Electronic Emission Notices

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions contained in this manual, may cause harmful interference to radio and television communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- REORIENT OR RELOCATE THE RECEIVING ANTENNA
- INCREASE THE SEPARATION BETWEEN THE EQUIPMENT AND THE RECEIVER
- CONNECT THE EQUIPMENT INTO AN OUTLET ON A CIRCUIT DIFFERENT FROM THAT OF THE RECEIVER
- CONSULT THE DEALER OR AN EXPERIENCED AUDIO/TELEVISION TECHNICIAN

NOTE: Connecting this device to peripheral devices that do not comply with Class B requirements, or using an unshielded peripheral data cable, could also result in harmful interference to radio or television reception.

The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

To ensure that the use of this product does not contribute to interference, it is necessary to use shielded I/O cables.

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Trademarks
All brand names, logos and registered trademarks mentioned are property of their respective owners.

TABLE OF CONTENT

Box Included Checklist

- ☑ Sapphire PE-AM2RS740G Motherboard
- ☑ Cable for ATA 133 IDE
- ☑ Sapphire Driver CD for Motherboard
- ☑ Cable for Serial ATA II
- ☑ Rear External I/O Shield
- ☑ Sapphire PE-AM2RS740G Motherboard User's Manual

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.
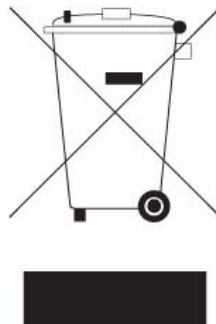
Features of motherboard

The AMD 740G Series motherboards are based on the latest AMD740G Chipset and SB700 chipset which supports the new generation innovative 64-bit AMD Socket AM2+ dual core multi-tasking Socket AM2+ Athlon64 X2 processors and dual core AMD Phenom™ processors. With an integrated low-latency high-bandwidth DDR2 memory controller and the highly-scalable Hyper Transport technology-based system bus which is up to 1000 MHZ, AMD740G Platform Processor Chipset motherboard series deliver the outstanding system performance and professional desktop platform solution with the advantages of new generation 64-bit AMD Socket AM2 Athlon64 X2 processors, AMD Phenom™ processors and the fully compatibility of the next generation operation system.

The AMD 740G Series motherboards support new generation Socket AM2+ processors with an integrated DDR2 memory controller which provides with 333MHz/400MHz/533MHz memory clock frequencies for DDR2 667/DDR2 800/DDR2 1066 DDR2 Module up to 8GB. The whole motherboard series are embedded with SB700 chipset that provides ULTRA ATA 133 connectors and Serial ATA2 with RAID 0, 1 and JBOD functions which support up to one IDE device and six Serial ATA2 devices to accelerate hard disk drives and guarantee the data security without failure in advanced computing performance.

The AMD740G Chipset incorporates HD 2100 Graphics with a core frequency of 400MHz featured   with DirectX 9.0 compliant 2D/3D graphics processor , Maximum DAC frequency of 400 MHz Resolution up to 2560x1600 (Under condition), refresh rate up to 85MHz delivering incredible graphics and blistering performance. AMD™ 740G chipset provides incredible flexibility and unlimited upgrade potential as it supports all Radeon® PCI-E graphics cards on a system configured for either single GPU or next generation multimedia operation. Designed with ATI's unique architecture to optimize speed and stability, this solution is perfect for over-clocking – without the need of additional cooling systems.

The AMD740G series motherboards provide 10/100 LAN functions with RTL8102E-VB PCI-E 10/100Mbps LAN. And the embedded 6-channel HD Audio CODEC is fully compatible with Sound Blaster Pro® standards that offer you with the home cinema quality and satisfying software compatibility.

The motherboards offer one PCI-Express x16 by 16lane graphics slot of 4Gbyte/sec data transfer rate at each relative direction which gets 3.5 times of bandwidth more than AGP 8X and it's up to a peak concurrent bandwidth of 8Gbyte/sec at full speed to guarantee the ultimate GPU computing performance. Two 32-bit PCI slots guarantee the rich connectivity for the I/O of peripherals; the motherboards are designed of tackling the profuse multimedia requirements nowadays.

Embedded USB controller as well as capability of expanding to 8 of USB2.0 functional ports delivering 480Mb/s bandwidth and 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* 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 cause 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.

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℃ to 90℃). 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.

Specification

Spec	Description
Design	* Micro u-ATX form factor 4 layers PCB * size: 245x200mm
Chipset	* AMD740G Chipset and AMD SB700 Chipset
CPU Socket AM2+	* Support 64bit AMD AM2+ 940-Pin package utilizes Flip-Chip Pin Grid Array package compatible processor * Support AMD AM2+ Phenom processors * Support AMD AM3 Phenom II processor
Memory Socket	* 240-pin DDR2 Module socket x 2 * Support 2 pcs DDR2 1066 / DDR2 800/DDR2 667 Modules Expandable to 8GB
Expansion Slot	* PCI-Express x16 by16 lane 1pcs delivers up to 8GB/s of concurrent bandwidth. * 32-bit PCI slot x 2 pcs
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. * 6 x Serial ATA2 ports provide 300 MB/sec data transfer rate with RAID 0, 1, 10, JBOD functions.
Integrated VGA	* Integrated with HD2100 graphics * Core CLK: 400MHz * DirectX 9.0 compliant 2D graphics processor * Supported ATI innovated AVIVO Technology and Multiple Display configurations
LAN	* Integrated RTL 8102E-VB PCI-E 10/100Mbps LAN chip * Supports Fast Ethernet LAN function provide 10/100 Mbps data transfer rate
Audio	* 6-channelALC662 HD Audio Codec integrated * Support 6-channel 3D surround & Positioning Audio * Audio driver and utility included
BIOS	* Award 8MB SPI Flash ROM
Multi I/O	* PS/2 keyboard and PS/2 mouse connectors * Floppy disk drive connector x1 * 1 * Serial port of 9-pin Block * 1 * VGA port * 1 * DVI port * USB2.0 port x 4 and headers x 2 * HDMI_SPDIF_OUT header x 1 * Audio connector (Line-in, Line-out, MIC/ 6CH Audio) * Front Audio 9-pin header * CD Audio In 4-pin header

Layout Diagram & Jumper Setting

RJ-45 LAN

PS/2 Mouse

DVI Connector

Line-IN

PS/2 Keyboard

Line-OUT

MIC-IN

VGA Connector

USB   USB

ATX 12V Power Connector   CPU Socket AM2+   CPU FAN

PS2 KB/Mouse
Port
Keyboard/USB
Power (JP1)
VGA
Connector

DVI
Connector

DDR2 Socket x2

ATX Power Conn.

USB Port

RJ-45 Over
USB Connector

ATA 133 IDE
Conn.(IDE1)

Audio Connector   SYSFAN2

AMD740G Chipset   SYSFAN1

RTL8102E-VB Megabit LAN   AMD SB700 Chipset

PCI Express x16

PCI Slot   Serial-ATAII Connector
(SATA II 1, 2,3,4,5,6)

Realtek ALC662
HD Audio Decod   Power LED Connector
Speaker Connector

HDMI-SPDIF   COM Connector   Front Panel Connector
Front Audio   Floppy Connector
CD Audio In   USB headers   8MBit Flash SPI
ROM BIOS

4

Hardware Installation

InstallSocket AM2 Supported AMD Processor

This motherboard provides a 940-pin surface mount, Zero Insertion Force (ZIF) socket, referred to as the mPGA940 socket supports AMD Athlon64 processor in the 940 Pin 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.

C o l d e n A

S o c k A M 2

C P U Z I F m P G A B S o
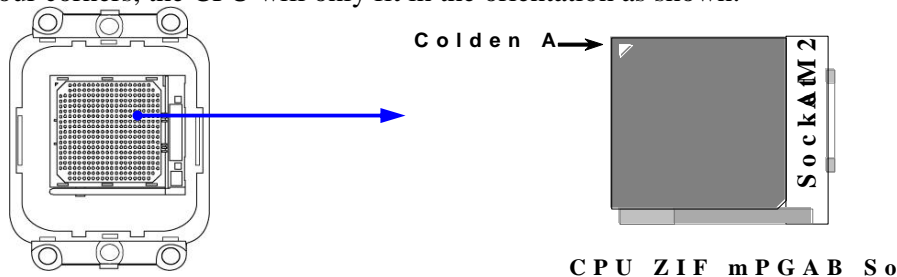
When you put the CPU into the ZIF socket， No force require to insert of the CPU, then press the level to Locate position slightly without any extra force.

Install Memory

The motherboards provide four / two 240-pin DDRII DUAL INLINE MEMORY MODULES (DIMM) sites for DDRII memory expansion available from minimum memory size of 128MB to maximum memory size of 8.0GB / 4.0GB DDRII SDRAM.

Valid Memory Configurations of 4-DIMM Design Motherboard

Bank	240-Pin DIMM	PCS	Total Memory
DIMM1	DDRII 1066/DDRII 800/DDRII 667	X1	128MB~2GB
DIMM2	DDRII 1066/DDRII 800/DDRII 667	X1	128MB~2GB
Total	System Memory (Max. 4GB)	2	128MB~4GB

Generally, installing DDRII SDRAM modules to your motherboard is very easy, you can refer to figure 2-4 to see what a 240-Pin DDR2 1066/800/667 SDRAM module looks like.

5
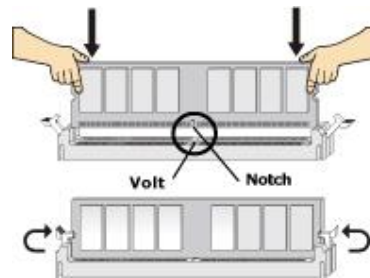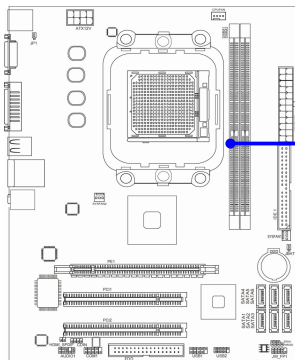
Figure 2-4

NOTE!	When you install DIMM module fully into the DIMM socket the eject tab should be locked into the DIMM module very firmly and fit into its indention on both sides

Expansion Cards

The motherboards offer one PCI-Express x16by16lane graphics slot of 4Gbyte/sec data transfer rate at each relative direction which gets 3.5 times of bandwidth more than AGP 8X and it's up to a peak concurrent bandwidth of 8Gbyte/sec at full speed to guarantee the ultimate GPU computing performance. Two32-bit PCI slots guarantee the rich connectivity for the I/O of peripherals; the motherboards are designed of tackling the profuse multimedia requirements nowadays.

PE1 / PCI-E x16 Slot

32-bit PCI Slot

6
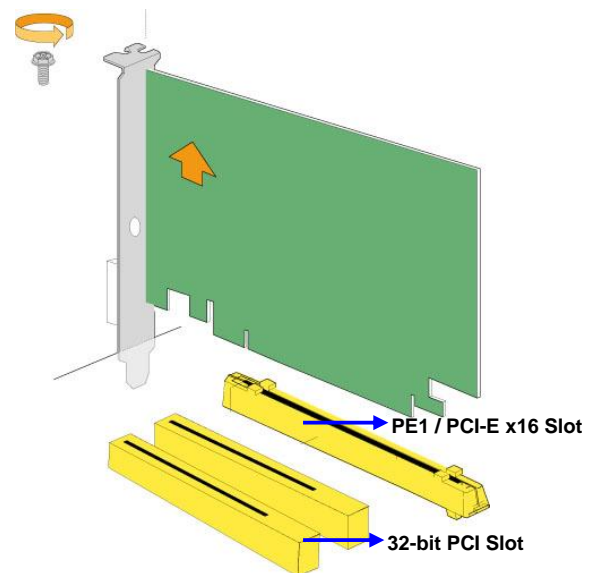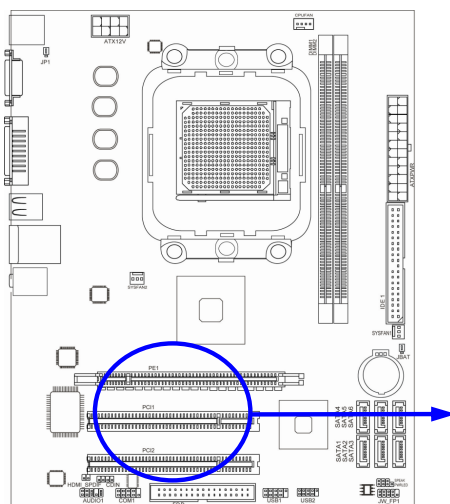
Connectors, Headers & Jumpers Setting

Connectors

(1) **Power Connector (24-pinblock) : 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.

ROW1 ROW2

ROW1 ROW2

Pin 1   Pin 1

20-Pin   **24-Pin**

PIN	ROW1	ROW2
1	3.3V	3.3V
2	3.3V	-12V
3	GND	GND
4	5V	Soft Power On
5	GND	GND
6	5V	GND
7	GND	GND
8	Power OK	-5V
9	+5V (for Soft Logic)	+5V
10	+12V	+5V
11	+12V	+5V
12	+3V	GND
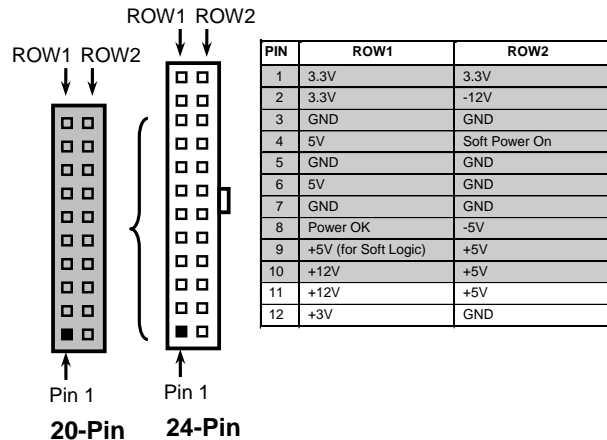
** We recommend that you use an ATX 12V Specification 2.0-compliant power supply unit (PSU) with a minimum of 350W power rating. This type has 24-pin and 4-pin power plugs.

** 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 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.

← PIN1

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

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

(4) **USB Port connector: CN5**

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

(5) **LAN Port connector: UL1**

This connector is standard RJ-45 connector for Network, The USB LAN1 support 10M/100Mbps data transfer rate

(6) **Audio Line-In, Lin-Out, MIC Connector: SURROUND1 / CN1**

This Connector is 3 phone Jack for LINE-OUT, LINE-IN, MIC

Line-in : (BLUE)   Audio input to sound chip
Line-out : (GREEN)   Audio output to speaker
MIC : (PINK)   Microphone Connector

PS/2 Mouse
PS/2 Keyboard
VGA Connector
DVI Connector
RJ-45 LAN
USB USB
Line-IN
Line-OUT
MIC-IN
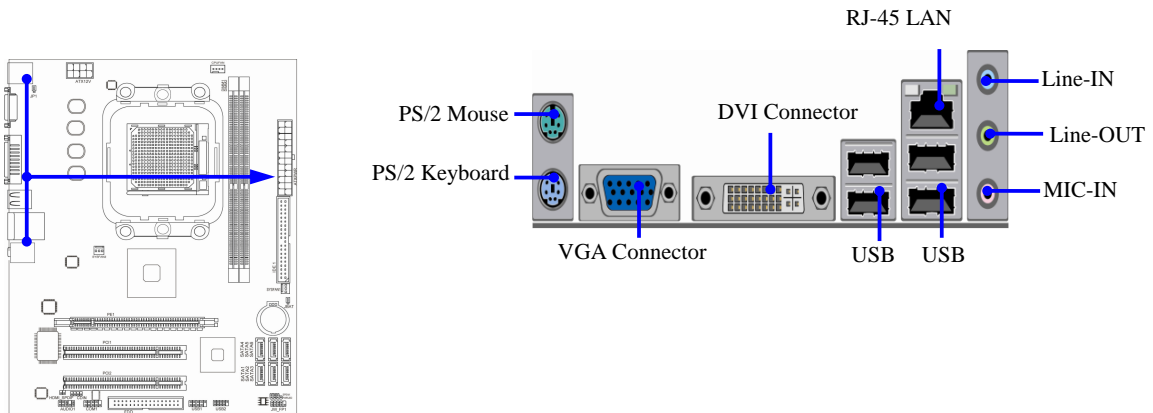
(7) Floppy drive Connector (34-pin block): FDD1
This connector supports the provided floppy drive ribbon cable. After connecting the single plug end to motherboard, connect the two plugs at other end to the floppy drives.

FDD

Pin 1

Floppy Drive Connector
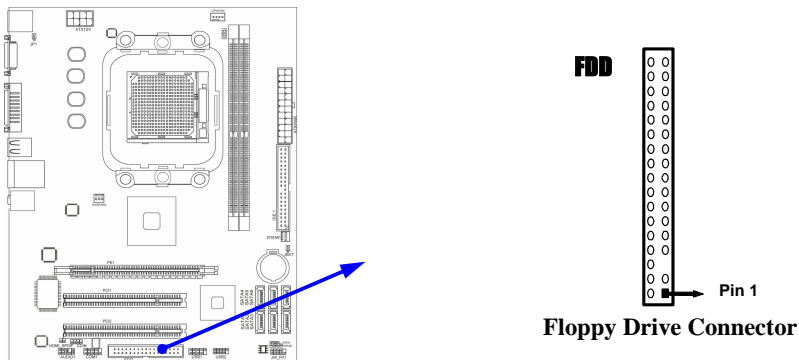
(8) (8) Primary IDE Connector (40-pin block): IDE1
This connector connects to the next set of Master and Slave hard disks.   Follow the same procedure described for the primary IDE connector.   You may also configure two hard disks to be both Masters using one ribbon cable on the primary IDE connector and another ribbon cable on the secondary IDE connector.

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

8

IDE1

Pin 1

Primary IDE Connector
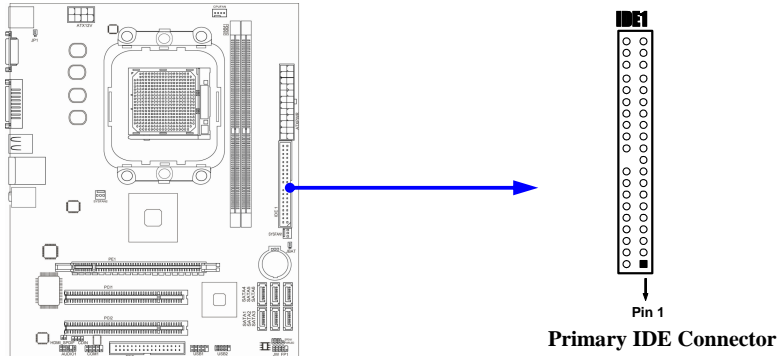
(9) Serial-ATAII Port connector:
  SATAII1 / SATAII2 / SATAII3/ SATAII4/ SATAII5/ SATAII6
   These connectors support the provided Serial ATA and Serial ATA2 IDE hard disk cable to connecting the motherboard and serial ATA hard disk.

SATA6

SATA5

SATA4

SATA3

SATA2

SATA1

Serial-ATA1 & 2 Compatible Connectors
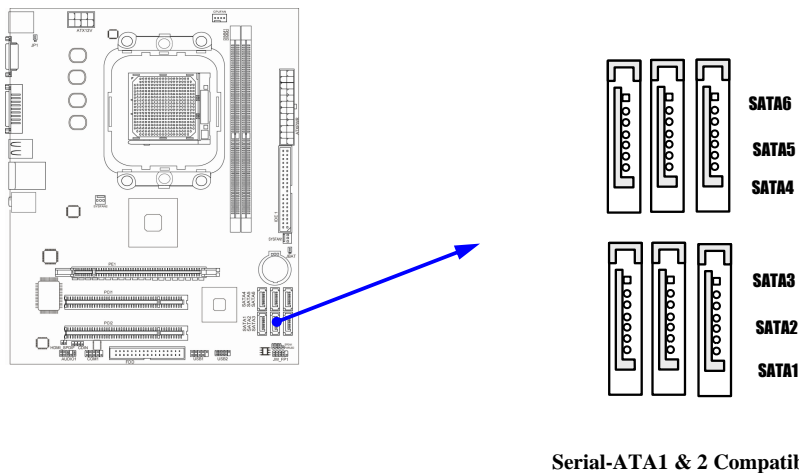
(10) D-Sub 15-pin Connector: VGA
   VGA is the 15-pin D-Subminiature female connector; it is for the display devices, such as the CRT monitor, LCD monitor and so on.

(11) DVI: Digital Visual Interface
   This interface standard designed to maximize the visual quality of digital display devices such as flat panel LCD computer displays and digital projectors.

9

Headers

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

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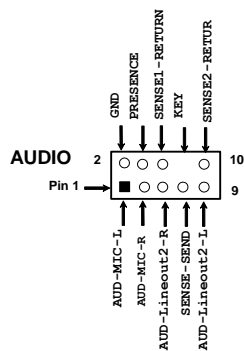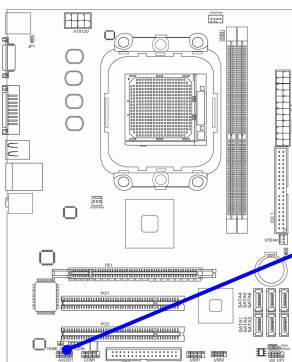
Line-Out, MIC Headers

(2) USB Port Headers (9-pin) : USB5 / USB6

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.
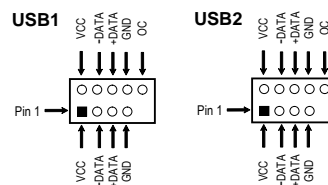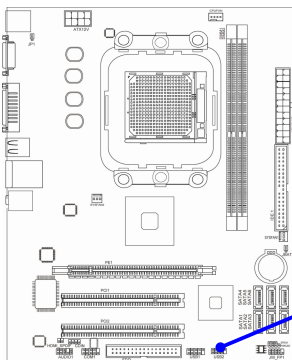
USB Port Headers

(3) Speaker connector: SPEAK1

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

(4) Power LED: PWR LED1

The Power LED is light on while the system power is on.   Connect the Power LED from the system case to this pin.

System Case Connections
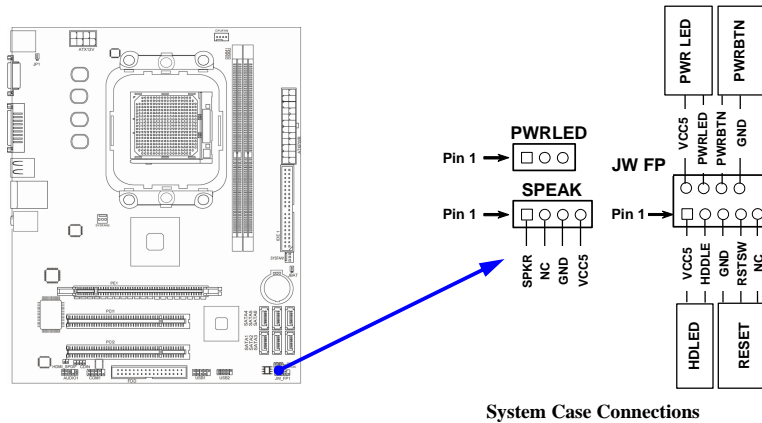
(5) FAN Power Headers: SYSFAN1, SYSFAN2 (3-pin), CPUFAN (4-pin)

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.

FAN Power Headers

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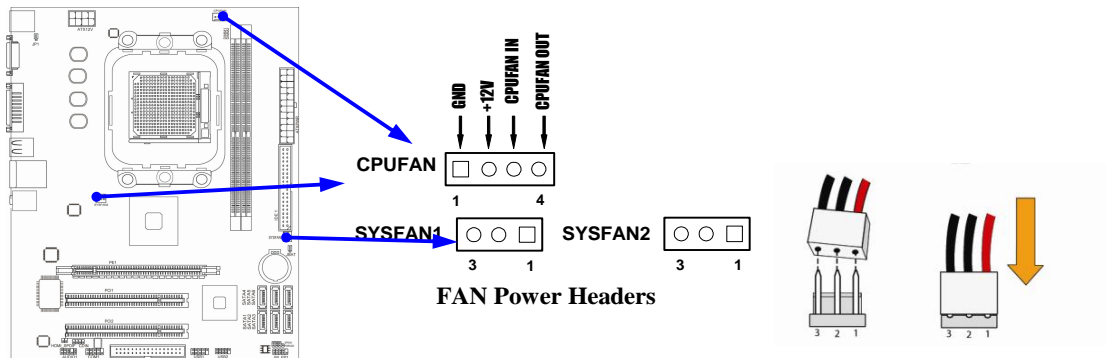
(6) CD Audio-In Headers (4-pin) : CDIN

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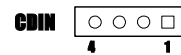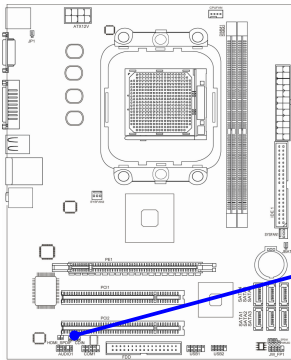
CD Audio-In Headers

(7) Serial COM Port Header: COM1

COM1 is the 9-pin block header. The on-board serial port can be disabled through BIOS SETUP.

Pin1 →
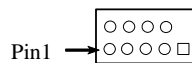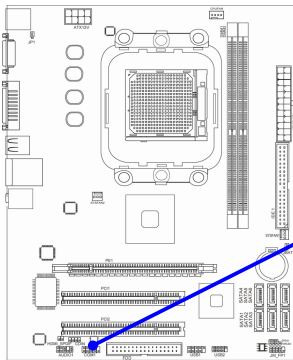
Serial COM Port 9-pin Block

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 are running, the BIOS will alarm beeps or additional message will appear on the screen.

   If you do not see any thing within 30 seconds from the time you turn on the power.   The system may have failed on power-on test. Recheck your jumper settings and connections or call your retailer for assistance.

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

6. During power-on, press <Delete> key to enter BIOS setup.   Follow the instructions in BIOS SETUP.

7. **Power off your computer:** You must first exit or shut down your operating system before switch off the power switch.   For ATX power supply, you can press ATX power switching after exiting or shutting down your operating system.   If you use Windows 9X, click **"Start"** button, click **"Shut down"** and then click **"Shut down the computer?"** The power supply should turn off after windows shut down.

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Useful Setup

BIOS Setup

The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program gain control. The BIOS first operates an auto-diagnostic test called POST (power on self test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization. Only when these tasks are completed done it gives up control of the computer to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performance as its best.

In the BIOS Setup main menu of Figure 3-1, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press <Esc> to quit the BIOS Setup.

- Press $\uparrow\downarrow\leftarrow\rightarrow$ (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.

Entering Setup

Power on the computer and by pressing <Del> immediately allows you to enter Setup.
If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to
    Press <F1> to continue, <Ctrl-Alt-Esc> or <Del> to enter Setup

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>.

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 Fail-Safe Defaults     │
  │  Power Management Setup       │  Load Optimized Defaults     │
  │  Miscellaneous control        │  Save & Exit Setup           │
  │  PC Health Status             │  Exit Without Saving         │
  ├──────────────────────────────┴──────────────────────────────┤
  │  Esc : Quit                   ↑↓→← : Select Item            │
  │  F10 : Save & Exit Setup                                     │
  │                                                              │
  └──────────────────────────────────────────────────────────────┘
```

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.

PC Health Status
This entry shows your PC health status.

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

Load Fail-Safe Defaults
This menu uses a minimal performance setting, but the system would run in a stable way.

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

Password Setting
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.

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)          00* 00 * 00         │        Item Help         │
│                                               │                          │
│  Time (hh:mm:ss)          16 : 48 : 35        │                          │
│                                               ├──────────────────────────┤
│ > IDE Channel 0 Master      None              │                          │
│ > IDE Channel 0 Slave       None              │  Menu Level >            │
│                                               │                          │
│  SATA Channel  1            None              │  Change the day, month,  │
│  SATA Channel  2            None              │  year and century        │
│  SATA Channel  3            None              │                          │
│  SATA Channel  4            None              │                          │
│  SATA Channel  5            None              │                          │
│  SATA Channel  6            None              │                          │
│                                               │                          │
│  Drive A                1.44M, 3.5 in.        │                          │
│  Halt On                All Errors            │                          │
│                                               │                          │
│  Base Memory                 640K             │                          │
│  Extended Memory          1047552K            │                          │
│  Total Memory             1048476K            │                          │
├─────────────────────────────────────────────┴──────────────────────────┤
│   ↑↓→←  Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│       F5:Previous Values   F6:Fail-safe Defaults  F7:Optimized  Defaults │
└─────────────────────────────────────────────────────────────────────────┘
```

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

    Day   Day of the week, from Sun to Sat, determined by BIOS. Read-only.
    Month   The month from Jan. through Dec.
    Date   The date from 1 to 31 can be keyed by numeric function keys.
    Year   The year depends on the year of the BIOS.

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

IDE Channel 0 Master / Channel 0 Slave
SATA Channel 1, 2, 3, 4, 5, 6
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

---

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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

Advanced BIOS Features

```
            Phoenix – AwardBIOS CMOS Setup Utility
                    Advanced BIOS Features

  CPU Feature              Press Enter  
  Hard Disk Boot Priority   Press Enter        Item Help
  Virus Warning            Disabled   
  CPU Internal Cache       Enabled    
  External Cache           Enabled          Menu Level >
  Quick Power On Self Test   Enabled   
  First Boot Device        Hard Disk  
  Second Boot Device       CD-ROM     
  Third Boot Device        LS120      
  Boot other Device        Enabled    
  Boot Up Floppy Seek      Disable    
  Boot Up NumLock Status   On         
  Gate A20 Option           Normal    
  Typematic Rate Setting    Disabled  
  * Typematic Rate (Chars/Sec)   6    
  * Typematic Delay (Msec)     250    
  Security Option          Setup      
  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 
  Small Logo (EPA ) Show      Enabled  

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

Hard Disk Boot Priority

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

Virus Warning

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

Disabled (default) No warning message to appear when anything attempts to access the boot sector or hard disk partition table.

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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 is begins to repeat the keystroke.   The settings are 250, 500, 750, and 1000.

Security Option

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

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

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

ACPI Mode

This option allow you to enable the ACPI Mode (Advanced Configuration and Power Interface). You can choose from Enabled and Disabled.

HDD S.M.A.R.T Capability

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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®.

Small Logo (EPA) Show
The selection is for you to choose the EPA small logo to show or not.

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]   │                       │
│  HT Link Control             [press enter]   │      Item Help        │
│  PCIE Configuration          [press enter]   │                       │
│  IGX Configuration           [press enter]   ├───────────────────────┤
│  HDMI Audio                      Disabled    │   Menu Level >        │
│  Memory Hole                     Disabled    │                       │
│  System BIOS Cacheable           Disabled    │                       │
├─────────────────────────────────────────────┴───────────────────────┤
│    ↑↓→←  Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│        F5:Previous Values   F6:Fail-safe Defaults   F7:Optimized  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.

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DRAM Configuration

```
                    Phoenix – AwardBIOS CMOS Setup Utility
                              DRAM Configuration

   DRAM Latency(tCL)                  Auto
   CKE base Power down Mode            Disabled          Item Help
   CKE based powerdom                 per channel
   Memclock tri-stating               Disabled
                                                        Menu Level >>
   Memory Hole Remapping              Eabled
   Auto Optimize Bottom IO            Enabled
   *Bottom of {31:24}IO               CO
   Bottom of UMA DRAM {31:24}         FC
   DRAM Command Rate                  2T
    DDRII Timing Item                   Disabled
    * Tw Tr Command delay              3 bus clock
    * Trfc 0 for DIMM 0                 75ns
    * Trfc 1 for DIMM 1                 75ns
    * Trfc 2 for DIMM 2                 75ns
    * Trfc 3 for DIMM 3                 75ns


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

DRAM Latency
When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.   The settings are: Auto,3T, 4T and 5T.

(Trcd)RAS-to-CAS R/W Delay
This field let's you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed.   *Fast* gives faster performance; and *Slow* gives more stable performance.   This field applies only when synchronous DRAM is installed in the system.

(Trp)Row Precharge Time
If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain date.   *Fast* gives faster performance; and *Slow* gives more stable performance.   This field applies only when synchronous DRAM is installed in the system.

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HT Link Control

```
                    Phoenix - AwardBIOS CMOS Setup Utility
                              HT link Control
┌──────────────────────────────────────────────┬──────────────────────┐
│  HT link Width              Auto               │                      │
│  HT link Frequency          Auto               │     Item Help        │
│                                                │                      │
│  HT Drive Strength          Auto               ├──────────────────────┤
│     ●   HT Drive Strength (P)    5             │   Menu Level >       │
│     ●   HT Drive Strength (N)    4             │                      │
│  HT Receiver Ctrl           Auto               │                      │
│     ●   HT Receiver Ctrl Value   9             │                      │
│  HT PLL Control             High Speed         │                      │
├──────────────────────────────────────────────┴──────────────────────┤
│   ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│      F5:Previous Values   F6:Fail-safe Defaults  F7:Optimized  Defaults │
└──────────────────────────────────────────────────────────────────────┘
```

PCIE Configuration

```
                    Phoenix - AwardBIOS CMOS Setup Utility
                             PCIE Configuration
┌──────────────────────────────────────────────┬──────────────────────┐
│  GFX Link Width                  Auto          │                      │
│  GFX Overclocking                Disabled      │     Item Help        │
│  ASPW GFX                        Disabled      │                      │
│  ASPW GPP                        Disabled      ├──────────────────────┤
│  ASPW NB-SB                      Disabled      │   Menu Level >       │
│                                                │                      │
├──────────────────────────────────────────────┴──────────────────────┤
│   ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│      F5:Previous Values   F6:Fail-safe Defaults  F7:Optimized  Defaults │
└──────────────────────────────────────────────────────────────────────┘
```

Integrated Peripherals

```
                    Phoenix - AwardBIOS CMOS Setup Utility
                           Integrated Peripherals
┌──────────────────────────────────────────────┬──────────────────────┐
│   CIMx-SB700 Revision        2.5.0            │     Item Help        │
│                                                │                      │
│  > SuperIO Function Setup     Press Enter      │                      │
│                                                ├──────────────────────┤
│  > Onboard PCI Devices        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:Fail-safe Defaults  F7:Optimized  Defaults │
└──────────────────────────────────────────────────────────────────────┘
```

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Super IO Function Setup

```
                    Phoenix – AwardBIOS CMOS Setup Utility
                          Super IO Function Setup
 ┌─────────────────────────────────────────┬──────────────────────────────┐
 │  Onboard FDC Controller      Enabled     │                              │
 │  Onboard Serial Port1        3F8/IRQ4    │                              │
 │  UART Mode Select            IrDA        │                              │
 │  Onboard Parallel Port        378/IRQ7   ├──────────────────────────────┤
 │  IrDA Duplex Mode             Half       │    Menu Level >>             │
 │  PWRON After PWR-Fail        [OFF]       │                              │
 ├─────────────────────────────────────────┴──────────────────────────────┤
 │   ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help│
 │       F5:Previous Values   F6:Fail-safe Defaults   F7:Optimized  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 Port

Select an address and corresponding interrupt for the serial port.   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.

Onboard Parallel Port

There is a built-in parallel port on the on-board Super I/O chipset that Provides Standard, ECP, and EPP features. It has the following option:

> **Disabled**
> **(3BCH/IRQ7)/**   Line Printer port 0
> **(278H/IRQ5)/**   Line Printer port 2
> **(378H/IRQ7)**   Line Printer port 1

Parallel Port Mode

> SPP   : Standard Parallel Port
> EPP   : Enhanced Parallel Port
> ECP: Extended Capability Port
>
> **SPP/EPP/ECP/ECP+EPP**
> To operate the onboard parallel port as Standard Parallel Port only, choose "SPP."   To operate the onboard parallel port in the EPP modes simultaneously, choose "EPP."   By choosing "ECP", the onboard parallel port will operate in ECP mode only.   Choosing

"ECP+EPP" will allow the onboard parallel port to support both the ECP and EPP modes simultaneously. The ECP mode has to use the DMA channel, so choose the onboard parallel port with the ECP feature. After selecting it, the following message will appear: "ECP Mode Use DMA" at this time, the user can choose between DMA channels 3 to 1. The onboard parallel port is EPP Spec. compliant, so after the user chooses the onboard parallel port with the EPP function, the following message will be displayed on the screen: "EPP Mode Select." At this time either EPP 1.7 spec. or EPP 1.9 spec. can be chosen.

PowerOn After Power Failure

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

Onchip IDE Function

```
                Phoenix – AwardBIOS CMOS Setup Utility

                        OnChip IDE Function

 ┌─────────────────────────────────────────┬──────────────────────────┐
 │ IDE HDD Block  Mode        Enabled       │      Item Help           │
 │                                          │                          │
 │ IDE DMA Transfer           Enabled       ├──────────────────────────┤
 │                                          │                          │
 │ OnChip IDE Channel0        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:Fail-safe Defaults   F7:Optimized  Defaults │
 └──────────────────────────────────────────────────────────────────────┘
```

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.

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.

Onchip SATA Controller

This item allows you to control Serial ATA controller.

Onboard Devices

```
                    Phoenix – AwardBIOS CMOS Setup Utility
                              OnChip PCI Device
┌──────────────────────────────────────────────┬─────────────────────────┐
│ Onboard PCIE LAN  Device          Enabled     │                         │
│ Onboard PCIE LAN BootROM          Disabled    │       Item Help         │
│ HD Audio Azalia                   Enable      │                         │
│ Onchip USB Controller             Enabled     ├─────────────────────────┤
│ USB EHCI Controller               Enabled     │   Menu Level >>         │
│ USB Keyboard Support              Enabled     │                         │
│                                               │                         │
│                                               │                         │
├──────────────────────────────────────────────┴─────────────────────────┤
│   ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│       F5:Previous Values   F6:Fail-safe Defaults   F7:Optimized  Defaults │
└─────────────────────────────────────────────────────────────────────────┘
```

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

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

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          │                         │
│   ACPI Suspend Type          S1(POS)          │       Item Help         │
│   C2 Disabled /Enabled        Disabled        │                         │
│   Power Management Option     User Define      ├─────────────────────────┤
│   HDD Power Down              Disabled        │   Menu Level >          │
│   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        │                         │
│   Power Fail  Status          HardWare Strap  │                         │
│   Modem Ring Resume           Disabled        │                         │
│   APCI 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          │                         │
└──────────────────────────────────────────────┴─────────────────────────┘
```

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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.

Miscellaneous Control

```
  Init Display First              PCI Ex
  Reset Configuration Data        Disabled              Item Help
  Resource Controlled by          Auto [ESCD]
  * IRQ Resource                  Press Enter
  PCI/VGA Palette Snoop           Disabled           Menu Level >
 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:Fail-safe Defaults  F7:Optimized  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 ofthe selected IRQ always awakens the system.

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

PC Health Status

This section shows the Status of you CPU, Fan, Warning for overall system status.   This is only available if there is Hardware Monitor onboard.

```
            Phoenix – AwardBIOS CMOS Setup Utility
                      PC Health Status
┌─────────────────────────────────────────┬──────────────────────────┐
│  Show PC Health in Post      Enabled     │                          │
│  Shutdown Temperature        Disabled    │      Item Help           │
│  SMART FAN Configuration     Press Enter │                          │
│  Vcc3.3                      3.37v       ├──────────────────────────┤
│  Vcore                       1.27V       │  Menu Level >            │
│  NBVCC                       1.08V       │                          │
│  +5V                         5.24V       │                          │
│  +12V                        12.55V      │                          │
│  5VSB                        5316V       │                          │
│  VDIMM                       1.96V       │                          │
│  CPU Temperature             41°C        │                          │
│  System Temperature          34°C        │                          │
│  CPUFAN                      3625RPM     │                          │
│  SYSFAN1                     0 RPM       │                          │
│  SYSFAN2                     0 RPM       │                          │
│                                          │                          │
├──────────────────────────────────────────────────────────────────  │
│  ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│      F5:Previous Values   F6:Fail-safe Defaults  F7:Optimized 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/ System Temperature / NBTemperature /SYSFAN1, FAN2 Speed/Vcore/ Vdd/3.3V/+5V/+12V/-12V/VBAT(V)/5VSB(V)

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

Power User Overclock Settings

```
            Phenix - AwardBIOS CMOS Setup Utility
                 Power User Overclock Settings
┌─────────────────────────────────────────┬───────────────────────────┐
│  CPU/HT Reference Clk(MHz)    200        │                           │
│  PCIE Reference clock         100        │       Item Help           │
│  SB Reference clock           100        │                           │
│  Spread Spectrum          Disabled       ├───────────────────────────┤
│  CPU Ratio at Next Boot      Auto        │ CPU/HT Reference Clk      │
│  NPT Vid control             Auto        │                           │
│  AMD K8 Cool&Quiet control   Auto        │  Min=190                  │
│  VDIMM Select                1.95v       │  Max=600                  │
│  Memory Clock Mode           Auto        │                           │
│  *Memory Clock at  Next Boot   DDR 800   │  Key in a DEC number :[ ] │
│                                          │                           │
│                                          ├───────────────────────────┤
│                                          │ ↑↓:Move ENTER:Accept ESC:Abort│
│                                          ├───────────────────────────┤
│                                          │  Menu Level >             │
│                                          │                           │
├─────────────────────────────────────────┴───────────────────────────┤
│   ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│       F5:Previous Values    F6:Fail-safe Defaults   F7:Optimized  Defaults │
└──────────────────────────────────────────────────────────────────────┘
```

CPU Ratio at Next Boot

```
            Phoenix - AwardBIOS CMOS Setup Utility
                 Power User Overclock Settings
┌─────────────────────────────────────────────────────────────────────┐
│  CPU/HT Reference Clk(MHz)    200      ┌─────────────────────────────┐│
│  PCIE Reference clock         100      │ AMD CPU Ratio Control       ││
│  SB Reference clock           100      │                             ││
│  Spread Spectrum          Disabled     │  Auto  · ·  [  ]            ││
│  CPU Ratio at Next Boot      Auto      │  X4··    ···[ ]             ││
│  NPT Vid control             Auto      │  X4.5·····[ ]               ││
│  AMD K8 Cool&Quiet control   Auto      │  X5·····  [ ]               ││
│  VDIMM Select                1.95v     │  X5.5·····[ ]               ││
│  Memory Clock Mode           Auto      │  X6····   [ ]               ││
│  *Memory Clock at  Next Boot   DDR 800 │  X6.5···. [ ]               ││
│                                        │  …..                        ││
│                                        │ ↑↓:Move ENTER:Accept ESC:Abort││
│                                        └─────────────────────────────┘│
├─────────────────────────────────────────────────────────────────────┤
│   ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│       F5:Previous Values    F6:Fail-safe Defaults   F7:Optimized  Defaults │
│                                                                       │
├─────────────────────────────────────────────────────────────────────┤
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
└─────────────────────────────────────────────────────────────────────┘
```

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SB Reference clock

VDIMM Select
.

```
              Phoenix – AwardBIOS CMOS Setup Utility
                    Power User Overclock Settings

    CPU/HT Reference Clk(MHz)    200      ┌──────────────────────────────┐
    PCIE Reference clock         100      │ VDIMM Select                 │
    SB Reference clock           100      │                              │
    Spread Spectrum          Disabled     │  ………                         │
    CPU Ratio at Next Boot      Auto      │  1.85v              [  ]      │
    NPT Vid control             Auto      │  1.90v              [  ]      │
    AMD K8 Cool&Quiet control    Auto     │  1.95v              [  ]      │
    VDIMM Select               1.95v      │  2.00v              [  ]      │
    Memory Clock Mode          Auto       │  …………………………………………………..       │
    *Memory Clock at  Next Boot   DDR 800 │                              │
                                          └──────────────────────────────┘

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

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Thermal Throttling Option

```
                      Phoenix – AwardBIOS CMOS Setup Utility
                              CPU Themal-Throttling

 ┌──────────────────────────────────────────┬──────────────────────────────┐
 │ CPU Thermal – Throttling      Disabled    │                              │
 │   * Thermal-Throttling Temp     70℃       │        Item Help             │
 │   * CPU Thermal-Throttling Duty  50.0%    │                              │
 │                                           ├──────────────────────────────┤
 │                                           │  Menu                        │
 │                                           │  Thermal Throttling Temp     │
 │                                           │                              │
 │                                           │   Min=40                     │
 │                                           │   Max=90                     │
 │                                           │   Key in a DEC number        │
 │                                           │                              │
 │                                           │  ↑↓:Move ENTER:Accept        │
 │                                           │  ESC:Abort                   │
 │                                           │                              │
 │                                           │ Level >>                     │
 ├──────────────────────────────────────────┴──────────────────────────────┤
 │   ↑↓→←  Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
 │        F5:Previous Values    F6:Fail-safe Defaults   F7:Optimized  Defaults │
 └──────────────────────────────────────────────────────────────────────────┘
```

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.

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.

Password Settings

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

---

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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.

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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.

Driver Installation supports WINDOWS 9X/NT/2K/XP/Vista 32-bit

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).
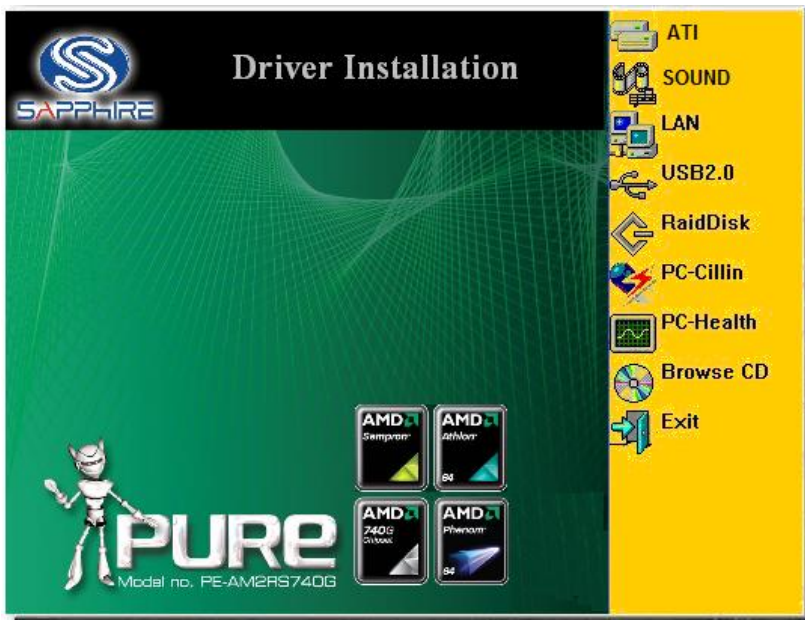
Install ATI Intergrated Driver Pack
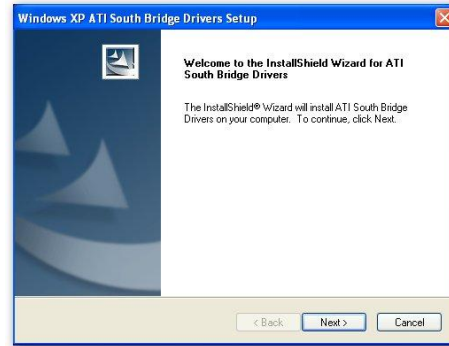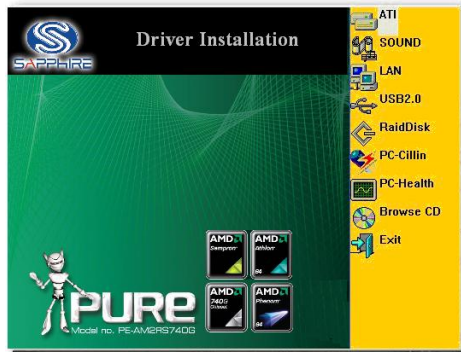
1. Click ATI in the DRIVER INSTALL MENU appears.

2. Click Next when ATI software driver pack appears.
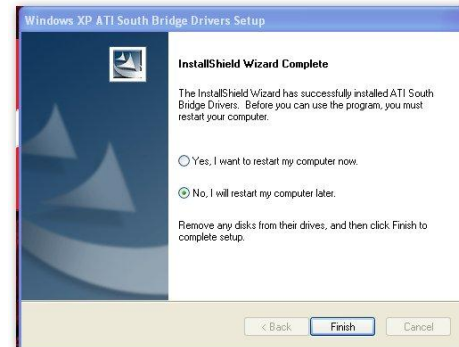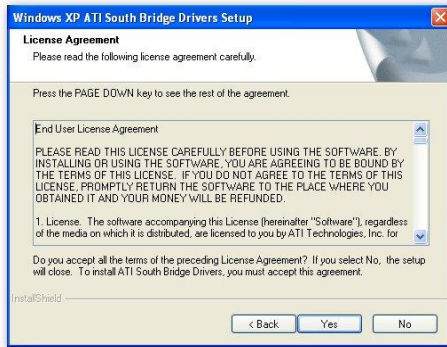
3. Click "Yes" to accept the license agreement and start installation..

4. Click Finish to restart your computer

Install HD Audio Driver
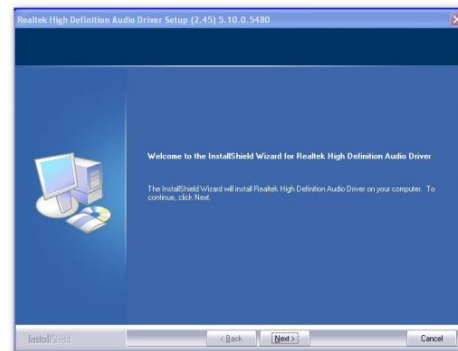
1. Click SOUND when DRIVER INSTALL MENU appears

2. Click Next when Realtek High Definition Audio driver windows appear
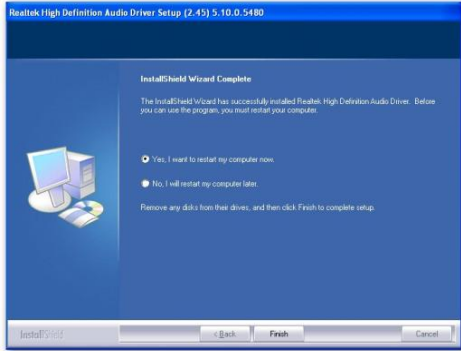
3. Click FINISH and restart your computer

4. Manual Sound Effect Setting

5. Drivers and mixer.

6. Audio input and output settings .

7. Microphone effect.

8. 3D Audio

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.

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Install LAN
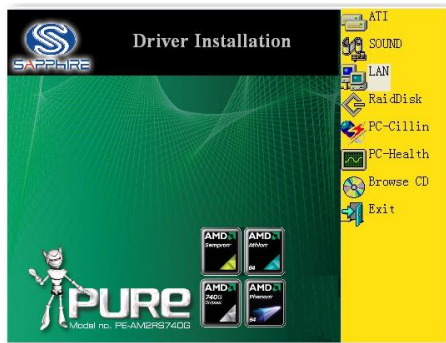
1 Click LAN when MAGIC INSTALL MENU appears
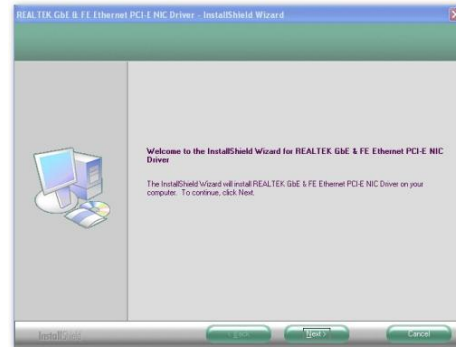
2. Click Next .
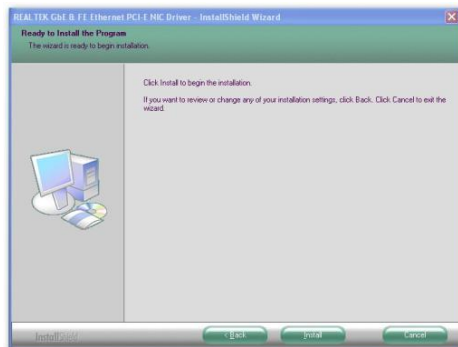
3 Click Install

2. Finish.

Install ATI SATA Driver and Utility
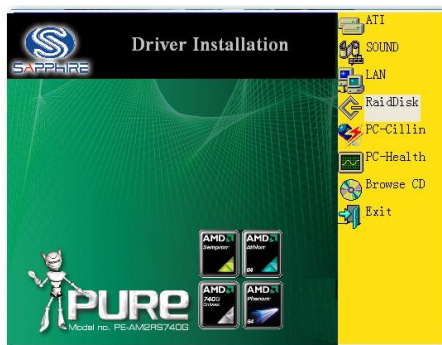
1 Click RAIDDisk when MAGIC INSTALL MENU appears
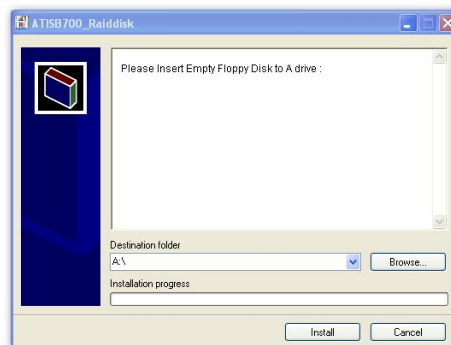
2. Install RAID Disk.

Install PC-CILLIN 2007 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
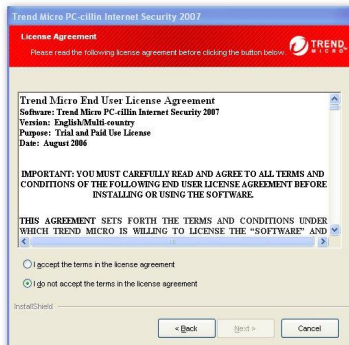
3. This is license agreement, select "I accept the terms in the license agreement" and Click NEXT.

4. . Click Next after you select the features you want to install and the folder to install it.
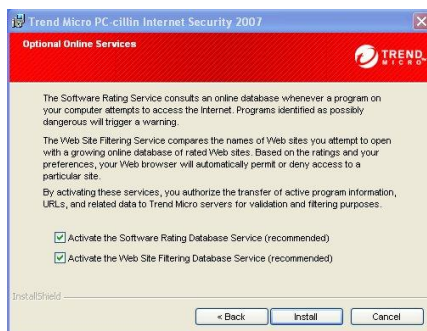
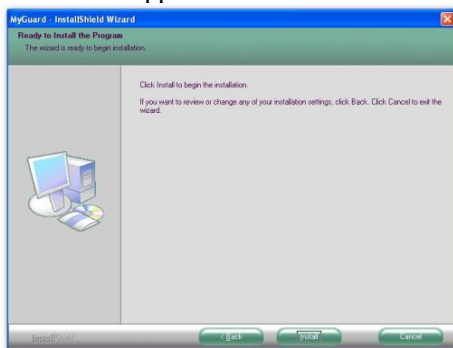5 Click Install after you select to install the optional online services.

6. Click "automatically restart your computer now "and Finish to activate this function.
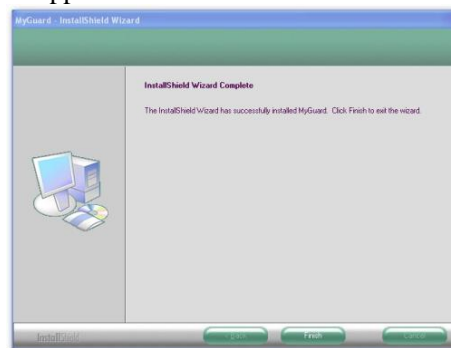
Install MyGuard Hardware monitor Utility
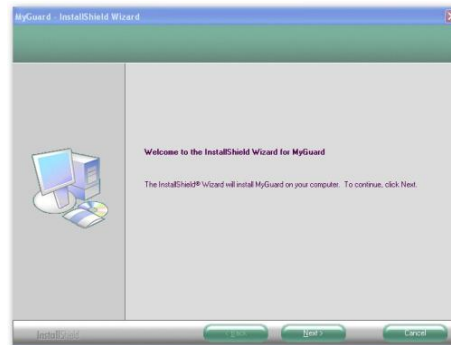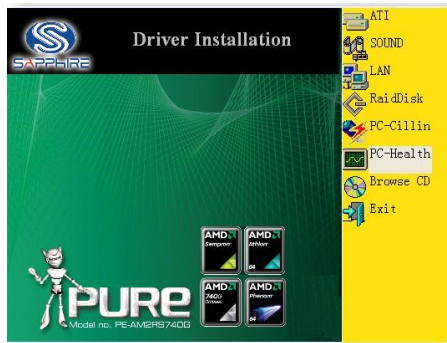
1. Click PC-HEALTH when MAGIC INSTALL MENU appears

2. Click Next on Install shield wizard Window appears

3. Click Install to begin the installation.

4. Click Finish to complete the installation.

NOTE: MAGIC INSTALL will auto detect file path X:\NF-ORCE4\MYGUARD\SETUP.EXE

AMD Platform RAID Function Installation

Step 1.

Please get into the location: BIOS setup \ Integrated Peripherals \ Onchip SATA Device \

Onchip SATA Type ,choose RAID to enable the RAID function and choose the RAID hard drive channel.

```
                Phoenix - AwardBIOS CMOS Setup Utility
                            RAID Configuration
┌─────────────────────────────────────────────┬─────────────────────────┐
│ RAID Enable              Enabled             │       Item Help         │
│ IDE Primary Master   RAID      Disabled      ├─────────────────────────┤
│ IDE Primary Slave    RAID      Disabled      │                         │
│ IDE Secondary Master RAID       Disabled     │  Menu Level >>          │
│ IDE Secondary Slave  RAID      Disabled      │                         │
│ SATA Channel 1              RAID      Enabled │                         │
│ SATA Channel 2              RAID      Enabled │                         │
│  SATA Channel 3              RAID       Enabled │                       │
│ SATA Channel 4              RAID      Enabled │                         │
│                                              │                         │
├──────────────────────────────────────────────┴─────────────────────────┤
│   ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│        F5:Previous Values  F6:Optimized Defaults   F7:Standard Defaults │
└─────────────────────────────────────────────────────────────────────────┘
```

Step 2.

After the System boot up in the second page , you can find the AMD RAID IDE ROM BIOS windows appear. It will ask you to "Press "Ctrl-F" to enter RAID setup utility

## 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).
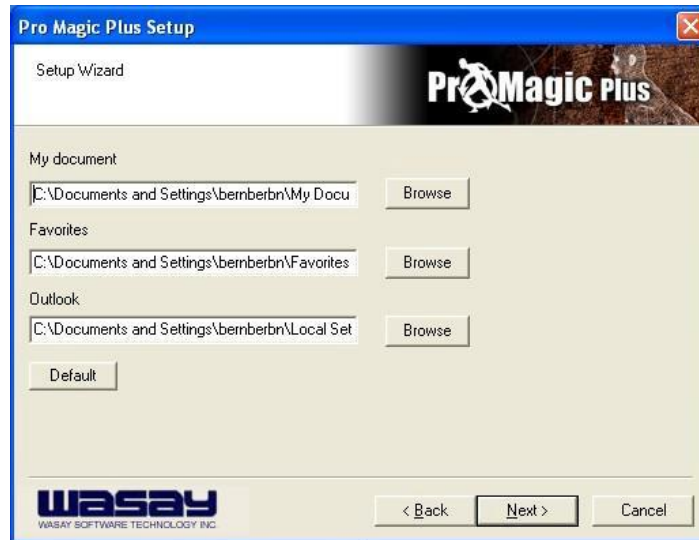
graph 4

☞**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
◇ 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.

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USEFUL HELP

HOW 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 AMD690X PPC motherboard series from the web site to your boot disc.
STEP 4. Insert your boot disc into A:,
start the computer, type "Awdflash A:\ AMD690X.BIN /SN/PY/CC/R"
AMD690X xxx.BIN is the file name of latest BIOS it can be AMD690Xa.BIN or AMD690Xb.BIN

SN	means	don't save existing BIOS data
PY	means	renew existing BIOS data
CC	means	clear existing CMOS data
R	means	restart computer

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

Trouble Shooting

Problem	Solution
No power to the system to the all power light don't illuminate, fan inside power supply doesn't turn on.	1. Make sure power cable is security plugged in. 2. Replace cable. 3. Contact technical support.
System inoperative. Keyboard lights are on , power indicator lights are lit, and hard drive is spinning.	Using ever pressure on both ends of the DIMM , press down firmly until the module snaps into places.
System doesn't boot from hard disk drive, can be booted from optical drive.	1. Check cable running from disk to disk controller board. .Make sure both ends are securely plugged in, check the drive type in the standard CMOS setup. 2. Backing up the hard drive is extremely important .All hard disks are capable of breaking down at any time.
System only boots from optical drive .Hard disk can be read and applications can be used but booting from hard disk is impossible.	1. Back up date and applications files. 2. Reformat the hard drive. Reinstall applications and date using backup disks.
Screen message says "Invalid Configuration" or "CMOS Failure"	Review system 's equipment .Make sure correct information on is in setup.
Can not boot system after installing second hard drive.	1. Set master /slave jumpers correctly. 2. Run SETUP program and select correct drive types. Call the drive manufacture for compatibility with other drives.