

USER'S MANUAL
Of
AMD 780G & AMD SB700
Based
M/B For Socket AM2+ 64-bit Quad Core
AMD Processor

NO. G03-XBLUE-78GA2 F

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Trademark:

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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.

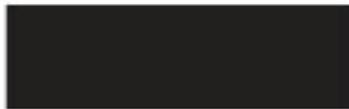


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Manual Revision Information

Reversion	Revision History	Date
1.0	First Edition	Sept., 2008

Item Checklist

- AMD 780G Chipset based motherboard
- AMD 780G Chipset motherboard User's Manual
- CD for Motherboard Utilities
- I/O Back Panel Shield
- SATA Cable
- HDD Cable

AMD K10 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-AM2+ processors.

Chapter 1

Introduction of AMD 780G Motherboards

1-1 Features of motherboard

The AMD 780G chipset motherboard series are based on the latest AMD 780G Chipset and the SB700 chipset which supports the innovative 64-bit AMD Socket AM2+ dual core multi-tasking Socket AM2+ AMD quad core Phenom™ processors. With an integrated low-latency high-bandwidth DDRII memory controller and a highly-scalable Hyper Transport technology-based system bus up to 2 GHZ. AMD 780G Platform Processor Chipset motherboard series deliver the outstanding system performance and professional desktop platform solution with the advantages of 64-bit AMD Socket AM2+ and Socket AM2 AMD Phenom™ FX, AMD Phenom™, Athlon64 FX, Athlon64 X2, Athlon64 & Sempron processors.

The AMD 780G Series motherboards support new generation Socket AM2+ processors with an integrated DDRII memory controller for Dual channel DDRII533 /DDRII667 /DDRII800/DDRII1066(AM2 Sempron processors only support up to DDRII667 memory) DDRII Module up to 4 GB. The motherboard also provides an integrated DDRII 64MBGPU Memory. The motherboard is embedded with SB700 chipset of providing ULTRA ATA 133 connector and Serial ATA2 with RAID 0 ,1 , 10 and JBOD functions which support up to one IDE and six Serial ATA2 devices to accelerate hard disk drives and guarantee the data security without failure in advanced computing performance.

The AMD 780G motherboards provide 10/100/1000 LAN function with RealTek RTL8111CVC PCI-E Gigabit LAN 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 780G 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 780G chipset is combined with the flexibility for single or dual card configurations. The AMD 780G chipset provide one x16@16 lane PCI Express 2.0 slots to support simultaneous operation of graphics cards for astonishing performance with brilliant and intense 3D graphics.

AMD 780G Series motherboard series offer one PCI-Express2.0 x16@ 16 lane graphics slot deliver up to 8Gbyte/sec data transfer rate at each relative direction and up 16Gbyte/sec concurrently. Besides AMD 780G Series motherboard series offer one PCI-Express2.0 x16@ 4 lane graphics slots deliver up to 2Gbyte/sec data transfer rate at each relative direction and up 4Gbyte/sec concurrently and one PCI-Express2.0 x1 graphics slots deliver up to 1Gb/sec data transfer rate concurrently.

The AMD 780G motherboards also carry 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.

Some special features--- **CPU Thermal Throttling/ CPU Smart Fan / OC-CON /G.P.I Function/WI-FI Header** in 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 Smart Fan---(The Noise Management System)

It's never been a good idea to gain the performance of your system by sacrificing its acoustics. CPU Smart Fan Noise Management System is the answer to control the noise level needed for now-a-day's high performance computing system. The system will automatically increase the fan speed when CPU operating loading is high, after the CPU is in normal operating condition, the system will low down the fan speed for the silent operating environment. The system can provide the much longer life cycle for both CPU and the system fans for game use and business requirements.

OC-CON --- (High-polymer Solid Electrolysis Aluminum 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.

1-2 Specification

Spec	Description
Design	* ATX form factor 4 layers PCB size: 29.5cm x20cm
Chipset	* AMD 780G North Bridge Chipset * AMD SB700 South Bridge Chipset
CPU Socket AM2+	* Support 64bit AMD Socket AM2+ processor utilizing Flip-Chip Pin Grid Array package * Support for AMD Athlon64 Dual –Core Athlon 64x2 processor, Athlon 64 & Sempron Processors with HTT Frequency 1GHz and the latest AMD Phenom™ FX, AMD quad core Phenom™ processors with HTT Frequency up to 2GHz.
Memory Socket	* 240-pin DDRII Module socket x 2 * Support 2pcs DDRII533/DDRII667/DDRII800/DDRII1066 Modules Expandable to 4 GB * Dual channel supported
Expansion Slot	* PCI-Express2.0 x16 by16 slot 1pcs deliver up to 16GB/s concurrent bandwidth. * PCI-Express2.0 x16 by4 slot 1pcs deliver up to4GB/s concurrent bandwidth. * PCI-Express2.0 x1 slot 1pcs deliver up to1GB/s concurrent bandwidth. * 32-bit PCI slot x 2pcs
Integrate IDE and Serial ATA2 RAID	* 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
Gigabit LAN	* Integrated RealTek RTL8111CVC PCI-E 10 / 100 / 1000 LAN. * Support Fast Ethernet LAN function of providing 10Mb/100Mb/1000 Mb/s data transfer rate
6 CH-Audio	* Realtek ALC662 HD 6-channel Audio Codec integrated * Audio driver and utility included
BIOS	* Award 8MB Flash ROM BIOS
Multi I/O	* PS/2 keyboard and PS/2 mouse connectors * HDMI Connector x1 * VGA Connector x1 * USB2.0 port x 4 and headers x 2 * RJ45 LAN Connector x1 * Audio connector x1 (Line-in, Line-out, MIC/6CH Audio) * Floppy disk drive connector x1/ Hard disk drive connector x1 * HDMI_SPDIF header x1/ IR Connector x1 * WI-FI Header x1

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: AMD Phenom 8600/Athlon 64x2 5400+

DRAM: Kingxon 1G 800X2 Memory

VGA Card : 1. Hybrid CrossFire 2. HD 2400

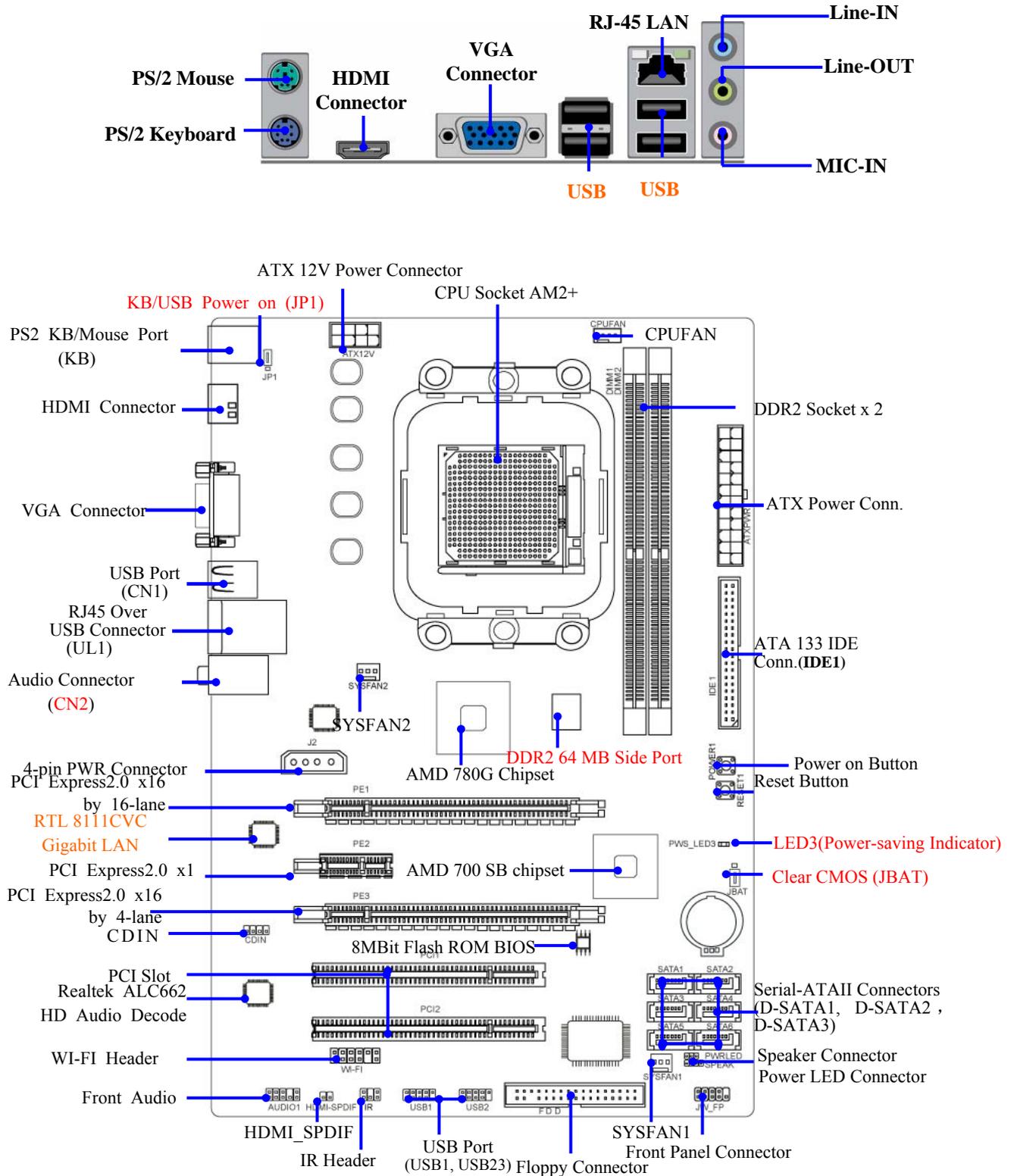
Hard Disk Driver: Sumsung 160GB

BIOS: To1

OS: Windows XP Professional (SERVICE PACK 2)

		AMD 780G Chipset Based Motherboard
3D Mark 2001SE		14141
3D Mark 2003		4685
3D Mark 2005		3418
3D Mark 2006		2624
PCMark2005		
System / CPU / Memory		NA/6077/4302
Graph / HDD		2409/5277
Content Creation Winstone 2004		37.3
Winbench 99 V2.0:		
Business/Hi-end GraphicWinmark99		29100
Business/Hi-end Graphic Winmark		
SISMark 2004: SISMark Rating(Internet Content Creation / Office Productivity)		
SISMark 2007		338
3D Creation/2D Creation		300/411
Web publication		312
Communication/ Document Creation		177/237
Data Analysis		171
SISOFT Sandra 2004 : 1.CPU Arithmetic Benchmark 2.Memory bandwidth Benchmark 3.CPU Multi-Media Benchmark		
1.Dhrystone ALU	MIPS	19590/16546
Whetstone FPU iSSE2	FLOPS	
2.Int/Float Buffered iSSE2	MB/S	50842/56034
3.Integer/Floating-Point	IT/S	5126/5139
UT2003 Benchmark (flyby/botmatch)		171.427/81.560
Quake3 DEMO1 /DEMO2		FPS 342.3/326.3
Return to Castle Wolfenstein		FPS
Super Pi (1M)		Second 35.594/2m56.688
CPUZ System / CPU Clock		

1-4 Layout Diagram



Jumpers

Jumper	Name	Description	Page
JP1	Keyboard/USB Power On Enabled/Disabled	3-pin Block	P.7
JBAT	CMOS RAM Clear	3-pin Block	P.8

Connectors

Connector	Name	Description	Page
ATXPWR1	ATX Power Connector	24-pin Block	P.12
ATX12V1	ATX 12V Power Connector	8-pin Block	P.13
KB	PS/2 Mouse & PS/2 Keyboard Connector	6-pin Female	P.13
USB from CN1, UL1	USB2.0 Port Connector	4-pin Connector	P.13
RJ45LAN from UL1	Gigabit LAN Port Connector	RJ-45 Connector	P.13
J2	CrossFire Power Connector	4-Pin Block	P.13
AUDIO : CN2	6-CH HD Audio Connector	3- phone jack Conn.	P.13
FDD1	Floppy Driver Connector	34-pin Block	P.14
IDE1	Primary/Secondary IDE Connector	40-pin Block	P.14
SATA1~SATA6	Serial ATAII IDE Connectors	7-pin Connector	P.15
VGA1	VGA Connector	15-pin Block	P.15
HDMI1	HDMIConnector	19-pin Block	P.15

Headers

Header	Name	Description	Page
AUDIO1	SPEAKER, MIC header	9-pin Block	P.15
USB1, USB2	USB Port Headers	9-pin Block	P.16
SPEAK1	PC Speaker connector	4-pin Block	P.16
PWR LED1	Power LED	3-pin Block	P.16
JW_FP1 (Reset/HDLED/Power Button/PWR LED)	Front Panel Header (including IDE activity LED/Reset switch / Power On Button lead)	9-pin Block	P.16
SYSFAN1/2	FAN Headers	3-pin Block	P.17
CPUFAN	FAN Header	4-pin Block	P.17
CDIN1	CD Audio-In Header	4-pin Block	P.17
IR	IR infrared module Headers	5-pin Block	P.17
HDMI SPDIF	SPDIF Out header	2-pin Block	P.18
WI-FI1	Wi-Fi header	11-pin Block	P.18

Expansion Sockets

Socket/Slot	Name	Description	Page
ZIF Socket AM2+	CPU Socket	940-pin mPGAB Athlon64 CPU Socket	P.9
DIMM1~2	DDRII Module Socket	240-pin DDRII Module Socket	P.9
PCI1~ PCI2	PCI Slots	32-bit PCI Local Bus Expansion slots	P.11
PE2	PCI-Express2.0 x1Slot	PCI-Express2.0 x1 Expansion Slots	P.11
PE1, PE3	PCI-Express2.0 x16 Slot	PCI-Express2.0 x16 Expansion Slots	P.11

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.

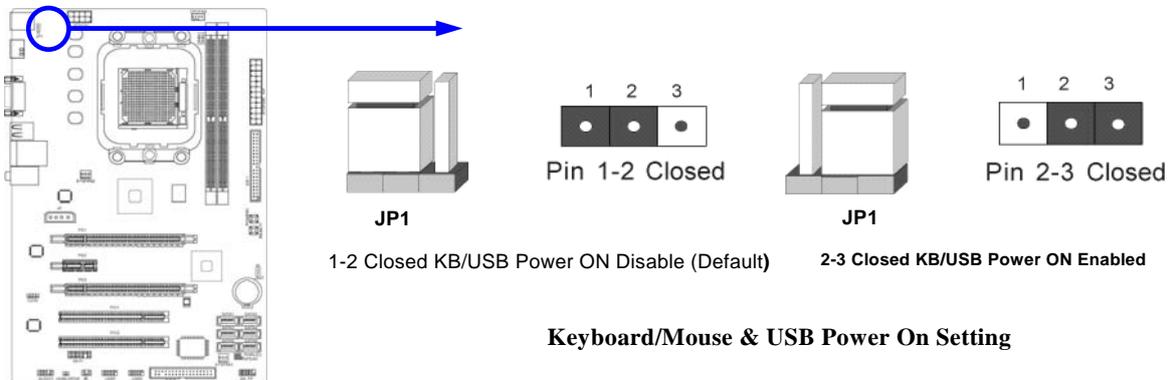
2-1 Hardware installation Steps

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 (3-pin) : JBAT

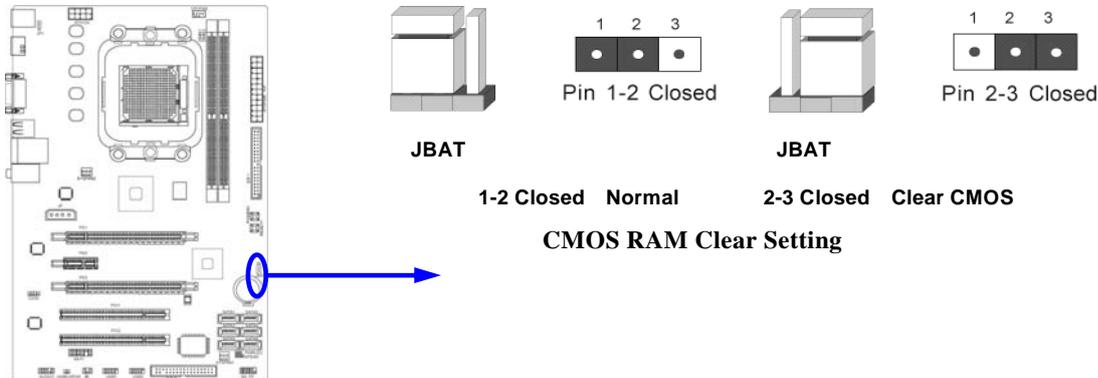
A battery must be used to retain the motherboard configuration in CMOS RAM short 1-2 pins of JBAT to store the CMOS data.

To clear the CMOS, follow the procedure below:

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

Note: When should clear CMOS

- 1. Troubleshooting*
- 2. Forget password*
- 3. After over clocking system boot fail*



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 - Peripheral Component Interconnect - 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 - 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.

LAN (interface) - Local Area Network - the interface to your local area network.

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, normal it depend on CPU type.

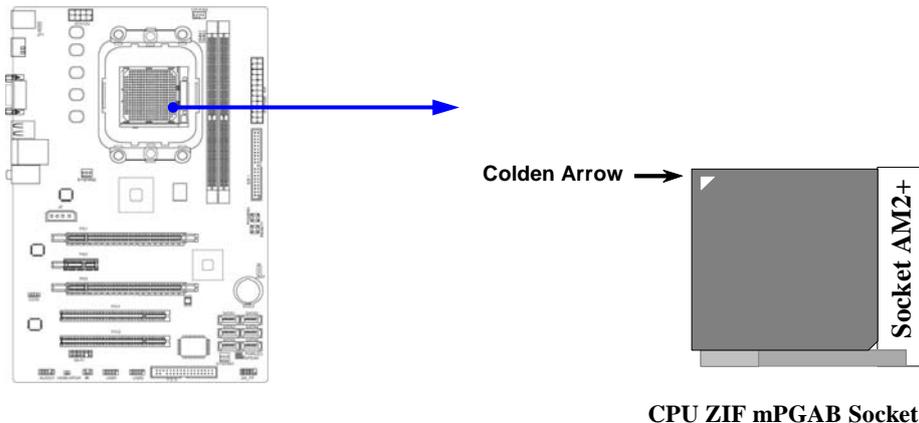
2-3-2 About AMD Athlon64 Socket AM2+ CPU

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.



CPU ZIF mPGAB Socket

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.

2-4 Install Memory

This motherboard provides two 240-pin DDR2 DUAL INLINE MEMORY MODULES (DIMM) socket for DDR2 memory expansion available from minimum memory volume of 128MB to maximum memory volume of 4 GB DDR SDRAM.

Valid Memory Configurations

Bank	240-Pin DIMM	PCS	Total Memory
Bank 0, 1 (DIMM1)	DDR2 667/DDR2 800/ DDR2 1066 *	X1	128MB~2 GB
Bank 2, 3 (DIMM2)	DDR2 667/DDR2 800/ DDR2 1066*	X1	128MB~2 GB
Total	System Memory (Max 4 GB)	2	128MB~4 GB

*DDR2 1066 could only be reached in the case of overclocking.

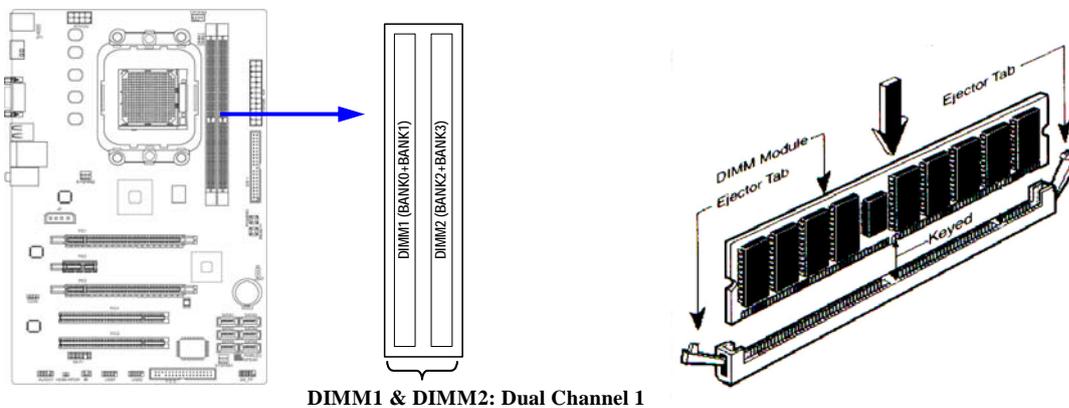
Recommend DIMM Module Combination

1. One DIMM Module ----Plug in DIMM1
2. Two DIMM Modules---Plug in DIMM1 and DIMM2 or DIMM3 and DIMM4 for Dual channel function

Dual channel Limited!

1. Dual channel function only supports when 2 DIMM Modules plug in either both DIMM1 & DIMM2 or DIMM3 & DIMM4, or four DIMM Modules plug in DIMM1~DIMM4.
2. Memory modules plugged in DIMM1 & DIMM2, or DIMM3 & DIMM4 must be of the same type, same size, and same frequency for dual channel function.

Install DDR II modules to your motherboard is not difficult, you can refer to figure below to see how to install a 240-Pin DDR2 667/DDR2 800/DDR2 1066 module.



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.

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.

2-5-2 Assigning IRQs For Expansion Card

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

Standard Interrupt Assignments

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

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

2-5-3 Interrupt Request Table For This Motherboard

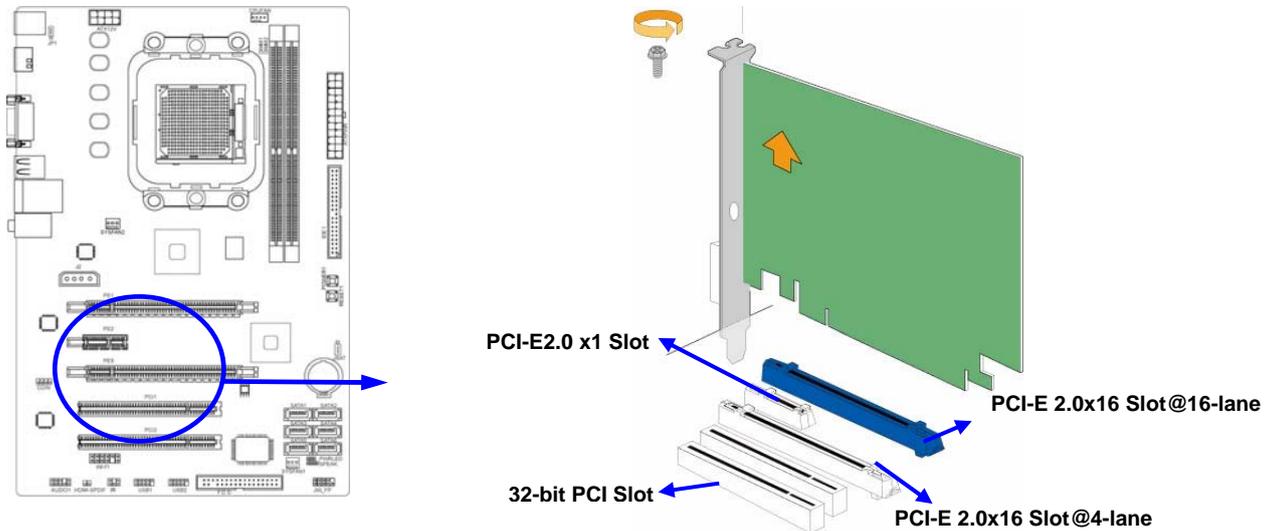
Interrupt request are shared as shown the table below:

	INT A	INT B	INT C	INT D	INT E	INT F	INT G	INT H
Slot 1		√						
Slot 2			√					
Slot 3				√				
Onboard USB 3			√					
HD Audio/MC97			√					

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

2-5-4 PCI Express 2.0 Slot

AMD 780G Series motherboard series offer one PCI-Express2.0 x16@ 16 lane graphics slots and one PCI-Express2.0 x16 by 4lane. PCI-Express2.0 x16by 16 slots deliver up to 8Gbyte/sec data transfer rate at each relative direction and up 16 Gbyte/sec concurrently while PCI-Express2.0 x16by 4 slots deliver up to 2 Gbyte/sec data transfer rate at each relative direction and up 4 Gbyte/sec concurrently Fully compliant to the PCI Express Base Specification revision 2.0, support PCI Express VGA card, and other PCI Express device. One PCI Express2.0 x1 I/O slot offers 1 Gbyte/sec concurrently, over 7 times more bandwidth than PCI at 133Mbyte/sec, tackling the most demanding multimedia tasks nowadays. The AMD 780G motherboards also carry two 32-bit PCI slots guarantee the rich connectivity for the I/O peripheral devices.



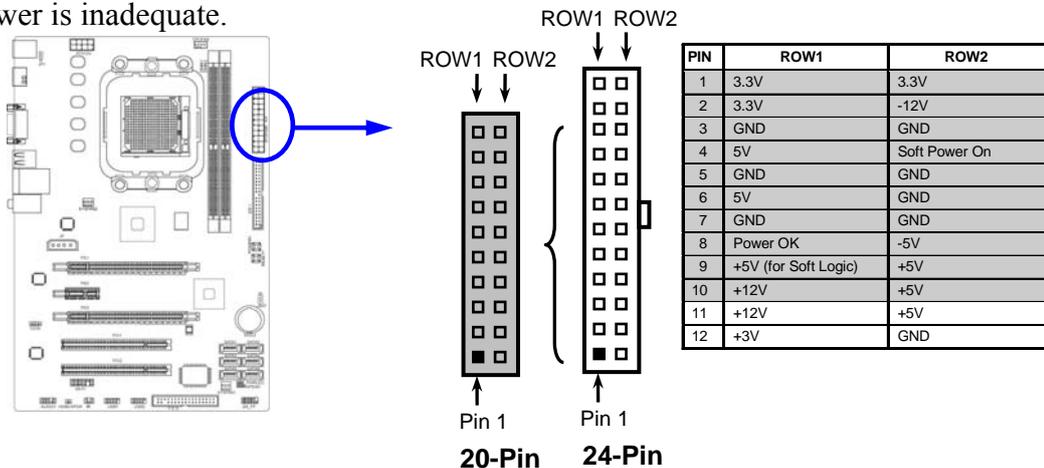
2-6 Connectors, Headers

2-6-1 Connectors

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

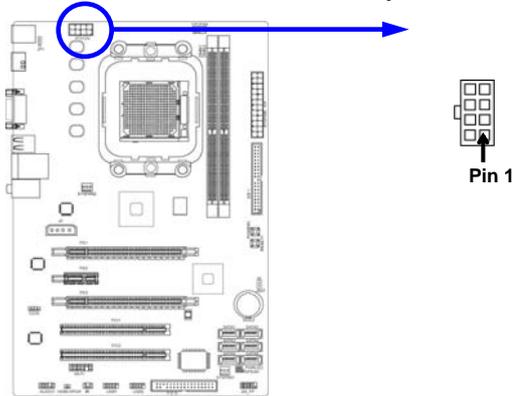
ATX Power Supply connector: This is a new defined 24-pins connector that usually comes with ATX case. The ATX Power Supply allows using soft power on momentary switch that connect from the front panel switch to 2-pins Power On jumper pole on the motherboard. When the power switch on the back of the ATX 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.



(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: KB**

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

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

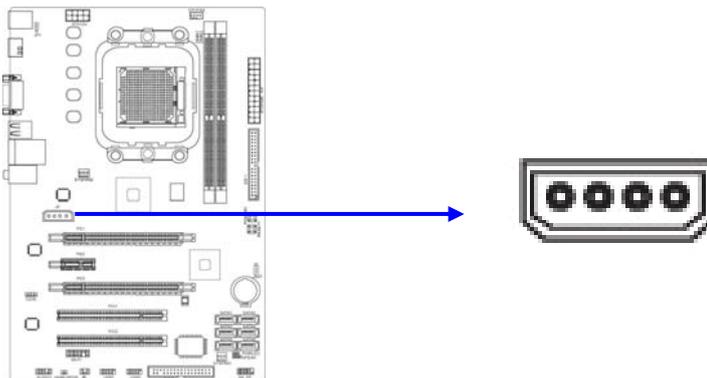
The connectors are 4-pin connector that connects USB devices to the system board.

(5) **LAN Port connector: RJ45 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**

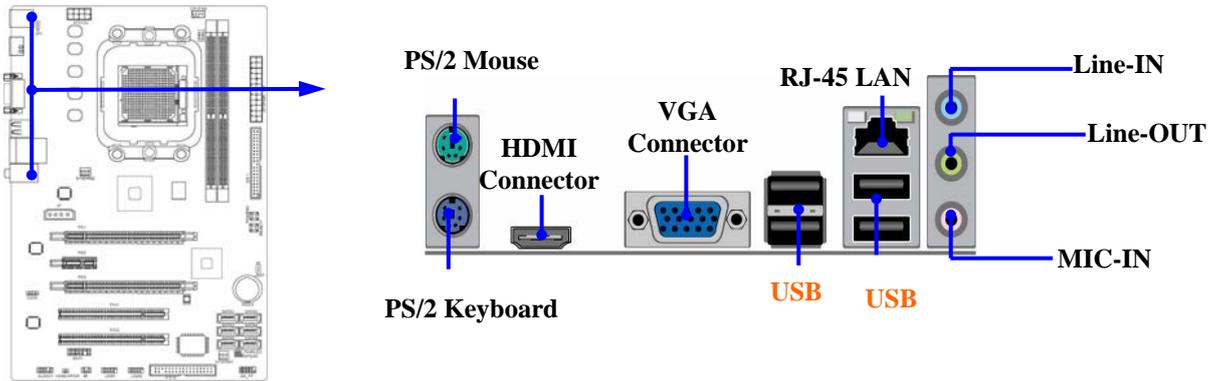
The connectors are 4-pin connector that supports extra 12V / 5V power to your system .



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

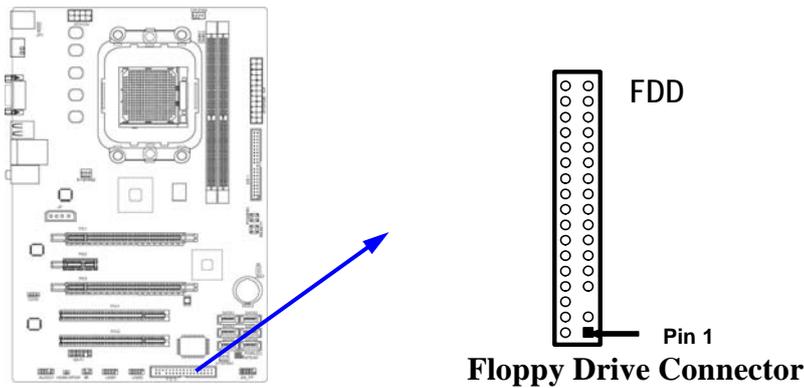
These Connectors are 3 Phone-Jack for LINE-OUT, LINE-IN, MIC audio connections.

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



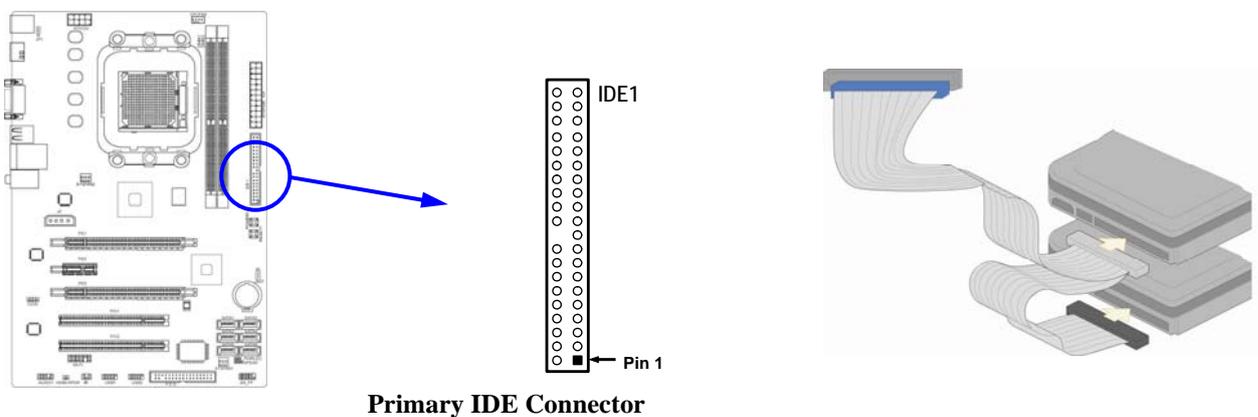
(8) Floppy drive Connector (34-pin block): FDD1

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

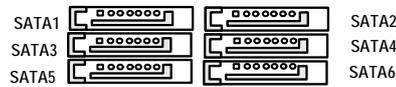
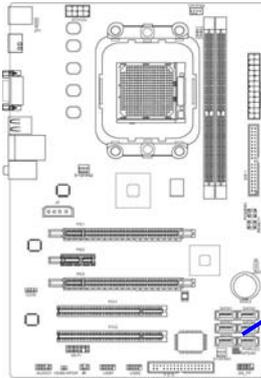
This connector supports the provided IDE hard disk ribbon cable. After connecting the single plug end to motherboard, connect the two plugs at other end to your hard disk(s). If you install two hard disks, you must configure the second drive to Slave mode by setting its jumpers accordingly. Please refer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

(10) Serial-ATAII Port connector:SATA1~SATA6

These connectors support the provided Serial ATA2 hard disk cables to connecting the motherboard with serial ATAII hard disks. E-SATA1 is not for SATA hard drive, it is only for connecting to a SATA connector of the D-SATA1, D-SATA2 or D-SATA3 to let the ESATA port work.



Serial-ATA2 Port Connector

(11) D-Sub 15-pin connector:VGA

VGA connector is the 15-pin D-subminiature female connector; it is for the display devices, such as the CRT monitor, LCD monitor and so on.

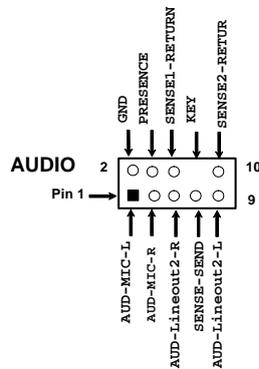
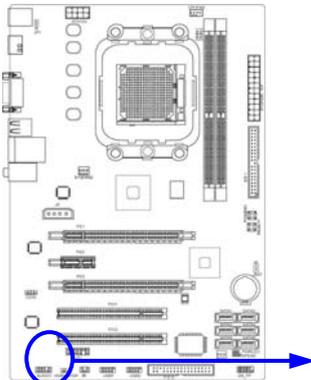
(12) HDMI: High-Definition Multimedia Interface

This point-to-point interface is for audio and video signals designed as a single-cable solution for home theater and consumer electronics equipment.

2-6-2 Headers

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

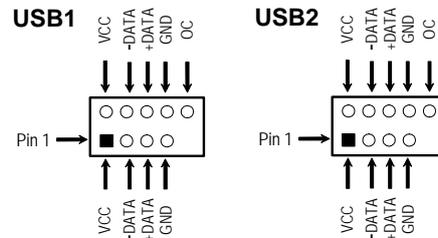
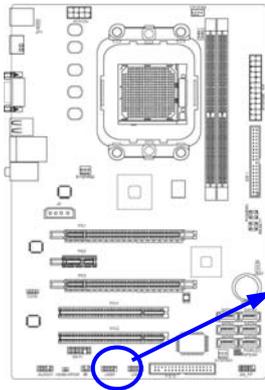
These headers connect to Front Panel Line-out, MIC connector with cable.



Line-Out, MIC Headers

(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.



USB Port Headers

(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

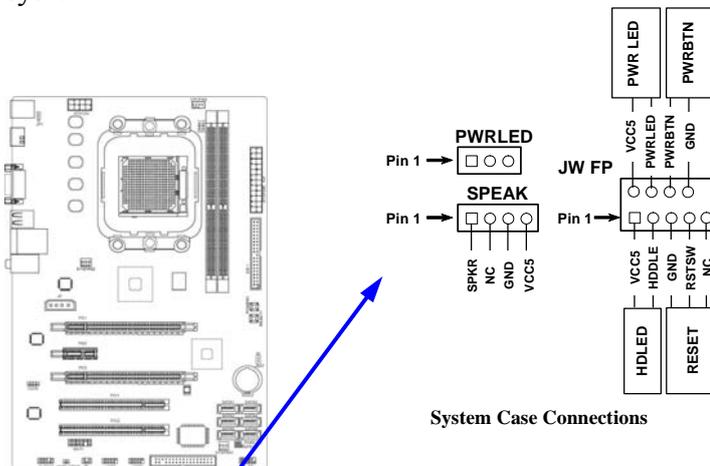
This connector connects to the hard disk activity indicator light on the case.

(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

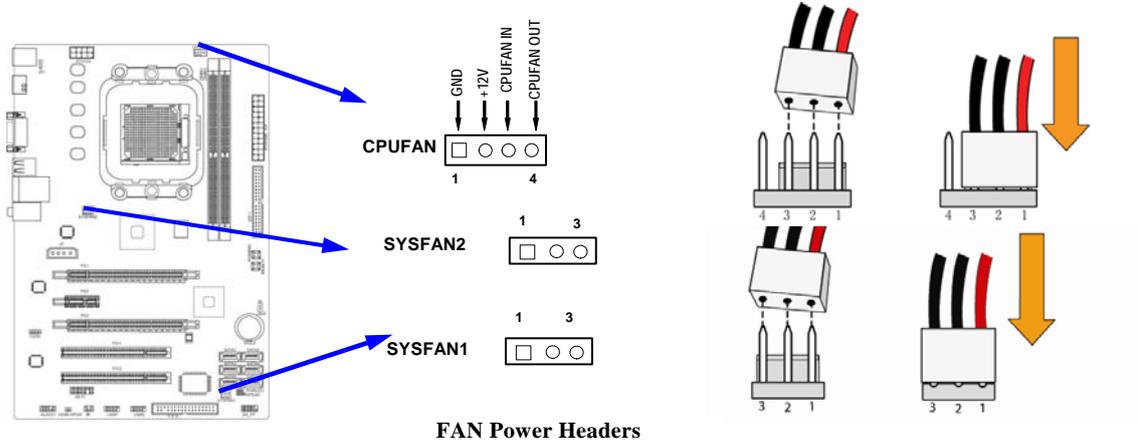
This 2-pin connector connects to the case-mounted power switch to power ON/OFF the system.



System Case Connections

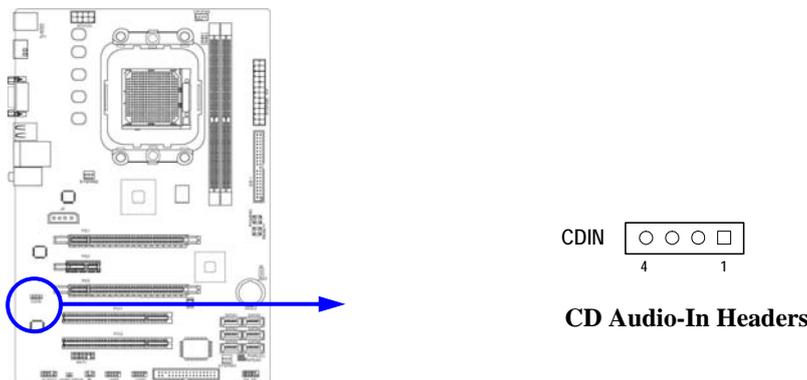
(8) FAN Power Headers: SYSFAN1, SYSFAN2, CPUFAN (4-pin)

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.



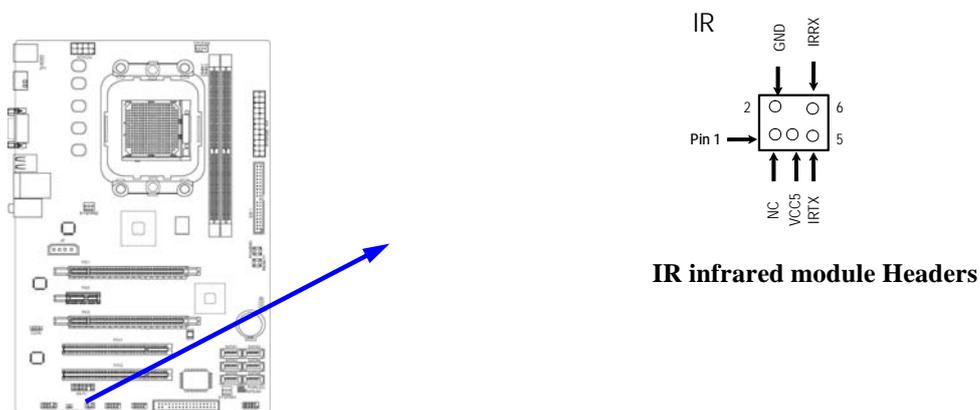
(9) CD Audio-In Headers (4-pin): CDIN1

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



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.

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

6. During power-on, press <Delete> key to enter BIOS setup. Follow the instructions in BIOS SETUP.
7. **Power off your computer:** You must first exit or shut down your operating system before switch off the power switch. For ATX power supply, you can press ATX power switching after exiting or shutting down your operating system. If you use Windows 9X, click “**Start**” button, click “**Shut down**” and then click “**Shut down the computer?**” The power supply should turn off after windows shut down.

Chapter 3

Introducing BIOS

The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program 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 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 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 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.

Phoenix - AwardBIOS CMOS Setup Utility

Standard CMOS Features	Thermal Throttling Option
Advanced BIOS Features	Power User Overclock Settings
Advanced Chipset Features	Password Settings
Integrated Peripherals	Load Optimized Defaults
Power Management Setup	Load Fail-Safe Defaults
Miscellaneous Control	Save & Exit Setup
PC Health Status	Exit Without Saving
Esc : Quit F9 : Menu in BIOS ↑↓→← : Select Item	
F10 : Save & Exit Setup	

Figure 3-1

Standard CMOS Features

Use this Menu for basic system configurations.

Advanced BIOS Features

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

Advanced Chipset Features

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

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management Setup

Use this menu to specify your settings for power management.

Miscellaneous Control

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

PC Health Status

This entry shows your PC health status.

Power User Overclock Settings

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

Thermal Throttling Option

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

Load Fail-Safe Defaults

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

Load Optimized Defaults

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

Password Settings

This entry for setting Supervisor password and User password

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.

Phoenix - AwardBIOS CMOS Setup Utility
Standard CMOS Features

Date (mm.dd.yy)	Tue* Jan 1 * 2008	Item Help
Time (hh:mm:ss)	1 : 39 : 8	
> IDE Channel 0 Master	None	Menu Level >
> IDE Channel 0 Slave	None	
SATA Channel 5	None	Change the day, month, year and century
SATA Channel 6	None	
SATA Channel 1	None	
SATA Channel 3	None	
SATA Channel 2	None	
SATA Channel 4	None	
Drive A	1.44M,3.5in	
Halt on	All Errors	
Base Memory	640K	
Extended Memory	392194K	
Total Memory	393216K	
↑↓←→ Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Date

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 the type of hard disk drives 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

Phoenix - AwardBIOS CMOS Setup Utility

Advanced BIOS Features

CPU Feature	Press Enter	Item Help	
Hard Disk Boot Priority	Press Enter		
Virus Warning	Disabled	Menu Level >	
CPU Internal Cache	Enabled		
External Cache	Enabled		
Quick power On Self Test	Enabled		
First Boot Device	Hard Disk		
Second Boot Device	CDROM		
Third Boot Device	Floppy		
Boot other Device	Enabled		
Boot Up Floppy Seek	Disable		
Boot Up NumLock Status	On		
Typematic Rate Setting	Disabled		
Typematic Rate (Chars/Sec)	6		
Typematic Delay (Msec)	250		
Security Option	Setup		
APIC Mode	Enabled		
MPS Version Control For OS	1.4		
OS Select For DRAM > 64MB	Non-OS2		
HDD S.M.A.R.T. Capability	Disabled		
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults			

3-5-1 CPU Feature

Phoenix - AwardBIOS CMOS Setup Utility

CPU Feature

Virtualization	Enabled	Item Help
TLB Check	Enabled	
		Menu Level >
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Hard Disk Boot Priority

The selection is for you to choose the hard disk drives priorities to boot from.

Virus Warning

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.

CPU Internal Cache

The default value is Enabled.

Enabled (default) Enable cache

Disabled Disable cache

Note: The internal cache is built in the processor.

External Cache

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

Quick Power On Self-Test

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

Enabled (default) Enable quick POST

Disabled Normal POST

First/Second/Third/Fourth Boot Device

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

Boot Up Floppy Seek

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

Boot Up NumLock Status

The default value is On.

On (default) Keypad is numeric keys.

Off Keypad is arrow keys.

Typematic Rate Setting

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

Typematic Rate (Chars/Sec)

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

Typematic Delay (Msec)

Sets the delay time after the key is held down before beginning to repeat the keystroke. The settings are 250, 500, 750, and 1000.

Security Option

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

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

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

HDD S.M.A.R.T Capability

This option allow you to enable the HDD S.M.A.R.T Capability (Self-Monitoring, Analysis and Reporting Technology). You can choose from Enabled and Disabled.

MPS Version Control For OS 1.4

This option is only valid for multiprocessor motherboards as it specifies the version of the Multiprocessor Specification (MPS) that the motherboard will use.

OS Select For DRAM > 64MB

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

3-6 Advanced Chipset Features

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

Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features

DRAM Configuration	Press Enter	Item Help Menu Level >
HT Link Control	Press Enter	
PCIE Configuration	press Enter	
IGX Configuration	Press Enter	
HDMI Audio	Enabled	
NB Power Management	Auto	
Memory Hole	Disabled	
System BIOS Cacheable	Disabled	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

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.

3-6-1 PCIE Configuration

Phoenix - AwardBIOS CMOS Setup Utility
PCIE Configuration

Primary Dual Slot Config	Disabled	Item Help Menu Level >
GFX Port 1	Press Enter	
GPP1	Press Enter	
NB-SB Port Features	Press Enter	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

GFX Port 1

Use this item to set PCI E Gen2 High Speed Mold, Link ASPM and Link Width .

GPP1

Use this item to set Gen2 High Speed Mold and Link Width.

NB-SB Port Features

Use this item to set Link ASPM, Link Width, VC1 Traffic Support.

3-6-2 DRAM Configuration

Phoenix - AwardBIOS CMOS Setup Utility

DRAM Configuration

DRAM Latency (tcl)	Auto	Item Help
(Trtc) RAS to CAS R/W Delay	Auto	
(Trp)Row precharge Time	Auto	
(Tras) Minimum RAS Active Time	Auto	
DRAM Command Rate	2T	
CKE base Power dowe mode	Disabled	
CKE BASED Powerdown	per channel	
Memclock tri-slating	Disabled	
Momery Hole Remapping	Enabled	
Auto optimize Bottom IO	Enabled	
Bottom of [31:24] IO Space	D8	
Bottom of UMA DRAM [31:24]	FC	
DDRII Timing Item	Disabled	
TwTr Command Delay	3 bus clock	
Trfc 0 for DIMM0	75ns	
* Trfc 1 for DIMM 1	75ns	
* Trfc 2 for DIMM 2	75ns	
* Trfc 2 for DIMM 3	75ns	
(Twr)Write Recovery Time	6 bus clocks	
(Trtp)Precharge Time	3 clocks	Menu Level >>
(Trc) Row Cycle Time	26 bus clocks	
(Trrd)RAS to RAS Delay	5 clocks	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

DRAM Latency

The settings are: Auto, 3T, 4T, 5T.

RAS-to-CAS R/W Delay

The settings are: Auto, 3 clocks, 4 clocks, 5 clocks, 6 clocks.

Minimum RAS Active Time

The settings are: Auto, 5~18 bus clocks.

DRAM Command Rate

The settings are: Auto, 1T,2T.

CKE Based Power Down Mold

The optional settings are: Per Channel; Per CS.

3-6-3 HT Link Control

Phoenix - AwardBIOS CMOS Setup Utility

HT Link Control

HT Link Width	Auto	Item Help Menu Level >
HT Link Frequency	Auto	
CLMC Support	Disable	
*CDLC	Disable	
*CDLD	Disable	
*CDLW	Disable	
*CDLF	Disable	
*CDLK	Disable	
*CDLR	Disable	
*CDLR Int	Disable	
*CDLR Ken	Disable	
IH Flow-Control Mold	Disable	
HT Link Trislate	Disabled	
Unit ID Clumping	Auto	
2X Lclk Mold	Disabled	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

HT Link Width

The optional settings are :Auto, 8 Bit, and 16 Bit.

HT Link Frequency

The optional settings are: Auto, 200MHz, 4000MHz, 600 MHz , 800Mhz and 1.0 GHz.

IH Flow-Control Mode:

Isochronous (ISOC) Flow Control Mode enable will make the HT Link communication have the complex ordering rules for Isochronous source to make sure it can get service from the system with deterministic worst-case latency. However, the latency time cost of ISOC flow control mode is an important consideration. Normal flow control mode will be a simpler solution for most system.

HT Link Tristate:

Disabled mode will make the link transmitter is driven but in and under fined state during the disconnect sequence. And the PHY (transmitter) is placed in LS0. LS0 state keeps all lanes active to maintain DLL and phase recovery lock.

Enabled mode will make the link transmitter is placed into high impedance states during the disconnect sequence. And the PHY (transmitter) is placed in LS1, LS2 or LS3. LS1, LS2 and LS3 are each states that shut down parts of the PHY to save power.

LS1 state: CLK running, CAD/CTL sending TxIdle.

LS2 state: CLK/CAD/CTL sending TxIdle.

LS3 state: CLK/CAD/CTL sending either HiZ or TxGndTrm.

IH Flow-Control Mode:

Isochronous (ISOC) Flow Control Mode enable will make the HT Link communication have the complex ordering rules for Isochronous source to make sure it can get service from the system with deterministic worst-case latency. However, the latency time cost of ISOC flow control mode is an important consideration. Normal flow control mode will be a simpler solution for most system.

UnitID Clumping:

The optional settings are: Auto, Disabled, PCIE, GFX and PCIE& GFX.

3-6-4 IGX Configuration

Phoenix - AwardBIOS CMOS Setup Utility

IGX Configuration

Internal Graphics Mode	UMA+SidePort	Item Help	
UMA Frame Buffer Size	Aotu		
Frame Buffer Location	Above 4G	Menu Level >	
IGX Engine Clock Override	Disabled		
* IGX Engine Clock	500		
Surround View	Disabled		
IGX Clock Spread	400 MHz		
UMA-SP Interleave Mold	Auto		
*Size	4MB		
*Ratio (SP:UMA)	1:1		
SP Power Management	Auto		
SP DDT	Disabled		
SP CMP Hold	Auto		
SP DTA Hold	Auto		
↑↓→← Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Optimized Defaults F7: Standard Defaults			

Internal Graphics Mode

The optional items are: Disabled, UMA, Side Port and UMA+ Side Port.

UMA Frame Buffer Size

The optional settings are: Auto, 32MB, 64MB, 128 MB, 256MB and 512MB.

3-7 Integrated Peripherals

Phoenix - AwardBIOS CMOS Setup Utility

Integrated Peripherals

CIMX-SB700 Revision	2.5.0	Item Help
Superio Function Setup	Press Enter	
onchip PCI Device	Press Enter	Menu Level >
Onchip IDE Device	Press Enter	
Onchip SATA Device	Press Enter	
↑↓→← Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Optimized Defaults F7: Standard Defaults		

Super IO Device

Please refer to section 3-7-1

OnChip IDE Device

Please refer to section 3-7-2

OnChip PCI Device

Please refer to section 3-7-3

OnChip SATA Device

Please refer to section 3-7-4

3-7-1 Super IO Device

Phoenix - AwardBIOS CMOS Setup Utility

Super IO Function Setup

Onboard FDC Controller	Enabled	Item Help
Onboard Side Port 1	3F8/IRQ4	
UART Mode Select	IrDA	Menu Level >>
* IRDA Duplex Mode	Half	
PWR0M After PWR-Fail	[OFF]	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Onboard FDC 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 Port1

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.

UART Mode Select

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

IrDA Duplex Mode

This field is available when UART Mode is set to either ASKIR or IrDA. This item enables you to determine the infrared function of the onboard infrared chip. The options are Full and Half (default). Full-duplex means that you can transmit and send information simultaneously. Half-duplex is the transmission of data in both directions , but only one direction at a time.

Poweron After Power Failure

This determines the manner when the power recovery after power failure. The setting are: Off, On.

3-7-2 Onchip IDE Function

Phoenix - AwardBIOS CMOS Setup Utility

OnChip IDE Function

IDE HDD Block Mode	Enabled	Item Help
IDE DMA transfer	Enabled	
Onchip IDE Channel 0	Enabled	Menu Level >>
Primary Master PIO	Auto	
Primary Slave PIO	Auto	
Primary Master UDMA	Auto	
Primary Slave UDMA	Auto	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

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.

IDE DMA Transfer

The integrated peripheral controller contains an IDE interface with support for one IDE channels. Select Enabled to activate each channel separately. The settings are: Enabled and Disabled.

Primary Master/Slave PIO

The two IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-2) for each of the two IDE devices that the onboard IDE interface supports. Modes 0 through 2 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 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.

3-7-3 Onchip PCI Device

Phoenix - AwardBIOS CMOS Setup Utility

OnChip PCI Device

Onboard PCIE LAN Device	Enabled	Item Help
Onboard PCIE LAN BootRom	Disabled	
HD Audio	Enable	Menu Level >>
Onchip USB Controller	Enabled	
USB EHCI Controller	Enabled	
USB keyboard Support	Enabled	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Onboard PCIE LAN device/Onboard PCIE LAN BootRom

This option allows you to control the onboard LAN device.

HD Audio

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

Onchip USB 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 EHCI/Keyboard Support

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

3-7-4 Onchip SATA Device

Phoenix - AwardBIOS CMOS Setup Utility

OnChip SATA Device

Onchip SATA Channel	Enabled	Item Help
Onchip SATA Type	Native IDE	
Combined Mold	Enabled	Menu Level >>
SATA smbus Interface	Enabled	
Aggressive Link PM	Enabled	
Port Multiplier	Enabled	
Slumber & Partial State	Enabled	
Hot Plug Support	Enabled	
SATA Auto Clock Control	Disabled	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Onchip SATA Type

The optional settings are: Native IDE, RAID, Legacy IDE and IDE→AHCI.

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.

Phoenix - AwardBIOS CMOS Setup Utility

Power Management Setup

ACPI function	Enabled	Item Help
ACPI Suspend Type	S1(POS)	
C2 Disabled /Enabled	Disabled	Menu Level >
Power Management Option	User Define	
HDD Power Down	Disabled	
Video Off Option	suspend - off	
Video off Method	V/H SYNC + BLANK	
Modem Use IRQ	3	
Soft-OFF by PWRBTN	Instant off	
Power On by PCI Card	Disabled	
ACPI XSDT Table	Enabled	
HPET Support	Enabled	
Power on by Keyboard	Disabled	
Power on by Mouse	Disabled	
RTC Alarm Resume	Disabled	
● Date of month	0	
● Resume Time <hh:mm:ss>	0:0:0	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

ACPI Function

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

HDD Power Down (Disabled)

The IDE hard drive will spin down if it is not accessed within a specified length of time. Options are from 1 Min to 15 Min and Disable.

Video Off Method

This determines the manner in which the monitor is blanked.

DPMS (default) Initial display power management signaling.

Blank Screen This option only writes blanks to the video buffer.

V/H SYNC+Blank This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

MODEM Use IRQ

If you want an incoming call on a modem to automatically resume the system from a power-saving mode, use this item to specify the interrupt request line (IRQ) that is used by the modem. You might have to connect the fax/modem to the motherboard Wake On Modem connector for this feature to work.

Soft-Off by PWRBTN

Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake up Alarms. This item lets you install a software power down that is controlled by the power Button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec, then you have to hold the power button down for four seconds to cause a software power down.

RTC Alarm Resume

When set to Enabled, additional fields become available and you can set the date (day of the month), hour, minute and second to turn on your system. When set to 0 (zero) for the day of the month, the alarm will power on your system every day at the specified time .

Date (of month)

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

Time (hh:mm:ss)

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.

ACPI XSDT Table This table is for 64 Bits OS using, Don't use for win2k or winxp 32 bits Mode.

3-9 Miscellaneous Configuration

Phoenix - AwardBIOS CMOS Setup Utility

Miscellaneous Control

Init Display First	PCIEx	Item Help
Reset Configuration Date	Disabled	
Resource Controlled by	Auto [ESCD]	Menu Level >
* IRQ Resource	Press Enter	
PCI /VGA Palette SNOOP	Disabled	
Assign IRQ for VGA	Enabled	
Assign IRQ for USB	Enabled	
PCI Latency Timer (CLK)	[64]	
* PCI Express Relative Items		
Maximum Payload Size	4096	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Reset Configuration Data

If you enable this item and restart the system, any Plug and Play configuration data stored in the BIOS Setup is cleared from memory.

Init Display First

Use this item to specify whether your graphics adapter is installed in one of the PCI E slots or is integrated on the motherboard. If a PCI E graphics card is installed, the onboard VGA will be disabled.

PCI/VGA Palette Snoop

This item is designed to overcome problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so

you must leave this item disabled.

Assign IRQ For USB

Names the interrupt request (IRQ) line assigned to the USB on your system. Activity of the selected IRQ always awakens the system.

Resources Controlled By BIOS can automatically configure all the boot and plug and play compatible devices. If you choose Auto, you cannot select IRQ DMA and memory base address fields, since BIOS automatically assigns them.

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.

Phoenix - AwardBIOS CMOS Setup Utility

PC Health Status

Show PC Health in Past	Enabled	Item Help
Shutdown Temperature	Disabled	
Smart FAN Configuration	Press Enter	Menu Level >
VLDT	1.26V	
VDIMM	1.95V	
VCORE	1.35V	
NBVCC	1.16V	
CPU Temperature	38°C	
SYS Temperature	80°C	
CPUFAN Speed	2525 RPM	
SYS FAN1 Speed	0 RPM	
SYS FAN2 Speed	0 RPM	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Show PC Health in Post

During Enabled, it displays information list below. The choice is either Enabled or Disabled

Shutdown Temperature

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

PS CPU Smart FAN Configurations

CPU Full-Speed Temp

This item allows you setting the FAN works in full speed when the temperature over the value which out set. If the temperature below the value but over the Idle Temperature, the FAN will works over 60% of full speed, and the higher temperature will gain higher FAN speed, after over the temperature which this item setting, the FAN works in full speed.

CPU Idle Temp

This item allows you setting the FAN works in 60% of full speed, when the temperature lower than the temperature which you setting.

CPU Temperature/SYS Temperature /SYS FAN1, SYS FAN2 /VLDT/VDIMM/VCORE/ NBVCC

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

3-11 Power User Overclock Setting

Phoenix - AwardBIOS CMOS Setup Utility

Power User Overclock Setting

CPU Clock At Next Boot	200	Item Help
PCIE Reference clock	100	
SB Reference clock	100	Menu Level >
Spread Spectrum	Enabled	
CPU Ratio at Next Boot	Auto	
NPI Vid Control	Auto	
AMD K8 Cool&Quiet Control	Disabled	
VDIMM Select	1.95v	
NB Voltage setting	1.15v	
Memory Clock Mode	Auto	
DRAM CLOCK at Next Boot	DDR667	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

CPU Clock at Next Boot

This item allows you to set CPU clock. The range is from 190~600.

PCI E Reference Clock

This item allows you to set PCI E reference clock. The range is from 90~250.

SB Reference Clock

This item allows you to set south bridge reference clock. The range is from 90~150.

CPU Ratio at Next Boot

This item provides user with 16 selectable stages to set the CPU ratio.

VDIMM Select

This item allows you to set memory module voltage. The optional items are 1.85V, 1.90V, 1.95 V and 2.00V.

NB Voltage Setting

This item allows you to select value of Voltage for North Bridge Chipset. The optional items are 1.10V, 1.15V and 1.20V.

Memory Clock Mold

This item allows you to set memory clock mold. The optional items are: Auto; Manual.

3-12 Thermal Throttling Options

Phoenix - AwardBIOS CMOS Setup Utility

Thermal Throttling Options

CPU Thermal-Throttling	Disabled	Item Help	
CPU Thermal-Throttling Temp	70		
CPU Thermal-Throttling Duty	50%	Menu Level >	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults			

3-13 Load Fail-Safe Defaults

Load Fail-Safe Defaults

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

Load Fail-Safe Defaults (Y/N)? N

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

3-14 Load Optimized Defaults

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.

3-15 Password Settings

Phoenix - AwardBIOS CMOS Setup Utility

Password Settings

Set Supervisor Password	Press Enter	Item Help
Set User Password	Press Enter	
		Menu Level >
↑↓← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

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

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

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

ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

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

PASSWORD DISABLED.

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

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

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

Chapter 4

DRIVER & FREE PROGRAM INSTALLATION

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

MAGIC INSTALL supports WINDOWS 9X/NT/2K/XP

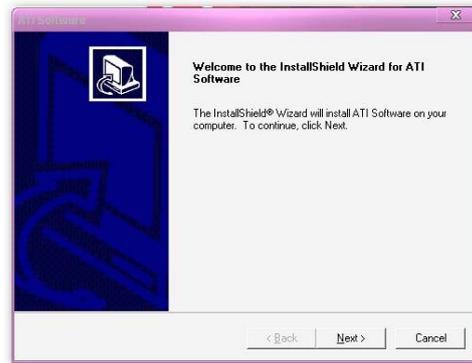
Insert CD into your CD-ROM drive and the MAGIC INSTALL Menu should appear as below. If the menu does not appear, double-click MY COMPUTER / double-click CD-ROM drive or click START / click RUN / type X:\SETUP.EXE (assuming X is your CD-ROM drive).



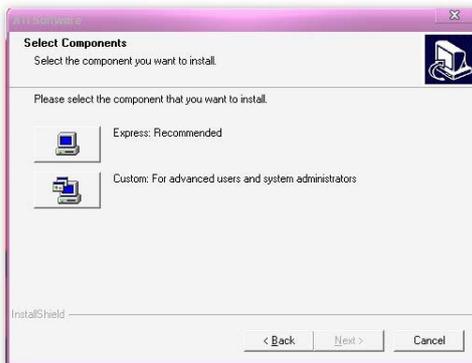
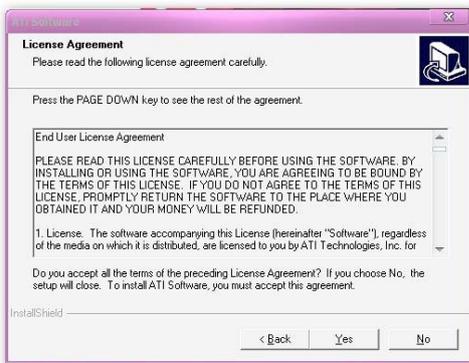
From MAGIC INSTALL MENU you may take 8 selections:

1. ATI install ATI driver pack
2. SOUND install ALC 662 HD Audio driver
3. LAN install RealTek LAN Controller Driver
4. RaidDisk install SATA RAID Driver and Utility
5. PC-CILLIN install PC-CILLIN 2008 anti-virus program
6. PC-HEALTH install My Guard hardware monitor utility
7. BROWSE CD to browse the contents of the CD
8. 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 restart your computer.

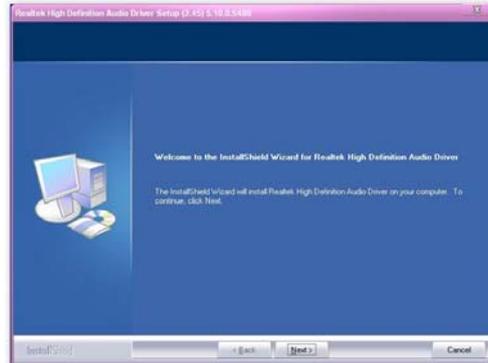


5. Click Continue anyway.
6. Choose Finish , do not restart your computer.

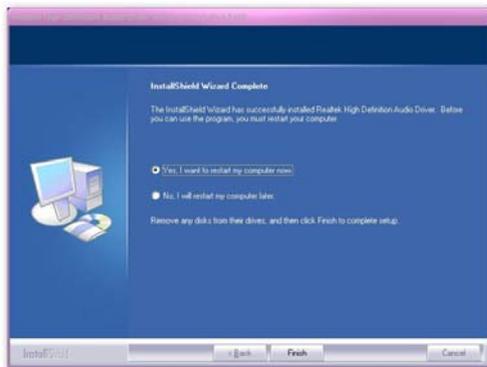
4-2 SOUND Install ALC662 HD Audio Driver



1. Click SOUND when MAGIC INSTALL MENU appears



2. Click NEXT When Realtek 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.



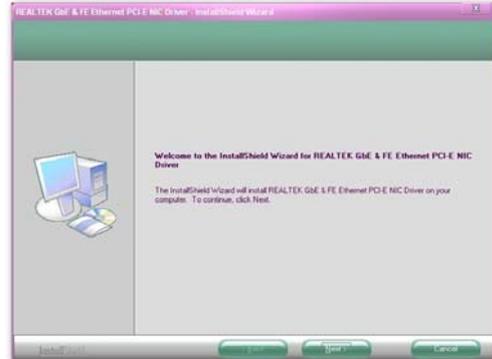
7. Microphone effect setting.



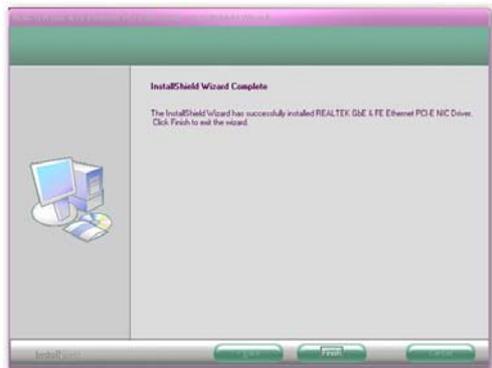
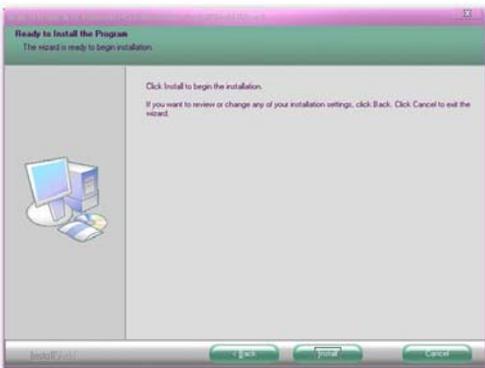
8. 3D demo setting.

NOTE: Please upgrade your Windows XP to Service Pack 1 / Windows 2000 to Service Pack 4 or later before you the HD Audio CODEC driver.

4-3 LAN Install RealTek LAN Controller Driver

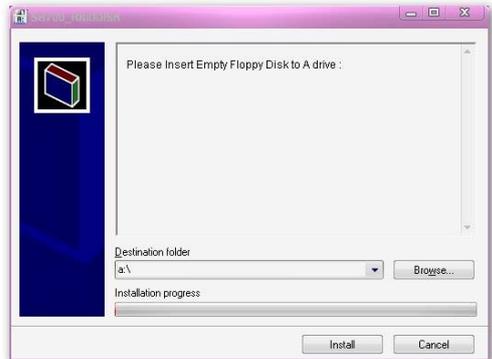


1. Click LAN when Magic Install Menu appears.
2. Click Next to install RealTek LAN Driver.



3. Click Install to begin the installation.
4. After driver installation completed, Click Finish.

4-4 RAID Install SATA RAID Driver and Utility



- 1 Click RAIDDisk when MAGIC INSTALL MENU appears
2. Install RAID Disk.

4-5 PC-CILLIN Install PC-CILLIN 2008 Anti-virus Program



1 Click PC-CILLIN when MAGIC INSTALL MENU appears



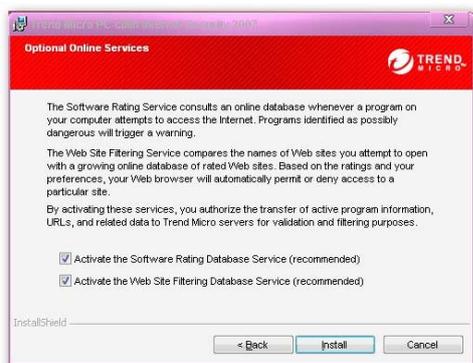
2. Please select Next when the "Trend Micro internet security" install shield wizard windows appears



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



4. The preinstallation checkup process

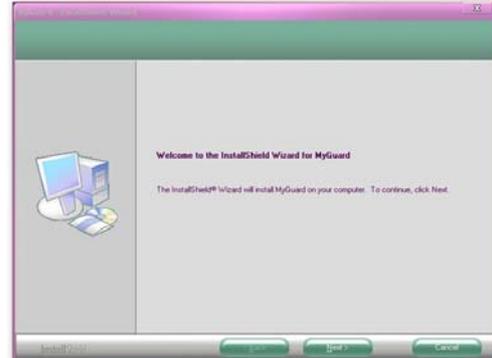


5. Click Next after you select the features you want to install and the folder to install it.

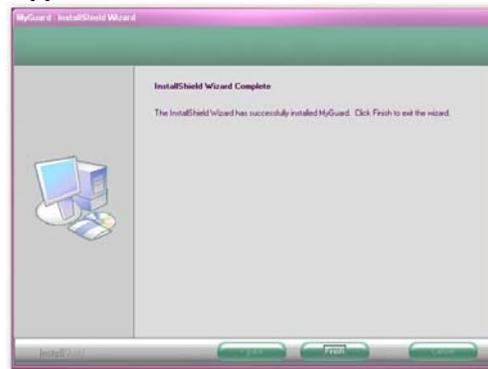
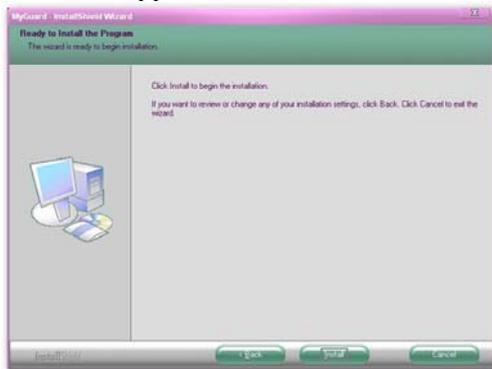


6. Click Install after you select to install the optional online services.

4-6 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.

4-7 How to Update BIOS

Before updating the BIOS, users have to check if the “Miscellaneous Control” of BIOS SETUP has the “Flash Part Write Protect” selection. If there is one, users have to “Disable” the “Flash Part Write Protect” selection of the “Miscellaneous Control” in BIOS SETUP. Otherwise the system will not allow you to upgrade BIOS by Award Flash Utility. If there is no such selection, users can follow the 4 steps directly to update BIOS.

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. Download and make a copy of the latest BIOS for 790X series motherboard series from the web site to your boot disc.

STEP 4. Insert your boot disc into A:;
Start the computer, type “Awdflash A:\xxxxxx.BIN /SN/PY/CD/CH/WB/CC/R”
xxxxxx.BIN is the file name of latest BIOS
SN means don't save existing BIOS data
PY means renew existing BIOS data
CD means clear DMI data after programming

CH means update HOLE
WB means always programming BootBlock
CC means clear existing CMOS data
R means restart computer

STEP 5. Type ENTER to update and flash the BIOS, then the system will restart automatically.

4-8 AMD Platform RAID Function Installation

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



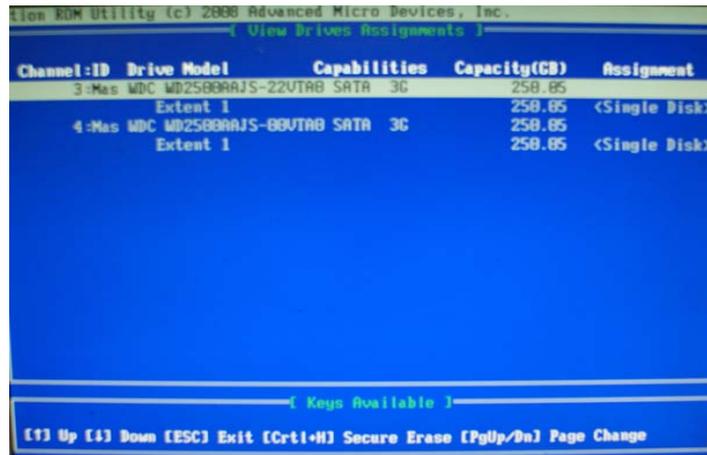
[figure1]

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

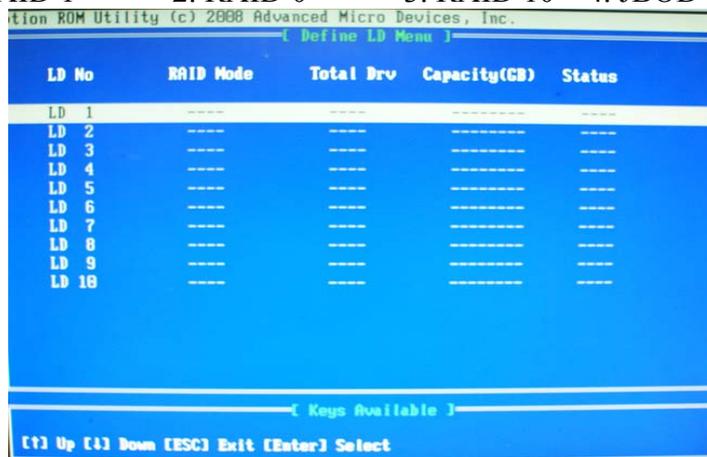


[figure3]

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

RAID function:

1. RAID 1
2. RAID 0
3. RAID 10
4. 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.



[figure8]

Making RAID driver diskette before Install WindowsXP/2000

Before you install the Windows XP or Windows 2000, 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 \NF-orce4\RAIDDisk to floppy diskette

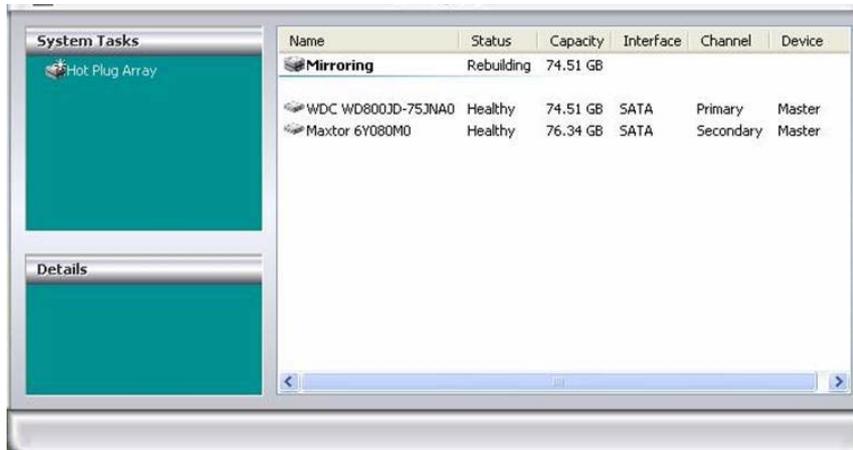
Once you have the SATA driver diskette ready, you may start to install Windows XP or Windows 2000 on your System.

Installation of Windows XP/ Windows 2000

For installation of Windows XP or Windows 2000, please insert Windows XP or Windows 2000 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.

Execute Start → programs → NVIDIA corporation → RAID manager , you can view RAID function status or rebuild RAID function from Windows OS



4-9 Pro Magic Plus Function Introduction

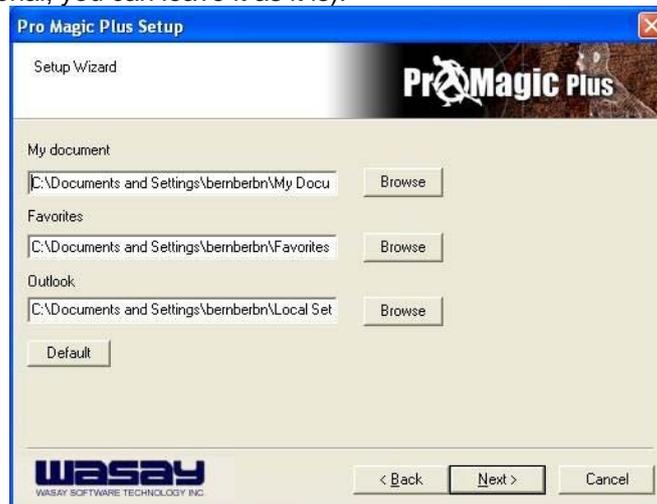
What's Pro Magic Plus?

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 you 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 98 SE/ME/2000/XP/VISTA
- ◇ 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 2000 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.

4-10 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 Feature→AMD K8 Cool&Quiet Control:
 AUTO/Disable(This function control the POWER SAVING MODE: Auto/Disabled)

Phoenix - AwardBIOS CMOS Setup Utility

Standard CMOS Features Advanced BIOS Features Advanced Chipset Features Integrated Peripherals Power Management Setup Miscellaneous control PC Health Status	Thermal Throttling Option Power User Overclock settings Password Settings Load Fail-Safe Defaults Load Optimized Defaults Save & Exit Setup Exit Without Saving
Esc : Quit F9 : Menu in BIOS ↑↓←→ : Select Item F10 : Save & Exit Setup	

[1]

Phoenix - AwardBIOS CMOS Setup Utility

Advanced BIOS Features

CPU Feature	Press Enter	Item Help	
Hard Disk Boot Priority	Press Enter		
Virus Warning	Disabled		
CPU Internal Cache	Enabled	Menu Level >	
External Cache	Enabled		
Quick power On Self Test	Enabled		
First Boot Device	Hard Disk		
Second Boot Device	CDROM		
Third Boot Device	Floppy		
Boot other Device	Enabled		
Boot Up Floppy Seek	Disable		
Boot Up NumLock Status	On		
Typematic Rate Setting	Disabled		
Typematic Rate (Chars/Sec)	6		
Typematic Delay (Msec)	250		
Security Option	Setup		
APIC Mode	Enabled		
MPS Version Control For OS	1.4		
OS Select For DRAM > 64MB	Non-OS2		
HDD S.M.A.R.T. Capability	Disabled		
Full Screen LOGO Show	Disabled		
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults			

[2]

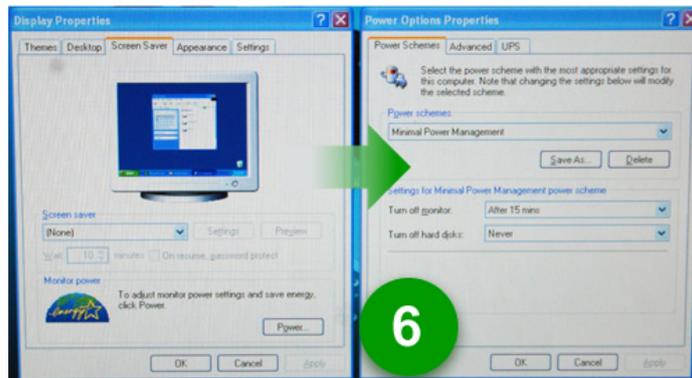
Phoenix - AwardBIOS CMOS Setup Utility

VDIMM SELECT

CPU Clock At Next Boot	200	Item Help	
PCIe Reference clock	100		
SB Reference clock	100		
Spread Spectrum	Enabled	Menu Level >	
AMD K8 Cool&Quiet Control	Disabled		
VDIMM Select	1.95v		
NB Voltage setting	1.15v		
Memory Clock Mode	Auto		
DRAM CLOCK at Next Boot	DDR533		
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults			

[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.



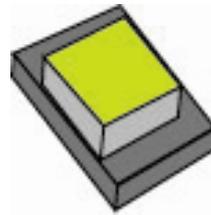
With OS Windows Vista series, there is no need for to take more steps. If needed, please enter Power Settings to make corresponding changes

4-11 G.P.I. LED Display



LED3

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



LED3

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