

Wind Board

D510 / D410 series

MS-7618 (v1.x) Mini-ITX Mainboard



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Revision History

Revision	Revision History	Date
V1.0	First release for PCB 1.X	January 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° C (140°F), 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.

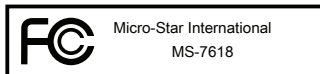
Notice 1

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 término 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 período 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 Electricische 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 odbačenju elektonskoj 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 atılmayacak ve bu elektronik 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 odebrání 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 környezetvédként 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 kezelhetők lakossági hulladékként, és az ilyen elektronikus berendezések gyártói kötelesek válnak az ilyen termékek visszavételére azok hasznos élettartama végén. Az MSI betartja a termékvisszavétellel kapcsolatos követelményeket az MSI márkanev 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 adegnerà 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 **Wind Board D510 / D410 Series (MS-7618 v1.X)** Mini-ITX mainboard. The **Wind Board D510 / D410 Series** mainboards are based on **Intel®NM10** chipset for optimal system efficiency. Designed to fit the advanced **Intel® Atom D510 / D410** processor, the **Wind Board D510 / D410 Series** deliver a high performance and professional desktop platform solution.

MAINBOARD SPECIFICATIONS

Processor Support

- Support Intel® Atom CPU D510/ D410

Base Clock External clock frequency

- 100 MHZ

Chipset

- Intel® NM10 chipset

Memory Support

- DDR2 800 SDRAM (4GB Max)
 - 2 DDR2 DIMMs (240pin / 1.8V), single channel
- *(For more information on compatible components, please visit <http://www.msi.com/index.php?func=testreport>)

LAN

- Supports Realtek® RTL8103EL 10/100 Mb/s
- Supports Realtek® RTL8111DL 10/100/1000 Mb/s (optional)
- Supports ACPI Power Management

Audio

- Chip integrated by Realtek® ALC888S
- Supports 6-channels audio out

SATA

- 2 SATA 3 Gb/s ports by Intel® NM10

Connectors

- Back panel
 - 1 PS/2 mouse port
 - 1 PS/2 keyboard port
 - 1 Serial port
 - 1 VGA port
 - 4 USB 2.0 Ports
 - 1 RJ-45 LAN jack
 - 3 flexible audio jacks
- On-Board Connectors
 - 2 USB 2.0 connectors
 - 1 Parallel port connector
 - 1 Front Panel Audio connector
 - 1 S/PDIF-Out connector
 - 1 Chassis Intrusion connector
 - 1 TPM connector

Slots

- 1 PCI slot
- Support 3.3V/ 5V PCI bus Interface

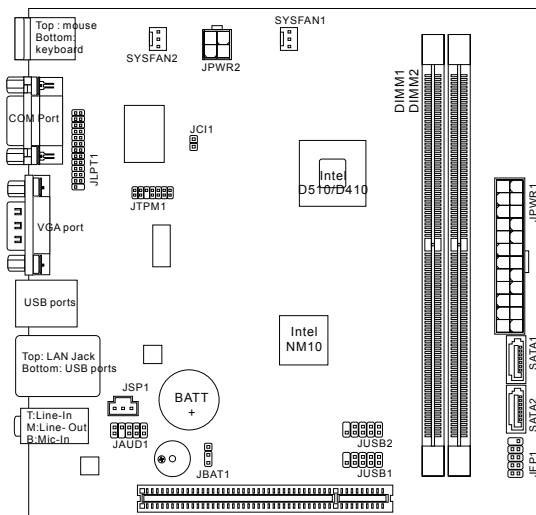
Form Factor

- Mini-ITX (17.0cm X 17.0cm)

Mounting

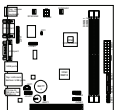
- 6 mounting holes

MAINBOARD LAYOUT



Wind Board D510 / D410 Series (MS-7618 v1.X) Mini-ITX Mainboard

PACKING CHECKLIST



MSI mainboard



MSI Driver/Utility DVD



SATA Cable



Power Cable



USB Bracket (Optional)



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 below <http://www.msi.com/index.php>

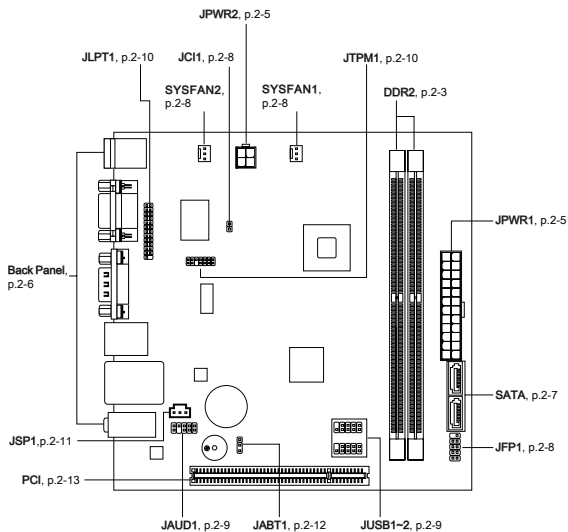
Chapter 2

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.

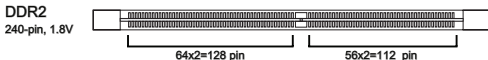
Use a grounded wrist strap before handling computer components. Static electricity may damage the components.

QUICK COMPONENTS GUIDE



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>



Memory Population Rule

Please refer to the following illustrations for memory population rules.

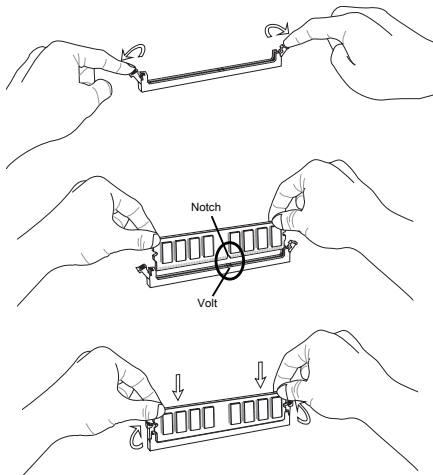


Important

- DDR2 memory modules are not interchangeable with DDR and the DDR2 standard is not backwards compatible. You should always install DDR2 memory modules in the DDR2 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 3+GB (not full 4GB) when each DIMM is installed with a 2GB 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

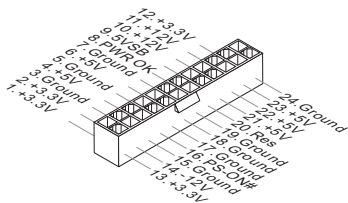
You can barely see the golden finger if the memory module is properly inserted in the DIMM slot.

POWER SUPPLY

ATX 24-pin Power Connector: JPWR1

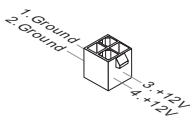
This connector allows you to connect an ATX 24-pin power supply. To connect the ATX 24-pin power supply, make sure the plug of the power supply is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.

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 4-pin Power Connector: JPWR2

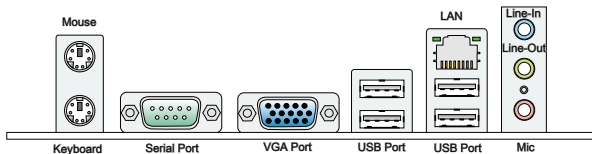
This connector is used to provide power to the CPU.



Important

- Make sure that all the connectors are connected to proper ATX power supplies to ensure stable operation of the mainboard.
- Power supply of 350 watts (and above) is highly recommended for system stability.

BACK PANEL



► 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.

► VGA Port

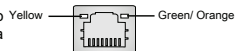
The DB15-pin female connector is provided for monitor.

► USB Port

The USB (Universal Serial Bus) port is for attaching USB devices such as keyboard, mouse, or other USB-compatible devices.

► 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

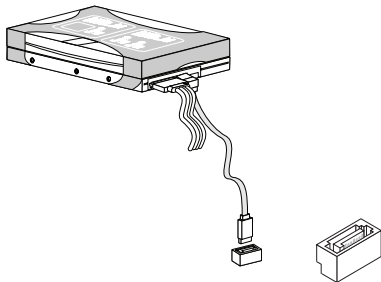
These audio connectors are used for audio devices. It is easy to differentiate between audio effects according to the color of audio jacks.

- Line-In (Blue) - Line In is used for external CD player, tapeplayer or other audio devices.
- Line-Out (Green) - Line Out is a connector for speakers or headphones.
- Mic (Pink) - Mic is a connector for microphones.

CONNECTORS

Serial ATA Connectors: SATA1~2

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

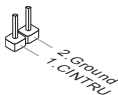


Important

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: SYSFAN1~2

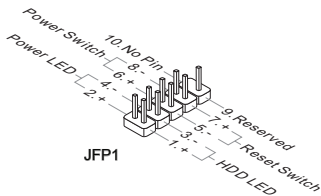
The fan power connectors support system cooling fan with +12V. When connecting the wire to the connectors, always note that the red wire is the positive and should be connected to the +12V; the black wire is Ground and should be connected to GND.

SYSFAN1/2



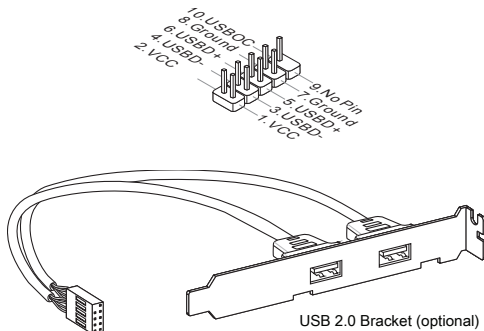
Front Panel Connector: JFP1

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.



Front USB Connector: JUSB1 / JUSB2

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.

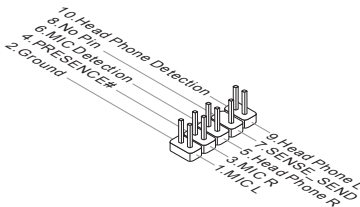


Important

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

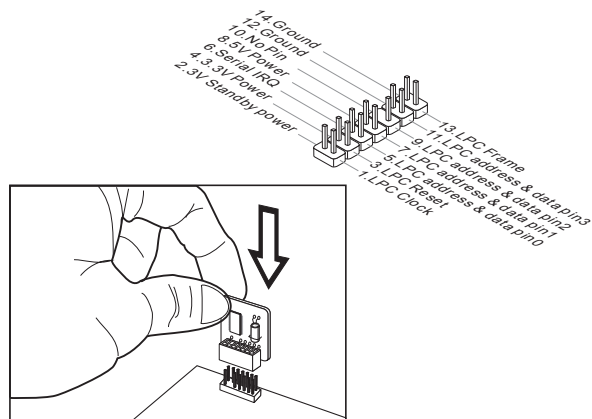
Front Panel Audio Connector: JAUD1

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



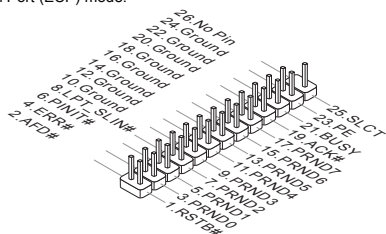
TPM Module connector: JTPM1

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



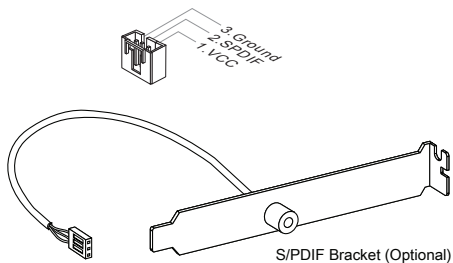
Parallel Port Header: JLPT1

This connector is used to connect an optional parallel port bracket. The parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) mode.



S/PDIF-Out Connector: JSP1

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



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.



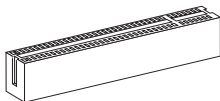
Important

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. Slots

SLOTS

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 B#	INT C#	INT D#	INT A#

msi[™]

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 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:*

A7618IMS V1.0 010510 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.

V1.0 refers to the BIOS version.

010510 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
<F4>	Enter the CPU Spec. menu, and read the CPU information
<F5>	Enter the Memory-Z menu, and read the memory information
<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>.

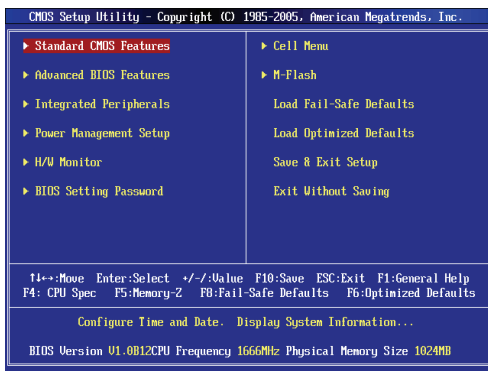


▶ SATA1
▶ SATA2

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.

▶ 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.

► M-Flash

Use this menu to read/ flash the BIOS from 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

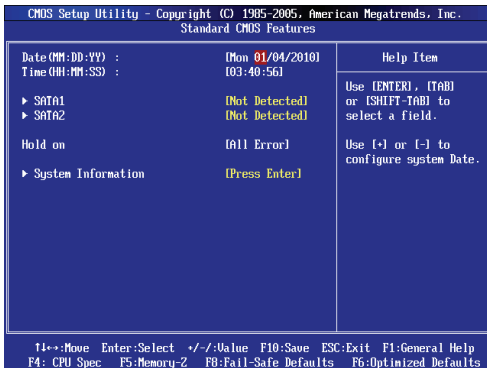
Save changes to CMOS and exit setup.

► 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>.

► SATA1~2

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

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.	
SATA1	
SATA1	Help Item
Device :Not Detected	Disabled: Disables LBA Mode.
LBA/Large Mode [auto]	Auto: Enables LBA Mode if the device supports it and the
DMA Mode [auto]	
Hard Disk S.M.A.R.T. [auto]	

► Device / Vendor / Size

It will show the device information that you connected to the 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

SATA1~2 are appearing when you connect the HD devices to the SATA connectors on the mainboard.

► 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 Error] The system stops when any error is detected.
- [No Error] The system doesn't stop for any detected error.

► System Information

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

ADVANCED BIOS FEATURES

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.		Help Item
Advanced BIOS Features		
▶ Boot Sequence	[Press Enter]	
BIOS Flash Protection	[Disabled]	Configure Boot Options
Full Screen Logo Display	[Enabled]	
Quick Booting	[Enabled]	
Boot Up Num-Lock LED	[On]	
IOAPIC Function	[Enabled]	
MPS Table Version	[1.4]	
Primary Graphic's Adapter	[Internal]	
PCI Latency Timer	[64]	
HPET	[Enabled]	
UGA Share Memory	[8M]	
DUMT Mode Select	[DUMT Model]	
DUMT/Fixed Memory	[256M]	
TCG/TPM Support	[No]	

↑↓←→:Move Enter:Select +/-:Value F10:Save ESC:Exit F1:General Help
 F4: CPU Spec F5:Memory-Z F8:Fail-Safe Defaults F6:Optimized Defaults

▶ Boot Sequence

Press <Enter> to enter the sub-menu.

▶ 1st/ 2nd Boot Device

These items allow you to set the first/ second/ third 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.

▶ 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 will 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.

▶ 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.

▶ HPET

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

▶ VGA Share Memory

The system shares memory to the onboard VGA card. This setting controls the exact memory size shared to the VGA card.

▶ DVMT Mode Select

This item allows you to set the mode for the graphics core..

[Fixed] a fixed-size fragment of the system memory is allocated to the graphics core. It can only be used by the graphics core.

[DVMT] the driver of the graphics core uses the system memory like any other OS component or application does.

▶ DVMT/Fixed Memory

Specify the size of DVMT/FIXED memory to allocate for video memory.

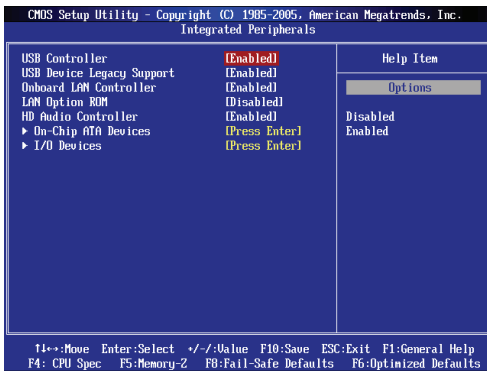
▶ Clearing the TPM

Press Enter to clear the TPM status.

▶ TCG/TPM Support

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

▶ 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 on-chip SATA controller.

► **RAID Mode**

This item is used to select mode for on-chip SATA connectors.

► **I/O Devices**

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

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.		
I/O Devices		
COM Port 1	[3F8/IRQ4]	Help Item
Parallel Port	[378]	Allows BIOS to Select Serial Port1 Base Addresses.
Parallel Port Mode	[ECP & EPP]	
EPP Version	[1.9]	
ECP DMA	[DMA3]	

► **COM Port 1**

This item specifies the base I/O port addresses of the onboard Serial Port 1 (COM 1). Selecting [Auto] allows AMIBIOS to automatically determine the correct base I/O port address.

► **Parallel Port**

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

[Disabled]

[3BC/IRQ7] Line Printer port0

[278/IRQ5] Line Printer port2

[378/IRQ7] Line Printer port1

► **Parallel Port Mode**

[SPP] Standard Parallel Port

[EPP] Enhanced Parallel Port

[ECP] Extended Capability Port

[ECP + EPP] Extended Capability Port + Enhanced Parallel Port

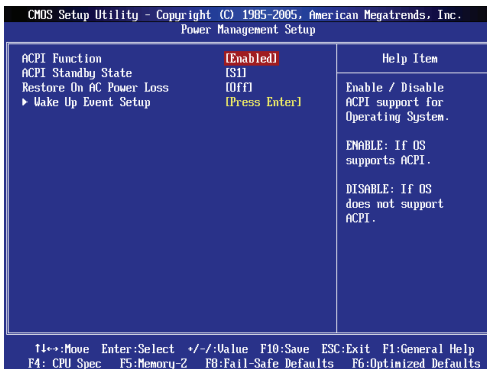
[Bi-Directional]

To operate the onboard parallel port as Standard Parallel Port only, choose [SPP]. To operate the onboard parallel port in the EPP mode simultaneously, choose [EPP]. By choosing [ECP], the onboard parallel port will operate in ECP mode only. Choosing [ECP + EPP] will allow the onboard parallel port to support both the ECP and EPP modes simultaneously.

► **EPP Version/ ECP DMA**

These items are used to select the EPP version/ ECP DMA mode for the parallel port.

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, such as Windows 98SE/2000/ ME/ XP, select [Enabled].

▶ ACPI Standby State

This item specifies the power saving modes for ACPI function. If your operating system supports ACPI, such as Windows 2000/ XP, you can choose to enter the Standby mode in S1(POS) or S3(STR) fashion through the setting of this field. Settings are:

- [S1] The S1 sleep mode is a low power state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system's context.
- [S3] The S3 sleep mode is a lower power state where the information of system configuration and open applications/files is saved to main memory that remains powered while most other hardware components turn off to save energy. The information stored in memory will be used to restore the system when a "wake up" event occurs.

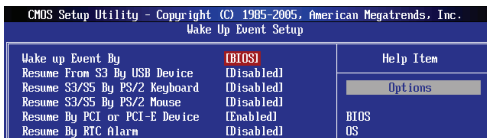
► Restore On AC Power Loss

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/S5 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 PCI or PCIE 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

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.			
H/W Monitor			
Chassis Intrusion	[Disabled]	Help Item	
----- PC Health Status -----			
CPU Temperature	102°C/215°F	Chassis Intrusion function	
System Temperature	45°C/113°F		
SYS FAN 1 Speed	0 RPM		
SYS FAN 2 Speed	0 RPM		
CPU Vcore	1.008 V		
3.3V	3.312 V		
5V	5.045 V		
12V	12.584 V		
↑↓←→:Move Enter:Select +/-:Value F10:Save ESC:Exit F1:General Help F4: CPU Spec F5:Memory-Z F8:Fail-Safe Defaults F6:Optimized Defaults			

► 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.

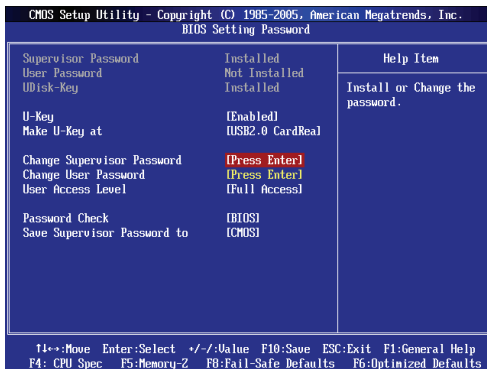
----- PC Health Status -----

► CPU/ System Temperature, SYS FAN 1/ 2 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.

BIOS SETTING PASSWORD

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



► U-Key

This item is used to enable/ disable USB driver device as a key.

► Make U-Key at

This item is used to specify the USB driver device as a key.

► Change Supervisor Password

This item is used to set the supervisor password.

► Change User Password

This item is used to set the user password.

Important

Type the password, up to eight characters in length, and press <Enter>. The password typed now will replace any previously set password. 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/ System. This prevents an unauthorized person from changing any part of your system configuration.

About Supervisor Password & User Password:

Supervisor password: Can enter and change the settings of the setup menu.

User password: Can only enter but do not have the right to change the settings of the setup menu.

► User Access Level

This item is used to limit the user access level.

► Password Check

This specifies the type of BIOS password protection that is implemented. Settings are described below:

Option	Description
[BIOS]	The password prompt appears only when end users try to run Setup.
[System]	A password prompt appears every time when the computer is powered on or when end users try to run Setup.

► Save Supervisor Password to

This item is used to assign a place to save the supervisor password.

CELL MENU

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.		Help Item
Cell Menu		CPU Information
Current CPU Frequency	1.67GHz (167x10)	
Current DRAM Frequency	800MHz	
▶ CPU Specifications	[Press Enter]	
▶ CPU Feature	[Press Enter]	
▶ MEMORY-Z	[Press Enter]	
▶ Advance DRAM Configuration	[Press Enter]	
Auto Disable DRAM/PCI Frequency	[Enabled]	
CPU VTT (U)	[auto]	
DRAM Voltage (U)	[auto]	
CPU NB (U)	[auto]	
SB 1.50 (U)	[auto]	
Spread Spectrum	[Enabled]	
↑←→:Move Enter:Select +/-:Value F10:Save ESC:Exit F1:General Help F4: CPU Spec F5:Memory-Z F8:Fail-Safe Defaults F6:Optimized Defaults		

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.

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.		Help Item
CPU Specifications		
Genuine Intel(R) CPU	@ 1.66GHz	
CPUID/MicroCode	106CA/503	
CPU Frequency	1666MHz	
CPU Ratio	10	
CPU Stepping	N/A	
Cache L1	48KB	
Cache L2	1024KB	
Core VID	1.1500V	
Current Core VID	1.000 V	
Core Number	2	
▶ CPU Technology Support	[Press Enter]	

► CPU Technology Support

Press <Enter> to enter the sub-menu. In this sub-menu, it shows the installed CPU technologies. Read only.

► CPU Feature

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

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.		
CPU Feature		
Hyper-Threading Function	[Enabled]	Help Item
Execute Bit Support	[Enabled]	
Set Limit CPUID MaxVal to 3	[Disabled]	Enabled for Windows XP and Windows Vista

► Hyper-Threading Function

The processor uses Hyper-Threading technology to increase transaction rates and reduces end-user response times. The technology treats the two cores inside the processor as two logical processors that can execute instructions simultaneously. In this way, the system performance is highly improved. If you disable the function, the processor will use only one core to execute the instructions. Please disable this item if your operating system doesn't support HT Function, or unreliability and instability may occur.

Important

Enabling the functionality of Hyper-Threading Technology for your computer system requires ALL of the following platform Components:

- CPU: An Intel® Processor with HT Technology;
- Chipset: An Intel® Chipset that supports HT Technology;
- BIOS: A BIOS that supports HT Technology and has it enabled;
- OS: An operating system that supports HT Technology.

For more information on Hyper-threading Technology, go to:

http://www.intel.com/products/ht/hyperthreading_more.htm

► 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.

► Memory-Z

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

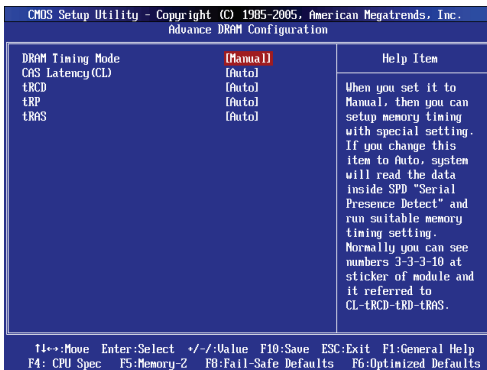


► DIMM1~2 Memory SPD Information

Press <Enter> to enter the sub-menu. The sub-menu displays the informations of installed memory.

► Advance DRAM Configuration

When the DRAM Timing Mode is set to [Manual], this sub-menu will available. Press <Enter> to enter the sub-menu.



► DRAM Timing Mode

Select whether DRAM timing is controlled by the SPD (Serial Presence Detect) EEPROM on the DRAM module. Setting to [Auto] enables DRAM timings and the following "Advance DRAM Configuration" sub-menu to be determined by BIOS based on the configurations on the SPD. Selecting [Manual] allows users to configure the DRAM timings and the following related "Advance DRAM Configuration" sub-menu 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.

▶ Auto Disable DRAM/PCI Frequency

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

▶ CPU VTT (V)/ DRAM Voltage (V)/ CPU NB (V)/ SB 1.50 (V)

These items are used to adjust the voltage of CPU, DRAM, CPU NB and SB.

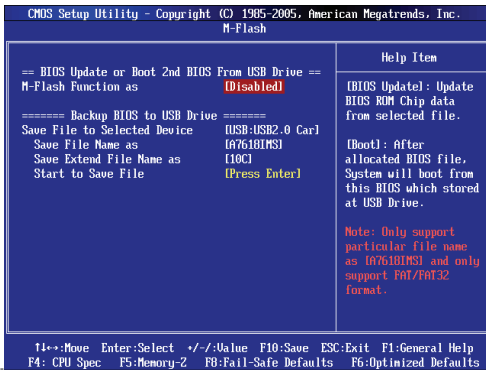
▶ Spread Spectrum

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==

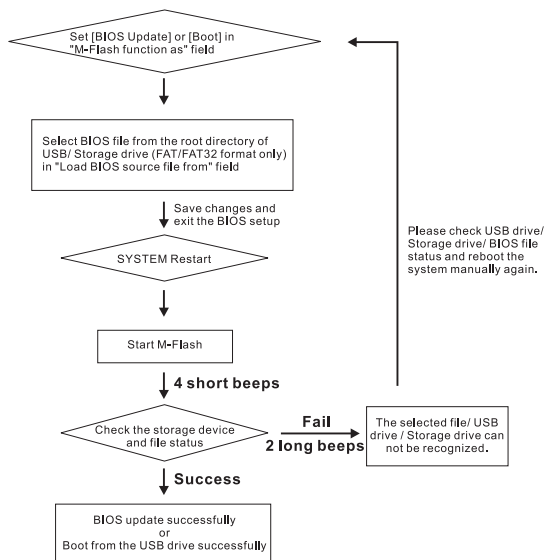
► M-Flash function as

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.

== 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 start to save the onboard ROM chip data to the selected USB drive/ storage drive.

LOAD FAIL-SAFE/ OPTIMIZED DEFAULTS

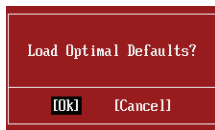
The two options on the main menu allow users to restore all of the BIOS settings to the default Fail-Safe or Optimized values. The Optimized Defaults are the default values set by the mainboard manufacturer specifically for optimal performance of the mainboard. The Fail-Safe Defaults are the default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