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

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Table of Contents

HARDWARE CONFIGURATION

Key Features :

Chipset

- CrossFire Express 3200 (ATI® RD580 + SB600) Chipset.

Processor

- Support for AMD™ K8 Processor in a Socket AM2 package.
- Supports 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 RAM sockets.
- DIMM size support from 64MB to 4GB.
- 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 hard disk with capacities over 160GB.
- Easy to upgrade BIOS.

Plug and Play

- Supports Plug and Play specification 1.1.
- Plug and play for Windows® 2000 and XP.
- Fully assignable PCI interrupts.

Onboard I/O

- One on board PCI fast IDE ports supporting up to two ATA, ATA2 , Ultra ATA33/66/100/133 IDE HDDs, CD-ROMs, ZIP drives and LS-120 drives as boot drive.
- 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.
- One ECP/EPP parallel port.

Extended USB Support

- Includes 4 OHCI host controllers, increasing the number of external ports to ten.
- Includes 2 OHCI USB2.0 host controllers that support all ten ports (bandwidth is shared between ten ports).
- This motherboard supports USB 2.0 only on Windows® 2000 (with SP4 or above) and Windows® XP (with SP1 or above) operating systems.

On-board Realtek RTL8111B PCI Express Gigabit LAN (optional)

- 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 operation.
- Supports Wake-On-LAN function and remote wake-up.

On-board Realtek RTL8100C 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 operation.
- Supports Wake-On-LAN function and remote wake-up.
- Supports ACPI, PCI Power management and PCI VPD.

PCI Express x16 Graphics Interface

- Two 16-lane PCI Express port intended for external graphics.
- Fully compliant to the PCI Express Base Specification revision 1.0a.
- A base PCI Express frequency of 4GB/s.
- PCI Express supported enhanced addressing mechanism.
- Supports ATI CrossFire.

PCI Express x1 Port

- Fully compliant to the PCI Express Base Specification revision 1.0a.
- Two virtual channel support for full unsynchronized data transfers.
- Supports full 2.5Gb/s bandwidth in each direction per x1 lane.

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.
- Wake-On-LAN (WOL) support.
- Supports Suspend-To-RAM (STR).

On-board IEEE1394 (optional)

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

Onboard ALC880/ALC883 7.1 Audio

- Integrated Realtek ALC880/ALC883 controller.
- Full Direct Sound and Sound Blaster compatibility.
- Full-Duplex 4 24-bit two-channel DACs and 3 stereo 20-bit ADCs.
- PnP and APM 1.2 support.
- Windows® 2000/XP ready.
- Line-in, Line-out, Mic-in, SPDIF-in, SPDIF-out.
- Supports ALC880/ALC883 codec for eight channel sound output.

On board Serial ATA-II host Controller (Only for SB600)

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

Onboard Serial ATA-II Host Controller (Only for JMB363)

- Independent DMA operation on two ports.
- Data transfer rates of 300MB/s.
- RAID 0/1 feature support .

Expansion Slots

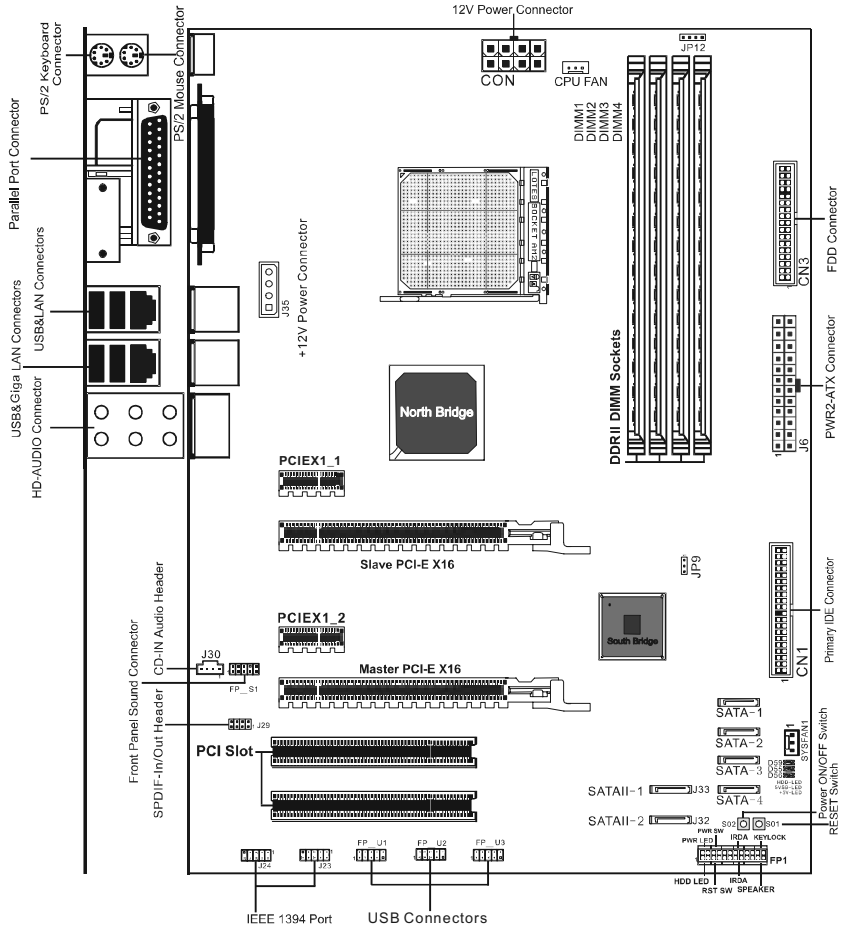
- 2 PCI Express X16 slots.
- 2 PCI Express X1 slot.
- 2 PCI slot - ver. 2.2 compliant.

When installing CrossFire graphics cards onto the motherboard, we recommend using a 500 watt or higher power supply.

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 computer's electronic components.

MOTHERBOARD LAYOUT

The following diagram shows the relative positions of the jumpers, connectors, major components and memory banks on the motherboard.

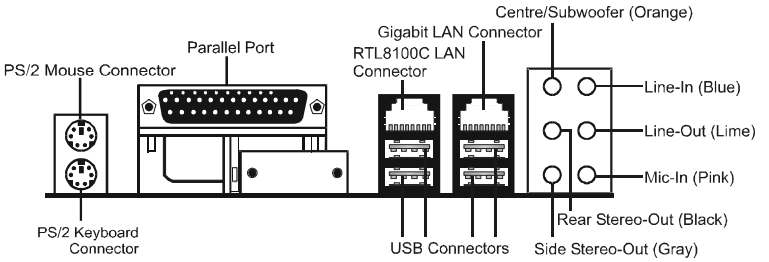


NOTE

1) Be sure to check the cable orientation in order to match the coloured strip to the pin 1 end of the connector.
2) When you start up the system, please wait for 5 seconds after you power on AC.
3) Adding a metal spaced plate to the back of the Socket AM2 is not recommended as this will short motherboard components and damage the system.

REAR PANEL

The back panel provides the following connectors:

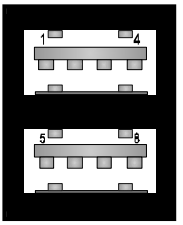


PS/2 Mouse Connector
The motherboard provides a standard PS/2 mouse mini DIN connector for attaching a PS/2 mouse. You can plug a PS/2 mouse directly into this connector.

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 - Pin Definition

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.

Gigabit LAN (Optional)
The onboard Realtek RTL8111B PCI-E X1 controller supports 10/100/1000 Mb/s operations.

8 Channel HD Audio
Option select of 2, 6, or 8 channel audio from onboard ALC880/ALC883 High Definition audio 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:

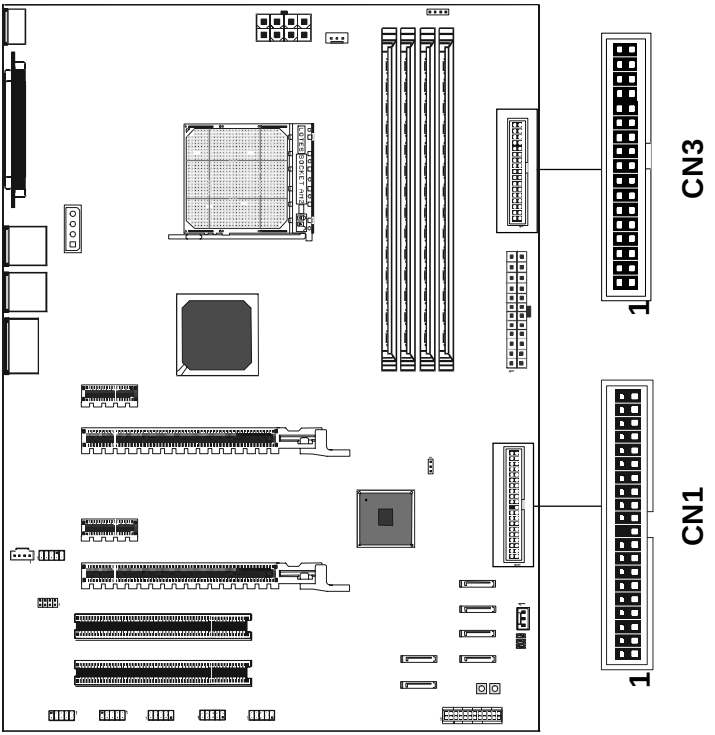
Audio Jack Color	2 Channel	6 Channel	8 Channel
Blue	Line-In	Line-In	Line-In
Lime	Line-Out	Front Stereo-Out	Front Stereo-Out
Pink	Mic-In	Mic-In	Mic-In
Gray	--	--	Side Stereo-Out
Black	--	Rear Stereo-Out	Rear Stereo-Out
Orange	--	Centre & Subwoofer	Centre & Subwoofer

CONNECTORS AND HEADERS

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

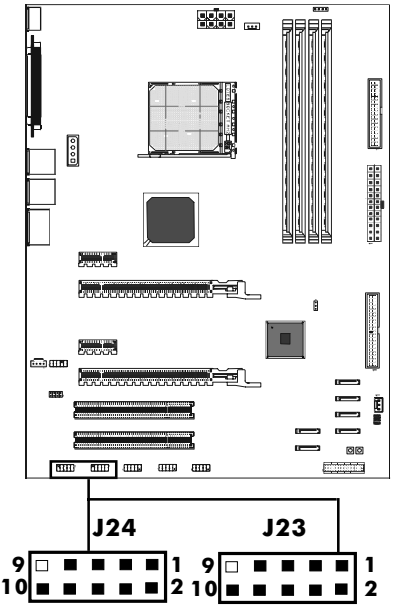
Floppy Disk Drive Connector - CN3
The motherboard provides a standard floppy disk drive connector that supports 1.44M, 2.88M floppy disk types.

Primary IDE Connector - CN1
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.



IEEE 1394 Header - J23, J24

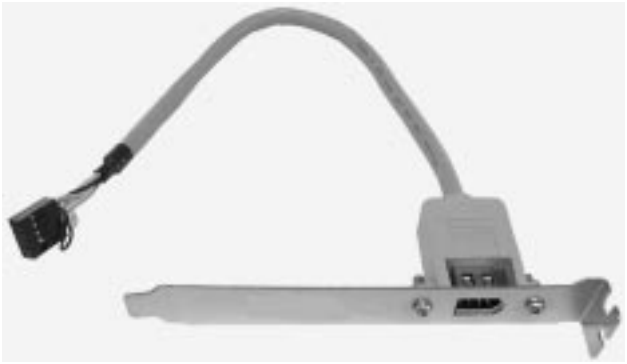
This motherboard provides two 1394 pin header that allow you to connect IEEE1394 port.



J23, J24 - Pin Definition

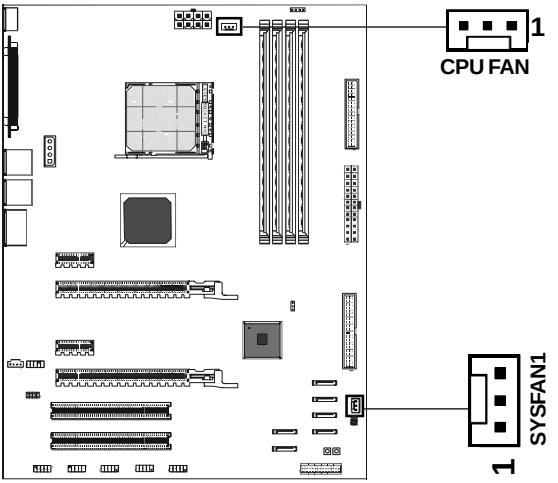
PIN	SIGNAL
1	TPA+
2	TPA-
3	Ground
4	Ground
5	TPB+
6	TPB-
7	Cable power
8	Cable power
9	Key (no pin)
10	Ground

IEEE 1394 Cable



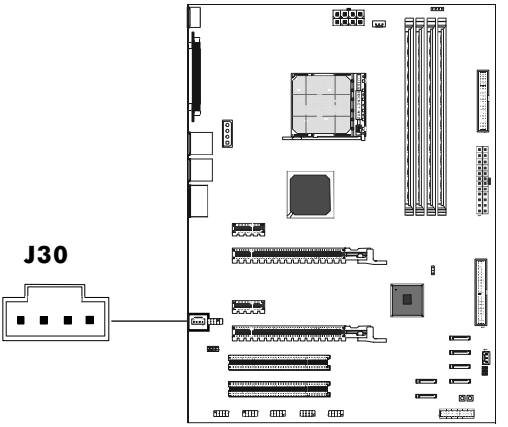
Fan Power Header - CPU FAN, SYSFAN1

The CPUFAN (processor fan) and SYSFAN (system fan) support system cooling fans using +12V via three-pin head connectors.



CD-IN Header - J30

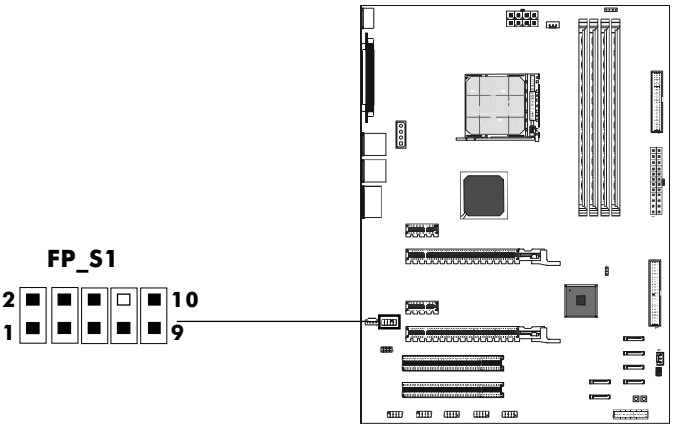
This header allows for the connection of audio from CD-ROM drive.



J30 - Pin Definition

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

Front Panel Audio Header - FP_S1



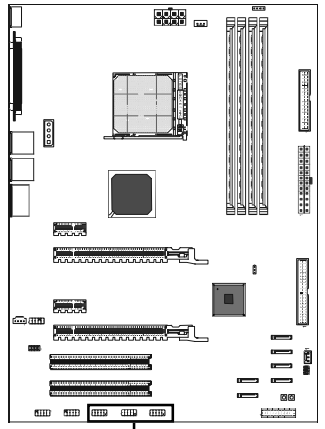
FP_S1 - Pin Definition

Pin	Signal	Description
1	PORT 1L	Analog Port1 - Left channel
2	GND	Ground
3	PORT 1R	Analog Port 1 - Right channel
4	PRESENCE	Active low signal - signals BIOS that a High Definition Audio dongle is connected to the analog header. PRESENCE=0 when a High Definition Audio dongle is connected.
5	PORT 2R	Analog Port 2 - Right channel
6	SENSE1_RETIRN	Jack detection return from front panel JACK1
7	SENSE_SEND	Jack detection sense line from the High Definition Audio Codec jack detection resistor network
8	KEY	Connector Key
9	PORT 2L	Analog Port2 - Left channel
10	SENSE2_RETIRN	Jack detection return from front panel JACK2

Note: In order to utilize the front audio header, your chassis must have a front audio connector. Also please make sure the pin assignment on the cable is the same as the pin assignment on the motherboard header. To find out if the chassis you are buying supports front audio connection, please contact your dealer.

USB Headers - FP_U1, FP_U2, PF_U3

This motherboard has up to 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 motherboard.



FP_U1, FP_U2, FP_U3 - Pin Definition

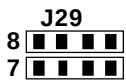
PIN	SIGNAL
1	VCC
2	VCC
3	USBP0-
4	USBP1-
5	USBP0+
6	USBP1+
7	GND
8	GND
9	KEY
10	OC#

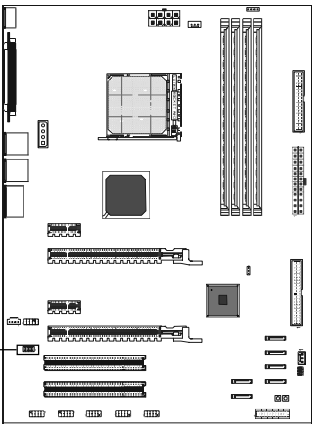
SPDIF-In/Out Header - J29

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

J29 Pin Definition

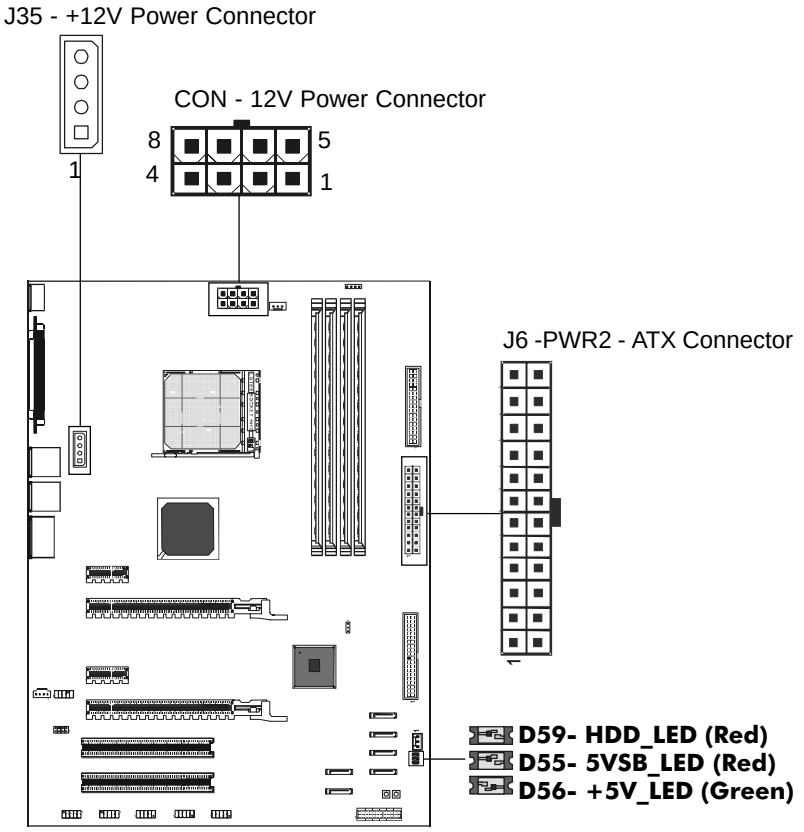
PIN	SIGNAL
1	SPDIP-In
2	SPDIF-Out
3.4.5.6	NC
7.8	GND





Power LED & Connector : D55, D56, D59 & J35, CON, J6

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.



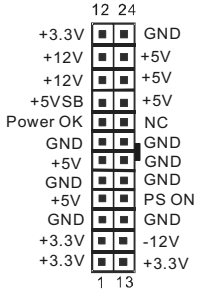
J35 - Pin Definition

PIN	Signal
1	+12V
2, 3	GND
4	NC

CON - Pin Definition

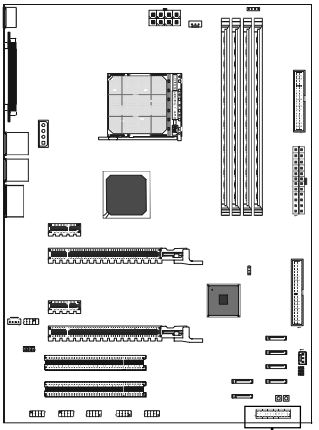
PIN	Signal
1, 2, 3, 4	GND
5, 6, 7, 8	+12V

J6 - Pin Definition

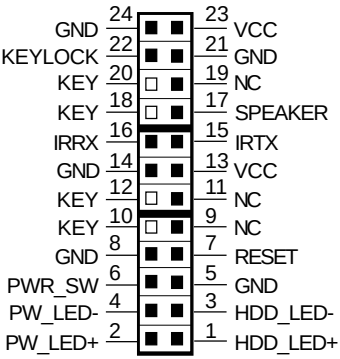


Front Panel Header: FP1

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

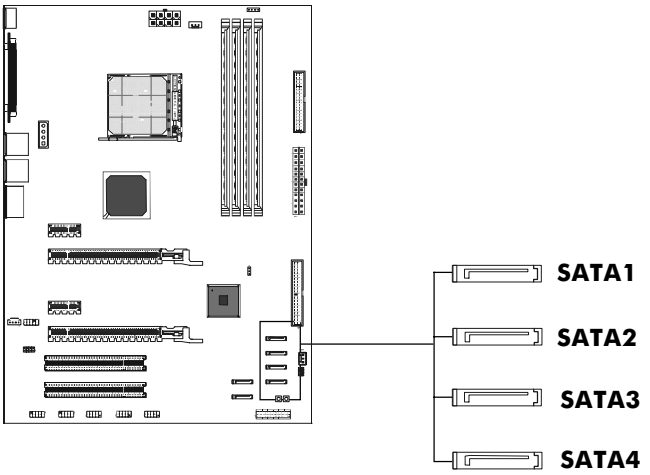


FP1



Serial ATA-II Hard Disk Connectors - SATA1, SATA2, SATA3, SATA4

The motherboard has four SATAII connectors: SATA1, SATA2, SATA3, SATA4. Each supports 1st generation SATAII data rates of 300 MB/s. All connectors are fully compliant with Serial ATA 2.0 specifications. Each SATAII connector can connect to one hard disk device. Please refer to SATAII Raid Setup for details on software installation procedure.

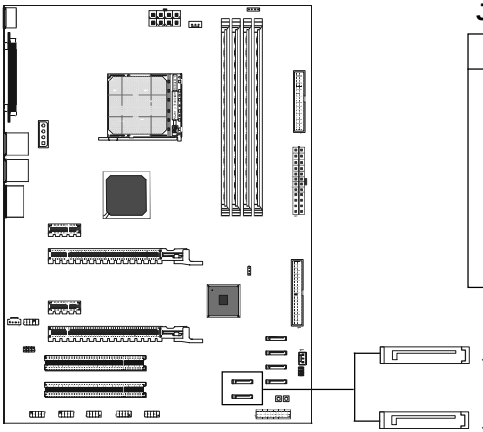


SATA1, SATA2, SATA3, STAT4 Pin Definition

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

Serial ATA-II Hard Disk Connectors - J32, J33

The motherboard has two SATA-II connectors: J32, J33. Each supports 2nd generation serial ATA data rates of 300 MB/s. All connectors are fully compliant with Serial ATA 2.0 specification. Each SATA -II connector can connect to 1 hard disk device.



J32, J33 Pin Definition

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

Serial ATA Cable

This cable is compatible for use with SATA and SATA-II devices.

Serial ATA Cable

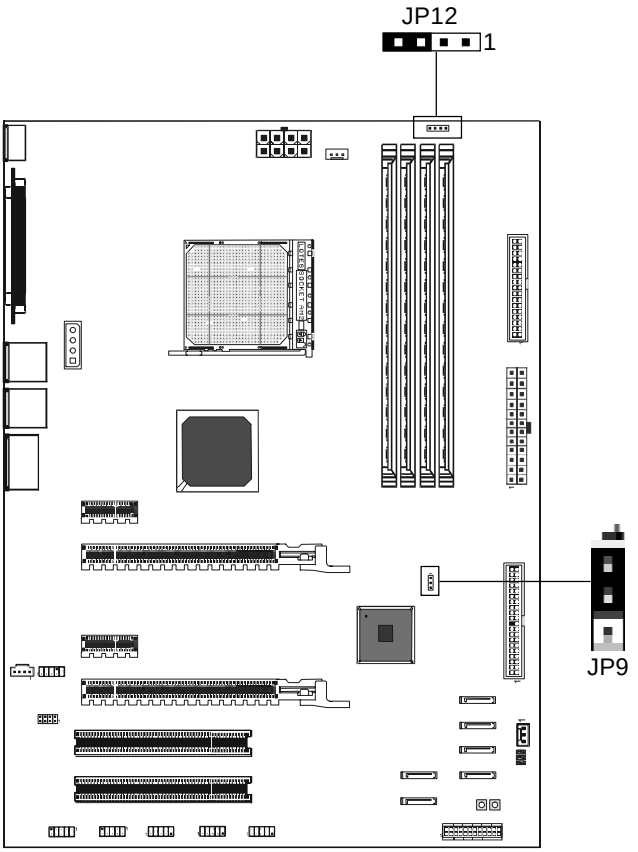
Serial ATA Devices
Power Cable (optional)

CAUTION!

Please do not fold the serial ATA cable, which may lead to loss of data during transmission.

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

 Close  Open * = *Default setting.*

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

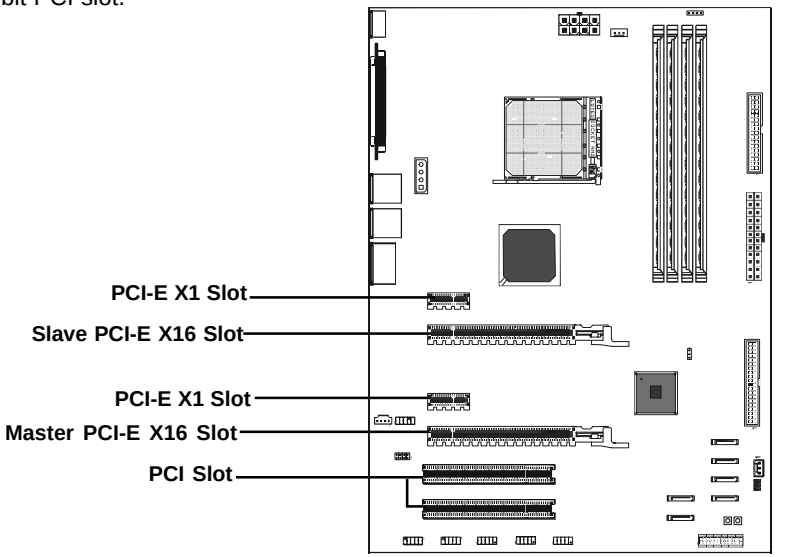
PIN	Assignment
1	+5VSB
2	KEY
3	Chassis Signal
4	GND

Note:

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

SLOTS

The motherboard provides two PCI-E x16 slots, two PCI-E x1 slot and two 32-bit PCI slot.



PCI Express x16 Graphics Interface

- Two 16-lane PCI Express port intended for external graphics.
- Fully compliant to the PCI Express Base Specification revision 1.0a.
- The base PCI Express frequency of this interface is 4GB/s.
- PCI Express supported enhanced addressing mechanism.
- Support ATI CrossFire.

PCI Express x1 Port

- Fully compliant to the PCI Express Base Specification revision 1.0a.
- One virtual channel support for full unsynchronized data transfers.
- Supports full 2.5Gb/s bandwidth in each direction per x1 lane.

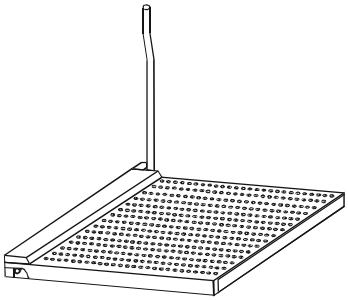
PCI (Peripheral Component Interconnect) Slots

- Two 32-bit PCI port for add-in card connections.

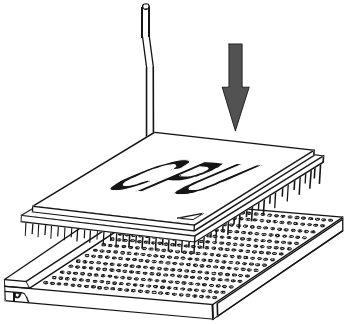
CPU INSTALLATION

Please refer to the steps below to install the CPU.

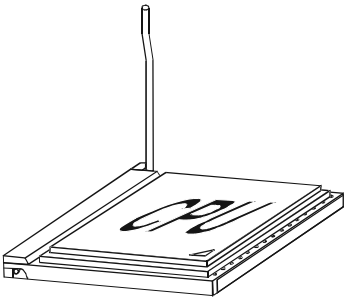
1. Please turn off the power and unplug the power cord before installing the CPU. Pull the lever up and away from the socket until it is at a 90 degree angle to the mainboard.



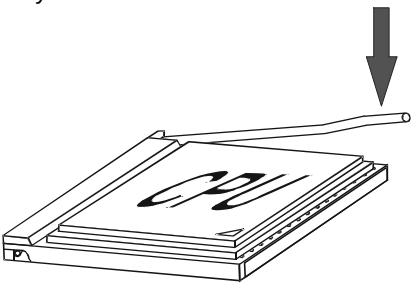
2. Look for the gold arrow on the CPU. The gold arrow should point away from the lever pivot. The CPU can only sit properly in the socket in the correct orientation.



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 mainboard.)



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 firmly on top of the CPU to make sure the CPU is properly and completely embedded into the socket.

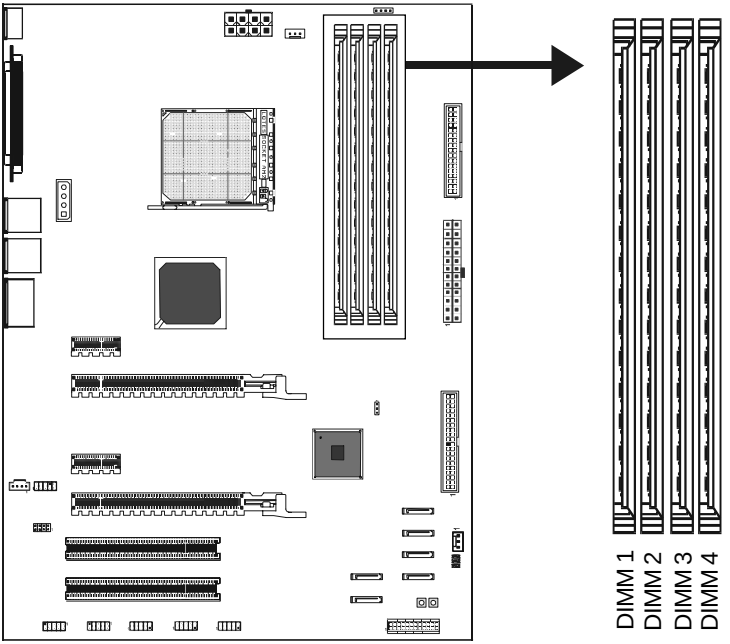


5. When you are installing the CPU, please make sure the CPU has a heat sink and a cooling fan attached on the top to prevent overheating. If you do not have a heat sink or cooling fan, contact your dealer to purchase and install them before turning on the computer.

MEMORY CONFIGURATIONS

DDRII DIMM Sockets Location

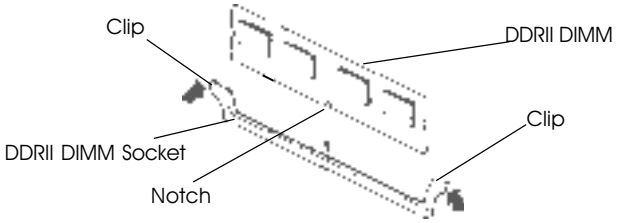
Please refer to the following figure for the location of the DDRII DIMM Sockets.



Install DDRII DIMMs

Please follow the steps below to install DDRII DIMMs.

1. Hold the DDRII DIMM module by the edges and remove it from its antistatic package.
2. Make sure the clips at either end of the DIMM socket are pushed away from the socket.



3. Position the DDRII DIMM module above the socket and align the notch in the bottom edge of the module with the key in the socket.
4. Insert the bottom edge of the DDRII DIMM module into the socket.
5. When the module is seated, press down on the top edge of the DDRII DIMM module until the retaining clips at the ends of the socket snap into place.

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

Memory Configurations

Please refer to the following recommended memory configurations.

Mode / (DIMM Type)	Case	Sockets			
		DIMM1	DIMM2	DIMM3	DIMM4
Dual-channel / (DDRII553/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 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

▸ Standard CMOS Features	▸ Frequency/Voltage Control
▸ Advanced BIOS Features	Load Fail-Safe Defaults
▸ Advanced Chipset Features	Load Optimized Defaults
▸ Integrated Peripherals	Set Supervisor Password
▸ Power Management Setup	Set User Password
▸ PnP/PCI Configurations	Save & Exit Setup
▸ PC Health Status	Exit Without Saving
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

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 WorkstationBIOS CMOS Setup Utility
Standard CMOS Features

Date (mm :dd :yy)	Thu. Jun 01 2006	Item Help
Time (hh :mm:ss)	11 : 1 : 35	
		Menu Level ▸
▸ IDE Primary Master	[Press Enter 4303 MB]	
▸ 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.)

Date	The date format is <day-of-the-week>. <month> <day> <year>.
Time	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.
Primary Master/Primary Slave/Secondary Master/ Secondary	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”.
Drive A Type / Drive B Type	This category identifies the drive types which have been installed in the computer.
Video	The default setting is EGA/VGA.
Halt on	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.

Warning : - 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.

Setup SATA RAID (for SB600)

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:

Phoenix - Award WorkstationBIOS CMOS Setup Utility	
▶ Standard CMOS Features	▶ Frequency/Voltage Control
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Advanced Chipset Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power Management Setup	Set User Password
▶ PnP/PCI Configurations	Save & Exit Setup
▶ PC Health Status	Exit Without Saving
Esc: Quit :	↑↓→←: Select Item
F10: Save & Exit Setup	
Time, Date, Hard Disk Type...	

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
```

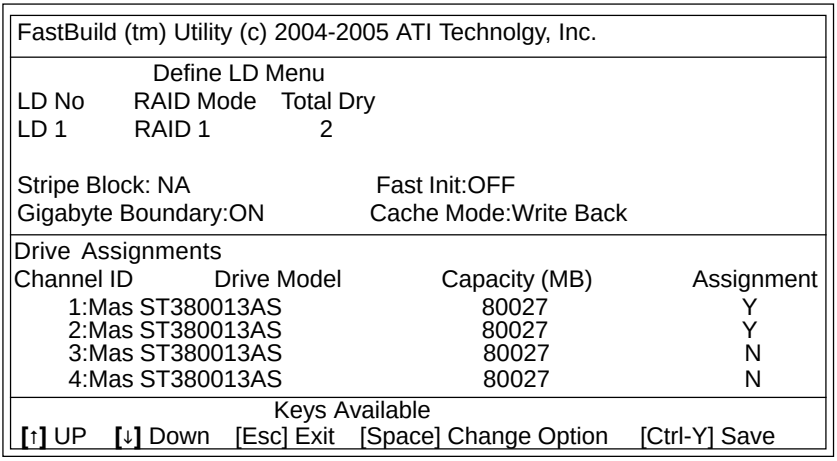
3. Press **2** on the Main Menu screen to display the Define LD Menu (below).

```
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).



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 ...

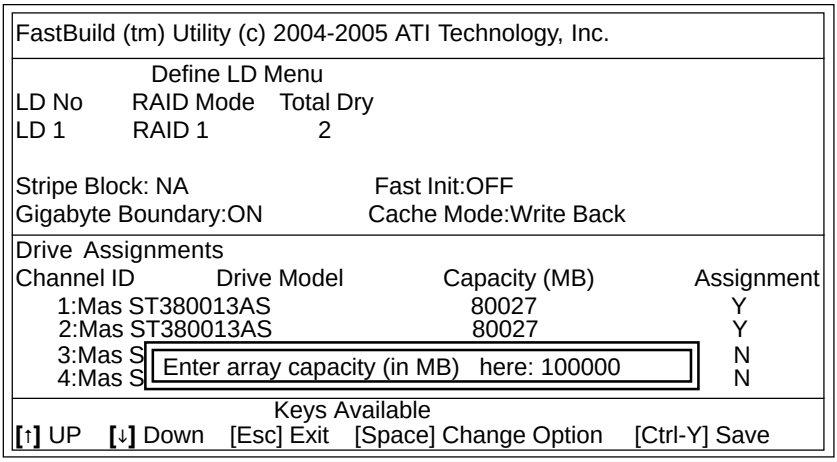
Choose one of the following actions:
• Use the full capacity of the disk drives for a single logical drive. Go to "One Logical Drive" below.
• Split the disk drives among two logical drives. Go to "Two Logical Drives" below.

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.



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 Drr	Capaty (MB)	Status
LD 1	RAID 1	2	10000	Punctional
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 Dry
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.

JMB363 SATA RAID User Manual

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

Phoenix - Award WorkstationBIOS CMOS Setup Utility

▸ Standard CMOS Features	▸ Frequency/Voltage Control
▸ Advanced BIOS Features	Load Fail-Safe Defaults
▸ Advanced Chipset Features	Load Optimized Defaults
▸ Integrated Peripherals	Set Supervisor Password
▸ Power Management Setup	Set User Password
▸ PnP/PCI Configurations	Save & Exit Setup
▸ PC Health Status	Exit Without Saving
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type	

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 “Onbord JMB363 SATA” to [RAID Controller] in the sub-menu “South OnChip PCI Device” of “Integrated Peripherals”. Then save the setup and exit.

Enter JMB363 RAID BIOS

You can enter JMB363 RAID BIOS to make RAID as below.

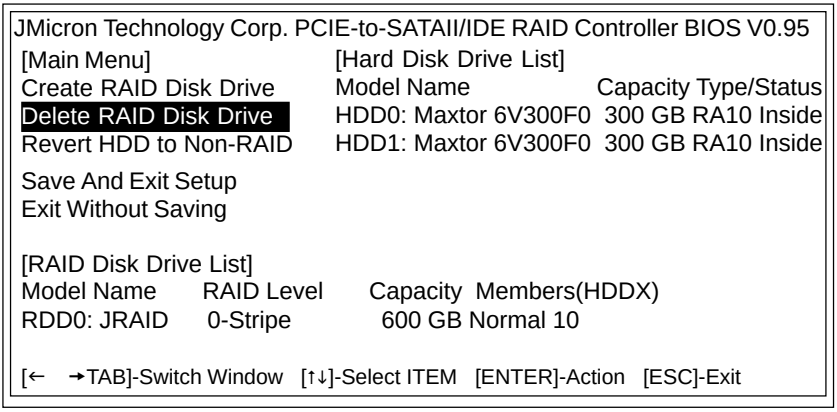
Step 1. After Main BIOS finishes BIOS POST action and before Windows OS starts, JMB363 BIOS will display the following screen (below).

JMicron Technology Corp. PCIE-to-SATAII/IDE Copyright (C) 2004-2005 JMicron Technology.

HDD0: ST3120827AS
HDD1: SAMSUNG SP1614C
HDD2: ST380011A
HDD3: ST3160023A

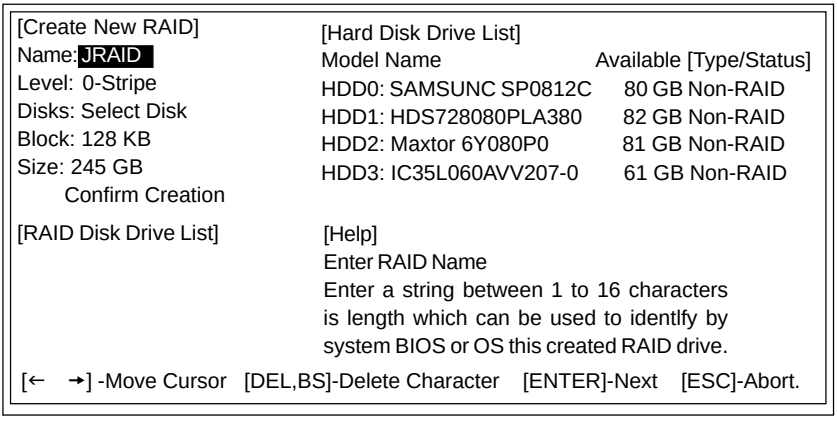
Press <Ctrl-J> to enter RAID Setup Utility

Step 2. Please push <Ctrl-J> key to enter JMB363 RAID BIOS Menu,you will see a window that shows up all available HDD/ODD(below), You can use <↑> <↓> <←> <→> to move Color Bar to select the action items

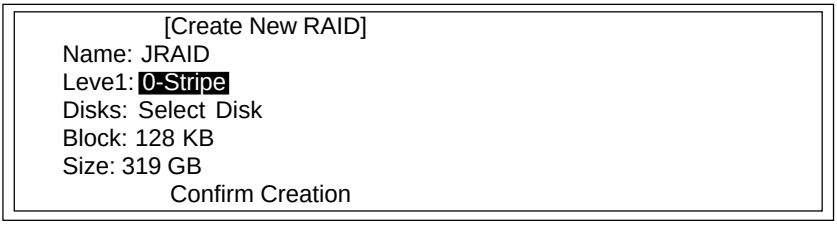


Ceate RAID Disk Drive

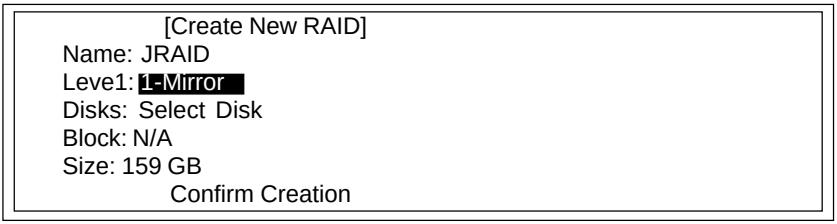
Entering **"**Create RAID Disk Drive**"** item, you can see the following Window. Before you create RAID, you need to select RAID mode, as you want.



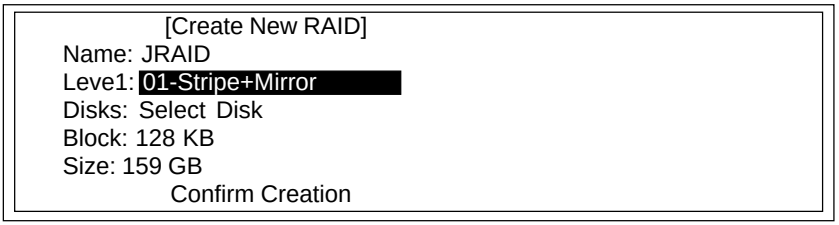
RAID 0 (0-Stripe)



RAID 1 (1-Mirror)

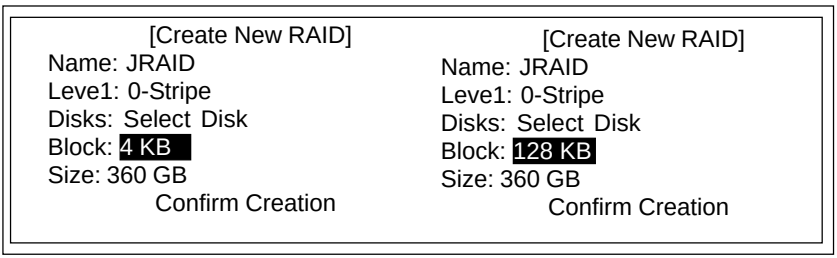


RAID 01 (Stripe/Mirror)

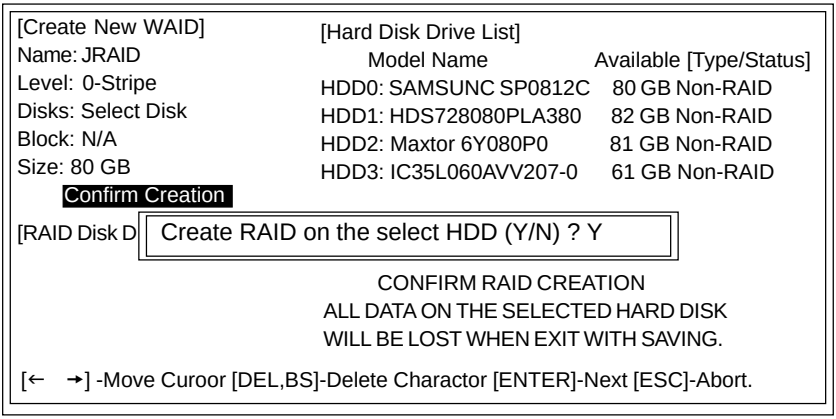


After selecting RAID mode, the following is to select HDD to create RAID. Entering “Select Disk Drives” item, you use <Space> to choose the HDD you want to select and use <↑> <↓> to select another HDD. If HDD is selected, there is a “>” sign at the front HDD description.

After selecting HDD to create RAID, The left part is RAID size. You can choose Block Size in RAID Mode through <↑> <↓> to select. The Block Size is from 4K to 128K Bytes. Of course, you need to setup the final RAID Capacity from user viewpoint. JMB363 RAID BIOS will highlight the maximum available RAID Capacity.



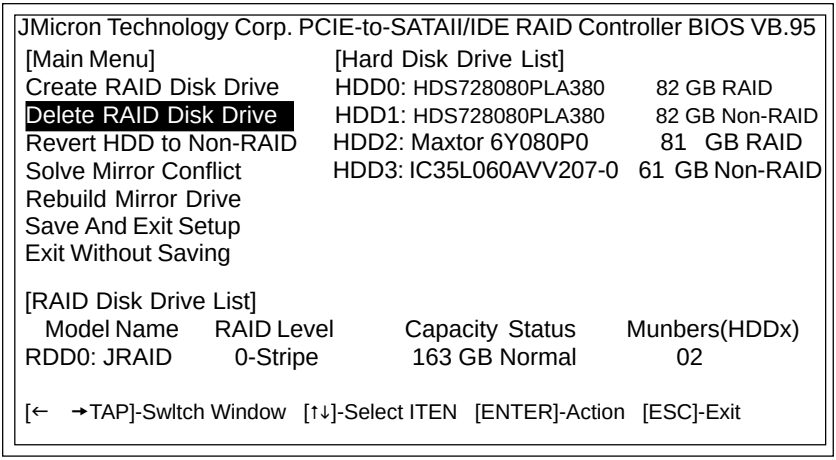
After finishing all selections, you can enter <Enter> to confirm RAID construction. Now, the Dialog Box will show up “Create RAID on the select HDD (Y/N)?” If you enter <Y> key, RAID will be created. If you enter <N> key, RAID setting will be ignored and RAID is not created.



Important: All original data in HDD List of RAID will be damaged after youenter <Y> key to create RAID.

Delete RAID Disk Drive

When you want to delete existed RAID, you can select “Delete RAID Disk Drive” item and push <Enter> key, the color bar will switch to below window. You can use <Space> key to select the RAID you want to delete. After selection, you can push <Del> key to confirm your deletion of RAID. Now, a Dialog Box will show up to confirm your action. If you push <Y> key, RAID will be deleted. If you push <N> key, RAID will be kept originally.



Revert HDD to non-RAID
When you connect your HDD in PC system, there might be a Broken RAID HDD that is member of another RAID originally. Facing this kind of condition, JMB363 RAID BIOS provides you to convert Broken RAID HDD into non-RAID mode. Once you decide to do it, original data in Broken RAID HDD will be damaged. When new RAID is created through JMB363, Broken RAID HDD is forbidden to select to avoid to damaging your system.
This function is used for deleting RAID structure of single RAID HDD.

Solve Mirror Conflict
When your mirror raid drive has lost each other, it means that both of the members ever be identify by the Option ROM at different boot. The members will both think itself as source disk. So that the System can not decide which one is source disk, the user can not access this raid drive. In such example, the Option ROM gives users an method to solve this problem. It allow users to choose one of the members of Mirror drive as source disk. And then users can try to rebuild the Mirror drive according to the content of chosen one.

Rebuild Mirror Drive
This option will help users to rebuild any Rebuildable Mirror drive. The bottom of the window will show the achieved percentage of scheduled progress

Save And Exit Setup
When you finish all actions, you can select “Save And Exit Setup“ item to save current RAID configuration and exit JMB363 RAID BIOS. After you select “Save And Exit Setup“, a window dialog box will shoe up to confirm your action. If you push <Y>+<Enter> key, configuration will be saved and JMB363 RAID BIOS will exit. If you push <N> key, you are still in JMB363 RAID BIOS Menu.

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.

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.

SATA-II Driver and RAID Software Installation (for JMB 363)

1. For Windows 2000 and XP, 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 DISC into your CD-ROM drive, select **"ATI Chipset\JMB36X\FDD" installation** bar on the dialogue Window to begin the driver and software installation.

When you install a new Windows 2000 or XP operating system on your RAID set, please follow the below procedure:

1. Insert the bundled driver CD DISC into CD-ROM (D:).
   If the SATA II is set as IDE mode, copy all files from directory (D:**ATI chipset\JMB36X\FDD**) to a floppy disk.
2. Install the OS from CD-ROM.
3. Press "**F6**" at the prompt "Press **F6** if you need to install a third party SCSI or RAID driver..."
4. Insert the floppy disk.
5. Choose the OS device driver wanted for loading.
6. Install the OS.
7. Install driver after OS is installed.

CrossFire SETUP

If you want to set up the CrossFire, the Master card should be inserted into the Master slot and the Slave card should be inserted into the Slave slot properly. Make sure that the card is inserted in correct slot. You need to install the 8.15 driver or later which must include the Catalyst Control Centre (CCC).

Step1

In the CCC advanced mode, you need to click the check box to enable the CrossFire.

Click “Standard View” as default

Step2

Click “CrossFire™ ”

Step3

Select the check box

Step4
After CrossFire is enabled successfully, you will be able to see that CrossFire has started.

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:

Sound Effect

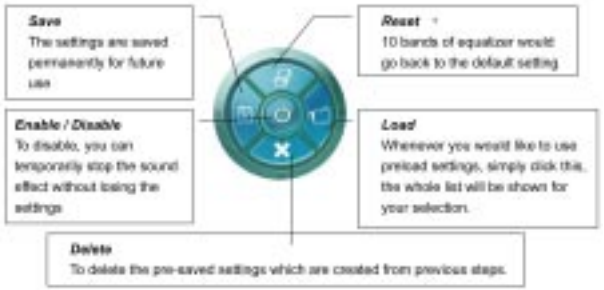
After clicking on the “Sound Effect” tab, 3 sections “Environment”, “Equalizer” and “Karaoke” are available for selection.

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 strengthen.

✓ **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

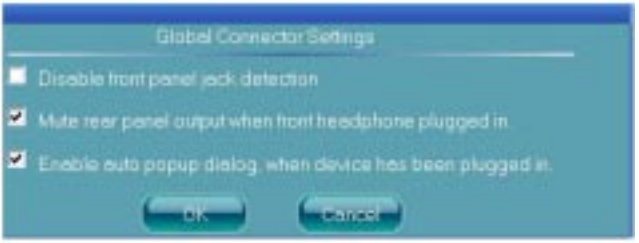
Step 1: Plug in the device in any available jack.
Step 2: Dialogue “connected device” will pop up for your selection. Please select the device you are trying to plug in.

* 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 ***S**ony/**P**hilips **D**igital **Inter**face*, 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.

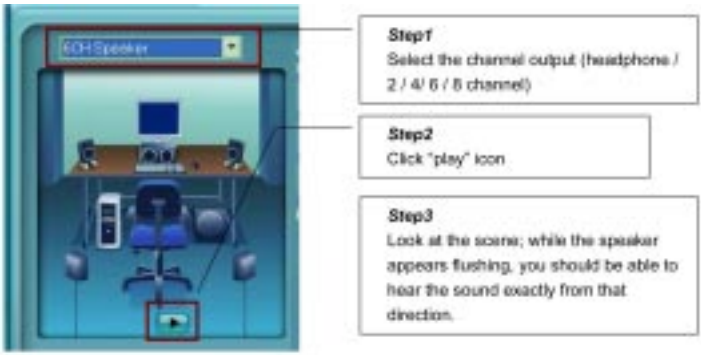
Data Validation:
This indicates if the input data is known to Realtek HD Audio Manager.

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.



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.

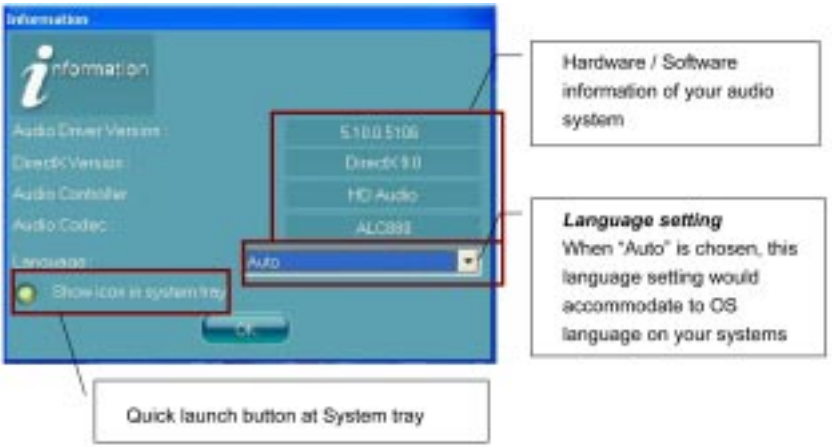
Acoustic Echo Cancellation

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.

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



This section provides information about your current system audio device.