



## 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.

### **Copyright**

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### **Trademarks**

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

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# HARDWARE CONFIGURATION

## Key Features :

### Chipset

- ATI® RS690+SB600 Chipset.

### Processor

- Support for AMD™ K8 Processor in a Socket AM2 package.
- Support Hypertransport interface bus.

### VRM (Voltage Regulator Modules) on Board

- Flexible motherboard design with on board VRM, easy to upgrade with future AMD™ K8 processors.
- 0.800V to 1.55V in 25mV steps.

### System Memory

- A total of four 240 pin DDRII SDRAM sockets (optional).
- DIMM sizes from 64 Mbytes to 4Gbyte.
- Supports Dual Channel 128-bit Wide Memory Interface.
- Supports 533/667/800 DDRII SDRAM memory types.

### System BIOS

- PnP, APM, ATAPI and Windows® 2000/XP.
- Full support of ACPI & DMI.
- Auto detects and supports LBA harddisk with capacities over 160GB.
- Easy to upgrade BIOS by end-user.

### Plug and Play

- Supports Plug and Play specification 1.1.
- Plug and play for Windows® 2000, as well as Windows® XP.
- Fully steerable PCI interrupts.

### Onboard VGA

- Integrated ATI PCIE X700 graphic core.
- Supports CRT or TV Out display.
- Integrated DAC and CRT controllers.
- Full screen/full speed video playback.
- Up to 2048x1536, non-interlaced screen resolution for CRT.

### TV Out (optional)

- Integrated TV encoder.
  - 10-bit DAC with 4-tap filter.
  - PAL/NTSC TV Out with Composite and S-Video outputs (via a header).
  - ATI's exclusive "Composite Dot Crawl" freeze option for PAL and NTSC to improve the picture quality.
  - TV-Out power management support.
-

**Expanded USB Support**

- Includes 2 OHCI host controllers.
- Includes 1 EHCI USB2.0 Host Controller that supports all ports (Bandwidth is shared between the all ports).
- This motherboard supports USB 2.0 only on Windows® 2000 (with SP4 or above) and Windows® XP (with SP1 or above) operation systems.

**PCI Express Graphics interface**

- One 16-lane (X16 port) PCI Express graphics port, fully compliant with the PCI Express Base Specification revision 1.0a.
- A base PCI Express frequency of 2.5Gb/s only.
- PCI Express support and Enhanced Addressing Mechanism.

**PCI ExpressX1 Ports**

- Full PCI Express 1.0a compliant.
- One virtual channel support for full isochronous data transfers.
- Support for full 2.5Gb/s bandwidth in each direction per X1 lane.

**Onboard I/O**

- One on board PCI fast IDE ports supporting up to 2 ATA, ATA2 , Ultra ATA33/66/100/133 IDE HDDs, CD-ROMs, ZIP drives and LS-120 drives as boot drive.
- One ECP/EPP parallel port.
- One 16550 Compatible UART serial port (via a header).
- One floppy port which supports two FDD of 1.44MB, 2.88MB capacity.
- Ten USB ports (six ports via three headers).
- PS/2 keyboard support.
- PS/2 mouse support.
- One front panel sound connector.
- Infrared (IrDA) support via a header.

**Onboard Realtek RTL8100C/RTL8110S PCI LAN (optional)**

- Provides 32-bit performance, PCI bus master capability.
- Full compliance with IEEE 802.3u 100 Base-T specifications and IEEE 802.3X Full Duplex Flow Control.
- Supports 10 Mb/s, 100 Mb/s and 1000 Mb/s (only for RTL8110S) operation.
- Supports Wake-On-LAN function and remote wake-up.
- Supports ACPI, PCI Power management and PCI VPD.

**Onboard HDMI (High-Definition Multimedia Interface)**

- Integrated 30-bit TMDS HDMI interface.
- Support EIA-861B uncompressed digital video modes.
- HDMI accepts 50Hz video formats, and that supports HDTV capability.
- Supports 1280x720p@59.94/60Hz.

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**Power Management**

- Supports SMM, APM and ACPI.
- Break switch for instant suspend/resume on system operations.
- Energy star “Green PC” compliant.
- Hardware monitoring circuit provides voltage, fan speed, etc. monitoring (optional).
- External Modem Ring-in Wake-up support.
- Supports suspend-to-RAM (STR) (optional).

**(Note:** Make sure that the current of your 5VSB power supply is more than 1.5A. Please use a 300 watt power supply or greater.)

**Onboard AC97 Sound (optional)**

- Integrated AC97 controller with standard AC97 Codec.
- Direct Sound and Sound Blaster compatible.
- Full-Duplex 16-bit record and play back.
- PnP and APM 1.2 support.
- Windows® 2000/XP ready.
- Line-in, Line-out, Mic-in.
- Supports AC97 codes for six sound channel output (optional).

**Onboard IEEE1394 (optional)**

- Compliant with 1394 OHCI specifications v1.0 and v1.1.
- Integrated 400Mbit 2 port PHY.

**Onboard HDA Sound (optional)**

- Integrated HDA controller with HDA codec.
- Support 16/20/24 bit PCM format for 7.1 sound play back.
- Support SPDIF-IN/OUT .
- Windows® 2000/xp ready.

**Onboard Serial ATAII Host Controller (optional)**

- Independent DMA operation on four ports.
- Data transfer rates of 300Mb/s.
- RAID feature support .

**Expansion Slots**

- 1 PCI Express X16 slot.
- 1 PCI Express X1 slot.
- 2 PCI slots, - ver. 2.2 compliant (optional).



Static electricity can harm delicate components of the motherboard. To prevent damage caused by static electricity, discharge the static electricity from your body before you touch any of the computers electronic components.

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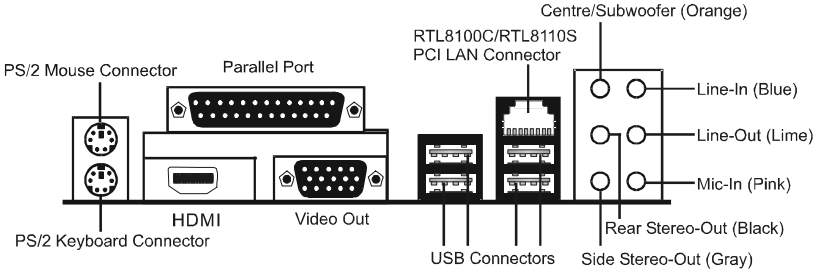




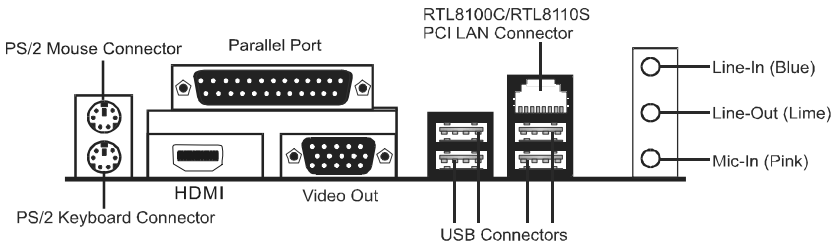


## REAR PANEL

The back panel (for HD Audio) provides the following connectors:



The back panel (for AC97 Audio) provides the following connectors:



## REAR PANEL

### PS/2 Mouse Connector

The motherboard provides a standard PS/2® mouse mini DIN connector for attaching a PS/2® mouse. You can plug a PS/2® mouse directly into this connector.

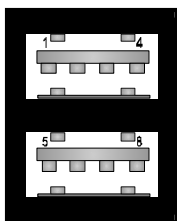
### PS/2 Keyboard Connector

The motherboard provides a standard PS/2® keyboard mini DIN connector for attaching a PS/2® keyboard. You can plug a PS/2® keyboard directly into this connector.

### USB 2.0 Connector

The motherboard provides an OHCI (Open Host Controller Interface) Universal Serial Bus root for attaching USB devices such as keyboard, mouse or other USB-compatible devices. You can plug the USB device directly into the connector.

#### USB 2.0 Connector



#### USB 2.0 Connector Description

PIN	SIGNAL	DESCRIPTION
1	VCC	+5V/5VSB (optional)
2	-Data 0	Negative Data Channel 0
3	+Data0	Positive Data Channel 0
4	GND	Ground
5	VCC	+5V/5VSB (optional)
6	-Data 1	Negative Data Channel 1
7	+Data 1	Positive Data Channel 1
8	GND	Ground

### VIA VT6307 IEEE 1394 Connector (Optional)

The mainboard provides an IEEE 1394 Connector and allows you to connect an IEEE 1394 device directly to the connector.

**Video Out Connector (Optional)**

The motherboard provides a Video out port to connect a 15-pin analog video monitor.

**SPDIF Connector (Optional)**

The motherboard provides a S-Bracket (SPDIF) connector that allows you to connect a S-Bracket (coaxial) for a Digital Interface (SPDIF).

**LAN Jack (Optional)**

The motherboard provides one standard RJ-45 jack for connecting to a Local Area Network(LAN). You can connect a network cable to the LAN jack.

**Parallel Port Connector: LPT1**

The motherboard provides a 25-pin female centronic connector. A parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) mode.

**Audio Port Connector**

**Line\_Out** is a connector for speakers or headphones. **Line\_In** is used for external CD players, tape players, or other audio devices. **Mic\_In** is the microphone connector.

The ALC655 embeds an internal analog switch (by driver software) to select LINE input or Surround output, and to select MIC input or CENTER/LFE output.

**8 Channel HD Audio**

Option select of 2, 6, or 8 channel audio from onboard High Definition compliant CODEC with 20-bit ADC and 24-bit DAC resolution.

- Supports CD-In, SPDIF-in and SPDIF-out.
- Optical & Coaxial SPDIF-out available on rear panel.
- Supports jack detection for easy audio device installation.

**Rear panel audio jacks configuration:**

Audio Jack Color	2 Channel	6 Channel	8 Channel
Blue	Line-In	Line-In	Line-In
Lime	Line-Out	Front Stereo-Out	Front Stereo-Out
Pink	Mic-In	Mic-In	Mic-In
Gray	--	--	Side Stereo-Out
Black	--	Rear Stereo-Out	Rear Stereo-Out
Orange	--	Centre & Subwoofer	Centre & Subwoofer

## AUDIO CONFIGURATION (for ALC 97 only)

After installing the audio driver, you can select 2/4/6 channel surround audio output in the software utility and then connect surround speakers to appropriate audio ports.

There are two ways to obtain 4/6 channel surround audio output:

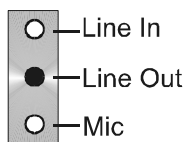
1. Using the 4/6 surround audio output of the back panel only. All surround speakers connect to this audio connector.
2. Using the S-Bracket (optional cable). You have install the S-Bracket into the computer. Connect two front speakers to back panel's "Line Out" port, and the rest of speakers to S-Bracket.

## SPEAKER CONFIGURATION

### Method 1:

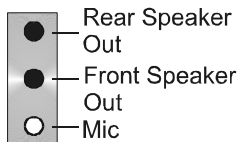
#### Using the 4/6 surround audio output of the back panel only

After installing the audio drivers, you can attach the speakers for 2-/4-/6- channel audio output. Please connect the speakers to the LINE OUT connectors. Different connector configurations for 2-/4-/6-channel options are listed below:



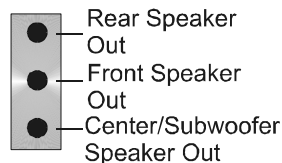
#### 2-Channel

In 2-channel configuration, Line Out, Line In and MIC functions all exist.




#### 4-Channel

When set to 4-channel configuration, Line In is replaced by Rear Speaker Out. The Line in function does not exist.



#### 6-Channel

When set to 6-channel configuration, Line In is replaced by Rear Speaker Out. Mic is replaced by Center/Subwoofer Speaker Out. Line in and Mic functions do not exist.

In the software utility, double click the “AC97 Audio configuration” icon  from the window tray on the right bottom.

The “AC97 Audio Configuration” box will appear. Click on the **Speaker Configuration** tab to select the audio mode.

- A. When you choose 4-channel mode for 4 speaker output, the selected item is shown (Figure 1).



(Figure 1)

- B. When you choose 6-channel mode for 5.1 speaker output, the selected item is shown (Figure 2).



(Figure 2)

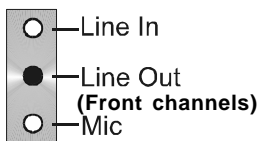
## Method 2: Using S-BRACKET connectors:

The S-Bracket (shown on page 18) is an optional accessory. To use the S-Bracket, you should select the correct setting in the software utility. For information about the setting, refer to selecting 4- or 6- Channel Settings later in this section.

Connector configurations for 4- and 6- channel using S-Bracket are described below:

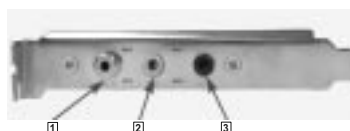
### 4-Channel Analog Audio Output

#### Back Panel



+

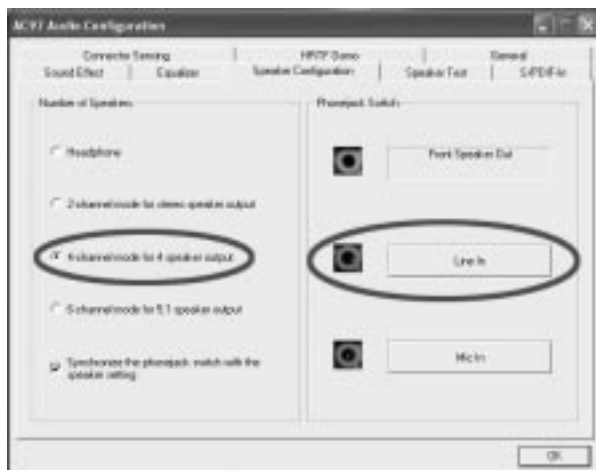
#### S-Bracket



- 1 SPDIF jack (coaxial)
- 2 Rear Speaker Out
- 3 No function

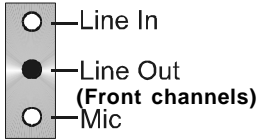
### Description:

Connect two speakers to the back panel's Line Out connector and two speakers to one Line Out connector on the S-Bracket, or connect all two speakers to one connector on the S-Bracket. If you want to use the **Line In** function, please click the **Rear Speaker Out** button (shown below)

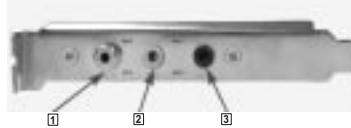


## 6-Channel Analog Audio Output

### Back Panel



### S-Bracket



+

- 1 SPDIF jack (coaxial)
- 2 Rear Speaker Out
- 3 Center and Subwoofer Out

### Description:

Connect two speakers to the back panel's Line Out connector and four speakers to the Line Out connector of the S-Bracket, or attach all six speakers to the connector on the S-Bracket. If you want to use the **Line In** and **MIC** functions at the same time, please click the **Rear Speaker Out** and **Center/Subwoofer Speaker Out** buttons (shown below).





## Connectors

The motherboard provides connectors to connect to the FDD, IDE HDD, and USB Ports and the CPU/System FAN etc.

### Floppy Disk Drive Connector: CN3

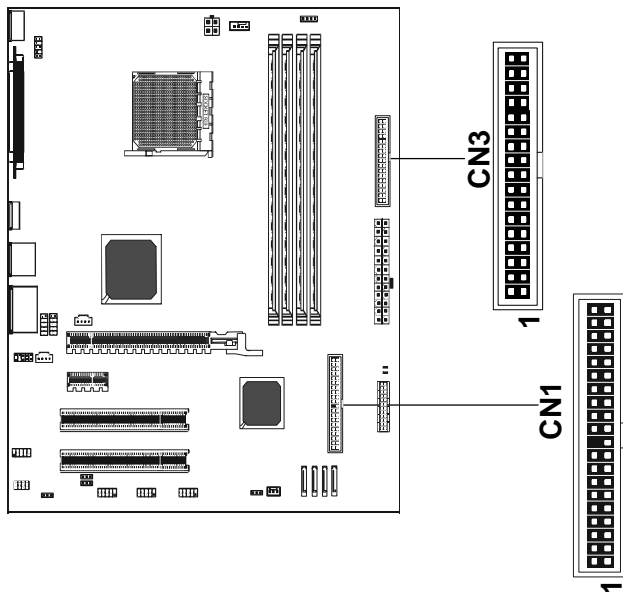
The motherboard provides a standard floppy disk drive connector that supports 1.44M, 2.88M floppy disk types.

### Hard Disk Connectors: CN1

The motherboard has a 32-bit Enhanced PCI IDE and Ultra DMA 33/66/100/133 controller that provides PIO mode 0-4, Bus Master, and Ultra DMA 33/66/100/133 function. You can connect up to two hard disk drives, CD-ROMs, 120MB Floppy (reserved for future BIOS) and other devices.

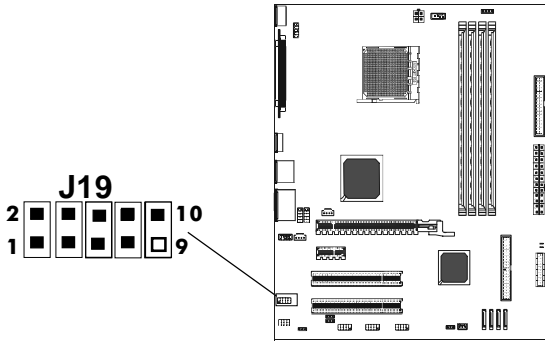
#### CN1 (Primary IDE Connector)

The first hard drive should always be connected to CN1. CN1 can connect a Master and a Slave drive. You must configure the second hard drive to Slave mode by setting the jumper accordingly.



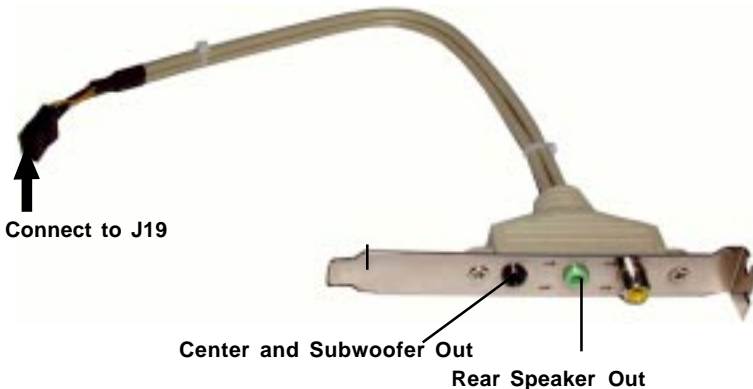
**S-Bracket (SPDIF) /CEN/LFE/Surround Output Connector - J19 for AC97 only (optional)**

This connector allows you to connect a S-Bracket for a digital interface (SPDIF). The S-Bracket offers 1 SPDIF jack for digital audio transmission and 2 analog Line-Out jacks for other 4-channel audio outputs. So you can use Line in, Mic in and 6 channel audio output features at the same time.



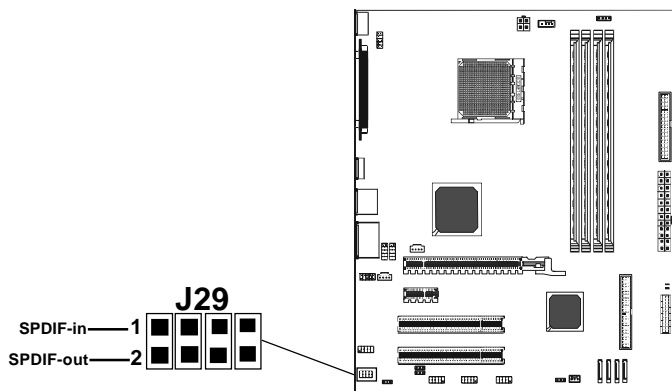
PIN	SIGNAL	DESCRIPTION
1	SOUT-	LAudioleftsurroundingoutput
2	SOUT-R	Audio right surrounding output
3	GND	Ground
4	GND	Ground
5	CET-OUT	Audio center output
6	LFE-OUT	Audio bass output
7	GND	Ground
8	SPDIF	S/PDIF input
9	KEY	NC
10	SPDFO	S/PDIF output

**S-Bracket Cable (optional)**



### SPDIF Header - J29 (for HD Audio)

This header provides a SPDIF (Sony/Philips Digital Interface) output to digital multimedia device through fiber or coaxial connector.

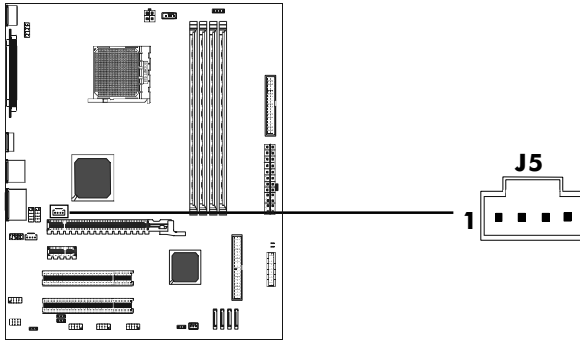


### SPDIF-IN/OUT: J29 (for HDA only)

PIN	SIGNAL	DESCRIPTION
1	SPDIF-in	SPDIF-in
2	SPDIF-out	SPDIF-out
3	NC	NC
4	NC	NC
5	NC	NC
6	NC	NC
7	GND	GND
8	GND	GND

## TV Out Connector - J5 (optional)

The motherboard provides TV Out connectors.



### J5 - Pin Definition

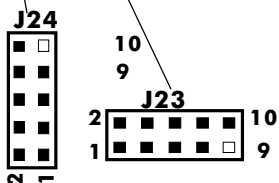
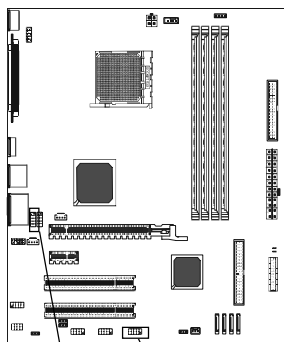
PIN	Assignment
1	C
2	GND
3	COMP/B
4	Y

### TV Out cable

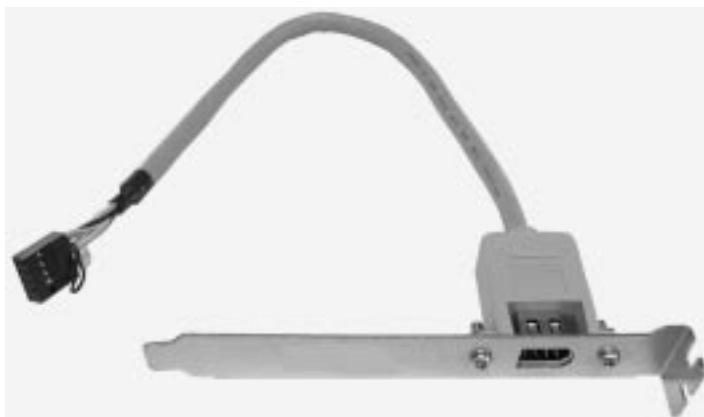


### IEEE 1394 Connector: J23/J24 (optional)

The motherboard provides two 1394 pin headers that allow you to connect IEEE 1394 ports.



### IEEE 1394 Cable (optional)

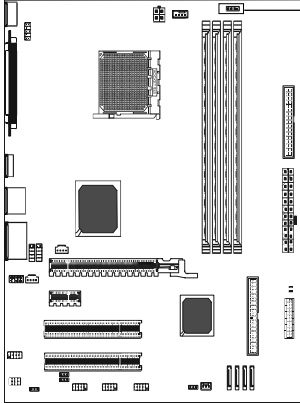


### J23/J24 - Pin Definition

PIN	Assignment
1	TPA+
2	TPA-
3	Ground
4	Ground
5	TPB+
6	TPB-
7	Cable power
8	Cable power
9	Key (no pin)
10	Ground

**Chassis Alarm Lead: JP12 (optional)**

This lead is for a chassis designed with an intrusion detection feature. This requires an external detection mechanism such as a chassis intrusion sensor or microswitch. When you remove any chassis component, the sensor triggers and sends a high-level signal to this lead to record a chassis intrusion event.



**JP12 - Pin Definition**

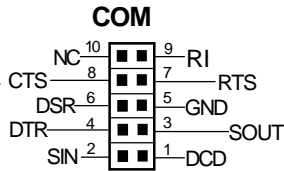
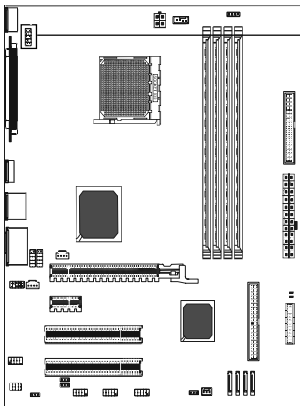
PIN	Assignment
1	+5VSB
2	KEY
3	Chassis Signal
4	GND

**Note:**

If you want to use “Chassis Alarm” Connector, you must remove 3-4 jumper.

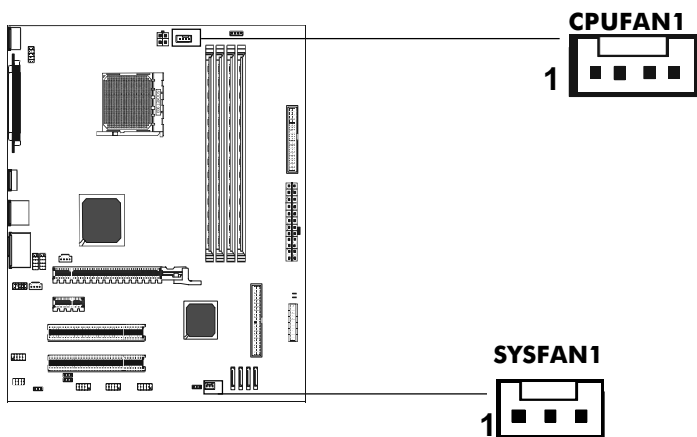
**Serial Port Header - COM**

The Port is 16550A high speed communication ports that send/receive 16 bytes FIFOs. You can attach a serial mouse or other serial devices directly to the connectors.



### Fan Power Connectors: CPUFAN1, SYSFAN1 (optional)

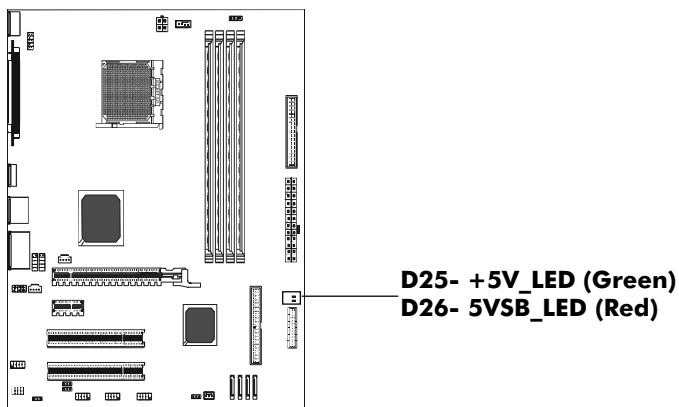
The CPUFAN1 (processor fan) and SYSFAN1 (system fan) support system cooling fans using +12V via four-pin head connectors. When connecting the wire to the connectors, always take note that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. If the motherboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.



### Power LED: D25, D26 (optional)

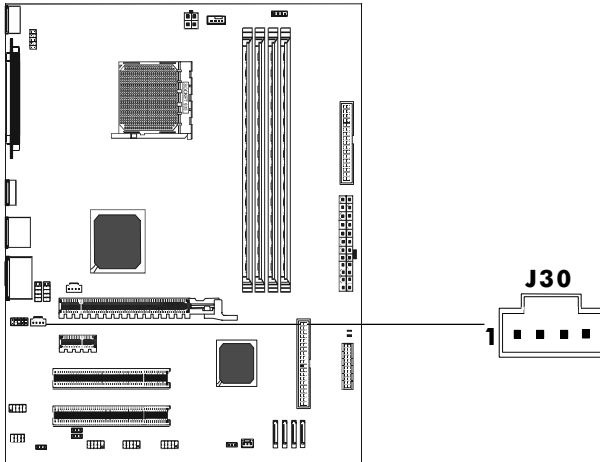
The green LED lights when the system is in the power-on state.

The red LED lights whenever AC mains power is attached, irrespective of whether the system is power-on or power-off or standby mode.



**CD-IN Connector: J30 (optional)**

The connector is for CD-ROM Drive.

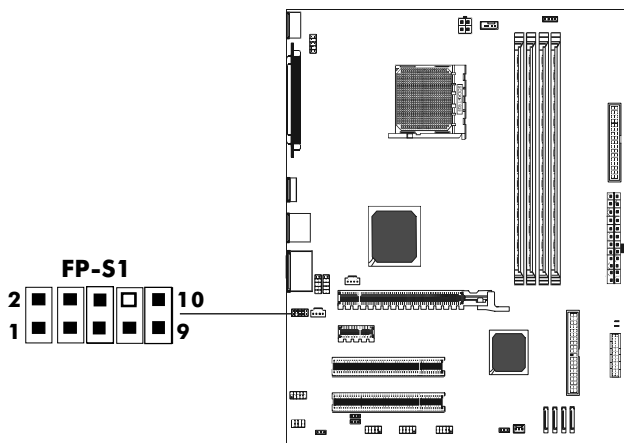
**CDS1 : J30 - Pin Definition**

PIN	Assignment
1	CD-L
2	GND
3	GND
4	CD-R



### Front Panel Audio Header: FP-S1

This motherboard supports front panel microphone and speaker out ports. If your computer case has these ports, connect them to FP-S1.



### FP-S1 - Pin Definition

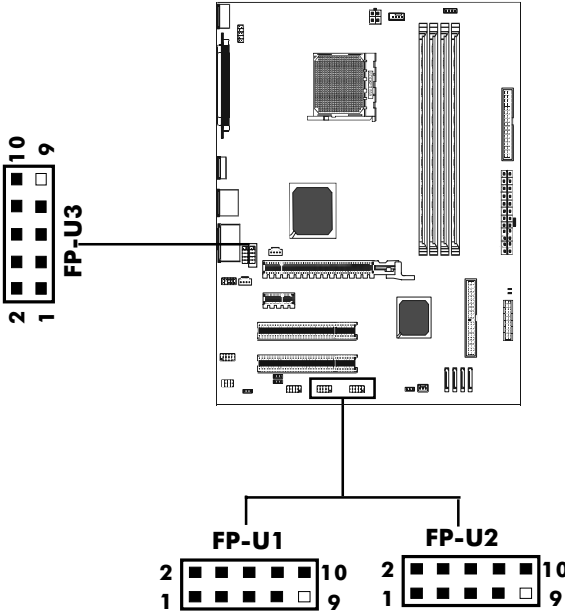
PIN	Assignment
1	MIC
2	GND
3	REF
4	POWER
5	Front Audio (R)
6	Rear Audio (R)
7	Reserved
8	Key (No pin)
9	Front Audio (L)
10	Rear Audio (L)

#### Note:

If you want to use the "Front Audio" connector, you must remove the "Front Audio" pin jumpers ( for ALC 655 only ). In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assignment on the cable is the same as the pin assignment on the mainboard header. To find out if the chassis you are buying supports a front audio connector, please contact your dealer.

**USB Connectors: FP-U1, FP-U2, FP-U3 (optional)**

This motherboard has ten USB ports. Some computer cases have a special module that mounts USB ports at the front of the case. If you have this kind of case, use the auxiliary USB connector FP\_U1/FP\_U2/FP\_U3 to connect the front mounted ports to the mainboard.

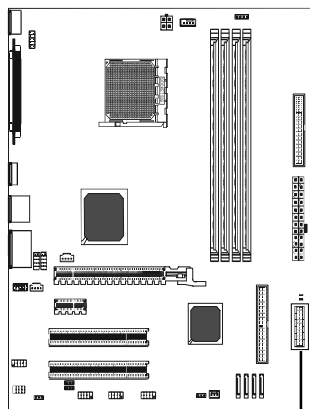


**FP-U1, FP-U2, FP-U3 USB Connector**

PIN	Assignment
1	VCC
2	VCC
3	USBP0-
4	USBP1-
5	USBP0+
6	USBP1+
7	GND
8	GND
9	KEY
10	OC#

## Front Panel Header: FP1

The motherboard provides one front panel connector for the front panel switches and LEDs.

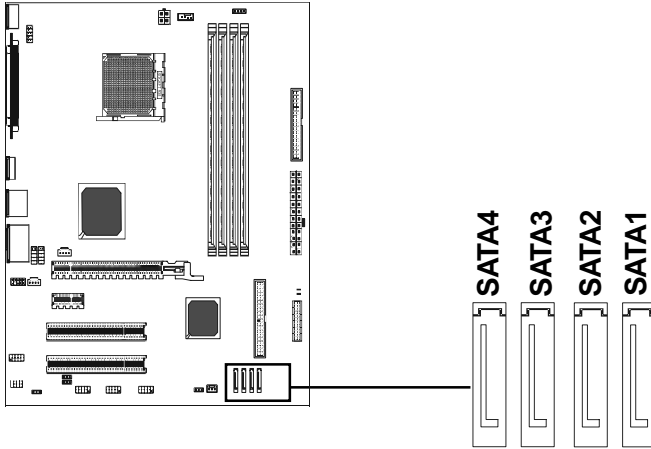


### FP1

	24	■ ■	23	VCC
GND	22	■ ■	21	GND
KEYLOCK	20	□ ■	19	NC
KEY	18	□ ■	17	NC
KEY	16	■ ■	15	SPEAKER
IRRX	14	■ ■	13	IRTX
GND	12	■ ■	11	VCC
KEY	10	□ ■	9	NC
KEY	8	□ ■	7	NC
GND	6	■ ■	5	RESET
PWR_SW	4	■ ■	3	GND
PW_LED-	2	■ ■	1	HDD_LED-
PW_LED+		■ ■		HDD_LED+

**Serial ATA Hard Disk Connectors:  
SATA1, SATA2, SATA3, SATA4 (optional)**

The motherboard has four SATA connectors. The motherboard provides optional dual high-speed Serial ATA interface ports, SATA1,2,3,4. Each supports 1<sup>st</sup> generation serial ATA data rates of 300MB/s. Both connector types are fully compliant with Serial ATA 2.0 specifications. Each Serial ATA connector can connect to 1 hard disk device. Please refer to Serial ATA Raid manual for detail software installation procedure.



**SATA1, SATA2, SATA3, SATA4 - Serial Connectors**

PIN	Assignment
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

---

## Serial ATA Cable



Connect one end of the SATA cable to the mainboard, and connect the other end to the SATA Hard Disk.



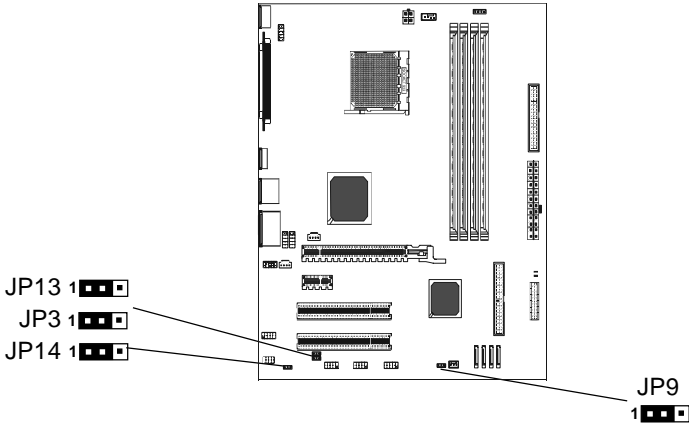
Please do not fold the serial ATA cable at a 90-degree angle as this will cause a loss of data during the transmission.

## Serial ATA Hard Disk Devices Power Cable (optional)



## JUMPER SETTING

This chapter explains how to configure the motherboard's hardware. Before using your computer, make sure all jumpers and DRAM modules are set correctly. Refer to this chapter whenever in doubt.



### Clear CMOS Jumper: JP9

If you want to clear the system configuration, use the JP9 (Clear CMOS Jumper) to clear data.

JP9	Selection
1-2*	Normal*
2-3	CMOS Clear

### JP14-On Board AC97 Sound Select

JP14	Function
1-2*	AC97 Sound Enable*
2-3	AC97 Sound Disable

### JP13-On Board LAN Select (optional)

JP13	Function
1-2*	LAN Enable*
2-3	LAN Disable

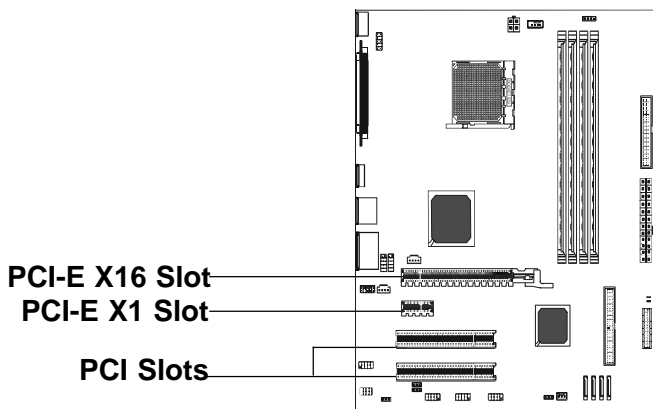
### JP3-On board IEEE1394 Select (optional)

JP3	Selection
1-2*	IEEE1394 Enable*
2-3	IEEE1394 Disable

Close    Open    \* = Default setting.

## SLOTS

The motherboard provides one PCI-E X16 slot, one PCI-E X1 slot and two 32-bit PCI bus slots.



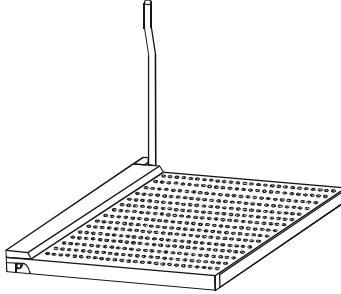
### PCI (Peripheral Component Interconnect) Slots

The PCI slots allow you to insert expansion cards to meet your needs. When adding or removing expansion cards, make sure that you unplug the power supply first. Read the documentation for the expansion card and make any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS configuration.

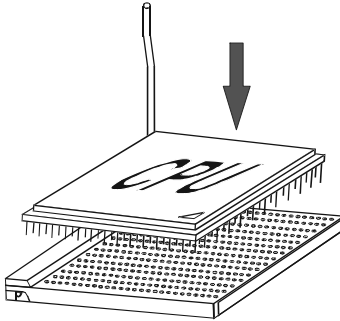
## CPU INSTALLATION

**Please follow below steps to install the CPU.**

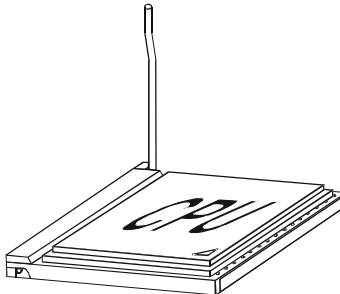
1. Please turn off the power and unplug the power cord before installing the CPU. Pull the lever up and away from the socket until it is at a 90 degree angle to the mainboard.



2. Look for the gold arrow on the CPU. The gold arrow should point away from the lever pivot. The CPU can only sit properly in the socket in the correct orientation.



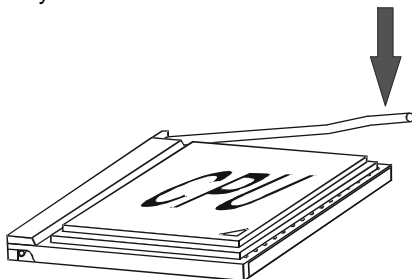
3. If the CPU is correctly seated, the pins should be completely embedded in the socket and can not be seen (Please note that any deviation from the correct installation procedures may cause permanent damage to your motherboard).





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4. Press the CPU down firmly into the socket and close the lever. As the CPU is likely to move while the lever is being closed, always close the lever with your fingers pressing tightly on top of the CPU to make sure the CPU is properly and completely seated in the socket.



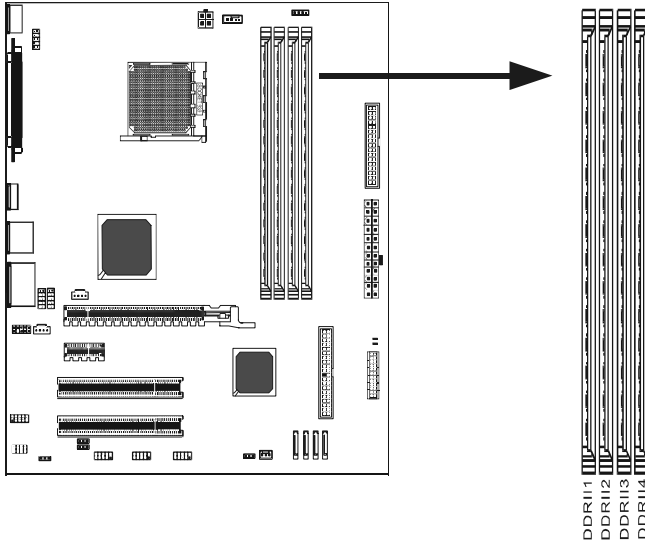
5. When you are installing the CPU, make sure the CPU has a heat sink and a cooling fan attached on the top to prevent overheating. If you do not have the heat sink and cooling fan, contact your dealer to purchase and install them before turning on the computer.

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# MEMORY CONFIGURATIONS

## 1. DDRII DIMM Sockets Location

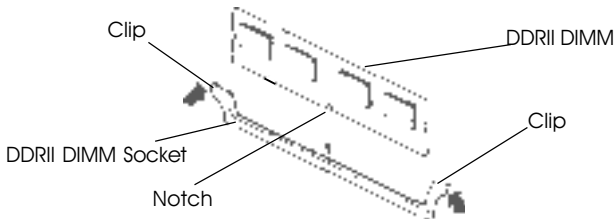
Please refer to the following figure for the location of the DDRII DIMM Sockets.



## 2. Installing DDRII DIMMs

Please follow the steps below to install DDRII DIMMs.

- Locate the DDRII DIMM sockets.
- Holding the DDRII DIMM by the edges, remove it from its antistatic package.
- Make sure the clips at either end of the socket are pushed away from the socket.



- Position the DDRII DIMM above the socket. Align the small notch in the bottom edge of the DDRII DIMM with the key in the socket.
- Insert the bottom edge of the DDRII DIMM into the socket.

- f. When the DDRII DIMM is seated, push down on the top edge of the DDRII DIMM until the retaining clips at the ends of the socket snap into place. Make sure the clips are firmly in place.

**Note:** Please turn the system off before installing or removing any device, otherwise system damage can occur.

### 3. Memory Configurations

Please refer to the following recommended memory configurations.

Model (DIMM Type)	Case	Sockets			
		DDRII1	DDRII2	DDRII3	DDRII4
Dual-channel/ (DDRII533/DDRII667/DDRII800)	1	Populated	Populated	----	----
	2	----	----	Populated	Populated
	3	Populated	Populated	Populated	Populated

You can install identical DIMMs in DDRII1 and DDRII2 and identical DIMMs in DDRII3 and DDRII4.

**Note:**

- In dual channel mode, always install an identical (the same type and size) DDRII DIMM pair in the sockets.
- Using the three DIMMs configuration is not recommended.
- Memory channel speed is determined by slowest DIMM populated in system.

## BIOS SETUP

### About the Setup Utility

The motherboard uses the latest Award BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals**
- Video display type and display options**
- Password protection to prevent unauthorized use**
- Power Management features**

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

### The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

### Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

## Main Menu

Once you enter the Award BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from various setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

### Phoenix - Award WorkstationBIOS CMOS Setup Utility

<ul style="list-style-type: none"> <li>▶ <b>Standard CMOS Features</b></li> <li>▶ Advanced BIOS Features</li> <li>▶ Advanced Chipset Features</li> <li>▶ Integrated Peripherals</li> <li>▶ Power Management Setup</li> <li>▶ PnP/PCI Configurations</li> <li>▶ PC Health Status</li> </ul>	<ul style="list-style-type: none"> <li>▶ Frequency/Voltage Control</li> <li>▶ Load Fail-Safe Defaults</li> <li>▶ Load Optimized Defaults</li> <li>▶ Set Supervisor Password</li> <li>▶ Set User Password</li> <li>▶ Save &amp; Exit Setup</li> <li>▶ Exit Without Saving</li> </ul>
Esc : Quit F10 : Save & Exit Setup	↑↓→← : Select Item
Time, Date, Hard Disk Type ... ..	

**(Note : The sample BIOS Setup Menu included here only shows a typical case, and may not be exactly the same as the one on your unit.)**

Note that a brief description of each highlighted item will appear at the bottom of the screen.

**Standard CMOS Features** This setup page includes all the items of Award™ special standard features.

**Advanced BIOS Features** This setup page includes all the items of Award™ special enhanced features.

**Advanced Chipset Features** This setup page includes all the items of chipset special features.

**Integrated Peripherals** This section page includes all the items of IDE hard drive and Programmed Input / Output features.

**Power Management Setup** This entry only appears if your system supports Power Management "Green PC" standards.

**PNP/PCI Configurations** This entry appears if your system supports PNP/PCI.

**PC Health Status** Display CPU and Case Fan Speed etc.

**Load Fail-Safe Defaults**      The BIOS defaults that have been set by the manufacturer and represent. Settings which provide the minimum requirements for your system to operate.

**Load Optimized Defaults**      These chipset defaults are settings which provide for maximum system performance. While Award has designed the custom BIOS to maximize performance, the manufacturer has the right to change these defaults to meet their needs.

**Set Supervisor/ User Password**      Changes, sets, or disables password. It allows you to limit access to the system and the Setup Program.

**Save & Exit Setup**      Saves value changes to CMOS and exits setup.

**Exit Without Saving**      Abandons all CMOS value changes and exits setup.

**Standard CMOS Features**

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes one or more setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> key to select the desired value in each item.

Phoenix - Award Workstation BIOS CMOS Setup Utility  
Standard CMOS Features

Date (mm :d d :yy)	Sat. Jan 01 2005	Item Help
Time (h h :mm:ss)	11 : 1 : 35	
▶ IDE Primary Master	[Press Enter 4303 MB]	Menu Level ▶
▶ IDE Primary Slave	[None]	Change the day, month, year and century
▶ IDE Secondary Master	[None]	
▶ IDE Secondary Slave	[None]	
Drive A	[1.44M, 3.5 in.]	
Drive B	[None]	
Video	[EGA/VGA]	
Halt on	[All, but keyboard]	
Base Memory	640K	
Extended Memory	30720K	
Total Memory	31744K	

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

**(Note :** The sample BIOS Setup Menu included here only shows a typical case, and may not be exactly the same as the one on your unit.)

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<b>Date</b>	The date format is <day-of-the-week>. <month> <day> <year>.
<b>Time</b>	The time format is <hour> <Minute> <second> displayed in 24-hour military-time clock. For example, 1 p. m. is displayed as 13:00:00.
<b>Primary Master/Primary Slave/Secondary Master/Secondary</b>	These categories identify the types of the two channels that have been installed in the computer. If the controller of the HDD interface is SCSI, the selection shall be "None".
<b>Drive A Type / Drive B Type</b>	This category identifies the drive types which have been installed in the computer.
<b>Video</b>	The default setting is EGA/VGA.
<b>Halt on</b>	You can select which type of error will cause the system to halt.

### **Advanced BIOS Features**

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot up sequence, keyboard operation, shadowing and security.

### **Advanced Chipset Features**

The 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.

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It must be stated that these items should not be altered. The default settings have been chosen because they provide the best operating conditions for your system.

### **Integrated Peripherals**

The Integrated Peripherals Setup allows the user to configure the onboard IDE controller, floppy disk controller, the printer port and the serial ports.

### **Power Management Setup**

The Power Management Setup Menu allows you to configure your system to save the most energy while operating in a manner consistent with your own style of computer use.

### **PNP/PCI Configurations**

This section describes how to configure the PCI bus system. This section covers some very technical items and it is recommended that only experienced users should make any changes to the default settings.

### **PC Health Status**

The PC Health Status displays CPU and Case Fan Speed.

---

### Set Supervisor/User Password

When this function is selected, the following message appears at the center of the screen to assist you in creating a password.

#### ENTER PASSWORD

Type the password, up to eight characters, 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. To disable password, just press <Enter> when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter BIOS Setup freely.

#### PASSWORD DISABLED

If you have selected "**System**" in "Security Option" of "BIOS Features Setup" menu, you will be prompted for the password every time the system reboots or any time you try to enter BIOS Setup. If you have selected "**Setup**" at "Security Option" from "BIOS Features Setup" menu, you will be prompted for the password only when you enter BIOS Setup.

Supervisor Password has higher priority than User Password. You can use Supervisor Password when booting the system or entering BIOS Setup to modify all settings. Also you can use User Password when booting the system or entering BIOS Setup but can not modify any setting if Supervisor Password is enabled.

### Save & Exit Setup

Navigate to this option and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, press <Y> to save and exit, or press <N> to return to the main menu.

### Exit Without Saving

Navigate to this option and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, press <Y> to discard changes and exit, or press <N> to return to the main menu.

**Note:** If you have made settings that you do not want to save, use the "Exit Without Saving" item and press <Y> to discard any changes you have



---

## FLASH Update Procedure

The program AWDFLASH.EXE is included on the driver CD (D:\Utility\AWDFLASH.EXE). Please follow the recommended procedure to update the flash BIOS, as listed below.

1. Create a DOS-bootable floppy diskette. Copy the new BIOS file (just obtained or downloaded) and the utility program AWDFLASH.EXE to the diskette.
2. Allow the PC system to boot from the DOS diskette.
3. At the DOS prompt, type

**AWDFLASH<ENTER>**

4. Enter the file name of the new BIOS.
5. The question: "Do you want to save BIOS (Y/N)?" is displayed.

***Press "N" if there is no need to save the existing BIOS.  
Press "Y" if a backup copy of the existing BIOS is needed.  
(A file name has to be assigned to the existing BIOS binary file.)***

6. The message : "Press "Y" to program or "N" to exit" is displayed. Type

**"Y"<ENTER>**

7. Wait until the flash-update is completed.
8. Restart the PC.

<p><b>Warning :</b> - Do not turn off or RESET the computer during the flash process. - If you are not sure how to upgrade the BIOS, please take your computer to an Authorized Service Center and have a trained technician do the work for you.</p>
---

## BIOS Update Procedure

The program AWDFLASH.EXE is included on the driver CD (D:\Utility\AWDFLASH.EXE). It is recommended to follow the procedure below to update the BIOS.

1. Create a DOS-bootable floppy diskette. Copy the new BIOS file (just obtained or downloaded) and the utility program AWDFLASH.EXE to the diskette.
2. Allow the PC system to boot from the DOS diskette.
3. At the DOS prompt, type

**AWDFLASH<ENTER>**

4. Enter the file name of the new BIOS.
5. The question: "Do you want to save BIOS (Y/N)?" is displayed.

***Press "N" if there is no need to save the existing BIOS.  
Press "Y" if a backup copy of the existing BIOS is needed.  
(A file name has to be assigned to the existing BIOS binary file.)***

6. The message : "Press "Y" to program or "N" to exit" is displayed. Type

**"Y"<ENTER>**

7. Wait until the flash-update is completed.
8. Restart the PC.

<p><b>Warning :</b> - Do not turn off or RESET the computer during the flash process. - If you are not sure how to upgrade the BIOS, please take your computer to an Authorized Service Center and have a trained technician do the work for you.</p>
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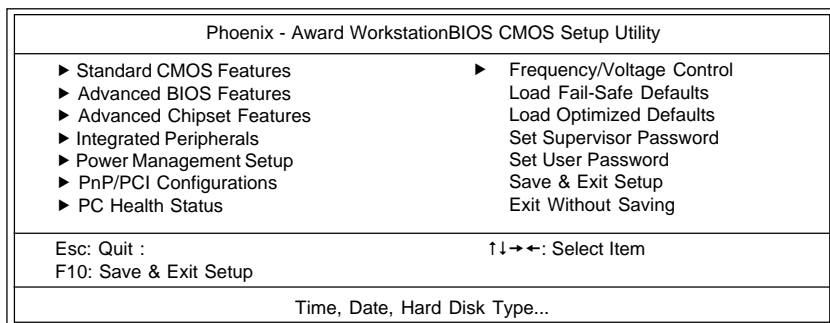
## Setup SATA RAID

### BIOS Setup

Power on the computer, when the following message briefly appears at the bottom of the screen during the POST (Power On Self Test), press <Del> key to enter the AWARD BIOS CMOS Setup Utility.

### Press Del to enter SETUP

Pressing the delete key accesses the BIOS Setup Utility:



When you have entered, the Main Menu appears on the screen. Use the arrow keys to select the item "Integrated Peripherals" and press the <Enter> key to accept.

Set "ATI SATA Type" to [RAID] in the sub-menu "South OnChip PCI Device" of "Integrated Peripherals". Then save the setup and exit.

## Create a Bootable Logical Drive

- Description
- Create a Logical Drive

### Description

A logical drive appears to the computer as a single hard disk drive. As a result, you can install your operating system onto a logical drive and boot your computer from the logical drive. The following steps describe how to create a bootable logical drive.

## CREATE A LOGICAL DRIVE

You will now use the onboard FastBuild BIOS utility to create a logical drive.

1. Boot your system. If this is the first time you have booted with the disk drives installed, the ATI onboard BIOS will display the following screen (below).

```
AHCI (tm) BIOS Version 2.5.1540.12
(c) 2004-2005 ATI Technology, Inc, All rights reserved.
No Array is defined...
Press <Ctrl-F> to enter FastBuild (tm) Utility...
```

2. Press the **Ctrl-F** keys to display the FastBuild Utility Main Menu (below).

```
FastBuild (tm) Utility (c) 2004-2005 ATI Technology, Inc.
```

```

Main Menu
Viov Drive Assignments.....[1]
Define LD.....[2]
Delete LD.....[3]
Controller Configuration.....[4]
```

```

Keys Available
Press 1...4 to select option      [Esc]...Exit
```

3. Press **2** on the Main Menu screen to display the Define LD Menu (below).

```
FastBuild (tm) Utility (c) 2004-2005 ATI Technology, Inc.
```

### Define LD Menu

LD No	RAID Mode	Total Drv	Capacity (MB)	Status
LD 1	----	----	----	----
LD 2	----	----	----	----
LD 3	----	----	----	----
LD 4	----	----	----	----
LD 5	----	----	----	----
LD 6	----	----	----	----
LD 7	----	----	----	----
LD 8	----	----	----	----

```

Keys Available
[↑] UP      [↓] Down      [Esc] Exit      [Enter] Select
```

4. Press the arrow keys to highlight an logical drive number you want to define and press **Enter** to select it.

The Define LD Menu for the logical drive number you selected will next appear (below).

FastBuild (tm) Utility (c) 2004-2005 ATI Technology, Inc.			
Define LD Menu			
LD No	RAID Mode	Total Drv	
LD 1	RAID 1	2	
Stripe Block: NA		Fast Init:OFF	
Gigabyte Boundary:ON		Cache Mode:Write Back	
Drive Assignments			
Channel ID	Drive Model	Capacity (MB)	Assignment
1:Mas	ST380013AS	80027	Y
2:Mas	ST380013AS	80027	Y
3:Mas	ST380013AS	80027	N
4:Mas	ST380013AS	80027	N
Keys Available			
[↑] UP	[↓] Down	[Esc] Exit	[Space] Change Option [Ctrl-Y] Save

5. Choose the RAID Level you want. In the Define LD Menu section, press the Spacebar to cycle through logical drive types:

- RAID 0 (Stripe)
- RAID 1 (Mirror)
- RAID 10 (Stripe / Mirror)

**NOTE:** While you can use any available RAID Level for your bootable logical drive, ATI recommends RAID 1 for most applications.

6. Press the arrow keys to move to the next option. Option choices depend on the RAID Level you selected.

- Initialize logical drive, zero the disk drives. RAID 1 or 10 only.
- Stripe Block Size, the default 64KB is best for most applications. RAID 0 or 10 only.
- Gigabyte Boundary, allows use of slightly smaller replacement drives.
- Cache Mode, WriteThru or WriteBack.

7. Press the arrow keys to move to Disk Assignments. Press the spacebar to toggle between N and Y for each available drive. Y means this disk drive will be assigned to the logical drive.

Assign the appropriate number of disk drives to your logical drive.

8. Press **Ctrl-Y** to save your logical drive configuration.

You have the option of using all of the disk drive capacity for one logical drive or allocating a portion to a second logical drive.

Press Ctrl-Y to Modify Array Capacity or press any other Key to use Maximum Capacity ...

Choose one of the following actions:

- Use the full capacity of the disk drives for a single logical drive. Go to “One Logical Drive” below.
- Split the disk drives among two logical drives. Go to “Two Logical Drives” below.

### One Logical Drive

Continued from *Create a Logical Drive* step 8, above.

1. Press any key (except for **Ctrl-Y**) to use the full portion of the logical drive for one logical drive.
2. Press **Esc** to exit to the Main Menu. Press **Esc** again to exit the Utility.
3. Press **Y** to restart the computer.

You have successfully created a new RAID logical drive.

### Two Logical Drives

Continued from *Create Logical Drive* step 8, above.

1. Press **Ctrl-Y** to allocate a portion of the disk drives to the first logical drive.

FastBuild (tm) Utility (c) 2004-2005 ATI Technology, Inc.				
Define LD Menu				
LD No	RAID Mode	Total Drv		
LD 1	RAID 1	2		
Stripe Block: NA		Fast Init:OFF		
Gigabyte Boundary:ON		Cache Mode:Write Back		
Drive Assignments				
Channel ID	Drive Model	Capacity (MB)	Assignment	
1:Mas	ST380013AS	80027	Y	
2:Mas	ST380013AS	80027	Y	
3:Mas	S	Enter array capacity (in MB) here: 100000		N
4:Mas	S			N
Keys Available				
[↑] UP	[↓] Down	[Esc] Exit	[Space] Change Option	[Ctrl-Y] Save

2. Enter the desired capacity in MB for the first logical drive and press **Enter**. The Define LD Menu displays again.

FastBuild (tm) Utility (c) 2004-2005 ATI Technology, Inc.				
Define LD Menu				
LD No	RAID Mode	Total Drv	Capacity (MB)	Status
LD 1	RAID 1	2	10000	Functional
LD 2	----	----	----	----
LD 3	----	----	----	----
LD 4	----	----	----	----
LD 5	----	----	----	----
LD 6	----	----	----	----
LD 7	----	----	----	----
LD 8	----	----	----	----

Keys Available

[↑] UP    [↓] Down    [Esc] Exit    [Enter] Select

3. Press the up and down arrow keys to select an available logical drive number and press **Enter**.

FastBuild (tm) Utility (c) 2004-2005 ATI Technology, Inc.				
Define LD Menu				
LD No	RAID Mode	Total Drv		
LD 1	RAID 1	2		
Stripe Block: NA		Fast Init:OFF		
Gigabyte Boundary:ON		Cache Mode:Write Back		
Drive Assignments				
Channel ID	Drive Model	Capacity (MB)	Assignment	
1:Mas	ST380013AS	39960	Y	
2:Mas	ST380013AS	39960	Y	
3:Mas	ST380013AS	80027	N	
4:Mas	ST380013AS	80027	N	

Keys Available

[↑] UP    [↓] Down    [Esc] Exit    [Space] Change Option    [Ctrl-Y] Save

4. Choose the RAID level and options for the second logical drive. Note that the disk drives in Channels 1 and 2 reflect smaller capacities because a portion of their capacity belongs the first logical drive. In this example the disk drives in Channels 3 and 4 are not assigned to a logical drive.
  5. Press **Ctrl-Y** to save your logical drive configuration.
  6. Press **Esc** to exit to the Main Menu. Press **Esc** again to exit the Utility.
  7. Press **Y** to restart the computer.
- You have successfully created a new RAID logical drive.

---

## DRIVER AND RAID SOFTWARE INSTALLATION

### Microsoft Windows Driver Installation

1. After Windows has finished booting up, the system will automatically find the newly installed adapter and prompt the **Found New Hardware Wizard** window. Click **Cancel** to skip it.



2. Insert the bundled driver CD into your CD-ROM drive and select **“ATI Chipset\ATI SB600”** installation bar on the dialogue window to begin the driver and software installation. (Please follow the instructions to finish the installation.)

### Install Windows 2000/XP

- a. Insert the bundled driver CD DISC into CD-ROM (G:). Copy all files from the directory ( G:\ATI chipset\ATI SB600 ) to a floppy disk.
- b. Install the OS from CD-ROM.
- c. Press **“F6”** at the prompt “Press **F6** if you need to install a third party SCSI or RAID driver...”.
- d. Insert the floppy disk.
- e. Choose the OS device driver to be loaded.
- f. Install the OS.
- g. Install the driver after OS is installed.



## HDMI SETUP

### 1. BIOS Setup

#### Phoenix-Award Workstation BIOS COMS Setup Utility South OnChip PCI Device

NB HDMI Audio	[Enabled]	Item Help
ATI Azalia Audio	[Auto]	
ATI Axalia Clock	[Usbclk48]	Menu Level ►► This Internal HD Audio Use to HMDI Au- dio output
ATI AC97 Nodem	[Auto]	
ATI MC97 Modem	[Disabled]	
ATI SATA Controller	[Enabled]	
ATI SATA Type	[Native IDE]	
SB600 Spread Spectrum	[Enabled]	
Onboard Lan Boot ROM	[Disabled]	
↑↓→←Move Enter: Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 :General Help F5 : Previous Values F6 : Fail-Safe Defaults F7 : Optimized Defaults		

Set "NB HDMI Audio" to [ENABLE] in the sub-menu "South On Chip PCI Device" of "Integrate Peripherals". Then save the setup and exit.

### 2.Driver Installation

1. After Windows has finished booting up, insert the bundled CD into your CD-ROM drive and select "ATI Chipset\HDMI\KB88811WXPSP2" installtion bar on the dialogue window to begin the software installation, and when the system prompt Sear for the best driver in those location window, select include this location in the search, then select "ATI Chipset\HDMI" to begin the software installation.(please follow the instruction to finish the installation.)

## 2. Select the default device in the control panel



You should select “HD Audio SPDIF out” as the default device, and click **OK**.

---

## Realtek HD Audio Driver Setup

### Getting Started

After installing the Realtek HD Audio Driver (insert the driver CD and follow the onscreen instructions), “Realtek HD Audio Manager” icon will show in System tray as below. Double click the icon and the control panel will appear:



Double click to enable  
Realtek HD Audio Manager

### Sound Effect

After clicking on the “Sound Effect” tab, 3 sections “Environment”, “Equalizer” and “Karaoke” are available for selection.



### Environment Simulation

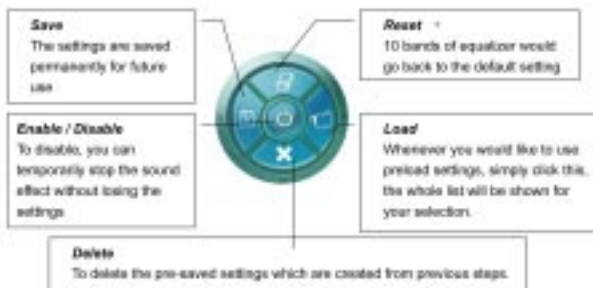
You will be able to enjoy different sound experiences by pulling down the arrow, a total of 23 sound effects will be shown for selection. Realtek HD Audio Sound Manager also provides five popular settings “Stone Corridor”, “Bathroom”, “Sewer pipe”, “Arena” and “Audio Corridor” for quick enjoyment.

---

## Equalizer Selection

The Equalizer section allows you to create your own preferred settings by utilizing this tool.

In standard 10 bands of equalizer, ranging from 100Hz to 16KHz are available:



## Frequently Used Equalizer Setting

Realtek recognizes the needs that you might have. By leveraging our long experience in the audio field, Realtek HD Audio Sound Manager provides you certain optimized equalizer settings that are frequently used for your quick enjoyment.

### How to Use

Other than the buttons “Pop” “Live” “Club” & “Rock” shown on the page, to pull down the arrow in “Others” , you will find more optimized settings available to you.

### Karaoke Mode

Karaoke mode brings Karaoke fun back home by simply using the music you usually play, Karaoke mode can help you eliminate the vocal of the song or adjust the key to accommodate your range.

**Vocal Cancellation:** Single click on “Voice Cancellation”, the vocals of the songs will be erased, while the background music is still playing which lets you take over the vocal part.

**Key Adjustment:** Using “Up / Down Arrow” to find a key which better fits your vocal range.

## Mixer

Realtek HD Audio Sound Manager integrates Microsoft's "Volume Control" functions into the Mixer page. This gives you the ability to create your favorite sound effect in one single tool.



## Playback control



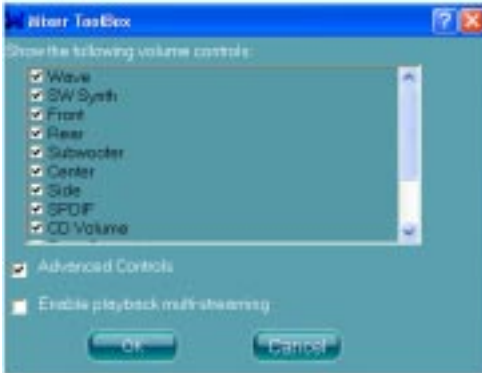
### Mute

You may choose to mute single or multiple volume controls or to completely mute sound output.

### Tool

- ✓ **Show the following volume control**  
This is to let you freely decide which volume control items to be displayed, total 13 items to be chosen.
- ✓ **Advanced controls**
- ✓ **Enable playback multi-streaming**

With this function, you will be able to have an audio chat with your friends via headphone (stream 1 from front panel) while still have music (stream 2 from back panel) playing. At any given period, you can have maximum 2 streams operating simultaneously.



## Recording control



### Mute

You may choose to mute single or multiple volume controls or to completely mute sound input.

### Tool

#### ✓ Show the following volume controls

This is to let you freely decide which volume control items to be displayed.

#### ✓ Advanced controls.

Advanced control is a “Microphone Boost” icon.

Once this item is checked, you will find “advanced” icon beside “Front Pink In” & “Mic Volume”. With this, the input signal into “Front Pink In” & “Mic Volume” will be strengthened.

#### ✓ Enable recording multi-streaming

At any given period, you can have maximum 2 streams operating simultaneously.



## Audio I/O

Realtek HD Audio Manager frees you from default speaker settings. Jacks are no longer limited to a specific function. Instead, each jack can now be assigned either an output (i.e. playback) function or input (i.e. Recording) function, we call this "Retasking".

Audio I/O helps you to setup the jacks as you wish. Moreover, other than blue to blue, pink to pink, the way that you used to do, Audio I/O would guide you to other right jacks that can also serve as microphone / speaker / headphone.



## Speaker Configuration

**Step 1:** Plug in the device in any available jack.


**Step 2:** Dialogue “connected device” will pop up for your selection. Please select the device you are trying to plug in.

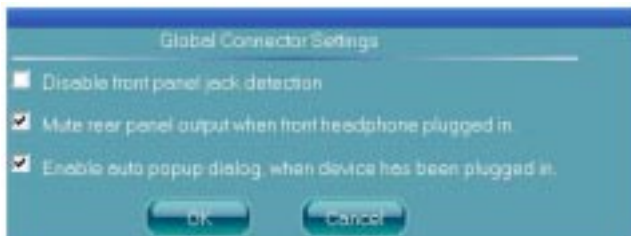
- \* If the device is being plugged into the correct jack, you will be able to find the icon beside the jack changed to the one that is same as your device.
- \* If not correct, Realtek HD Audio Manager will guide you to plug the device into the correct jack.





## Global Connector Settings

Click  to access global connector settings



- ✓ **Mute rear panel when front headphone plugged in**  
Once this option is checked, whenever front headphone is plugged, the music that is playing from the back panel, will be stopped.
- ✓ **Disable front panel jack detection (option)**  
Did not find any function on front panel jacks?  
Please check if front jacks on your system are so-called AC'97 jacks. If so, please check this item to disable front panel jack detection.
- ✓ **Enable auto popup dialogue, when device has been plugged in.**  
Once this item checked, the dialog "Connected device", would not automatically pop up when device plugged in.

## S/PDIF

Short for *Sony/Philips Digital Interface*, a standard audio file transfer format. S/PDIF allows the transfer of digital audio signals from one device to another without having to be converted first to an analog format. Maintaining the viability of a digital signal prevents the quality of the signal from degrading when it is converted to analog.





### Output Sampling Rate

- 44.1KHz: This is recommend while playing CD
- 48KHz: This is recommended while playing DVD or Dolby.
- 96KHz: This is recommended while playing DVD-Audio.



### Output Source

- Output digital audio source: The digital audio format (such as .wav, .mp3, midi etc) will come out through S/PDIF-Out.
- S/PDIF-in to S/PDIF -out pass though mode: The data from S/PDIF-In can be real-time played from S/PDIF-Out.

## S/PDIF In Status

### Lock:

This is to determine if the S/PDIF In data has been successfully caught by codec Sampling Rate.

### Data Validation:

This indicates if the input data is known to Realtek HD Audio Manager.

### Copyright protection:

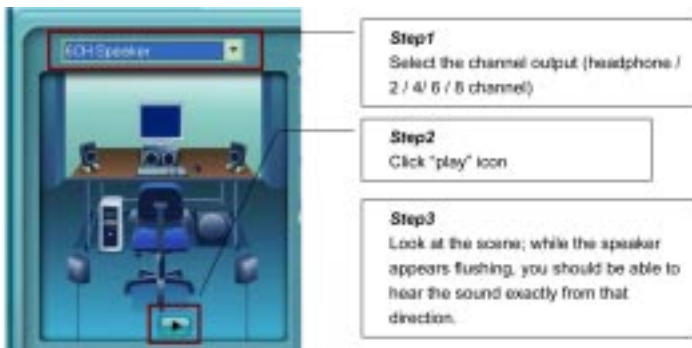
The input data can only be copied while “Copy Free” is shown; while “No Copy” indicates the data is read only.

### Real time S/PDIF-in monitor:

Not only S/PDIF out, but also other analog out (such as front /side/surround speakers) can also output S/PDIF-in data real-time.

## Speaker Calibration

After you have successfully plugged in speakers and assigned them to the right jacks, there is only one more step to enjoy the desired sound quality. We provide “Speaker Calibration” to help you check if the speakers are located in the correct position.



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## Microphone

This page is designed to provide you better microphone / recording quality.

Below picture indicates both “Noise Suppression” & “Acoustic Echo Cancellation” are both enabled.



### Noise Suppression

If you feel that the background noise, especially the sound generated from the fan inside PC is too loud, try “Noise Suppression”. This allows you to cut off and suppress disturbing noise.

### Beam Forming

Also known as “directional recording”, this option lets you do the following: Once beam forming is enabled; only the sound from certain direction will be recorded. You will get the best quality if you chose 90° position, which we recommend you to use, this effectively means that you speak right into the microphone.

**Note:** A Stereo Microphone is required when using Beam Forming function.

### Acoustic Echo Cancellation

This function prevents playback sound from being recorded by microphone together with your sound. For example, you might have chance to use VOIP function through Internet with your friends. The voice of your friend will come out from speakers (playback). However, the voice of your friend might also be recorded into your microphone then go back to your friend through Internet. In that case, your friend will hear his/her own voice again. With AEC (Acoustic Echo Cancellation) enabled at your side, your friend can enjoy the benefit with less echo.

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## Audio Demo

The section “3D Audio Demo” grants you another possibility to enjoy your sound. The Audio Demo allows you to listen to sound in an extraordinary way.



## Information

A screenshot of the "Information" window in the Realtek Audio Control Panel. The window displays the following information: "Audio Driver Version: S.T.S.05106", "DirectX Version: DirectX 9.0", "Audio Controller: HD Audio", and "Audio Codec: ALCC88". The "Language" dropdown menu is set to "Auto". A "Show icon in system tray" checkbox is checked. A "Quick launch button at System tray" is located at the bottom. Three callout boxes provide additional information: one pointing to the main window content, one pointing to the "Language" dropdown, and one pointing to the "Show icon in system tray" checkbox.

Hardware / Software information of your audio system

Language setting  
When "Auto" is chosen, this language setting would accommodate to OS language on your systems

Quick launch button at System tray

This section provides information about your current system audio device.

## APPENDIX

### Note to User:

The bundled driver CD contains all the drivers that the motherboard needs. Each driver will install automatically once it is selected. Please select the drivers that you want to install by clicking on the driver's button.