



P43-C53 series

MS-7519 (v3.x) Mainboard

G52-75191XP

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Revision History

Revision	Revision History	Date
V3.1	Update JSP1 for PCB 3.X	July 2010

Technical Support

If a problem arises with your system and no solution can be obtained from the user's manual, please contact your place of purchase or local distributor. Alternatively, please try the following help resources for further guidance.

- Visit the MSI website for FAQ, technical guide, BIOS updates, driver updates, and other information: ***http://www.msi.com/index.php?func=service***
- Contact our technical staff at: ***http://ocss.msi.com***

Safety Instructions

- Always read the safety instructions carefully.
- Keep this User's Manual for future reference.
- Keep this equipment away from humidity.
- Lay this equipment on a reliable flat surface before setting it up.
- The openings on the enclosure are for air convection hence protects the equipment from overheating. DO NOT COVER THE OPENINGS.
- Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
- Place the power cord such a way that people can not step on it. Do not place anything over the power cord.
- Always Unplug the Power Cord before inserting any add-on card or module.
- All cautions and warnings on the equipment should be noted.
- Never pour any liquid into the opening that could damage or cause electrical shock.
- If any of the following situations arises, get the equipment checked by service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment does not work well or you can not get it work according to User's Manual.
  - The equipment has dropped and damaged.
  - The equipment has obvious sign of breakage.

  DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, STORAGE TEMPERATURE ABOVE 60^0 C (140^0F), IT MAY DAMAGE THE EQUIPMENT.

CAUTION: Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.

警告使用者:

這是甲類資訊產品，在居住的環境中使用時，可能會造成無線電干擾，在這種情況下，使用者會被要求採取某些適當的對策。



廢電池請回收

For better environmental protection, waste batteries should be collected separately for recycling special disposal.

FCC-B Radio Frequency Interference Statement



This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the 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 the instructions, may cause harmful interference to radio 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 measures listed below.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Notice 1

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

Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) this device may not cause harmful interference, and
2) this device must accept any interference received, including interference that may cause undesired operation.

WEEE (Waste Electrical and Electronic Equipment) Statement

ENGLISH

To protect the global environment and as an environmentalist, MSI must remind you that...



Under the European Union ("EU") Directive on Waste Electrical and Electronic Equipment, Directive 2002/96/EC, which takes effect on August 13, 2005, products of "electrical and electronic equipment" cannot be discarded as municipal waste anymore and manufacturers of covered electronic equipment will be obligated to take back such products at the end of their useful life. MSI will comply with the product take back requirements at the end of life of MSI-branded products that are sold into the EU. You can return these products to local collection points.

DEUTSCH

Hinweis von MSI zur Erhaltung und Schutz unserer Umwelt

Gemäß der Richtlinie 2002/96/EG über Elektro- und Elektronik-Altgeräte dürfen Elektro- und Elektronik-Altgeräte nicht mehr als kommunale Abfälle entsorgt werden. MSI hat europaweit verschiedene Sammel- und Recyclingunternehmen beauftragt, die in die Europäische Union in Verkehr gebrachten Produkte, am Ende seines Lebenszyklus zurückzunehmen. Bitte entsorgen Sie dieses Produkt zum gegebenen Zeitpunkt ausschliesslich an einer lokalen Altgerätesammelstelle in Ihrer Nähe.

FRANÇAIS

En tant qu'écologiste et afin de protéger l'environnement, MSI tient à rappeler ceci...

Au sujet de la directive européenne (EU) relative aux déchets des équipement électriques et électroniques, directive 2002/96/EC, prenant effet le 13 août 2005, que les produits électriques et électroniques ne peuvent être déposés dans les décharges ou tout simplement mis à la poubelle. Les fabricants de ces équipements seront obligés de récupérer certains produits en fin de vie. MSI prendra en compte cette exigence relative au retour des produits en fin de vie au sein de la communauté européenne. Par conséquent vous pouvez retourner localement ces matériels dans les points de collecte.

РУССКИЙ

Компания MSI предпринимает активные действия по защите окружающей среды, поэтому напоминаем вам, что....

В соответствии с директивой Европейского Союза (ЕС) по предотвращению загрязнения окружающей среды использованным электрическим и электронным оборудованием (директива WEEE 2002/96/EC), вступающей в силу 13 августа 2005 года, изделия, относящиеся к электрическому и электронному оборудованию, не могут рассматриваться как бытовой мусор, поэтому производители вышеперечисленного электронного оборудования обязаны принимать его для переработки по окончании срока службы. MSI обязуется соблюдать требования по приему продукции, проданной под маркой MSI на территории ЕС, в переработку по окончании срока службы. Вы можете вернуть эти изделия в специализированные пункты приема.

ESPAÑOL

MSI como empresa comprometida con la protección del medio ambiente, recomienda:

Bajo la directiva 2002/96/EC de la Unión Europea en materia de desechos y/o equipos electrónicos, con fecha de rigor desde el 13 de agosto de 2005, los productos clasificados como “eléctricos y equipos electrónicos” no pueden ser depositados en los contenedores habituales de su municipio, los fabricantes de equipos electrónicos, están obligados a hacerse cargo de dichos productos al termino de su período de vida. MSI estará comprometido con los términos de recogida de sus productos vendidos en la Unión Europea al final de su periodo de vida. Usted debe depositar estos productos en el punto limpio establecido por el ayuntamiento de su localidad o entregar a una empresa autorizada para la recogida de estos residuos.

NEDERLANDS

Om het milieu te beschermen, wil MSI u eraan herinneren dat….

De richtlijn van de Europese Unie (EU) met betrekking tot Vervuiling van Electrische en Electronische producten (2002/96/EC), die op 13 Augustus 2005 in zal gaan kunnen niet meer beschouwd worden als vervuiling. Fabrikanten van dit soort producten worden verplicht om producten retour te nemen aan het eind van hun levenscyclus. MSI zal overeenkomstig de richtlijn handelen voor de producten die de merknaam MSI dragen en verkocht zijn in de EU. Deze goederen kunnen geretourneerd worden op lokale inzamelingspunten.

SRPSKI

Da bi zaštitili prirodnu sredinu, i kao preduzeće koje vodi računa o okolini i prirodnoj sredini, MSI mora da vas podesti da…

Po Direktivi Evropske unije (“EU”) o odbačenoj ekektronskoj i električnoj opremi, Direktiva 2002/96/EC, koja stupa na snagu od 13. Avgusta 2005, proizvodi koji spadaju pod “elektronsku i električnu opremu” ne mogu više biti odbačeni kao običan otpad i proizvođači ove opreme biće prinuđeni da uzmu natrag ove proizvode na kraju njihovog uobičajenog veka trajanja. MSI će poštovati zahtev o preuzimanju ovakvih proizvoda kojima je istekao vek trajanja, koji imaju MSI oznaku i koji su prodati u EU. Ove proizvode možete vratiti na lokalnim mestima za prikupljanje.

POLSKI

Aby chronić nasze środowisko naturalne oraz jako firma dbająca o ekologię, MSI przypomina, że...

Zgodnie z Dyrektywą Unii Europejskiej (“UE”) dotyczącą odpadów produktów elektrycznych i elektronicznych (Dyrektywa 2002/96/EC), która wchodzi w życie 13 sierpnia 2005, tzw. “produkty oraz wyposażenie elektryczne i elektroniczne “ nie mogą być traktowane jako śmieci komunalne, tak więc producenci tych produktów będą zobowiązani do odbierania ich w momencie gdy produkt jest wycofywany z użycia. MSI wypełni wymagania UE, przyjmując produkty (sprzedawane na terenie Unii Europejskiej) wycofywane z użycia. Produkty MSI będzie można zwracać w wyznaczonych punktach zbiorczych.

TÜRKÇE

Çevreci özelliğiyle bilinen MSI dünyada çevreyi korumak için hatırlatır:

Avrupa Birliği (AB) Kararnamesi Elektrik ve Elektronik Malzeme Atığı, 2002/96/EC Kararnamesi altında 13 Ağustos 2005 tarihinden itibaren geçerli olmak üzere, elektrikli ve elektronik malzemeler diğer atıklar gibi çöpe atılamayacak ve bu elektonik cihazların üreticileri, cihazların kullanım süreleri bittikten sonra ürünleri geri toplamakla yükümlü olacaktır. Avrupa Birliği'ne satılan MSI markalı ürünlerin kullanım süreleri bittiğinde MSI ürünlerin geri alınması isteği ile işbirliği içerisinde olacaktır. Ürünlerinizi yerel toplama noktalarına bırakabilirsiniz.

ČESKY

Záleží nám na ochraně životního prostředí - společnost MSI upozorňuje...

Podle směrnice Evropské unie ("EU") o likvidaci elektrických a elektronických výrobků 2002/96/EC platné od 13. srpna 2005 je zakázáno likvidovat "elektrické a elektronické výrobky" v běžném komunálním odpadu a výrobci elektronických výrobků, na které se tato směrnice vztahuje, budou povinni odebírat takové výrobky zpět po skončení jejich životnosti. Společnost MSI splní požadavky na odebírání výrobků značky MSI, prodávaných v zemích EU, po skončení jejich životnosti. Tyto výrobky můžete odevzdat v místních sběrnách.

MAGYAR

Annak érdekében, hogy környezetünket megvédjük, illetve környezetvédőként fellépve az MSI emlékezteti Önt, hogy ...

Az Európai Unió („EU") 2005. augusztus 13-án hatályba lépő, az elektromos és elektronikus berendezések hulladékairól szóló 2002/96/EK irányelve szerint az elektromos és elektronikus berendezések többé nem kezelhetőek lakossági hulladékként, és az ilyen elektronikus berendezések gyártói kötelessé válnak az ilyen termékek visszavételére azok hasznos élettartama végén. Az MSI betartja a termékvisszavétellel kapcsolatos követelményeket az MSI márkanév alatt az EU-n belül értékesített termékek esetében, azok élettartamának végén. Az ilyen termékeket a legközelebbi gyűjtőhelyre viheti.

ITALIANO

Per proteggere l'ambiente, MSI, da sempre amica della natura, ti ricorda che….

In base alla Direttiva dell'Unione Europea (EU) sullo Smaltimento dei Materiali Elettrici ed Elettronici, Direttiva 2002/96/EC in vigore dal 13 Agosto 2005, prodotti appartenenti alla categoria dei Materiali Elettrici ed Elettronici non possono più essere eliminati come rifiuti municipali: i produttori di detti materiali saranno obbligati a ritirare ogni prodotto alla fine del suo ciclo di vita. MSI si adeguerà a tale Direttiva ritirando tutti i prodotti marchiati MSI che sono stati venduti all'interno dell'Unione Europea alla fine del loro ciclo di vita. È possibile portare i prodotti nel più vicino punto di raccolta

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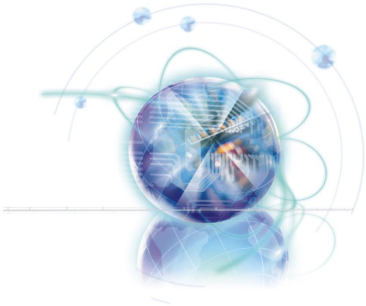


Chapter 1

Getting Started

Thank you for choosing the **P43-C53** Series (MS-7519 v3.X) ATX mainboard. The **P43-C53** Series mainboards are based on **Intel® P43** & **ICH10** chipsets for optimal system efficiency. Designed to fit the advanced **Intel® Core™2 Extreme, Core™2 Quad, Core™2 Duo, Pentium Dual-Core** and **Celeron Dual-Core LGA 775** processor, the **P43-C53** Series deliver a high performance and professional desktop platform solution.

Mainboard Specifications

Processor Support

- Intel® Core™2 Extreme, Core™2 Quad, Core™2 Duo, Pentium® Dual-Core and Celeron® Dual-Core processor in the LGA775 package
  *(For the latest information about CPU, please visit http://www.msi.com/index.php?func=cpuform2)

FSB

- 1600 *(OC)/ 1333/ 1066/ 800 MHz

Chipset

- North Bridge: Intel® P43 chipset
- South Bridge: Intel® ICH10 chipset

Memory Support

- 4 DDR3 DIMMs support DDR3 1600 *(OC)/ 1333/ 1066/ 800 DRAM speed (240pin/ 1.5V, total 16GB Max)
  (*OC means overclocking, for more information on compatible components, please visit http://www.msi.com/index.php?func=testreport)

LAN

- Supports 10/100/1000 LAN by Realtek® RTL8111E

Audio

- Chip integrated by Realtek® ALC892/ ALC887 (optional)
- Flexible 8-channel audio with jack sensing
- Compliant with Azalia 1.0 Spec

IDE

- 1 IDE port by JMicron® JMB368
- Supports Ultra DMA 66/100/133 mode
- Supports PIO, Bus Master operation mode

SATA

- 6 SATA 3Gb/s (SATA1~6) ports by Intel® ICH10

IEEE 1394 (optional)

- Chip integrated by VIA® VT6315N
- Supports 1 IEEE 1394 port (back panel) & 1 IEEE 1394 connector (front panel)

FDD

- 1 floppy port
- Supports 1 FDD with 360 KB, 720 KB, 1.2 MB, 1.44 MB and 2.88 MB

Connectors

- Back panel
  - 1 PS/2 mouse/ keyboard port
  - 1 Optical S/PDIF-Out port
  - 1 Serial port
  - 1 IEEE 1394 port (optional)
  - 6 USB 2.0 ports
  - 1 LAN port
  - 6 flexible audio ports
- On-Board
  - 3 USB 2.0 connectors
  - 1 IEEE 1394 connector (optional)
  - 1 Chassis Intrusion connector
  - 1 Serial Port connector
  - 1 CD-In connector
  - 1 S/PDIF-Out connector
  - 1 Front Panel Audio connector
  - 1 TPM Module connector
  - 1 OC Switch
  - 1 Power Button

Slots

- 1 PCIE x16 slot
- 2 PCIE x1 slots
- 3 PCI slots, support 3.3V/ 5V PCI bus Interface

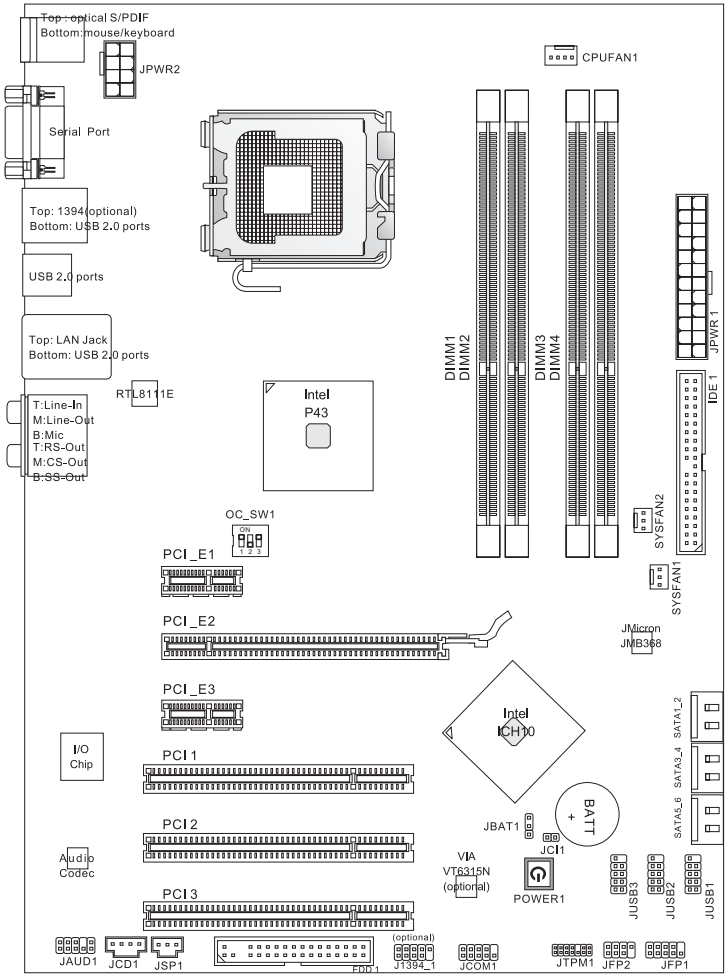
Form Factor

- ATX (30.5 cm X 22.0 cm)

Mounting

- 6 mounting holes

Mainboard Layout



P43-C53 Series (MS-7519 v3.X) ATX Mainboard

Packing Checklist



MSI mainboard



MSI Driver/Utility DVD



SATA Cable (Optional)



Power Cable



Standard Cable for IDE Devices

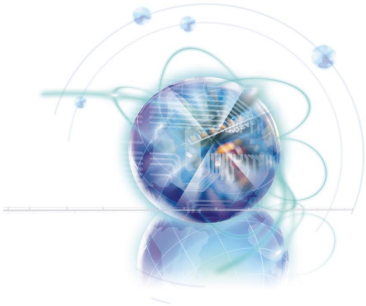


Back IO Shield



User's Guide

* The pictures are for reference only and may vary from the packing contents of the product you purchased. If you need to purchase accessories and request the part numbers, you could search the product web page and find details on our web address http://www.msi.com/index.php



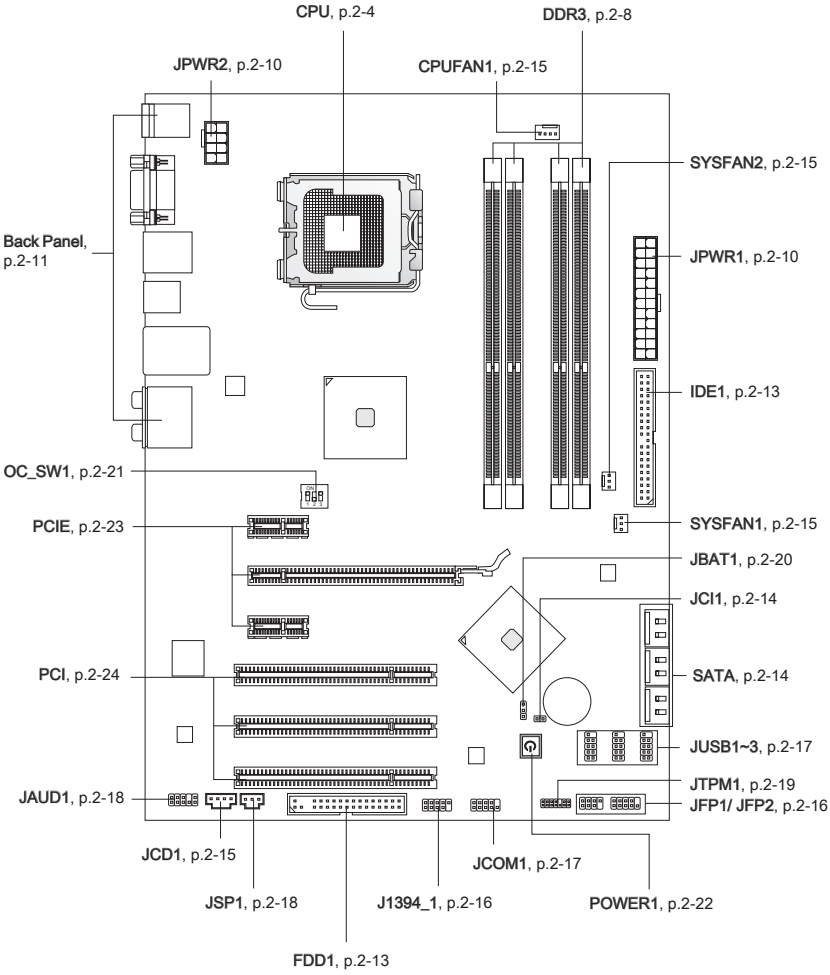
Chapter 2

Hardware Setup

This chapter provides you with the information about hardware setup procedures. While doing the installation, be careful in holding the components and follow the installation procedures. For some components, if you install in the wrong orientation, the components will not work properly.

Use a grounded wrist strap before handling computer components. Static electricity may damage the components.

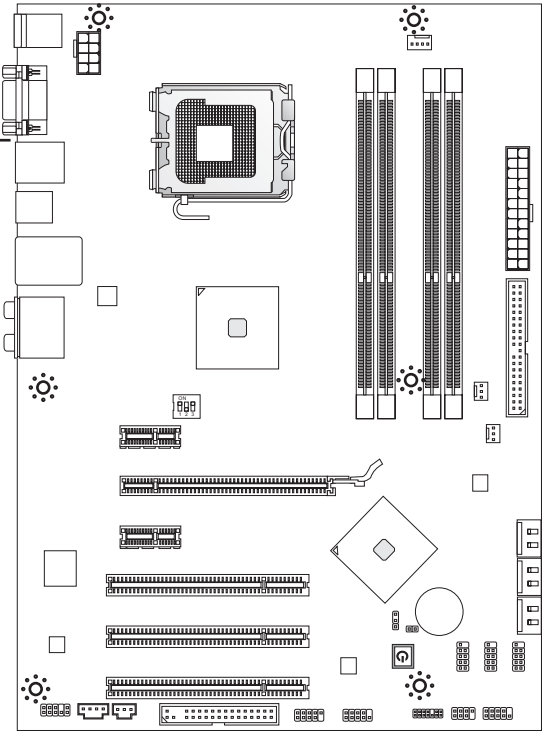
Quick Components Guide



Screw Holes

When you install the mainboard, you have to place the mainboard into the chassis in the correct direction. The locations of screws holes on the mainboard are shown as below.

The side has to toward the rear, the position for the I/O shield of the chassis.



Screw holes

Refer above picture to install standoffs in the appropriate locations on chassis and then screw through the mainboard screw holes into the standoffs.

Important

- *To prevent damage to the mainboard, any contact between the mainboard circuit and chassis or unnecessary standoffs mounted on the chassis is prohibited.*
- *Please make sure there is no metal components placed on the mainboard or within the chassis that may cause short circuit of the mainboard.*

CPU (Central Processing Unit)

When you are installing the CPU, make sure to install the cooler to prevent overheating. If you do not have the CPU cooler, consult your dealer before turning on the computer. For the latest information about CPU, please visit *http://www.msi.com/index.php?func=cpuform2*

Important

Overheating

Overheating will seriously damage the CPU and system. Always make sure the cooling fan can work properly to protect the CPU from overheating. Make sure that you apply an even layer of thermal paste (or thermal tape) between the CPU and the heatsink to enhance heat dissipation.

Replacing the CPU

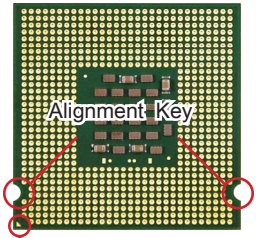
While replacing the CPU, always turn off the ATX power supply or unplug the power supply's power cord from the grounded outlet first to ensure the safety of CPU.

Overclocking

This mainboard is designed to support overclocking. However, please make sure your components are able to tolerate such abnormal setting, while doing overclocking. Any attempt to operate beyond product specifications is not recommended. We do not guarantee the damages or risks caused by inadequate operation or beyond product specifications.

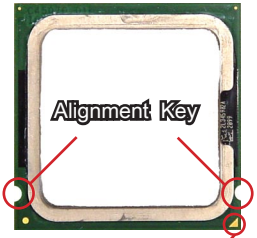
Introduction to LGA 775 CPU

The pin-pad side of LGA 775 CPU.



Yellow triangle is the Pin 1 indicator

The surface of LGA 775 CPU. Remember to apply some thermal paste on it for better heat dispersion.



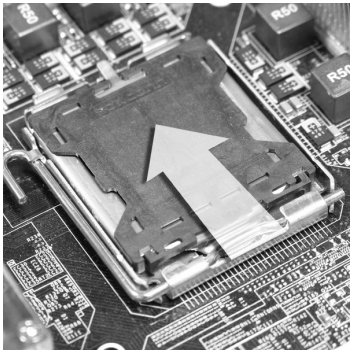
Yellow triangle is the Pin 1 indicator

CPU & Cooler Installation

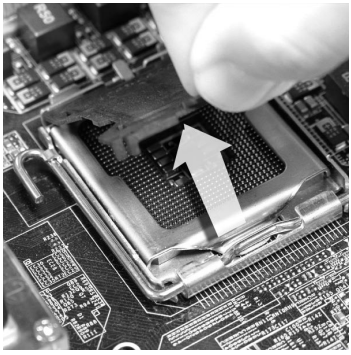
When you are installing the CPU, make sure the CPU has a cooler attached on the top to prevent overheating. Meanwhile, do not forget to apply some thermal paste on CPU before installing the heat sink/cooler fan for better heat dispersion.

Follow the steps below to install the CPU & cooler correctly. Wrong installation will cause the damage of your CPU & mainboard.

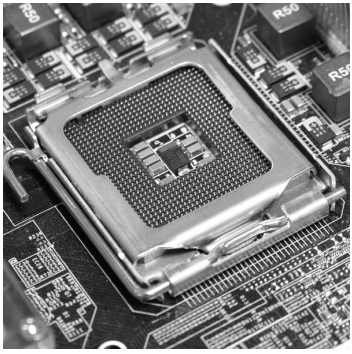
1. The CPU socket has a plastic cap on it to protect the contact from damage. Before you install the CPU, always cover it to protect the socket pin.



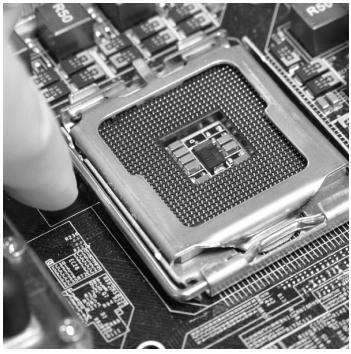
2. Remove the cap from lever hinge side (as the arrow shows).



3. The pins of socket reveal.



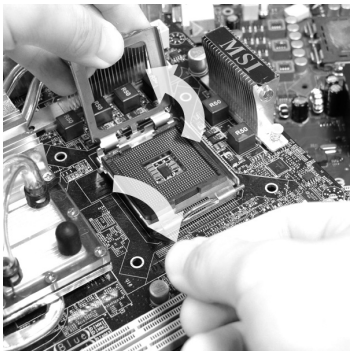
4. Open the load lever.



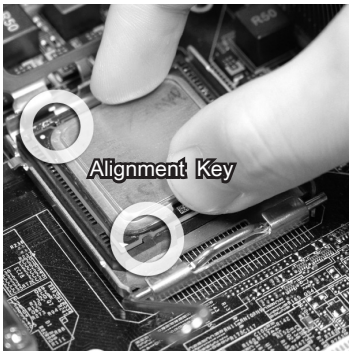
Important

- *Confirm if your CPU cooler is firmly installed before turning on your system.dfgdafgsedgadfgagasgasgsag*
- *Do not touch the CPU socket pins to avoid damaging.*
- *The availability of the CPU land side cover depends on your CPU packing.*

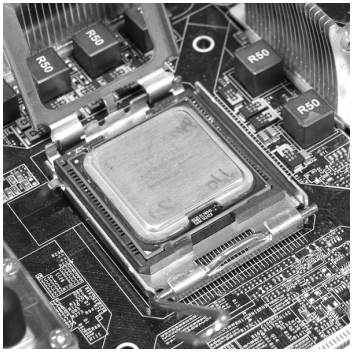
5. Lift the load lever up and open the load plate.



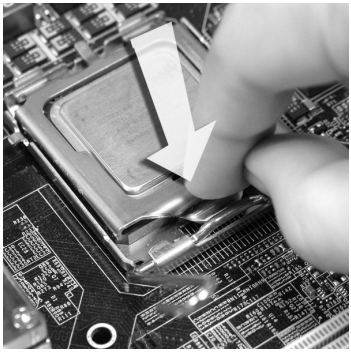
6. After confirming the CPU direction for correct mating, put down the CPU in the socket housing frame. Be sure to grasp on the edge of the CPU base. Note that the alignment keys are matched.



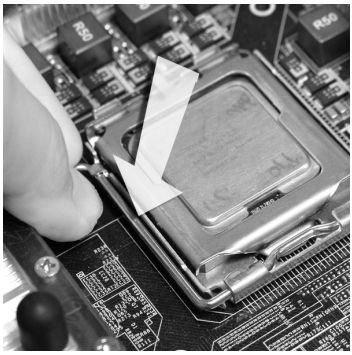
7. Visually inspect if the CPU is seated well into the socket. If not, take out the CPU with pure vertical motion and reinstall.



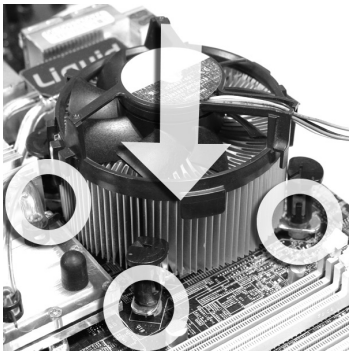
8. Cover the load plate onto the package.



9. Press down the load lever lightly onto the load plate, and then secure the lever with the hook under retention tab.



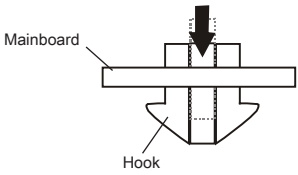
10. Align the holes on the mainboard with the heatsink. Push down the cooler until its four clips get wedged into the holes of the mainboard.



11. Press the four hooks down to fasten the cooler. Then rotate the locking switch (refer to the correct direction marked on it) to lock the hooks.



12. Turn over the mainboard to confirm that the clip-ends are correctly inserted.

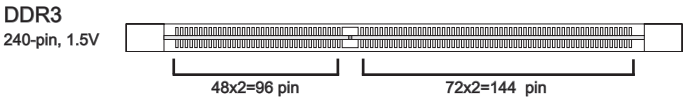


Important

- *Read the CPU status in BIOS.*
- *Whenever CPU is not installed, always protect your CPU socket pin with the plastic cap covered (shown in Figure 1) to avoid damaging.*
- *Mainboard photos shown in this section are for demonstration of the CPU/ cooler installation only. The appearance of your mainboard may vary depending on the model you purchase.*

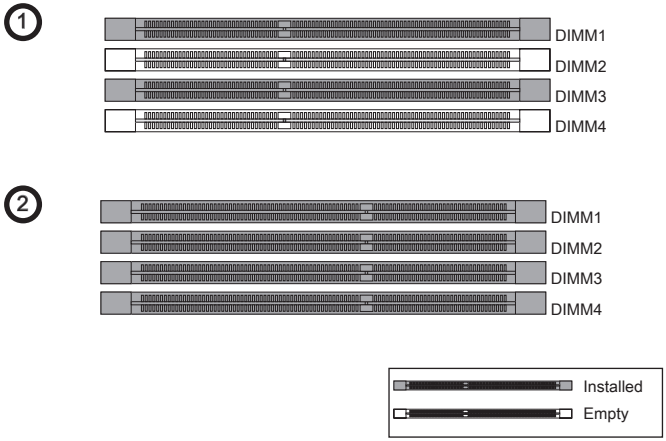
Memory

These DIMM slots are used for installing memory modules. For more information on compatible components, please visit *http://www.msi.com/index.php?func=testreport*



Dual-Channel mode Population Rule

In Dual-Channel mode, the memory modules can transmit and receive data with two data bus lines simultaneously. Enabling Dual-Channel mode can enhance the system performance. The following illustrations explain the population rules for Dual-Channel mode.

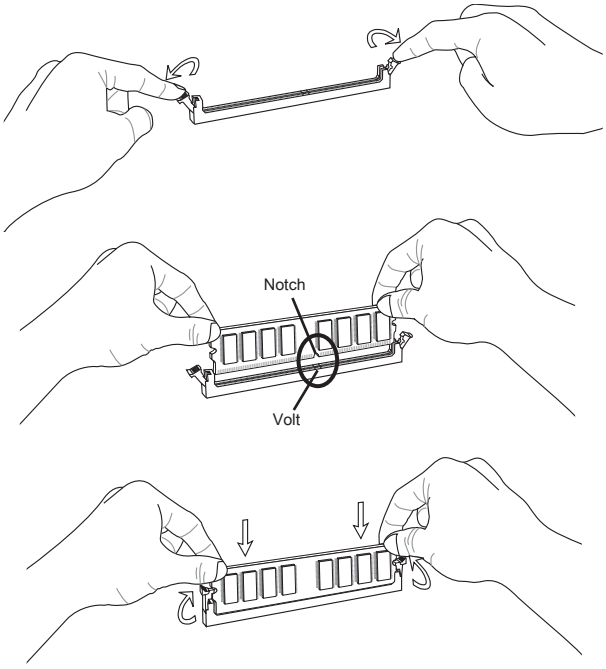


Important

- *DDR3 memory modules are not interchangeable with DDR2 and the DDR3 standard is not backwards compatible. You should always install DDR3 memory modules in the DDR3 DIMM slots.*
- *In Dual-Channel mode, make sure that you install memory modules of the* ***same type and density*** *in different channel DIMM slots.*
- *To enable successful system boot-up, always insert the memory modules into the* ***DIMM1 first****.*
- *Due to the chipset resource deployment, the system density will only be detected up to 15+GB (not full 16GB) when each DIMM is installed with a 4GB memory module.*

Installing Memory Modules

1. The memory module has only one notch on the center and will only fit in the right orientation.
2. Insert the memory module vertically into the DIMM slot. Then push it in until the golden finger on the memory module is deeply inserted in the DIMM slot. The plastic clip at each side of the DIMM slot will automatically close when the memory module is properly seated.
3. Manually check if the memory module has been locked in place by the DIMM slot clips at the sides.



Important

You can barely see the golden finger if the memory module is properly inserted in the DIMM slot.

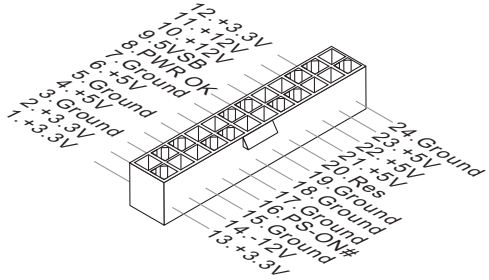
•

Power Supply

ATX 24-pin Power Connector: JPWR1

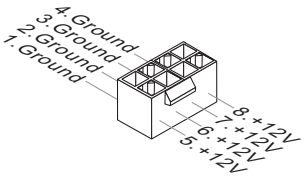
This connector allows you to connect an ATX 24-pin power supply. To connect the ATX 24-pin power supply, make sure the plug of the power supply is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.

You may use the 20-pin ATX power supply as you like. If you'd like to use the 20-pin ATX power supply, please plug your power supply along with pin 1 & pin 13.



ATX 8-pin CPU Power Connector: JPWR2

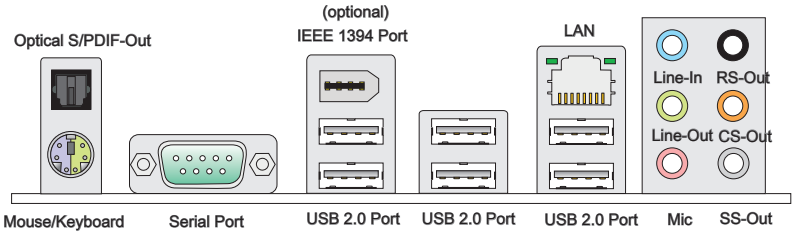
This connector provides 12V power output to the CPU.



Important

- *Make sure that all the connectors are connected to proper ATX power supplies to ensure stable operation of the mainboard.*

Back Panel



▸ **Optical S/PDIF-Out**

This S/PDIF (Sony & Philips Digital Interconnect Format) connector is provided for digital audio transmission to external speakers through an optical fiber cable.

▸ **Mouse/Keyboard**

The standard PS/2® mouse/keyboard DIN connector is for a PS/2® mouse/keyboard.

▸ **Serial Port**

The serial port is a 16550A high speed communications port that sends/ receives 16 bytes FIFOs. You can attach a serial mouse or other serial devices directly to the connector.

▸ **IEEE 1394 Port (optional)**

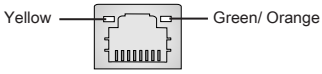
The IEEE1394 port on the back panel provides connection to IEEE1394 devices.

▸ **USB 2.0 Port**

The USB (Universal Serial Bus) port is for attaching USB devices such as keyboard, mouse, or other USB-compatible devices. Supports data transfer rate up to 480Mbit/s (Hi-Speed).

▸LAN

The standard RJ-45 LAN jack is for connection to the Local Area Network (LAN). You can connect a network cable to it.



LED	Color	LED State	Condition
Left	Yellow	Off	LAN link is not established.
		On(Steady state)	LAN link is established.
		On(brighter & pulsing)	The computer is communicating with another computer on the LAN.
Right	Green	Off	10 Mbits/sec data rate is selected.
		On	100 Mbits/sec data rate is selected.
	Orange	On	1000 Mbits/sec data rate is selected.

▸Audio Ports

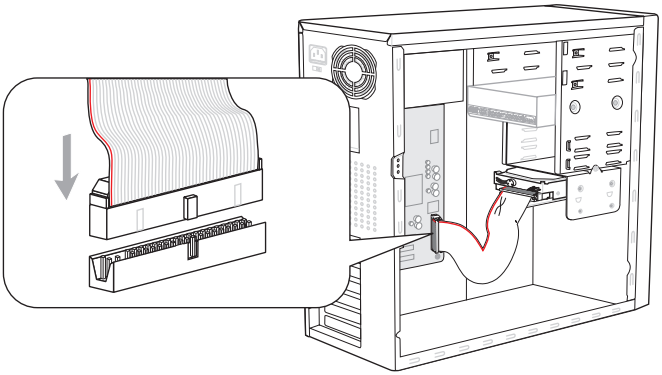
These audio connectors are used for audio devices. It is easy to differentiate between audio effects according to the color of audio jacks.

- Line-In (Blue) - Line In, is used for external CD player, tape-player or other audio devices.
- Line-Out (Green) - Line Out, is a connector for speakers or headphones.
- Mic (Pink) - Mic, is a connector for microphones.
- RS-Out (Black) - Rear-Surround Out in 4/ 5.1/ 7.1 channel mode.
- CS-Out (Orange) - Center/ Subwoofer Out in 5.1/ 7.1 channel mode.
- SS-Out (Gray) - Side-Surround Out 7.1 channel mode.

Connectors

Floppy Disk Drive Connector: FDD1

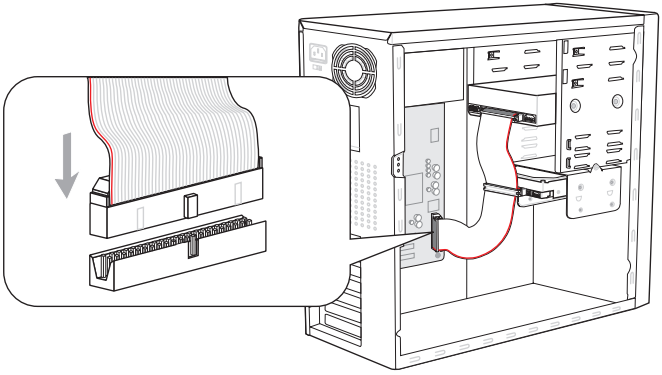
This connector supports 360 KB, 720 KB, 1.2 MB, 1.44 MB or 2.88 MB floppy disk drive.



* The MB layout in this figure is for reference only.

IDE Connector: IDE1

This connector supports IDE hard disk drives, optical disk drives and other IDE devices.



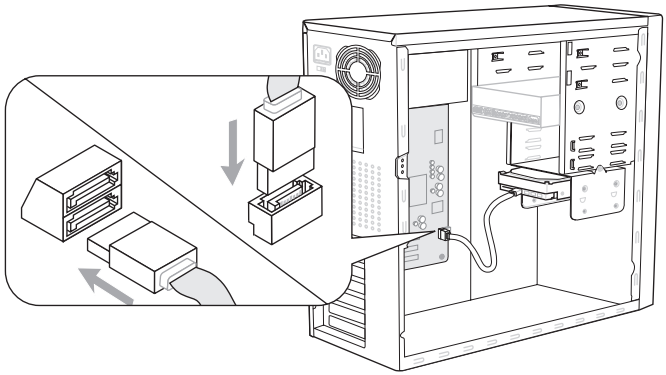
* The MB layout in this figure is for reference only.

Important

If you install two IDE devices on the same cable, you must configure the drives separately to master / slave mode by setting jumpers. Refer to IDE device's documentation supplied by the vendors for jumper setting instructions.

Serial ATA Connector: SATA1~6

This connector is a high-speed Serial ATA interface port. Each connector can connect to one Serial ATA device.



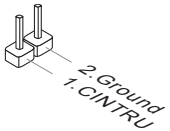
* The MB layout in this figure is for reference only.

Important

Please do not fold the Serial ATA cable into 90-degree angle. Otherwise, data loss may occur during transmission.

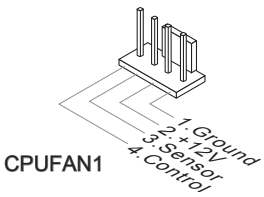
Chassis Intrusion Connector: JCI1

This connector connects to the chassis intrusion switch cable. If the chassis is opened, the chassis intrusion mechanism will be activated. The system will record this status and show a warning message on the screen. To clear the warning, you must enter the BIOS utility and clear the record.

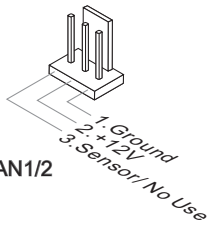


Fan Power Connectors: CPUFAN1,SYSFAN1,SYSFAN2

The fan power connectors support system cooling fan with +12V. When connecting the wire to the connectors, always 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 mainboard 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.



CPUFAN1



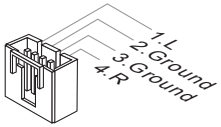
SYSFAN1/2

Important

- *Please refer to the recommended CPU fans at processor's official website or consult the vendors for proper CPU cooling fan.*
- *CPUFAN support Smart fan control. You can install* **Control Center** *utility that will automatically control the CPUFAN1 speeds according to the actual CPUFAN1 temperatures.*
- *Fan cooler set with 3 or 4 pins power connector are both available for CPUFAN1.*

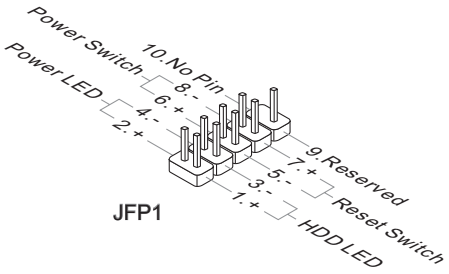
CD-In Connector: JCD1

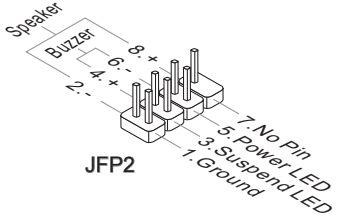
This connector is provided for external audio input.



Front Panel Connectors: JFP1, JFP2

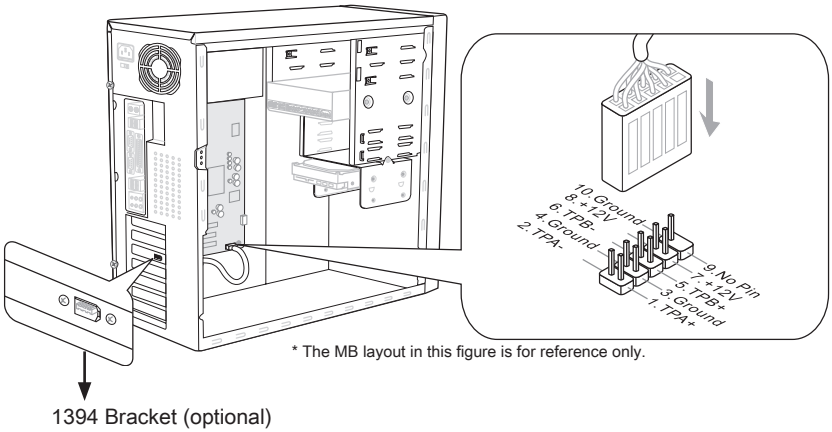
These connectors are for electrical connection to the front panel switches and LEDs. The JFP1 is compliant with Intel® Front Panel I/O Connectivity Design Guide.





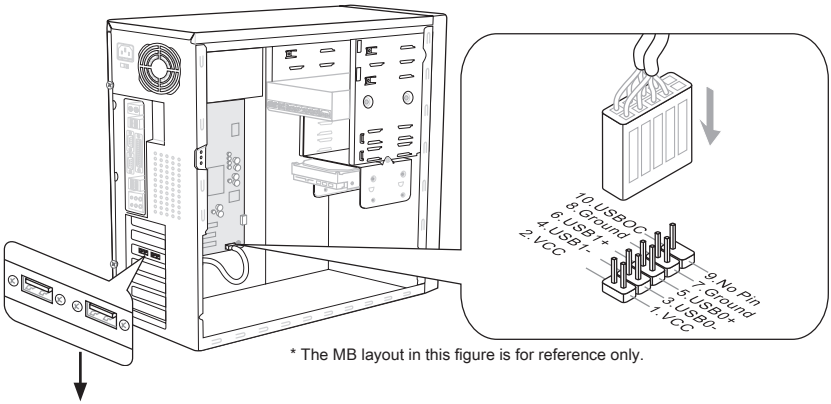
IEEE1394 Connector: J1394_1 (Optional)

This connector allows you to connect the IEEE1394 device via an optional IEEE1394 bracket.



Front USB Connector: JUSB1~3

This connector, compliant with Intel® I/O Connectivity Design Guide, is ideal for connecting high-speed USB interface peripherals such as USB HDD, digital cameras, MP3 players, printers, modems and the like.



* The MB layout in this figure is for reference only.

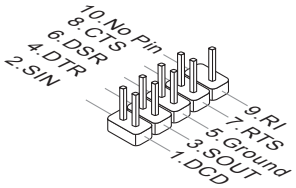
USB 2.0 Bracket (optional)

Important

Note that the pins of VCC and GND must be connected correctly to avoid possible damage.

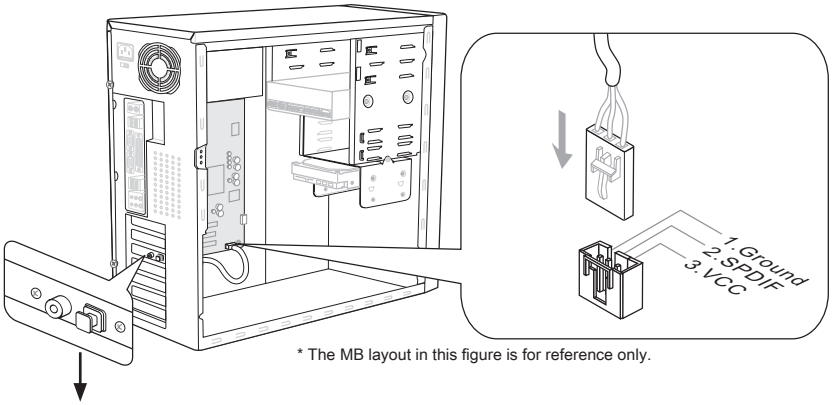
Serial Port Connector: JCOM1

This connector is a 16550A high speed communication port that sends/ receives 16 bytes FIFOs. You can attach a serial device.



S/PDIF-Out Connector: JSP1

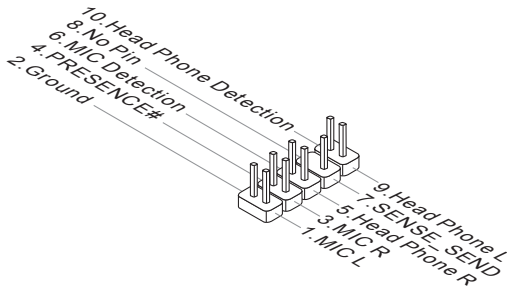
This connector is used to connect S/PDIF (Sony & Philips Digital Interconnect Format) interface for digital audio transmission.



* The MB layout in this figure is for reference only.

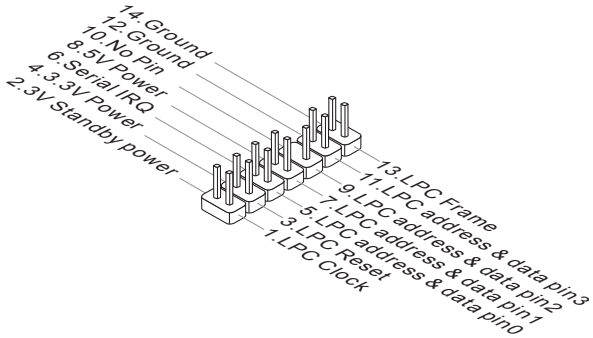
Front Panel Audio Connector: JAUD1

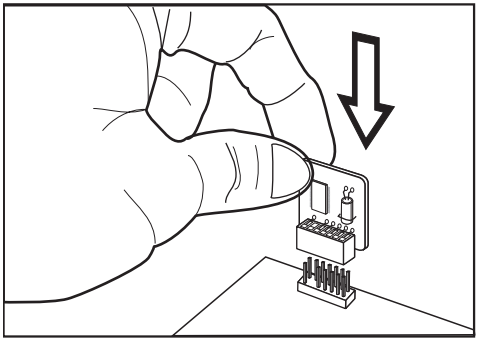
This connector allows you to connect the front panel audio and is compliant with Intel® Front Panel I/O Connectivity Design Guide.



TPM Module connector: JTPM1

This connector connects to a TPM (Trusted Platform Module) module (optional). Please refer to the TPM security platform manual for more details and usages.





Jumpers

Clear CMOS Jumper: JBAT1

There is a CMOS RAM onboard that has a power supply from an external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time it is turned on. If you want to clear the system configuration, set the jumper to clear data.



JBAT1



Keep Data



Clear Data

Important

You can clear CMOS by shorting 2-3 pin while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on; it will damage the mainboard.

Switch

This mainboard provides the following switch for you to set the computer's function. This section will explain how to change your mainboard's function through the use of switch.

Hardware Overclock FSB Switch: OC_SW1

You can overclock the FSB to increase the processor frequency by changing this switch. Follow the instructions below to set the FSB.



(default)



200 -> 266 MHz



200 -> 333 MHz



266 -> 333 MHz



200 -> 400 MHz
266 -> 400 MHz
333 -> 400 MHz

Important

- *Make sure that you power off the system before changing the switch.*
- *This overclocking behavior depends on the system's configuration (memory capability, thermal solution...etc), and it is not guaranteed.*
- *When overclocking cause instability or crash during boot, please set the switch to default.*

Button

The mainboard provides the following button for you to set the computer's function. This section will explain how to change your mainboard's function through the use of button.

Power Button: POWER1

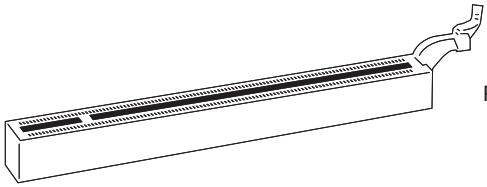
This power button is used to turn-on or turn-off the system. Press the button to turn-on or turn-off the system. This button will light after you power-on the system, and the light will turn-off when you power-off the system.



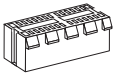
Slots

PCIE (Peripheral Component Interconnect Express) Slot

The PCIE slot supports the PCI Express interface expansion card.



PCI Express x16 Slot



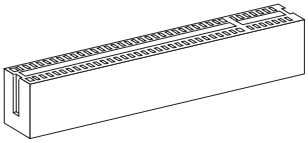
PCI Express x1 Slot

Important

When adding or removing expansion cards, make sure that you unplug the power supply first. Meanwhile, read the documentation for the expansion card to configure any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS configuration.

PCI (Peripheral Component Interconnect) Slot

The PCI slot supports LAN card, SCSI card, USB card, and other add-on cards that comply with PCI specifications.



32-bit PCI Slot

Important

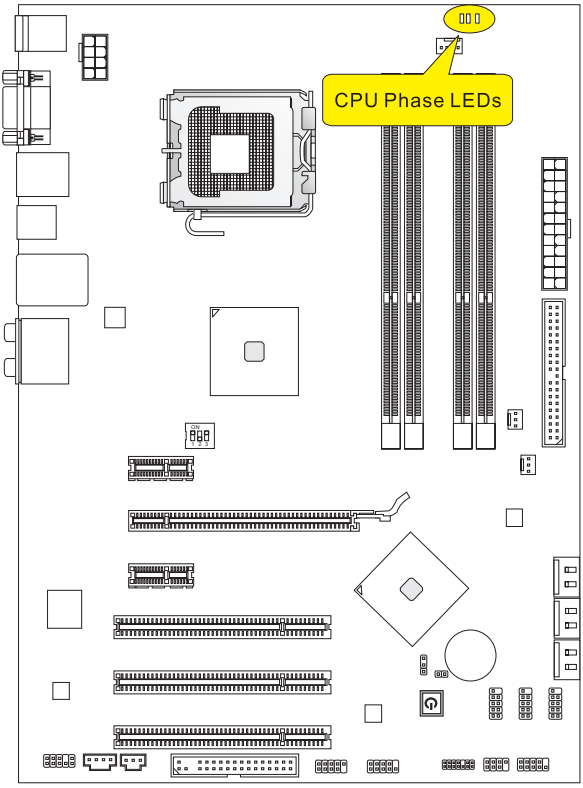
When adding or removing expansion cards, make sure that you unplug the power supply first. Meanwhile, read the documentation for the expansion card to configure any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS configuration.

PCI Interrupt Request Routing

The IRQ, acronym of interrupt request line and pronounced I-R-Q, are hardware lines over which devices can send interrupt signals to the microprocessor. The PCI IRQ pins are typically connected to the PCI bus pins as follows:

	Order1	Order2	Order3	Order4
PCI Slot1	INT F#	INT G#	INT H#	INT E#
PCI Slot2	INT G#	INT H#	INT E#	INT F#
PCI Slot3	INT A#	INT B#	INT C#	INT D#

LED Status Indicators

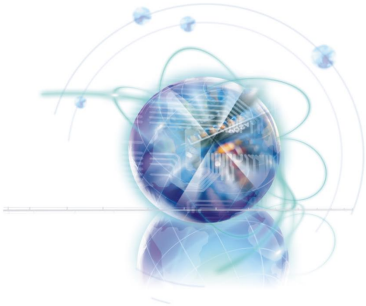


CPU Phase LEDs

These LEDs indicate the current CPU power phase mode. Follow the instructions below to read.

▮ lights ▯ Off

	Mode
▮ ▯ ▯	CPU is in 1 phase power mode.
▮ ▮ ▮	CPU is in 3 phase power mode.



Chapter 3

BIOS Setup

This chapter provides information on the BIOS Setup program and allows you to configure the system for optimum use.

You may need to run the Setup program when:

- An error message appears on the screen during the system booting up, and requests you to run SETUP.
- You want to change the default settings for customized features.

Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <DEL> key to enter Setup.

Press DEL to enter SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

Important

- *The items under each BIOS category described in this chapter are under continuous update for better system performance. Therefore, the description may be slightly different from the latest BIOS and should be held for reference only.*
- *Upon boot-up, the 1st line appearing after the memory count is the BIOS version. It is usually in the format:*

A7519IMS V3.X 053010 where:

1st digit refers to BIOS maker as A = AMI, W = AWARD, and P = PHOENIX.

2nd - 5th digit refers to the model number.

6th digit refers to the chipset as I = Intel, N = NVIDIA, A = AMD and V = VIA.

7th - 8th digit refers to the customer as MS = all standard customers.

V3.X refers to the BIOS version.

053010 refers to the date this BIOS was released.

Control Keys

<↑>	Move to the previous item
<↓>	Move to the next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Enter>	Select the item
<Esc>	Jumps to the Exit menu or returns to the main menu from a submenu
<+/PU>	Increase the numeric value or make changes
<-/PD>	Decrease the numeric value or make changes
<F1>	General Help
<F6>	Load Optimized Defaults
<F8>	Load Fail-Safe Defaults
<F10>	Save all the CMOS changes and exit

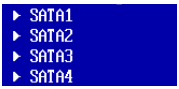
Getting Help

After entering the Setup menu, the first menu you will see is the Main Menu.

Main Menu

The main menu lists the setup functions you can make changes to. You can use the arrow keys (↑↓) to select the item. The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Sub-Menu

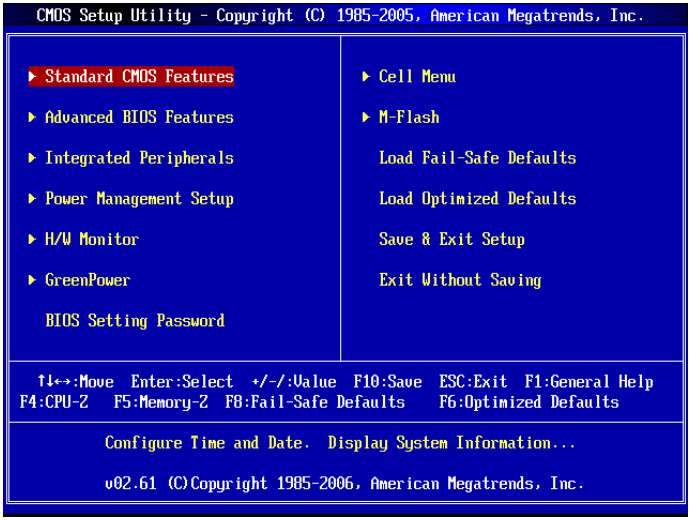


If you find a right pointer symbol (as shown in the right view) appears to the left of certain fields that means a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. You can use arrow keys (↑↓) to highlight the field and press <Enter> to call up the sub-menu. Then you can use the control keys to enter values and move from field to field within a sub-menu. If you want to return to the main menu, just press the <Esc >.

General Help <F1>

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.

The Main Menu



▸Standard CMOS Features

Use this menu for basic system configurations, such as time, date etc.

▸Advanced BIOS Features

Use this menu to setup the items of the BIOS special enhanced features.

▸Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

▸Power Management Setup

Use this menu to specify your settings for power management.

▸H/W Monitor

This entry shows your PC health status.

▸Green Power

Use this menu to specify the power phase.

▸BIOS Setting Password

Use this menu to set the password for BIOS.

▸Cell Menu

Use this menu to specify your settings for frequency/voltage control and overclocking.

▸ **M-Flash**

Use this menu to read/ flash (or backup) the BIOS from (to) storage drive (FAT/ FAT32 format only).

▸ **Load Fail-Safe Defaults**

Use this menu to load the default values set by the BIOS vendor for stable system performance.

▸ **Load Optimized Defaults**

Use this menu to load the default values set by the mainboard manufacturer specifically for optimal performance of the mainboard.

▸ **Save & Exit Setup**

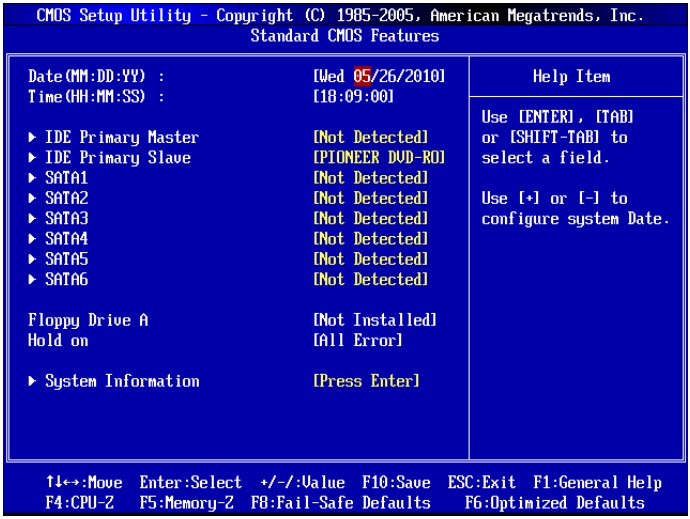
Save changes to CMOS and exit setup.

▸ **Exit Without Saving**

Abandon all changes and exit setup.

Standard CMOS Features

The items in Standard CMOS Features Menu include some basic setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.



▸Date (MM:DD:YY)

This allows you to set the system to the date that you want (usually the current date). The format is <day><month> <date> <year>.

[day]	Day of the week, from Sun to Sat, determined by BIOS. Read-only.
[month]	The month from Jan. through Dec.
[date]	The date from 1 to 31 can be keyed by numeric function keys.
[year]	The year can be adjusted by users.

▸Time (HH:MM:SS)

This allows you to set the system time that you want (usually the current time). The time format is <hour> <minute> <second>.

▸ **IDE Primary Master/ Slave & SATA1~6**

Press <Enter> to enter the sub-menu, and the following screen appears.

▸ **Device / Vendor / Size**

It will show the device information that you connected to the IDE/ SATA connector.

▸ **LBA/Large Mode**

This allows you to enable or disable the LBA Mode. Setting to Auto enables LBA mode if the device supports it and the devices is not already formatted with LBA mode disabled.

▸ **DMA Mode**

Select DMA Mode.

▸ **Hard Disk S.M.A.R.T.**

This allows you to activate the S.M.A.R.T. (Self-Monitoring Analysis & Reporting Technology) capability for the hard disks. S.M.A.R.T is a utility that monitors your disk status to predict hard disk failure. This gives you an opportunity to move data from a hard disk that is going to fail to a safe place before the hard disk becomes offline.

Important

IDE Primary Master/ Slave, SATA 1~6 are appearing when you connect the HD devices to the IDE/ SATA connectors on the mainboard.

▸ **Floppy Drive A**

This item allows you to set the type of floppy drives installed.

▸ **Hold on**

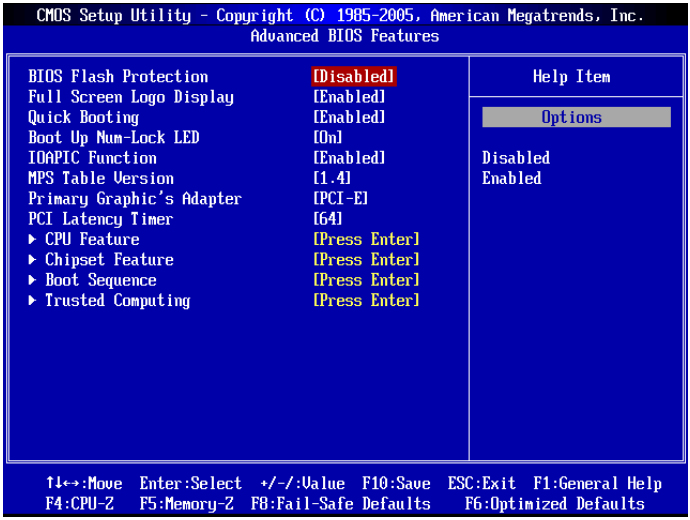
The setting determines whether the system will stop of an error is detected at boot. When the system stops of the errors preset, it will halt on for 15 seconds and then automatically resume its operation. Available options are:

[All Errors]	The system stops when any error is detected.
[No Errors]	The system doesn't stop for any detected error.

▸ **System Information**

Press <Enter> to enter the sub-menu. This sub-menu shows the CPU information, BIOS version and memory status of your system (read only).

Advanced BIOS Features



▸BIOS Flash Protection

This function protects the BIOS from accidental corruption by unauthorized users or computer viruses. When enabled, the BIOS data cannot be changed when attempting to update the BIOS with a Flash utility. To successfully update the BIOS, you'll need to disable this Flash BIOS Protection function. You should enable this function at all times. The only time when you need to disable it is when you want to update the BIOS. After updating the BIOS, you should immediately re-enable it to protect it against viruses.

▸Full Screen Logo Display

This item enables this system to show the company logo on the boot-up screen. Settings are:

[Enabled]	Shows a still image (logo) on the full screen at boot.
[Disabled]	Shows the POST messages at boot.

▸Quick Booting

Setting the item to [Enabled] allows the system to boot within 10 seconds since it will skip some check items.

▸Boot Up Num-Lock LED

This setting is to set the Num Lock status when the system is powered on. Setting to [On] will turn on the Num Lock key when the system is powered on. Setting to [Off] will allow users to use the arrow keys on the numeric keypad.

▸IOAPIC Function

This field is used to enable or disable the APIC (Advanced Programmable Interrupt Controller). Due to compliance with PC2001 design guide, the system is able to run in APIC mode. Enabling APIC mode will expand available IRQ resources for the system.

▸MPS Table Version

This field allows you to select which MPS (Multi-Processor Specification) version to be used for the operating system. You need to select the MPS version supported by your operating system. To find out which version to use, consult the vendor of your operating system.

▸Primary Graphic's Adapter

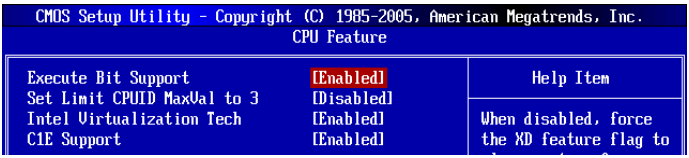
This setting specifies which graphic card is your primary graphics adapter.

▸PCI Latency Timer

This item controls how long each PCI device can hold the bus before another takes over. When set to higher values, every PCI device can conduct transactions for a longer time and thus improve the effective PCI bandwidth. For better PCI performance, you should set the item to higher values.

▸CPU Feature

Press <Enter> to enter the sub-menu and the following screen appears:



▸Execute Bit Support

Intel's Execute Disable Bit functionality can prevent certain classes of malicious "buffer overflow" attacks when combined with a supporting operating system. This functionality allows the processor to classify areas in memory by where application code can execute and where it cannot. When a malicious worm attempts to insert code in the buffer, the processor disables code execution, preventing damage or worm propagation.

▸Set Limit CPUID MaxVal to 3

The Max CPUID Value Limit is designed limit the listed speed of the processor to older operating systems.

▸Intel Virtualization Tech

This item is used to enable/disable the Intel Virtualization technology. For further information please refer to Intel's official website.

▸C1E Support

To enable this item to read the CPU power consumption while idle. Not all processors support Enhanced Halt state (C1E).

▸Chipset Feature

Press <Enter> to enter the sub-menu and the following screen appears:

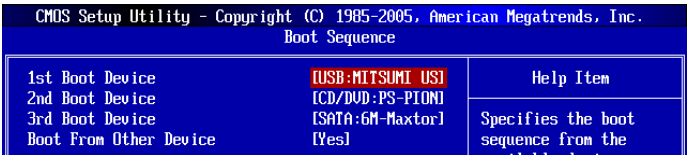


▸HPET

The HPET (High Precision Event Timers) is a component that is part of the chipset. You can to enable it, and will provide you with the means to get to it via the various ACPI methods.

▸Boot Sequence

Press <Enter> to enter the sub-menu and the following screen appears:



▸1st/ 2nd/ 3rd Boot Device

This item allows you to set the 1st/ 2nd/ 3rd boot device where BIOS attempts to load the disk operating system.

▸Boot From Other Device

Setting the option to [Yes] allows the system to try to boot from other device, if the system fails to boot from 1st boot device.

▸Trusted Computing

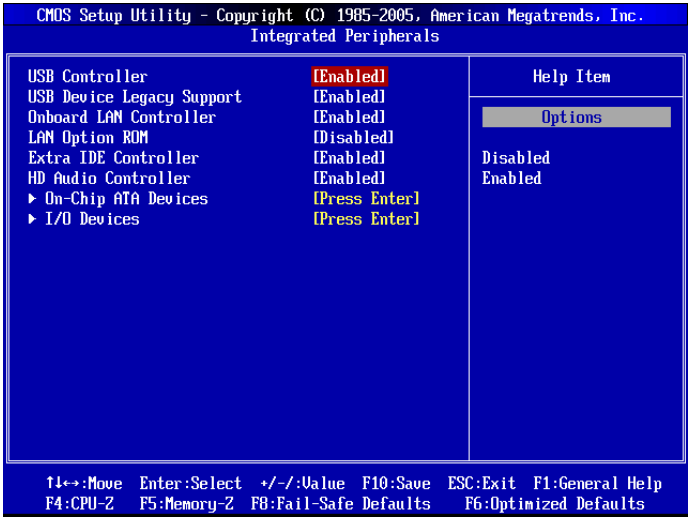
Press <Enter> to enter the sub-menu and the following screen appears:



▸TCG/TPM SUPPORT

Setting the option to [Yes] enables TPM (Trusted Platform Module) to the system.

Integrated Peripherals



▸USB Controller

This setting allows you to enable/disable the onboard USB controller.

▸USB Device Legacy Support

Select [Enabled] if you need to use a USB-interfaced device in the operating system.

▸Onboard LAN Controller

This setting allows you to enable/disable the onboard LAN controller.

▸LAN Option ROM

This item is used to decide whether to invoke the Boot ROM of the onboard LAN.

▸Onboard IEEE1394 Controller (optional)

This item allows you to enable/disable the onboard IEEE1394 controller.

▸Extra IDE Controller

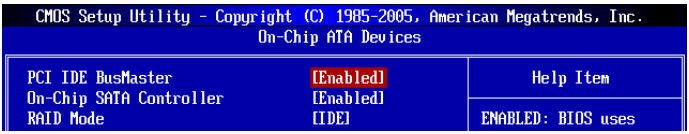
This item allows you to enable/disable the extra IDE controller.

▸HD Audio Controller

This setting is used to enable/disable the onboard audio controller.

▸On-Chip ATA Devices

Press <Enter> to enter the sub-menu and the following screen appears:



▸PCI IDE BusMaster

This item allows you to enable/ disable BIOS to used PCI busmastering for reading/ writing to IDE drives.

▸On-Chip SATA Controller

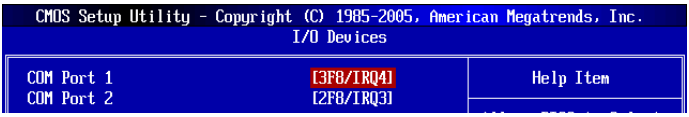
This item allows users to enable or disable the SATA controller.

▸RAID Mode

This item allows you to configure SATA RAID mode.

▸I/O Devices

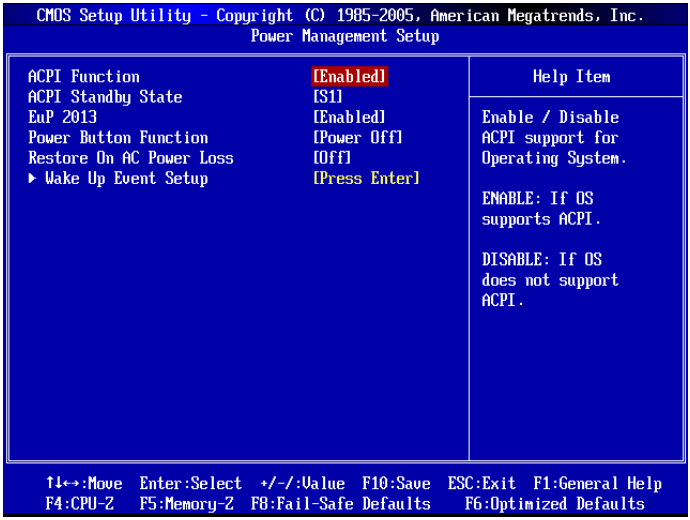
Press <Enter> to enter the sub-menu and the following screen appears:



▸COM Port 1/ 2

Select an address and corresponding interrupt for the serial port1/ 2.

Power Management Setup



Important

S3-related functions described in this section are available only when the BIOS supports S3 sleep mode.

▸ACPI Function

This item is to activate the ACPI (Advanced Configuration and Power Management Interface) Function. If your operating system is ACPI-aware, select [Enabled].

▸ACPI Standby State

This item specifies the power saving modes for ACPI function.

▸EuP 2013

This Item is Designed for Energy Using Products Lot 6 2013 (EuP) aka Energy Related Products (ErP). To Reduce Power Consumption when System off or Standby Mode.

Note: When “Enabled” EuP 2013 Setting, System Don’t Support RTC Wake Up Event function.

▸Power Button Function

This feature sets the function of the power button. Settings are:

[Power On/Off] The power button functions as normal power on/ off button.

[Suspend] When you press the power button, the computer enters the suspend/ sleep mode, but if the button is pressed for more than four seconds, the computer is turned off.

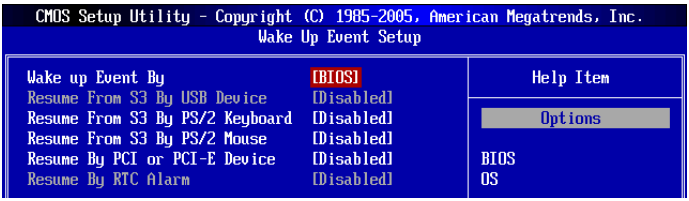
▸Restore On AC Power Loss

This item specifies whether your system will reboot after a power failure or interrupt occurs. Settings are:

[Off]	Always leaves the computer in the power off state.
[On]	Always leaves the computer in the power on state.
[Last State]	Restore the system to the status before power failure or interrupt occurred.

▸Wake Up Event Setup

Press <Enter> and the following sub-menu appears.



▸Wake up Event By

Setting to [BIOS] activates the following fields, and use the following fields to set the wake up events. Setting to [OS], the wake up events will be defined by OS.

▸Resume From S3 By USB Device

The item allows the activity of the USB device to wake up the system from S3 (Suspend to RAM) sleep state.

▸Resume From S3 By PS/2 Keyboard / Mouse

These items determine whether the system will be awakened from what power saving modes when input signal of the PS/2 keyboard/ mouse is detected.

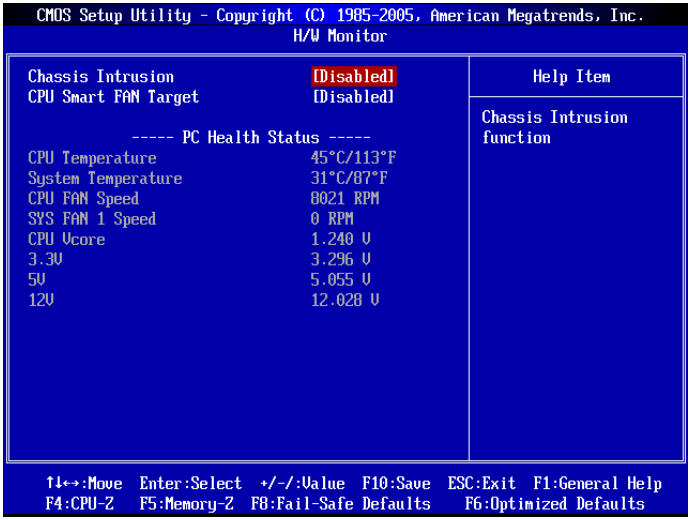
▸Resume By PCI or PCI-E Device

When set to [Enabled], the feature allows your system to be awakened from the power saving modes through any event on PCIE or PCI device.

▸Resume By RTC Alarm

The field is used to enable or disable the feature of booting up the system on a scheduled time/date.

H/W Monitor



▸Chassis Intrusion

The field enables or disables the feature of recording the chassis intrusion status and issuing a warning message if the chassis is once opened. To clear the warning message, set the field to [Reset]. The setting of the field will automatically return to [Enabled] later.

▸CPU Smart FAN Target

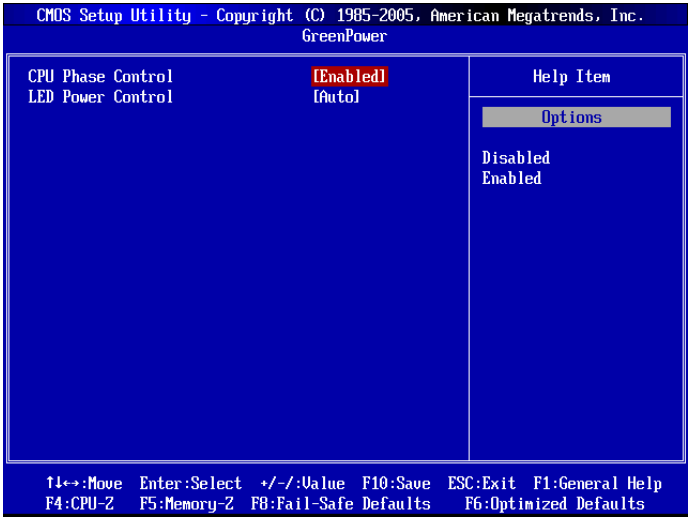
The mainboard provides the Smart Fan function which can control the CPU fan speed automatically depending on the current temperature to keep it with in a specific range. You can enable a fan target value here. If the current CPU fan temperature reaches to the target value, the smart fan function will be activated. It provides several sections to speed up for cooling down automatically.

▸PC Health Status

▸CPU/ System Temperature, CPU FAN/ SYS FAN 1 Speed, CPU Vcore, 3.3V, 5V, 12V

These items display the current status of all of the monitored hardware devices/components such as CPU voltage, temperatures and all fans' speeds.

Green Power



▸CPU Phase Control

When set to [Auto], the hardware will auto adjust the CPU power phase according to the loading of CPU to reach the best power saving function.

▸LED Power Control

This item is used to enable/ disable the power phase LEDs of the mainboard.

BIOS Setting Password

When you select this function, a message as below will appear on the screen:

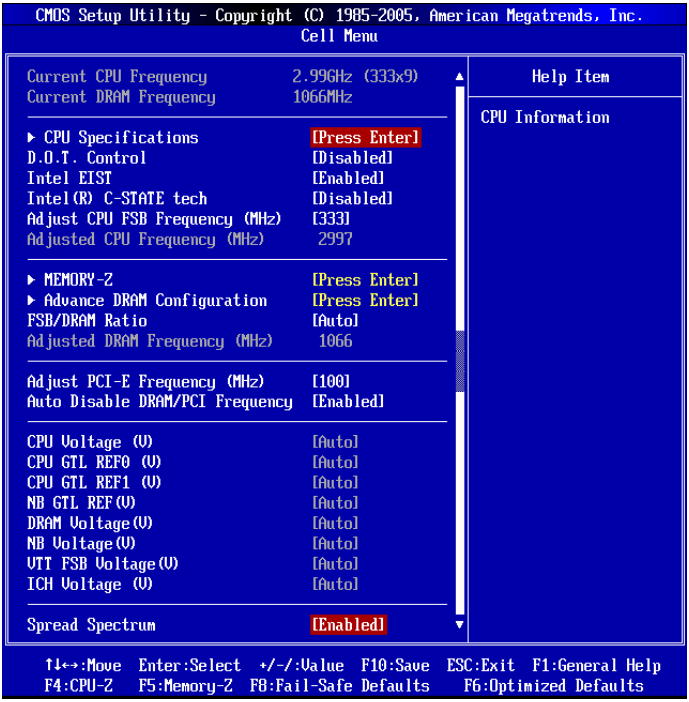


Type the password, up to six characters in length, and press <Enter>. The password typed now will replace any previously set password from CMOS memory. You will be prompted to confirm the password. Retype the password and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To clear a set password, just press <Enter> when you are prompted to enter the password. A message will show up confirming the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup without entering any password.

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

Cell Menu



Important

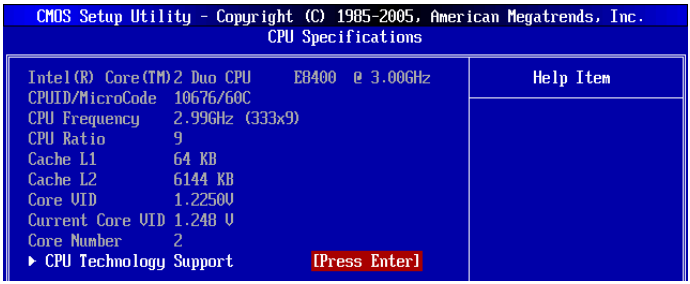
Change these settings only if you are familiar with the chipset.

▸Current CPU / DRAM Frequency

These items show the current frequencies of CPU and Memory. Read-only.

▸CPU Specifications

Press <Enter> to enter the sub-menu and the following screen appears. This submenu shows the information of installed CPU.



▸CPU Technology Support

Press <Enter> to enter the sub-menu. This sub-menu shows the technologies that the installed CPU supported.

▸D.O.T. Control

D.O.T. (Dynamic Overclocking Technology) is an automatic overclocking function, included in the MSI™ newly developed Dual Core Center™ Technology. It is designed to detect the load balance of CPU while running programs, and to adjust the best frequency automatically to make the program run smoothly and faster. When the system is temporarily suspending or staying in the low load balance, it will restore the default settings instead. Usually the Dynamic Overclocking Technology will be powered only when users' PC need to run huge amount of data like 3D games or the video process, and the CPU and PCIE frequency need to be boosted up to enhance the overall performance.

Important

Even though the Dynamic Overclocking Technology is more stable than manual overclocking, basically, it is still risky. We suggest user to make sure that your CPU/ memory modules can afford to overclocking regularly first. If you find the PC appears to be unstable or reboot incidentally, it's better to disable the Dynamic Overclocking or to lower the level of overclocking options. By the way, if you need to conduct overclocking manually, you also need to disable the Dynamic Overcocking first.

▸Intel EIST

The Enhanced Intel SpeedStep technology allows you to set the performance level of the microprocessor whether the computer is running on battery or AC power. This field will appear after you installed the CPU which supports speedstep technology.

▸Intel (R) C-STATE tech

C-state is a power management state that significantly reduces the power of the processor during idle. This field will appear after you installed the CPU which support c-state technology.

▸Adjust CPU FSB Frequency (MHz)

This item allows you to set the CPU FSB clock (in MHz). You may overclock the CPU by adjusting this value. Please note the overclocking behavior is not guaranteed.

▸Adjusted CPU Frequency (MHz)

It shows the adjusted CPU frequency. Read-only.

▸MEMORY-Z

Press <Enter> to enter the sub-menu and the following screen appears.

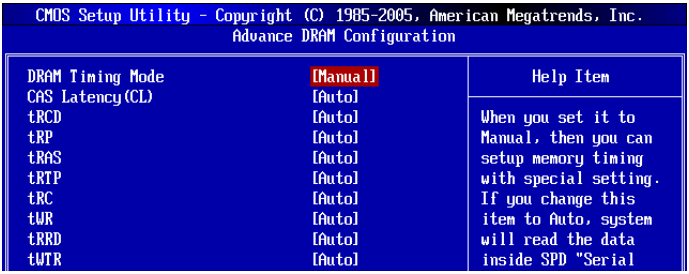


▸DIMM1~4 Memory SPD Information

Press <Enter> to enter the sub-menu. These items display the current status of the current DIMM Memory speed information such as memory type, max bandwidth, manufacturer, part number, serial number, SDRAM cycle time, DRAM TCL, DRAM TRCD, and ...etc. They are read only.

▸Advance DRAM Configuration

Press <Enter> to enter the sub-menu and the following screen appears.



▸DRAM Timing Mode

This item allows you to select the DDR timing setting. Setting to [Auto] enables memory clock automatically to be determined by SPD. Selecting [Manual] allows users to configure these fields manually.

▸CAS Latency (CL)

This controls the CAS latency, which determines the timing delay (in clock cycles) before SDRAM starts a read command after receiving it.

▸tRCD

When DRAM is refreshed, both rows and columns are addressed separately. This setup item allows you to determine the timing of the transition from RAS (row address strobe) to CAS (column address strobe). The less the clock cycles, the faster the DRAM performance.

▸tRP

This setting controls the number of cycles for Row Address Strobe (RAS) to be allowed to precharge. If insufficient time is allowed for the RAS to accumulate its charge before DRAM refresh, refresh may be incomplete and DRAM may fail to retain data. This item applies only when synchronous DRAM is installed in the system.

▸tRAS

This setting determines the time RAS takes to read from and write to memory cell.

▸ tRTP

Time interval between a read and a precharge command.

▸ tRC

The rowcycle time determines the minimum number of clock cycles a memory row takes to complete a full cycle, from row activation up to the precharging of the activerow.

▸ tWR

Minimum time interval between end of write data burst and the start of a pre-charge command. Allows sense amplifiers to restore data to cells.

▸ tRRD

Specifies the active-to-active delay of different banks.

▸ tWTR

Minimum time interval between the end of write data burst and the start of a column-read command. It allows I/O gating to overdrive sense amplifiers before read command starts.

▸ FSB/DRAM Ratio

This item will allow you to adjust the ratio of FSB to memory.

▸ Adjusted DRAM Frequency (MHz)

It shows the adjusted DDR Memory frequency. Read-only.

▸ Adjust PCI-E Frequency (MHz)

This field allows you to select the PCIE frequency (in MHz).

▸ Auto Disable DRAM/PCI Frequency

When set to [Enabled], the system will remove (turn off) clocks from empty DIMM and PCI slots to minimize the electromagnetic interference (EMI).

▸ CPU Voltage (V)/ CPU GTL REF0 (V)/ CPU GTL REF1 (V)/ NB GTL REF (V)/ DRAM Voltage (V)/ NB Voltage (V)/ VTT FSB Voltage (V)/ ICH Voltage (V)

These items are used to adjust the voltage of CPU, Memory and chipset.

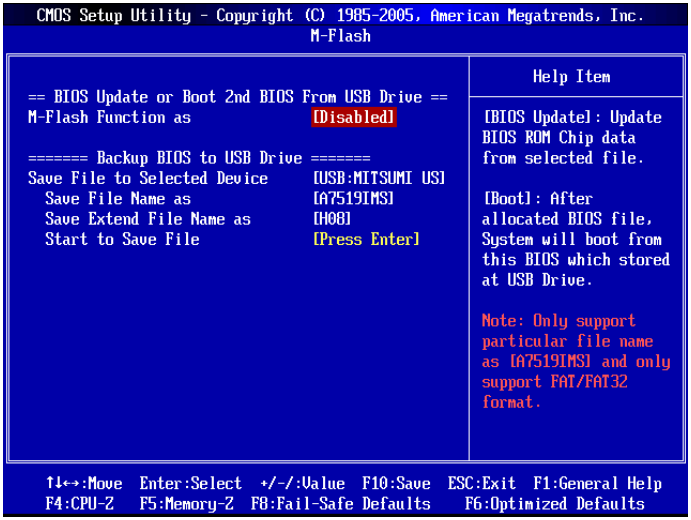
▸ Spread Spectrum

When the mainboard's clock generator pulses, the extreme values (spikes) of the pulses create EMI (Electromagnetic Interference). The Spread Spectrum function reduces the EMI generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves.

Important

- *If you do not have any EMI problem, leave the setting at [Disabled] for optimal system stability and performance. But if you are plagued by EMI, select the value of Spread Spectrum for EMI reduction.*
- *The greater the Spread Spectrum value is, the greater the EMI is reduced, and the system will become less stable. For the most suitable Spread Spectrum value, please consult your local EMI regulation.*
- *Remember to disable Spread Spectrum if you are overclocking because even a slight jitter can introduce a temporary boost in clock speed which may just cause your overclocked processor to lock up.*

M-Flash



== BIOS Update or Boot 2nd BIOS From USB drive==

▸M-Flash function as

M-Flash function allows you to flash BIOS from USB drive/ storage drive (FAT/ FAT32 format only), or allows the system to boot from the BIOS file inside USB drive (FAT/ FAT32 format only).

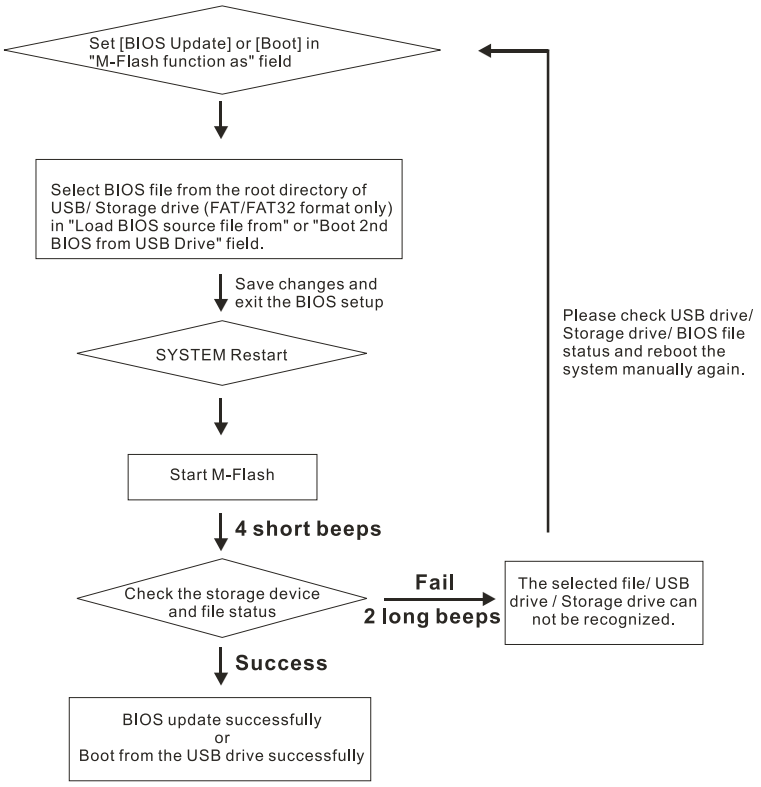
[Disabled] Disable M-Flash function.

[BIOS Update] Flash BIOS via the USB/ Storage drive directly. Update BIOS ROM chip data from selected file, which was be download from official website and must be saved in the root directory of the USB/ Storage drive. It only supports particular file name, which is the official BIOS file name from us.

[Boot] After allocated particular BIOS file, system will boot from this BIOS file which saved in the root directory of USB drive. System will skip MB ROM chip data and boot with this particular BIOS inside USB drive. Note: this option is for USB drive only.

Important

- *Please refer to the block diagram below about the M-Flash function.*



- *Due to the special design of some graphics cards will cause dark screen during M-flash operation, and you may refer the beeps from the system to confirm the current M-flash process.*

▸Load BIOS source File from

When the M-Flash function as sets to [BIOS Update], this item is selectable. Use this item to select particular BIOS file from the USB/ Storage (FAT/32 format only) drive.

▸Boot 2nd BIOS from USB Drive

When the M-Flash function as sets to [Boot]], this item is selectable. Use this item to select particular BIOS file from the USB drive.

== Backup BIOS to USB Drive ==

The following fields are used to read the onboard BIOS ROM data, and save it to USB drive/ storage drive.

▸Save File to Selected Device

Please setup a specific folder in specific USB drive/ storage drive to save BIOS file from BIOS ROM chip data. Note: it only supports FAT/ FAT32 file system drive.

▸Save File Name as

Please setup a specific name for the BIOS file, which will be saved into the USB drive/ storage drive. Note: we suggest you using the official name as the default name.

▸Save Extend File Name as

Please setup a specific extend name for the BIOS file, which will be saved into the USB drive/ storage drive. Note: we suggest you using [ROM] as default name.

▸Start to Save File

Press “Enter” and select “OK” the system will stare to save the onboard ROM chip data to the selected USB drive/ storage drive.

Load Fail-Safe/ Optimized Defaults

The two options on the main menu allow users to restore all of the BIOS settings to the default Fail-Safe or Optimized values. The Optimized Defaults are the default values set by the mainboard manufacturer specifically for optimal performance of the mainboard. The Fail-Safe Defaults are the default values set by the BIOS vendor for stable system performance.

When you select Load Fail-Safe Defaults, a message as below appears:

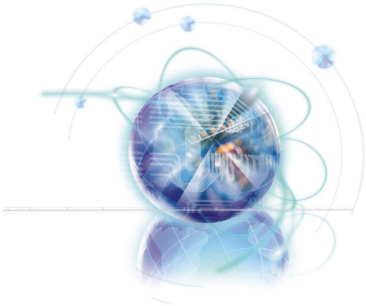


Selecting Ok and pressing Enter loads the BIOS default values for the most stable, minimal system performance.

When you select Load Optimized Defaults, a message as below appears:



Selecting Ok and pressing Enter loads the default factory settings for optimal system performance.



Appendix A

Realtek Audio

The Realtek audio provides 10-channel DAC that simultaneously supports 7.1 sound playback and 2 channels of independent stereo sound output (multiple streaming) through the Front-Out-Left and Front-Out-Right channels.

Installing the Realtek HD Audio Driver

You need to install the HD audio driver for Realtek audio codec to function properly before you can get access to 2-, 4-, 6-, 8- channel or 7.1+2 channel audio operations. Follow the procedures described below to install the drivers for different operating systems.

Installation for Windows®

For Windows® XP, you must install Windows® XP Service Pack3 or later before installing the driver.

The following illustrations are based on Windows® 7 environment and could look slightly different if you install the drivers in different operating systems.

1. Insert the application DVD into the DVD-ROM drive. The setup screen will automatically appear.
2. Click Driver tab.
3. Click Audio button.



4. Select Realtek HD Audio Drivers to start installing the drivers.
5. Click Next to install the Realtek High Definition Audio Driver.
6. Follow the on-screen instructions to install drivers.
7. Click Finish to restart the system.

Important

The HD Audio Configuration software utility is under continuous update to enhance audio applications. Hence, the program screens shown here in this section may be slightly different from the latest software utility and shall be held for reference only.

Software Configuration

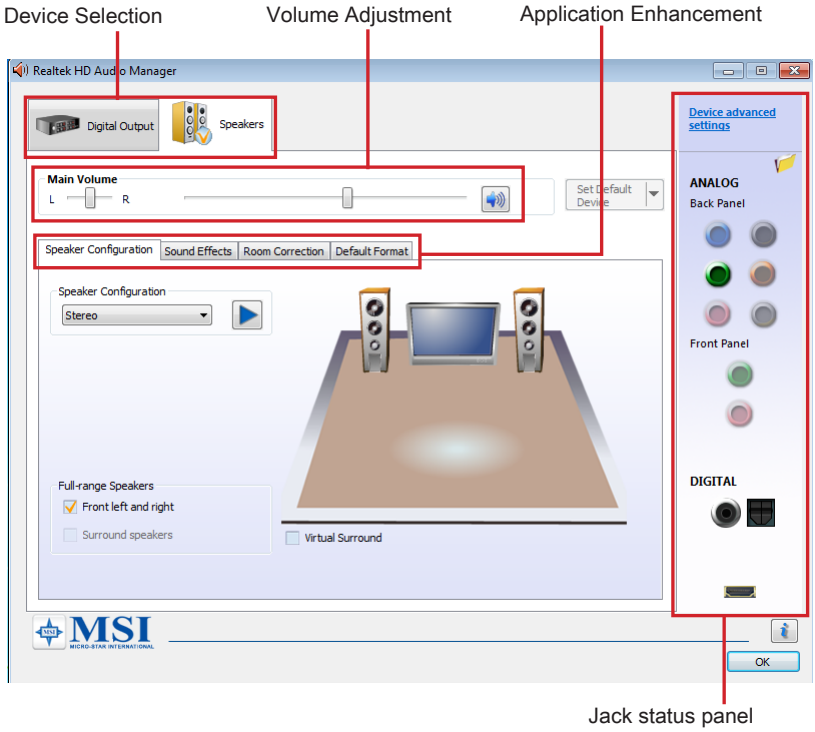
After installing the audio driver, the “Realtek HD Audio Manager” icon will appear at the notification area (lower right of the screen). You may double click the icon and the GUI will pop up accordingly.



It is also available to enable the audio driver by clicking the **Realtek HD Audio Manager** from the **Control Panel**.

Software panel overview

The following figure describes the function of the Realtek HD Audio Manager panel.



■ Device Selection

Here you can select a audio output source to change the related options. the “check” sign (in orange) indicates the devices as default.

■ Volume Adjustment

You can control the volume or balance the right/left side of the speakers that you plugged in front or rear panel by adjust the bar.

■ Application Enhancement

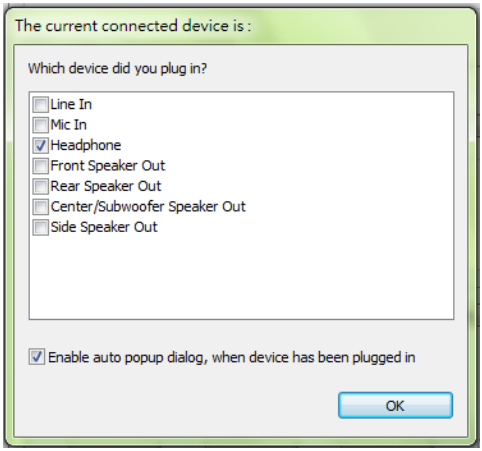
The array of options will provide you a complete guidance of anticipated sound effect for both output and input device.

■ Jack status panel

This panel depicts all render and capture devices currently connected with your computer. Additionally, more applications would be found at the option of “Device Advanced Settings”.

Auto popup dialog

When you plug into the device at the jack, a dialogue window will pop up asking you which device is current connected.

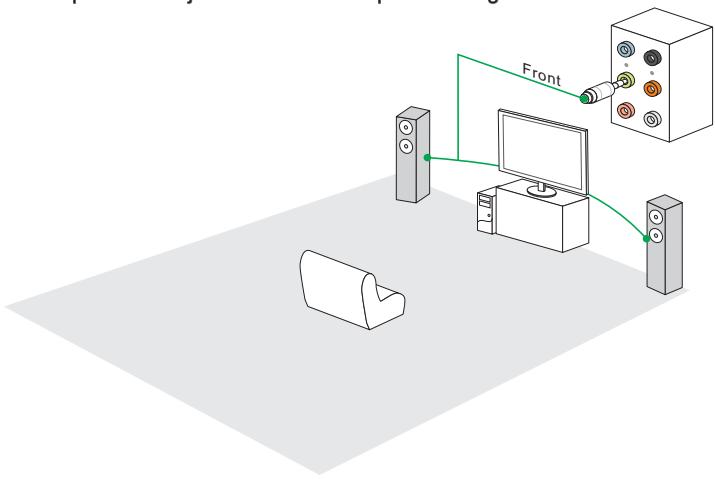


As you know, each jack corresponds to its default setting, you can refer to the next section “Hardware Default Setting”.

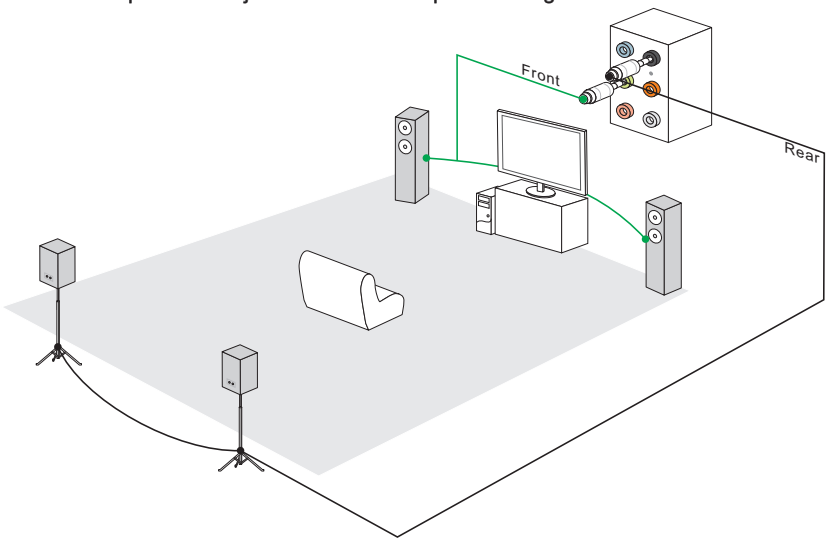
Hardware Default Setting

The following diagrams are audio back panel default setting.

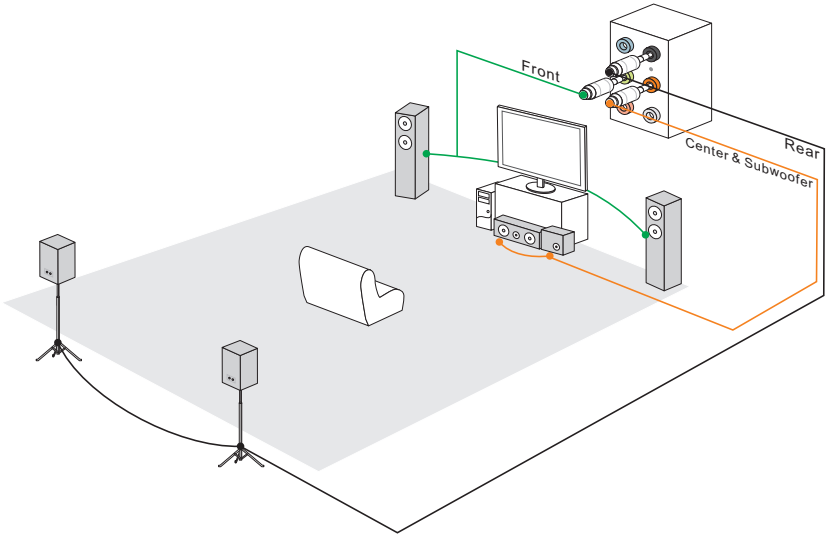
- **Backpanel audio jacks to 2-channel speakers diagram**



- **Backpanel audio jacks to 4-channel speakers diagram**



- Backpanel audio jacks to 6-channel speakers diagram



- Backpanel audio jacks to 8-channel speakers diagram

