when MAGIC INSTALL MENU appears
2. Click Next on Install shield wizard Window appears.

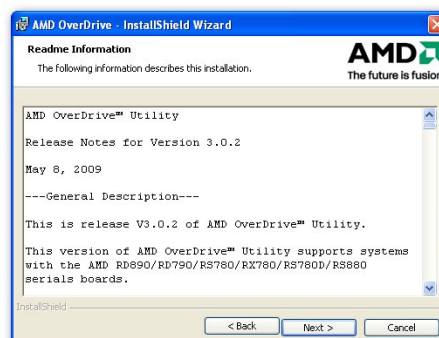


3. Click Install to begin the installation.
4. Click Finish to complete the installation.

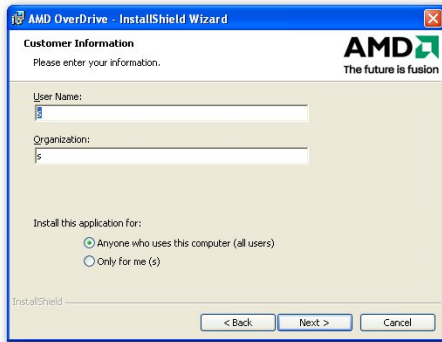
## 4-9 OVERCLOCK Install OVERCLOCK Drive Utility



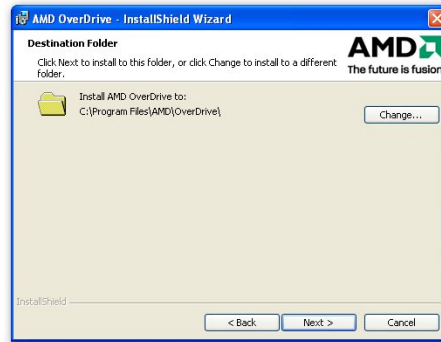
1. Click OVER CLOCK when MAGIC INSTALL MENU appears
2. Click Next on AMD OverDriver installation wizard.



3. Choose "I accept the terms in the license agreement".
4. The information describes the installation, Click Next after you finish reading it.



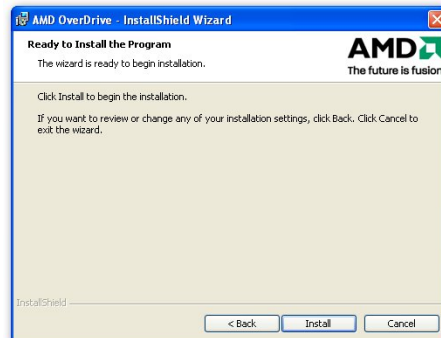
5. Type in Customer Information and then click Next.



6. Select the Destination Folder and then Click Next.



7. Decide whether you want a shortcut on your desktop and then click Next.



8. Click Install to begin installation.

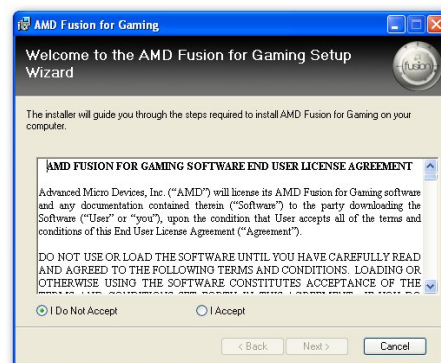


9. Finish the installation.

## 4-10 Fusion Install Fusion Drivers and Tools

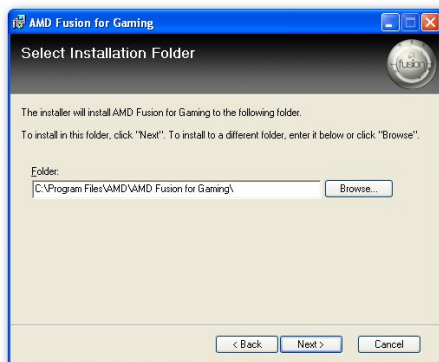


5. Click Fusion when MAGIC INSTALL MENU appears.

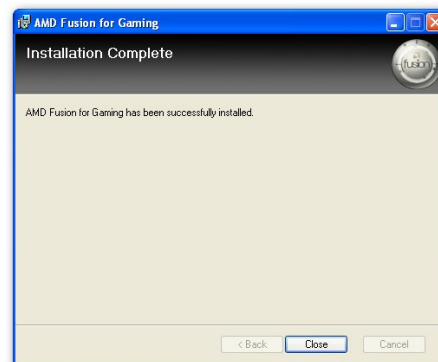


6. Click to accept the license agreement then click Next.





7. Select installation folder then click Next.



8. Click Close to complete the installation.

### NOTICE!

The above driver screen and operation steps are for reference only because we might update the drivers or make modifications due to technological need and user's benefits. We reserve these changes or upgrade without advanced notification. Please visit our website for possible driver upgrade.

## 4-11 How to Update BIOS

**Step 1.** Prepare a bootable floppy disk. (You may make one by click START click RUN type SYS A: click OK)

**Step 2.** Download upgrade tools and the latest BIOS files of the motherboard from official website and then make a copy of it to your bootable floppy disk after decompressing these files

**Step 3.** Insert the disk into A: ,start your computer and then type in "A:\xxxxxxx.BAT"(xxxxxxx being the file name of the latest BIOS )

**Step 4.** Type Enter to update and flash the BIOS. The system will restart automatically when BIOS is upgraded.

## 4-12 AMD Platform RAID Function Installation

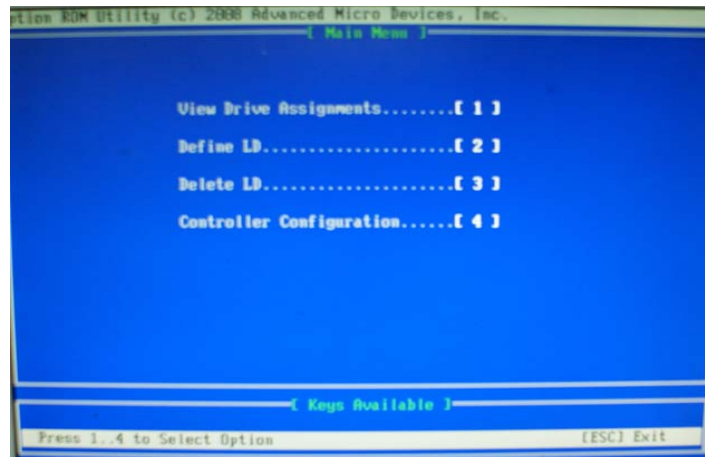
Please set these choice in the BIOS as RAID : BIOS setup \Integrated Peripherals \ Onchip SATA Type. When the below figures appeared, please press [Ctrl-F] into figure 2



[figure1]

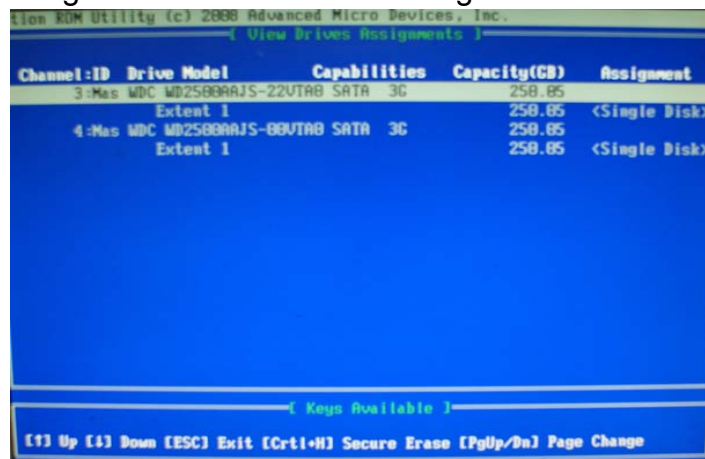
Function: press[1] key, showing the RAID; press [2] key , building RAID; press [3] key, delete the RAID; press[4] key, showing the information of controller.





[figure2]

press[1] key , showing the RAID , as the below figure



[figure3]

Press [2] key, the interface of RAID, as figure 4.

RAID function: RAID 1 / RAID 0/ RAID 10 /JBOD

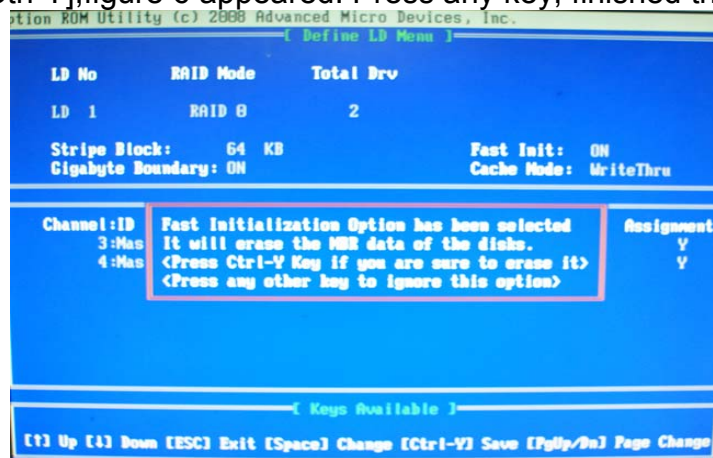


[figure4]

Choose LD 1 then press Enter.

Take Raid0 for example, use [↑] [↓] to shift the cursor, press space key to change the choice, press [Ctrl-Y] to keep.

Set Assignment mode as [Y], press [Ctrl-Y] to keep , then figure 5 appeared, erase the MBR. choose [Ctrl-Y],figure 6 appeared. Press any key, finished the RAID.

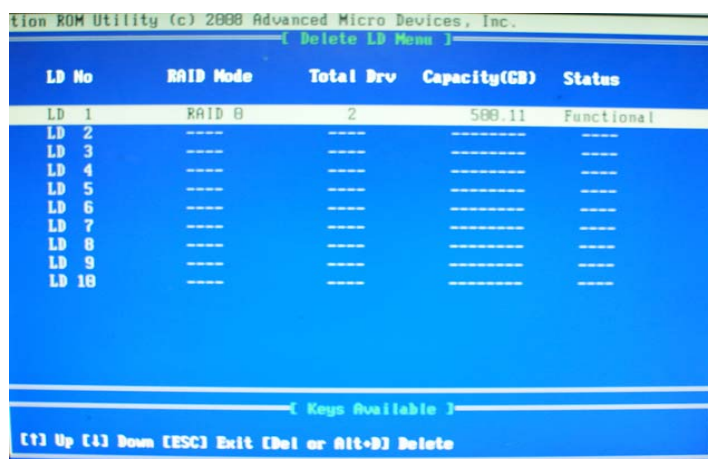


[figure5]



[figure6]

Press [3], delete the RAID mode, as figure 7.press [Delete] will delete the array. As figure 7 .



[figure7]

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Press [4], showing the information of controller, as figure 8.



[figure8]

### **Making RAID driver diskette before Install Windows OS**

Before you install the WindowsOS, you will need to make a RAID driver diskette before you start to install the Operating System.

#### **How to make a RAID driver diskette?**

- 1: Insert the diskette which is being formatted in floppy drive on a system which can start OS.
- 2: After booting OS insert the bundle CD in your CD-ROM
- 3: Copy all the files from\AMD\RAIDDisk to floppy diskette

Once you have the SATA driver diskette ready, you may start to install Windows OS on your System.

### **Installation of Windows OS**

For installation of Windows OS, please insert Windows XP Windows OS CD into the CD-ROM drive. Then remove the floppy diskette, and boot the system. At the very beginning, you will see the message at the bottom of screen, "Press F6 if you need to install a third party SCSI or RAID driver..."

At this moment, please press <F6> key and follow the instructions of Windows XP or Windows 2000 for the proper installation.

## **4-13 Pro Magic Plus Function Introduction**

### **What's Pro Magic Plus?**

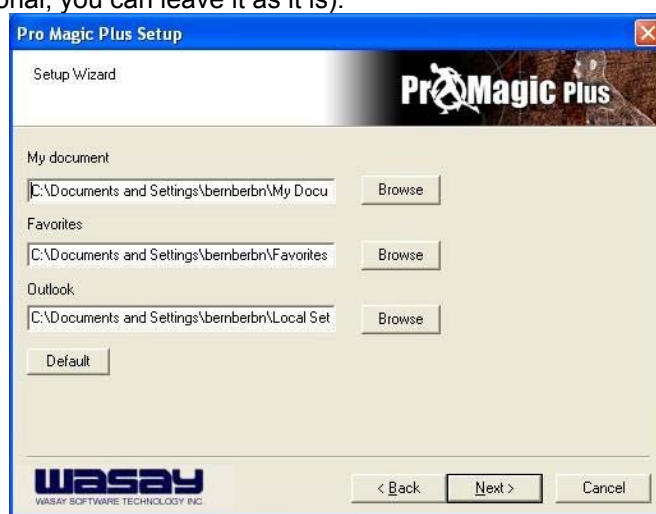
Tired with reinstall OS each time when it doesn't work? Does your computer often crash down or unable to work after installed new software? Have you had great loses and troubles because of computer problems? Still using time-consuming backup software that occupies lots of HD space?

Pro Magic Plus- an instant system recovery software tailored to solve these problems for you. It combines various application tools (e.g. anti-virus, backup software, uninstall software, multi-boot software) to satisfy your needs of all sorts of system protections.

### **What functions does Pro Magic Plus have?**

1. **Instant System Restoration** – Regardless of mis-operation or system crash, install Pro Magic Plus beforehand would allow you to instantly restore your system back by simply reboot your computer.
2. **Easy-to-use** – Auto installation from CD ROM; Supports Mouse

3. **System Uninstall** – Pro Magic provides a protection mode, which allows user to freely test any software. If user does not want to keep the software, just reboot the computer to restore back to the previous state, and Pro Magic will remove it completely from your computer.
4. **Password Security** – Pro Magic provides double password protection, including user password for entering each OS and manager password for managing 'Pro Magic', which can effectively prevent others from using your computer without permission or data from being stolen. (disable item for OEM version)
5. **Complete Protection** – Pro Magic not only protects the system disk, but also can protect your data disk, and does not require to reboot when backup or restore data disk.
6. **Multipoint Save/Restore** – You can backup your system whenever you need and restore them back to anytime you wish, 1 hour, 1 day or 1 month ago. Restore points are unlimited. (disable item for OEM version)
7. **Data Disk Protection** – Pro Magic Plus now comes with data disk protection, provides complete protection for your computer! (disable item for OEM version)
8. **You can choose to change the default path of 'My Document', 'My Favorite' and 'Outlook Express'**, so that when you are restoring the system, data in these folders will not be restored as well. (This is optional, you can leave it as it is).



graph 4

**NOTE:** Functions of each version will differ from each other, and will be based on the function descriptions of each version.

## System Requirements

- ◇ First OS must be Windows XP/Vista/7
- ◇ Support Only Windows OS (No Linux)
- ◇ Windows server OS and Windows NT not supported
- ◇ Minimum of Intel 486 or above, 16MB of memory or above
- ◇ Minimum of 500MB free/usable space or above
- ◇ Support for SCSI & SATA Hard disk

*Pro Magic Plus only supports SCSI hard disk with Windows XP or OS above*

## Notice Before Installation

1. Before install Pro Magic Plus, turn off all anti-virus software. (Include BIOS anti-virus function)
2. Pro Magic Plus does not support multiple PRI partitions. If you have multiple PRI partitions, please repartition your HD before installation.
3. If your HDD is not fully partitioned (with un-partitioned/unused space at end of HDD), please repartition the HDD before install Pro Magic Plus.

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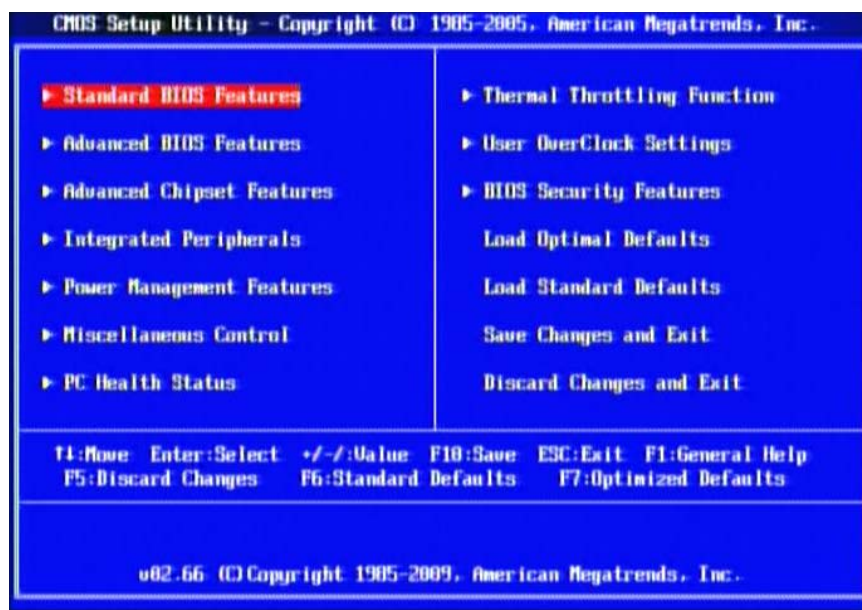
## 4-14 G.P.I Function Installation Steps

Operating Steps:

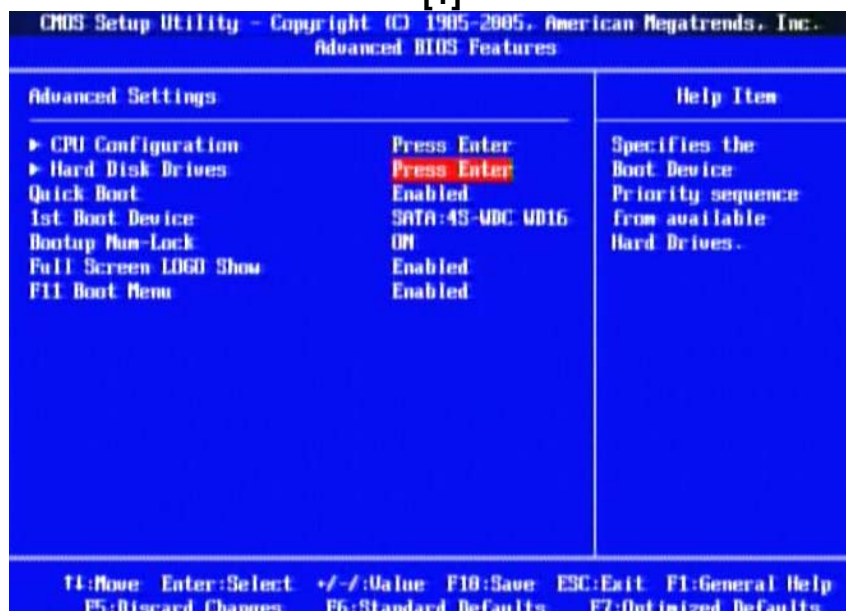
The Default setting in BIOS has already enabled this function. If you wish to change the settings, please enter BIOS and take the following steps:

**Select:**

- Advanced BIOS Features→CPU Configuration→AMD Cool&Quiet Control set as Enabled;
- Advanced BIOS Features→CPU Configuration→G.P.I. Function set as Enabled;

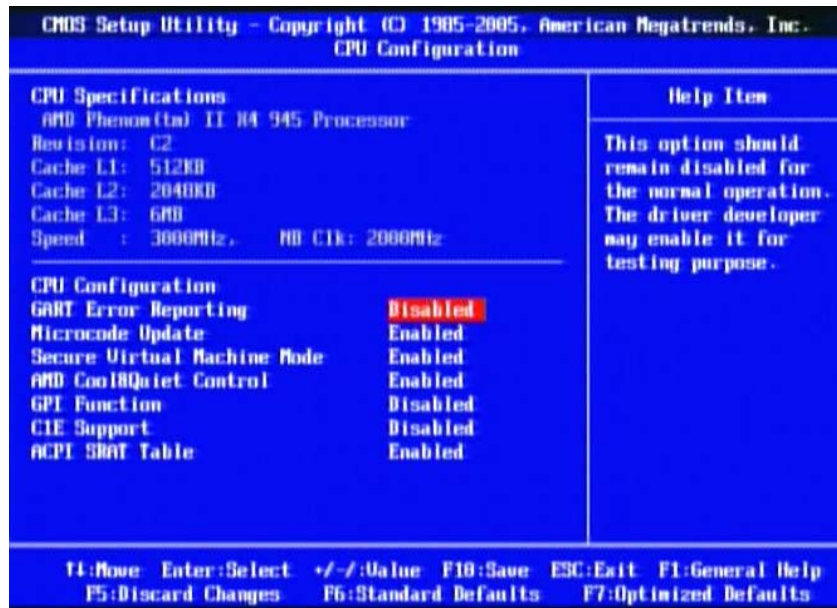


[1]



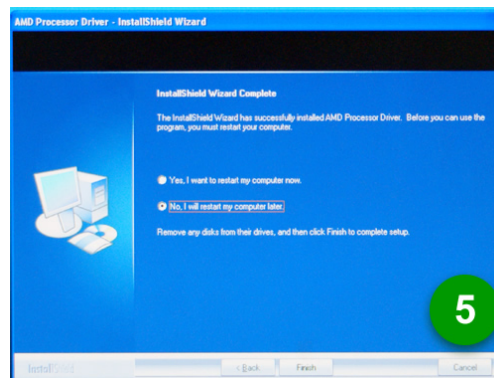
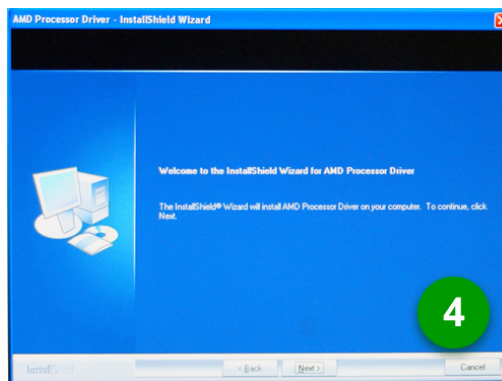
[2]

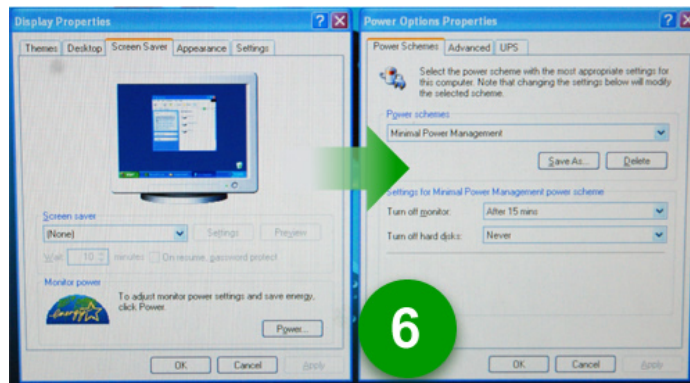




[3]

**Compatible with OS:** Windows XP/ 64 series. Users must install CPU driver program(AMD Processor Driver) and select the "Minimal" item in Power Setting.





With OS Windows Vista series, there is no need for to take more steps. If needed, please enter Power Settings to make corresponding changes

## 4-15 G.P.I. LED Display



Light on-CPU workload is light and motherboard works in power-saving



Light off-CPU workload is heavy and motherboard work in normal mold.



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## APPENDIX I

### Subject 1: Regarding the Application of 3-Phase or 3+1 Phase Power Supply Mold



As a result of the increasing power consumption demand from many AMD CPUs in current market, we suggest not to use a CPU that demands more than 65W power consumption at work for an AMD CPU compliant board that comes with power supply design as 3 phase or 3+1 phase mold and MOSFET design as working in High SideX1 and Low SideX1 mold so as to avoid MOSFET getting burned or other phenomena like a halted system or system instability. So please take notice of the CPU you are using and make sure that it is one that demand not more than 65 W to ensure long-term working order.

#### Note:

1. The relation between CPU Power Consumption Amount and Power Phase: depending on difference in voltage rating, one-phase of power can provide 25~30W to the motherboard.
2. 3- Phase Power Supply Mold: motherboard with 3 inductances for CPU power supply, and each inductance carries with it 2 MOSFET (6 MOSFETs in total) (Figure1)  
3+1–Phase Power Supply Mold: motherboard with 4 inductances for CPU power supply, and each inductance carries with it 2 MOSFET (8 MOSFETs in total) (Figure2)

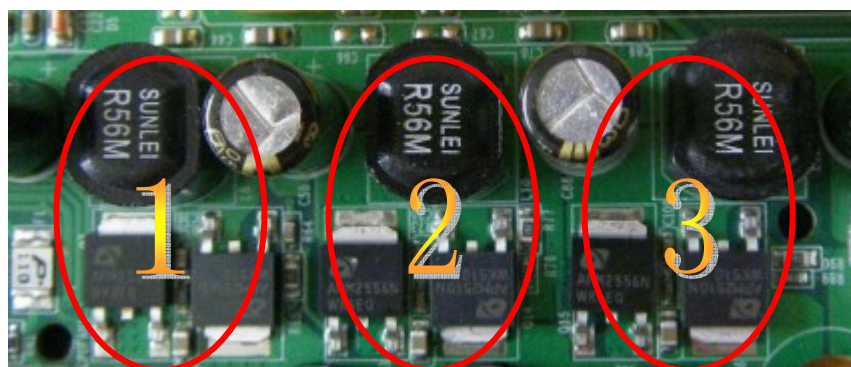


Figure 1

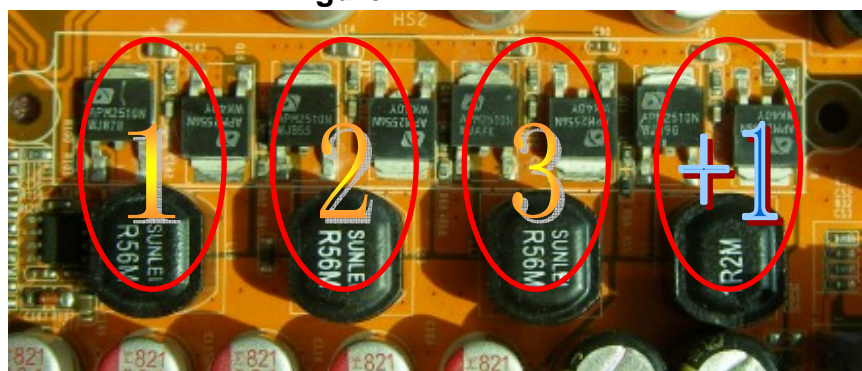


Figure 2

#### Solution:

We recommend users choose motherboards with power design of 4-phase, 4+1 phase or more for CPUs that demand 89W or 95W power consumption.

We recommend users choose motherboards with power design of 5-phase, 5+1 phase or more for CPUs that demand 125W or 140W power consumption.

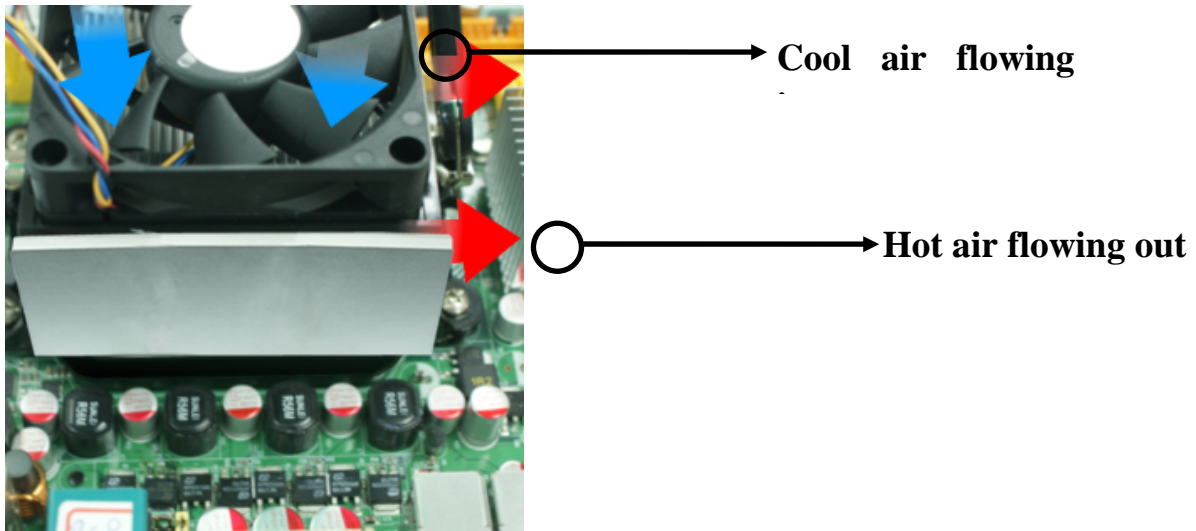
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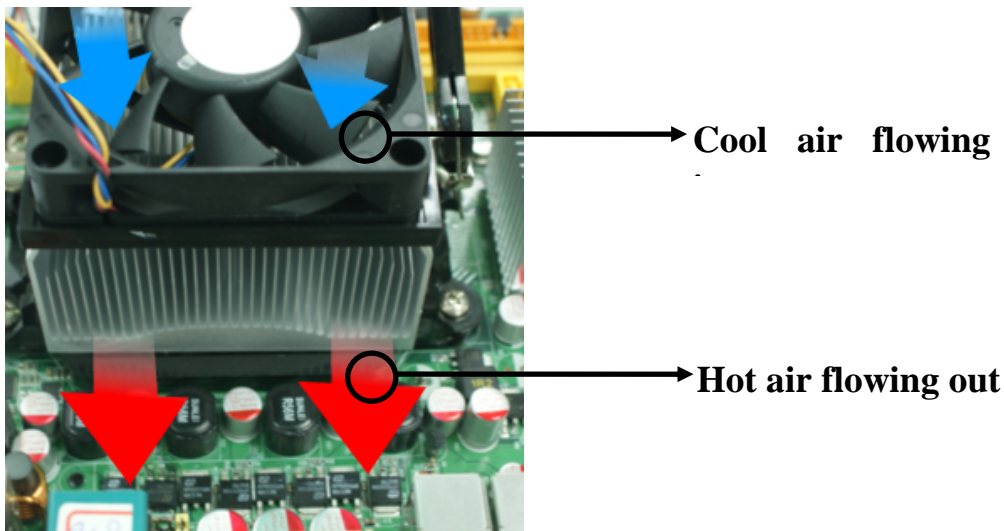
## Subject 2: Suggestion on choosing electric fan



Both the amount of electric current to MOSFET and the heat produced from the motherboard go up as AMD's CPU power consumption increases. In this case we recommend users select a CPU fan with air outlet towards MOSFET so that CPU fan can carry away heat produced by MOSFET, for better heat dissipation effects. At the same time we suggest using well-ventilated cases to maintain temperature as 38°C approximately inside.( 38°C is recommended by CPU



**Figure 1----** CPU Fan can not blow off the heat produced by MOSFET. We suggest not to using fans of this kind



**Figure 2----** CPU Fan can blow off the heat produced by MOSFET. We suggest using fans of this kind