MSI
MICRO-STAR INTERNATIONAL

Media Live DIVA

MS-7411 (V1.X) Mainboard

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Revision History

Revision	Revision History	Date
V1.1	First Release	November 2008

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

Safety Instructions

1. Always read the safety instructions carefully.

2. Keep this User's Manual for future reference.

3. Keep this equipment away from humidity.

4. Lay this equipment on a reliable flat surface before setting it up.

5. The openings on the enclosure are for air convection hence protects the equipment from overheating. DO NOT COVER THE OPENINGS.

6. Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.

7. Place the power cord such a way that people can not step on it. Do not place anything over the power cord.

8. Always Unplug the Power Cord before inserting any add-on card or module.

9. All cautions and warnings on the equipment should be noted.

10. Never pour any liquid into the opening that could damage or cause electrical shock.

11. 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.

12. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, STORAGE TEMPERATURE ABOVE 60^0C (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：
此為甲類資訊技術設備，於居住環境中使用時，可能會造成射頻
擾動，在此情況下，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 or special disposal.

iii

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.

Micro-Star International
MS-7411

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.

iv

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/ЕС), 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.

V

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.

CONTENTS

Chapter 1

Getting Started

Thank you for choosing the Media Live DIVA (MS-7411 V1.X) Micro-ATX mainboard. The Media Live DIVA is based on AMD® RS780M & SB700 chipsets for optimal system efficiency. Designed to fit the advanced AMD® Phenom™, Athlon™ 64/ 64 FX/ 64 X2 and Sempron™ processors in the socket AM2/ AM2+ package, the Media Live DIVA delivers a high performance and professional desktop platform solution.

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Mainboard Specifications

Processor
- Supports AMD® Phenom™, Athlon™ 64/ 64 FX/ 64 X2 and Sempron™
  processors in the socket AM2/ AM2+ package (TDP Max 95 W)
(For the latest information about CPU, please visit
http://global.msi.com.tw/index.php?func=cpuform)

FSB
- Hyper Transport supports speed up to 1.0 GHz (HT1)
- Hyper Transport supports speed up to 2.6 GHz (HT3)

Chipset
- North Bridge: AMD® RS780M chipset
- South Bridge: AMD® SB700 chipset

Memory
- DDR2 400/ 533/ 667/ 800 SDRAM (240-Pin/ 1.8 V)
- 4 DDR2 DIMM slots (8GB Max) (Non-ECC)
(For more information on compatible components, please visit
http://global.msi.com.tw/index.php?func=testreport)

LAN
- Supports Gigabit Ethernet Controller for PCI Express™ Applications
  by Realtek® RTL8111C

IEEE 1394
- Chip integrated by JMicron® JMB381
- Transfer rate is up to 400 Mb/s

Audio
- Chip integrated by Realtek® ALC888
- Compliant with Azalia 1.0 spec

IDE
- 1 IDE port by AMD® SB700
- Supports two IDE devices
- Supports Ultra DMA 33/ 66/ 100/ 133 mode
- Supports PIO, Bus Master operation mode

SATA
- 4 SATAII ports by AMD® SB700
- Supports 4 SATA devices
- Supports storage and data transfers up to 3 Gb/s

RAID
- SATA1~4 support RAID 0/ 1/ 10 mode by AMD® SB700

Connector

● **Back Panel**
  - 1 VGA port
  - 4 USB ports
  - 1 HDMI port
  - 1 IEEE 1394 port
  - 1 LAN jack
  - 5 audio RCA-in/ out jacks
  - 3 component video-out jacks
  - 2 coaxial S/PDIF-in/ out jacks

● **On-Board Pinheader/ Connector**
  - 1 CD-in connector
  - 1 serial port connector
  - 4 USB pinheaders
  - 1 IEEE 1394 pinheader
  - 1 front panel audio pinheader
  - 1 CIR connector

Slot
  - 1 PCI express x16 slot (For VGA card use only)
  - 1 PCI express x4 slot (For amplifier card use only)
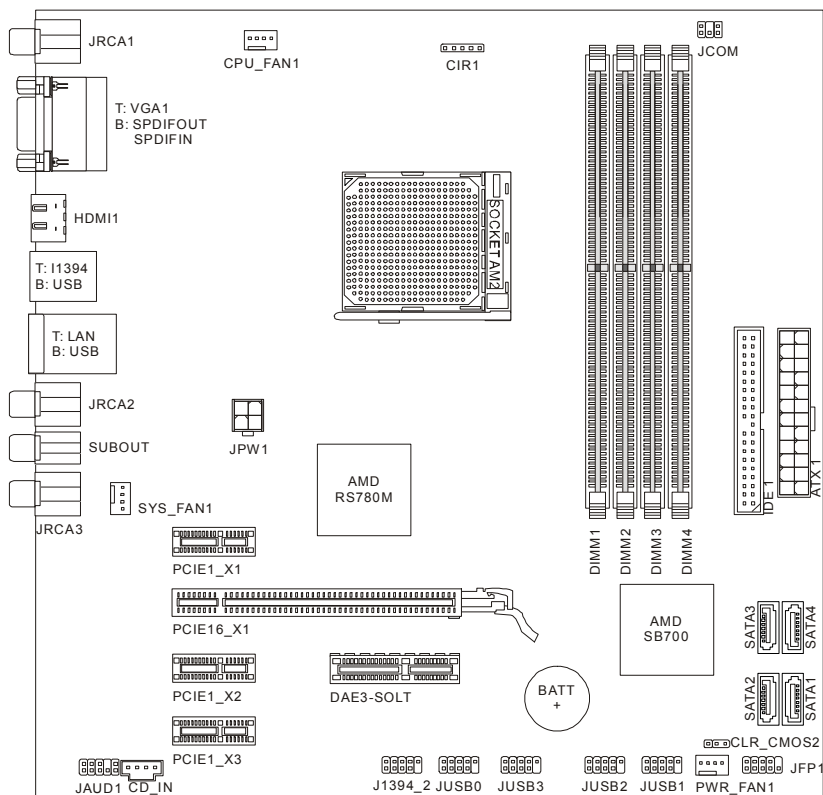 - 3 PCI express x1 slots

Form Factor
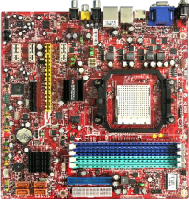 - Micro-ATX (24.4 cm X 24.4 cm)

Mounting
  - 8 mounting holes

Mainboard Layout

Media Live DIVA (MS-7411 V1.X)
Micro-ATX Mainboard

Packing Checklist

MSI Mainboard

MSI Driver/ Utility CD

User's Guide

Back I/O Shield

Power Cable

SATA Cable

Standard Cable for IDE Devices

Amplifier Card

Speaker Connector

* The pictures are for reference only and your packing contents may vary depending on the model you purchased.
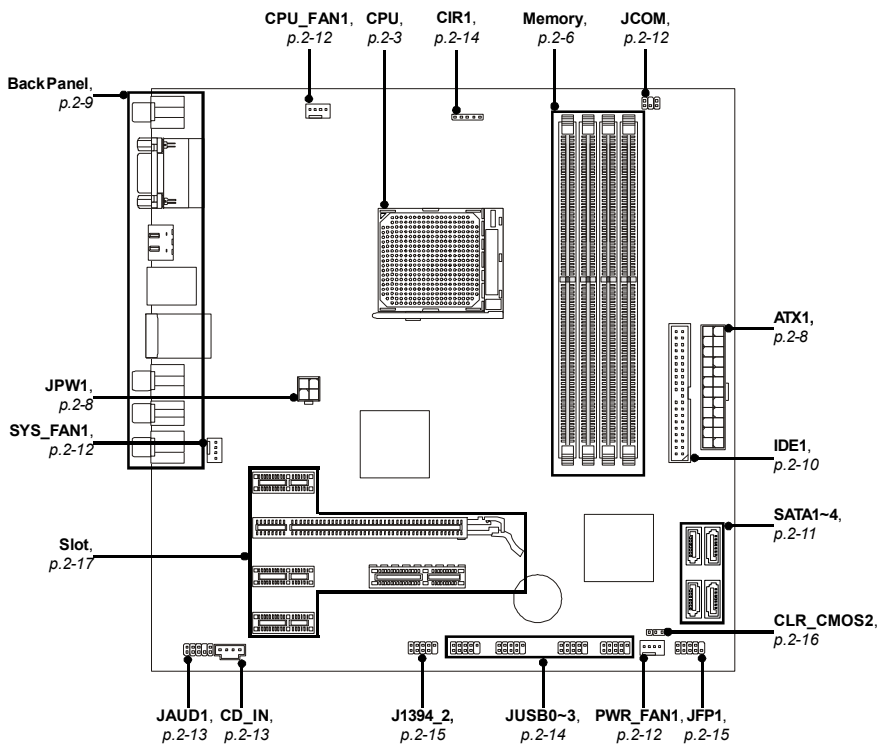
Chapter 2

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.

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Quick Components Guide

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CPU (Central Processing Unit)

The mainboard supports AMD® Phenom™, Athlon™ 64/ 64 FX/ 64 X2 and Sempron™ processors in the socket AM2/ AM2+ package. The socket AM2/ AM2+ offers easy CPU installation. When you are installing the CPU, make sure the CPU has a heat sink and a cooling fan attached on the top to prevent overheating. If you do not have the heat sink and cooling fan, contact your dealer to purchase and install them before turning on the computer.

For the latest information about CPU, please visit *http://global.msi.com.tw/index. php?func=cpuform*

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 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.
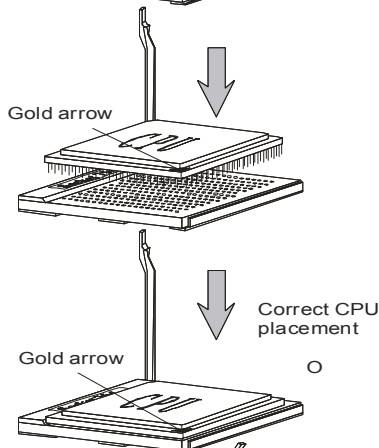
CPU Installation Procedures for Socket AM2/ AM2+

1. Please turn off the power and unplug the power cord before installing the CPU.

2. Pull the lever sideways away from the socket. Make sure that you raise the lever up to a 90-degree angle.
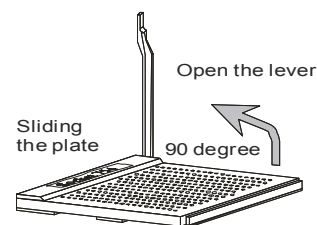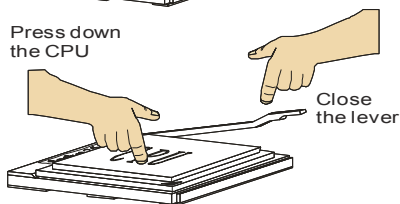
3. Look for the gold arrow on the CPU. The gold arrow should point as shown in the picture. The CPU can only fit in the correct orientation. Lower the CPU down onto the socket.

4. If the CPU is correctly installed, the pins should be completely embedded into the socket and can not be seen. Please note that any violation of the correct installation procedures may cause permanent damage to your mainboard.
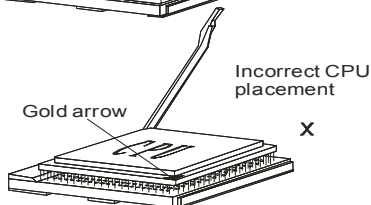
5. Press the CPU down firmly into the socket and close the lever. As the CPU is likely to move while the lever is being closed, always close the lever with your fingers pressing tightly on top of the CPU to make sure the CPU is properly and completely embedded into the socket.

Open the lever

Sliding the plate   90 degree

Gold arrow

Correct CPU placement

Gold arrow   O

Incorrect CPU placement

Gold arrow   X

Press down the CPU

Close the lever

Installing CPU Cooler Set

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

Important

1. Read the CPU status in BIOS (Chapter 3).

2. 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.
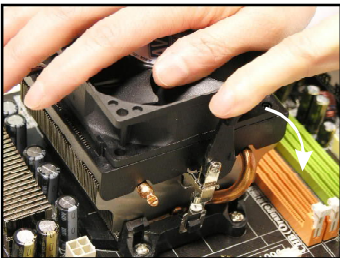
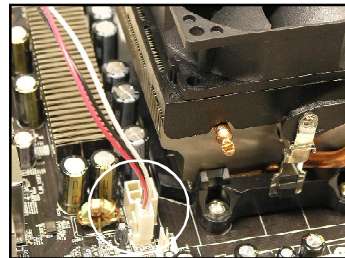1. Position the cooling set onto the retention mechanism. Hook one end of the clip to hook first.
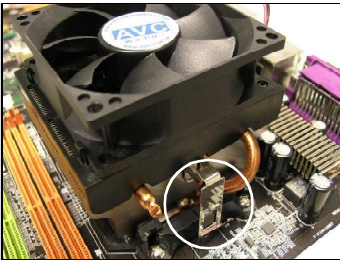
2. Then press down the other end of the clip to fasten the cooling set on the top of the retention mechanism. Locate the Fix Lever and lift up it.

Fixed Lever
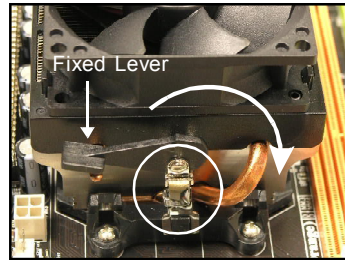
3. Fasten down the lever.

4. Attach the CPU Fan cable to the CPU fan connector on the mainboard.

Memory

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

DDR2
240-pin, 1.8V

56x2=112 pin   64x2=128 pin
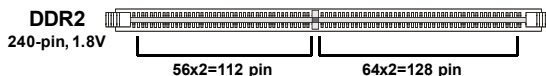
Dual-Channel Memory Population Rules

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. Please refer to the following illustrations for population rules under Dual-Channel mode.

❶

DIMM1
DIMM2
DIMM3
DIMM4

❷

DIMM1
DIMM2
DIMM3
DIMM4

❸

DIMM1
DIMM2
DIMM3
DIMM4
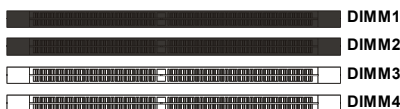
Installed
Empty

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.
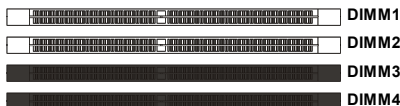
Important

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

3. Manually check if the memory module has been locked in place by the DIMM slot clips at the sides.

Volt   **Notch**
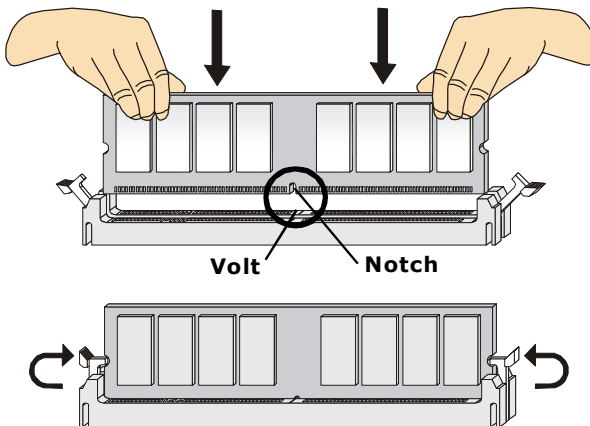
Important

1. In Dual-Channel mode, make sure that you install memory modules of the same type and density in different channel DIMM slots.

2. To enable successful system boot-up, always insert the memory modules into the DIMM1 first.

3. Due to the chipset resource deployment, the system density will only be detected up to 7+GB (not full 8GB) when each DIMM is installed with a 2GB memory module.

Power Supply

ATX 24-Pin Power Connector: ATX1

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 sup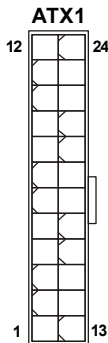ply firmly into the connector. You may use the 20-pin ATX power supply as you like. If you'd like to use the 20-pin ATX power supply, please plug your power supply along with pin 1 & pin 13 (refer to the image at the right hand). There is also a foolproof design on pin 11, 12, 23 & 24 to avoid wrong installation.

pin 13

pin 12

ATX1

12   24

1   13

Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS-ON#
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	PWROK	20	Res
9	5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	GND

ATX 12V Power Connector: JPW1

This power connector is usaed to provide power to the CPU.

JPW1

2   1

4   3

Pin Definition

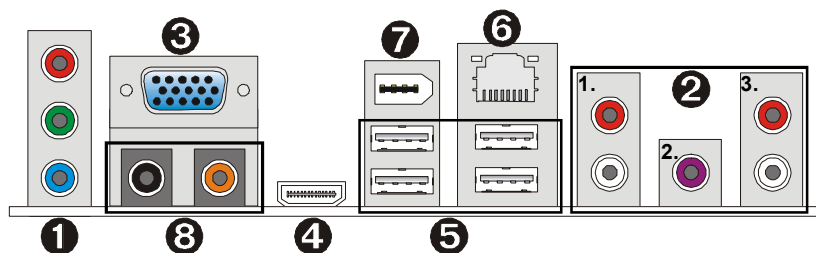| PIN	SIGNAL
1	GND
2	GND
3	12V
4	12V

Important

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

Back Panel

❶	(RCA jacks)	Component Video-Out (RGB)	3 RCA jacks. (interlaced or progressive scan) (supports 720p, 1080i HDTV) Red colour: Pr Green colour: Y Blue colour: Pb (not all modes support DVD playback due to content protection)

❷	(RCA jacks)	Audio RCA-In/ Out	1. Front channels
			  Red colour: Line-out (R)
			  White colour: Line-out (L)
			2. Subwoofer channel
			  Purple colour: Subwoofer-out

			3. Red colour: Line-in (R) White colour: Line-in (L)
❸	(VGA)	VGA-Out	15-pin D-sub
❹	(HDMI)	Digital Video / Audio-Out	HDMI (High Definition Multimedia Interface Support) (supports 720p, 1080i, 1080p HDTV)
❺	(USB)	USB 2.0	Four 4-pin USB 2.0 ports (High Speed)
❻	(LAN)	LAN (RJ45)	Ethernet 10/ 100/ 100/ 1000
❼	(IEEE 1394)	IEEE 1394	6-pin DV input/ output for Digital Video or other device
❽	(Coaxial)	Digital Audio-Out	Black colour: Coaxial S/PDIF Output Orange colour: Coaxial S/PDIF Input

Connector

IDE Connector: IDE1

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

IDE1
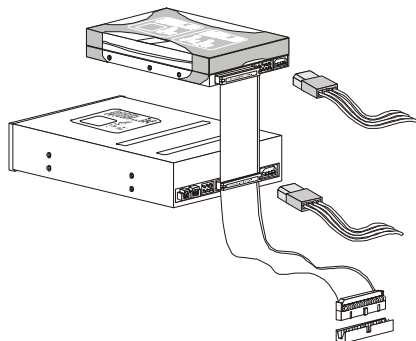
Important

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, SATA2, SATA3, SATA4

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

SATA3 SATA4
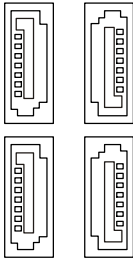
SATA2 SATA1
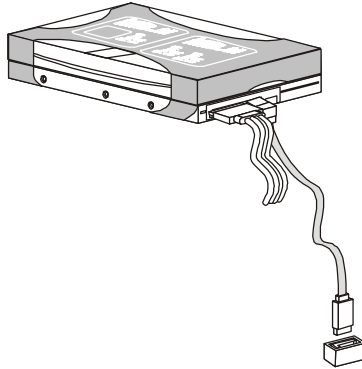
Important

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

Serial Port Connector: JCOM

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

```
5 □ □ 1
6 □ □ 2
  JCOM
```

Pin Definition

PIN	SIGNAL
1	SOUTA
2	GROUND
3	Key (no pin)
4	GROUND
5	SINA
6	VCC5

Fan Power Connector: CPU_FAN1, SYS_FAN1, PWR_FAN1

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 onboard, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.

```
  CONTROL
  SENSOR
  +12V
  GND
  □ □ □ □          □  GND
                   □  +12V
  CPU_FAN1         □  SENSOR
  PWR_FAN1         □  Control

                   SYS_FAN1
```
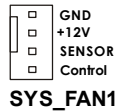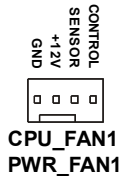
Important

1. *Please refer to the recommended CPU fans at processor's official website or consult the vendors for proper CPU cooling fan.*
2. *CPU_FAN1 supports fan control. You can activate the Smart Fan function in the BIOS Setup Utility to automatically control the CPU fan speed according to the actual CPU temperature.*
3. *Fan/ heatsink with 3 or 4 pins are both available for CPU_FAN1.*

CD-In Connector: CD_IN

This connector is provided for exaternal audio input.

GND

L   R

CD_IN
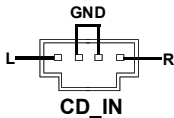
Front Panel Audio Connector: JAUD1

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

2   10
1   9

JAUD1

Pin Definition

PIN	SIGNAL	DESCRIPTION
1	MIC_L	Microphone - Left channel
2	GND	Ground
3	MIC_R	Microphone - Right channel
4	PRESENCE#	Active low signal-signals BIOS that a High Definition Audio dongle is connected to the analog header. PRESENCE# = 0 when a High Definition Audio dongle is connected
5	LINE out_R	Analog Port - Right channel
6	MIC_JD	Jack detection return from front panel microphone JACK1
7	Front_JD	Jack detection sense line from the High Definition Audio CODEC jack detection resistor network
8	N C	No control
9	LINE out_L	Analog Port - Left channel
10	LINEout_JD	Jack detection return from front panel JACK2

Front USB Connector: JUSB0, JUSB1, JUSB2, JUSB3

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.
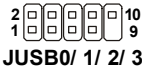
Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	VCC	2	VCC
3	USB0-	4	USB1-
5	USB0+	6	USB1+
7	GND	8	GND
9	Key (no pin)	10	

JUSB0/ 1/ 2/ 3

USB 2.0 Bracket
(Optional)
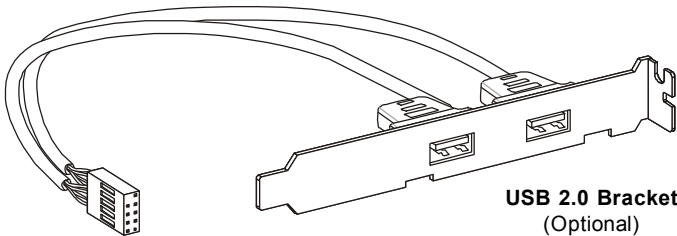
Important

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

CIR Connector: CIR1

This connector allows you to connect to consumer infrared devices.

Pin Definition

Pin	Signal
1	CIRTX
2	GND
3	CIRRX
4	NC
5	VCC5

CIR1

Front Panel Connector: JFP1

This connector is provided for electrical connection to the front panel switches/LEDs and is compliant with Intel® Front Panel I/O Connectivity Design Guide.
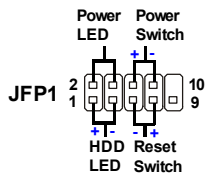
Pin Definition

PIN	SIGNAL	DESCRIPTION
1	HD_LED +	Hard disk LED pull-up
2	FP PWR/SLP	MSG LED pull-up
3	HD_LED -	Hard disk active LED
4	FP PWR/SLP	MSG LED pull-up
5	RST_SW -	Reset Switch low reference pull-down to GND
6	PWR_SW+	Power Switch high reference pull-up
7	RST_SW +	Reset Switch high reference pull-up
8	PWR_SW-	Power Switch low reference pull-down to GND
9	RSVD_DNU	Reserved. Do not use.

IEEE1394 Connector: J1394_2

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

Pin Definition

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

IEEE1394 Bracket
(Optional)
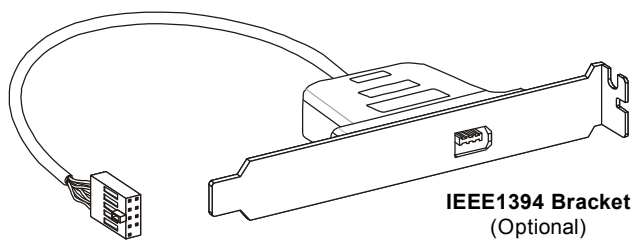
Jumper

Clear CMOS Jumper: CLR_CMOS2

There is a CMOS RAM onboard that has a power supply from an external battery to keep the dasta 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.

CLR_CMOS2   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.

Slot

PCI (Peripheral Component Interconnect) Express Slot

The PCI Express slot supports the PCI Express interface expansion card.
The PCI Express x16 slot supports up to 4.0 GB/s transfer rate.
The PCI Express x4 slot supports up to 1.0 GB/s transfer rate.
The PCI Express x1 slot supports up to 250 MB/s transfer rate.
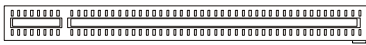
**PCI Express x16 Slot
(For x8 VGA card use only)**
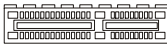
**PCI Express x4 Slot
(For D2AUDIO DAE-3 amplifier card use only)**
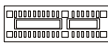
PCI Express x1 Slot
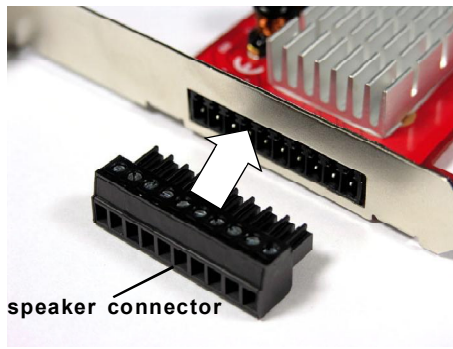
speaker connector

* We suggest that you should connect the speaker connector to the amplifier card first for easy and quick installation.

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.

Chapter 3

BIOS Setup

This chapter provides you with the information about 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.

MSI
MICRO-STAR INTERNATIONAL

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

1. 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.

2. Upon boot-up, the 1st line appearing after the memory count is the BIOS version. It is usually in the format:

A7411AMS V1.0 071508 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, A = AMD, N = NVIDIA and V = VIA.
7th - 8th digit refers to the customer as MS = all standard customers.
V1.0 refers to the BIOS version.
071508 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
<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 Menu Bar

```
                        BIOS SETUP UTILITY
Main    Advanced    Boot    Security    Chipset    Power    Exit

System Overview                                  Use [ENTER], [TAB]
                                                 or [SHIFT-TAB] to
BIOS Information                                  select a field.
Version  :A7411KMS V1.11
Build Date:07/15/08                              Use [+] or [-] to
                                                 configure system Time.
Processor
AMD Athlon(tm) 64 X2 Dual Core Processor 4400+
Speed    :2300MHz
Count    :2

System Memory                                    ←    Select Screen
Size     :3840MB                                 ↑↓   Select Item
                                                 +-   Change Field
System Time             [20:36:27]               Tab  Select Field
System Date             [Mon 07/14/2008]         F1   General Help
                                                 F10  Save and Exit
                                                 ESC  Exit

         v02.61 (C)Copyright 1985-2006, American Megatrends, Inc.
```

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

▶ **Advanced**
Use this menu to set up the items of special enhanced features available on your system.

▶ **Boot**
Use this menu to specify the priority of boot devices.

▶ **Security**
Use this menu to set Supervisor and User Passwords.

▶ **Chipset**
Use this menu to change the values in the chipset registers and optimize your system's performance.

▶ **Power**
Use this menu to specify your settings for power management.

▶**Exit**
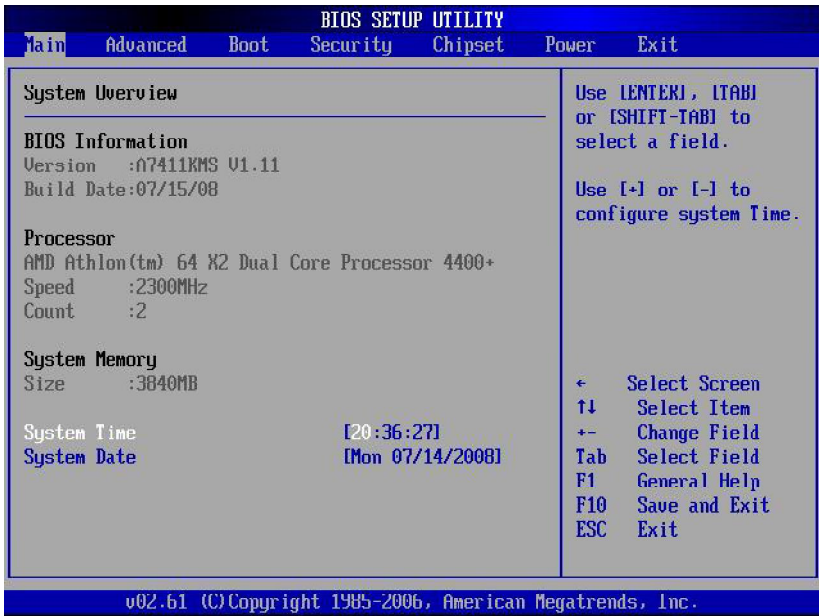This menu allows you to load the BIOS default values or factory default settings into the BIOS and exit the BIOS setup utility with or without changes.

Main

```
                          BIOS SETUP UTILITY
Main    Advanced    Boot    Security    Chipset    Power    Exit

System Overview                                  Use [ENTER], [TAB]
                                                 or [SHIFT-TAB] to
BIOS Information                                 select a field.
Version   :A7411KMS V1.11
Build Date:07/15/08                              Use [+] or [-] to
                                                 configure system Time.
Processor
AMD Athlon(tm) 64 X2 Dual Core Processor 4400+
Speed     :2300MHz
Count     :2

System Memory
Size      :3840MB                                ←     Select Screen
                                                 ↑↓    Select Item
System Time              [20:36:27]              +-    Change Field
System Date              [Mon 07/14/2008]        Tab   Select Field
                                                 F1    General Help
                                                 F10   Save and Exit
                                                 ESC   Exit

        v02.61 (C)Copyright 1985-2006, American Megatrends, Inc.
```

▶ **BIOS Information**
This item shows the information of AMI® BIOS. (Read-only)

▶ **Processor**
This item shows the information of Processor. (Read-only)

▶ **System Memory**
This item shows the information of System Memory. (Read-only)
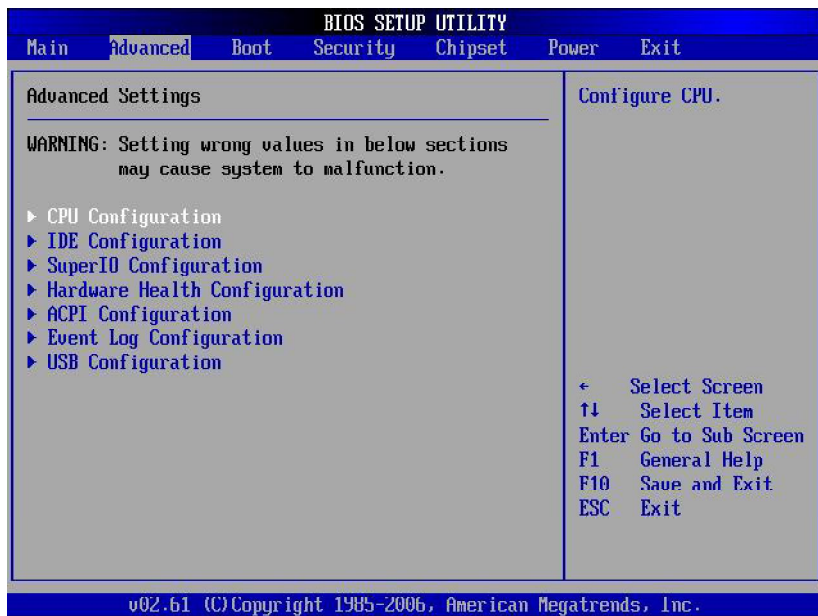
▶ **System Time**
This allows you to set the system time that you want (usually the current time). The time format is <hour> <minute> <second>.

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

[Day]	Day of the week, from Sun to Sat, determined by BIOS.
[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.

Advanced

```
                        BIOS SETUP UTILITY
 Main    Advanced    Boot    Security    Chipset    Power    Exit

 Advanced Settings                                   Configure CPU.

 WARNING: Setting wrong values in below sections
          may cause system to malfunction.

 ▶ CPU Configuration
 ▶ IDE Configuration
 ▶ SuperIO Configuration
 ▶ Hardware Health Configuration
 ▶ ACPI Configuration
 ▶ Event Log Configuration
 ▶ USB Configuration
                                                     ←    Select Screen
                                                     ↑↓    Select Item
                                                     Enter Go to Sub Screen
                                                     F1    General Help
                                                     F10   Save and Exit
                                                     ESC   Exit

        v02.61 (C)Copyright 1985-2006, American Megatrends, Inc.
```
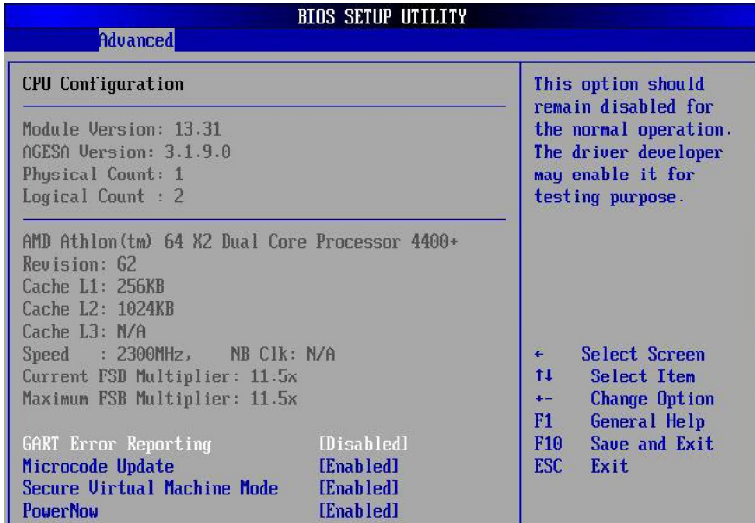
WARNING: Setting wrong values in below sections may cause system to malfunction.

► CPU Configuration
Press <Enter> and the following sub-menu appears:

```
                          BIOS SETUP UTILITY
  Advanced

  CPU Configuration                          This option should
                                             remain disabled for
  Module Version: 13.31                      the normal operation.
  AGESA Version: 3.1.9.0                      The driver developer
  Physical Count: 1                          may enable it for
  Logical Count : 2                          testing purpose.

  AMD Athlon(tm) 64 X2 Dual Core Processor 4400+
  Revision: G2
  Cache L1: 256KB
  Cache L2: 1024KB
  Cache L3: N/A
  Speed  : 2300MHz,   NB Clk: N/A          ←    Select Screen
  Current FSB Multiplier: 11.5x            ↑↓   Select Item
  Maximum FSB Multiplier: 11.5x            +-   Change Option
                                           F1   General Help
  GART Error Reporting     [Disabled]      F10  Save and Exit
  Microcode Update         [Enabled]       ESC  Exit
  Secure Virtual Machine Mode [Enabled]
  PowerNow                 [Enabled]
```

Module Version
This item shows the version of the current USB module. (Read-only)

AGESA Version
This item shows the version of the AMD® Generic Encapsulated Software Architecture. (Read-only)

Physical/ Logical Count
These items show the detail CPU information. (Read-only)

AMD AthlonTM 64 X2 Dual Core Processor 4400+

Revision
This item shows the current status of the processor. (Read-only)

Cache L1/ 2/ 3
Cache memory is additional memory that is much faster than conventional DRAM (system memory). When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU. This item shows the internal cache (also known as L1 or level 1 cache) and external cache (also known as L2 or level 2 cache).

Speed
This item shows the current CPU Front Side Bus (FSB) clock speed. (Read-only)

NB Clk
This item allows you to select the NB clock.

Current/ Maximum FSB Multiplier
These items show the current/ maximum FSB Multiplier. (Read-only)

GART Error Reporting
The GART is a device that translates a range of physical address space, called the GART aperture, to a logical address based on page tables in system memory. This item is used to Enable or Disable GART Error Reporting.

Microcode Update
This item is used to Enable or Disable Update CPU Microcode.

Secure Virtual Machine Mode
This item is used to enable or disable the SVM (Secure Virtual Machine) mode.

PowerNow
This item allows you to enable or disable AMD® PowerNow technology. When set to Enabled, the system always operates in a conserve power mode. If you want optimize the processor, set this item to Disabled, so that the processor's speed will vary depending on the use of your operating system and applications. Default setting is set to Enabled.

► IDE Configuration
Press <Enter> and the following sub-menu appears:

OnBoard PCI IDE Controller
The integrated peripheral controller contains a PCI IDE interface with support for two IDE channels. Select [Disabled] to disable the integrated IDE controller, [Primary] to enable only the primary IDE controller, [Secondary] to enable only the secondary IDE controller, or [Both] to enable both IDE controllers.

Primary/ Secondary/ Third/ Fourth IDE Master/ Slave
Press <Enter> and the following sub-menu appears:

Type
Press PgUp/ <+> or PgDn/ <-> to select [Manual], [None] or [Auto] type. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper infor-mation for this category. If your hard disk drive type is not matched or listed, you can use [Manual] to define your own drive type manually.

LBA/ Large Mode

This item allows you to enable or disable the LBA (Logical Block Address, the logical block size in hard disk) mode.

Block (Multi-Sector Transfer)

When the setting is Auto, it will read or write more sector at every circle to enhance the hard disk performance. Setting options: [Auto], [Disabled].

PIO Mode

The PIO (Programmed Input/ Output) Mode let you set a PIO mode (0-4) for the IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device. The settings are: [Auto], [Mode 0], [Mode 1], [Mode 2], [Mode 3], [Mode 4].

DMA Mode

This item allows you to enable or disable the DMA (Direct Memory Access) mode.

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.

32Bit Data Transfer

The IDE interface in the integrated peripherals controller supports 32-bit data transfers. Select [Enabled] only if your IDE hard drives can also support 32-bit transfer mode.

► **SuperIO Configuration**
Press <Enter> and the following sub-menu appears:

```
                         BIOS SETUP UTILITY
          Advanced

  Configure ITE8718 Super IO Chipset              Allows BIOS to Select
                                                  Serial Port1 Base
  Serial Port1 Address          [3F8/IRQ4]        Addresses.
    Serial Port1 Mode           [Normal]
  OnBoard CIR Port              [Disabled]

  Chassis Intrusion             [Disabled]
```

Serial Port1 Address
This item specifies the base I/O port address of the onboard Serial Port 1 (COM A). Select [Auto] allows AMI® BIOS to automatically determine the correct base I/O port address. Setting options: [3F8/ IRQ4], [2F8/ IRQ3], [3E8/ IRQ4], [2E8/ IRQ3] and [Disabled].

Serial Port1 Mode
This item allows you to specify the operation mode for serial port1. Setting options: [Normal], [IrDA], [ASKIR].

        [Normal]   RS-232C Serial Port
        [IrDA]   IrDA-compliant Serial Infrared Port
   [ASKIR]   Amplitude Shift Keyed Infrared Port

OnBoard CIR Port
This item is used to Enable or Disable OnBoard Consumer Remote Control (TV remote IR).

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.

► Hardware Health Configuration
Press <Enter> and the following sub-menu appears:
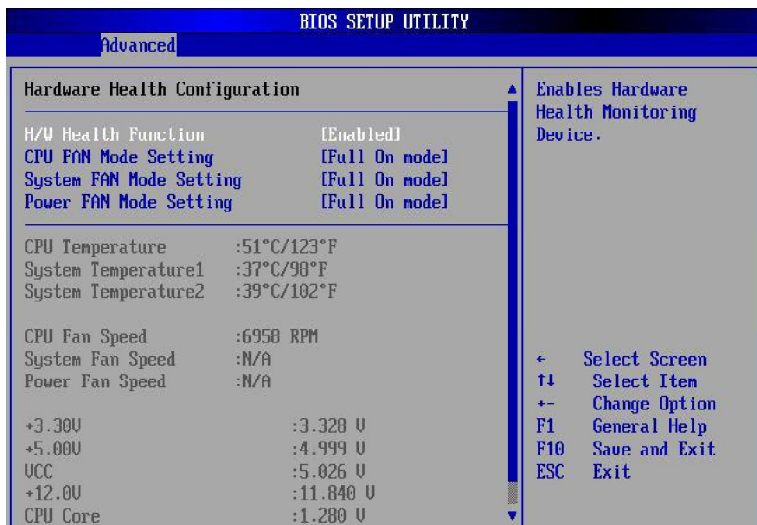
H/W Health Function
This setting enables Hardware Health Monitoring Device.

CPU/ System/ Power FAN Mode Setting
This item allows you to specify the operation mode for CPU/ System/ Power FAN. Setting options: [Full On mode], [Automatic mode], [PWM Manually mode].

[Full On mode]	Fan work on full speed.
[Automatic mode]	The PWM value is subject to the temperature inputs linear changs.
[PWM Manually mode]	The PWM value is subject to the value set by user.

CPU Temperature, System Temperature1/ 2, CPU/ System/ Power Fan Speed
These items display the current status of all of the monitored hardware devices and components such as CPU temperature and system fan speed.

+3.30V, +5.00V, VCC, +12.0V, CPU Core
These items display the current status of all of the monitored hardware devices and components such as CPU voltages.

► ACPI Configuration
Press <Enter> and the following sub-menu appears:

```
                    BIOS SETUP UTILITY
         Advanced

ACPI Settings                              General ACPI
                                           Configuration settings
 ▸ General ACPI Configuration
 ▸ Advanced ACPI Configuration
```

General ACPI Configuration
Press <Enter> and the following sub-menu appears:

```
                    BIOS SETUP UTILITY
         Advanced

General ACPI Configuration                 Select the ACPI
                                           state used for
Suspend mode              [Auto]           System Suspend.
Repost Video on S3 Resume [No]
```

Suspend mode
Select the type of Suspend mode:

        [Auto] After the period of inactivity selected in the Auto Suspend Timeout field, the system automatically enters STD mode. If STD mode is unavailable, the system enters STR mode.

        [S1]   Save to disk

        [S3]   Suspend to RAM

Report Video on S3 Resume
This item is used to Enable or Disable Report Video on S3 Resume.

Advanced ACPI Configuration
Press <Enter> and the following sub-menu appears:

```
                    BIOS SETUP UTILITY
         Advanced

Advanced ACPI Configuration                Enable RSDP pointers
                                           to 64-bit Fixed System
ACPI Version Features     [ACPI v1.0]      Description Tables.
ACPI APIC support         [Enabled]        Different ACPI version
AMI OEMB table            [Enabled]        has some addition.
Headless mode             [Disabled]
```

ACPI Version Features
This item is used to select the ACPI Features.

ACPI APIC support
This item is used to Enable or Disable support ACPI APIC.
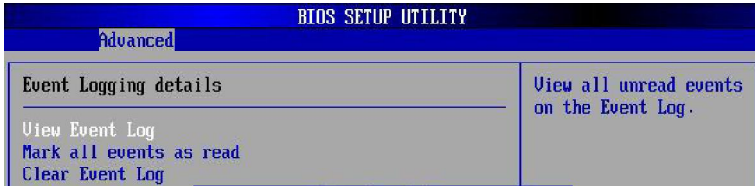
AMI OEMB table
This item is used to Enable or Disable AMI® OEM ACPI table.

Headless mode
This feature allows operating without a keyboard, monitor or mouse. To run in headless mode, both BIOS and operating system must support headless operation. When enabled, the BIOS will update the FACP to indicate support for headless operation. Operating systems that support headless operation can proceed to boot in headless mode.

▶ **Event Log Configuration**
Press <Enter> and the following sub-menu appears:

```
                    BIOS SETUP UTILITY
      Advanced

  Event Logging details                    View all unread events
                                           on the Event Log.
  View Event Log
  Mark all events as read
  Clear Event Log
```

View Event Log
This item is used to view the Event Log which occurred during post or runtime.

Mark all events as read
This item is used to mark all events as read and they do not display at next time.

Clear Event Log
This item is used to clear all events in nvram and they do not display at next time.

► **USB Configuration**
Press <Enter> and the following sub-menu appears:
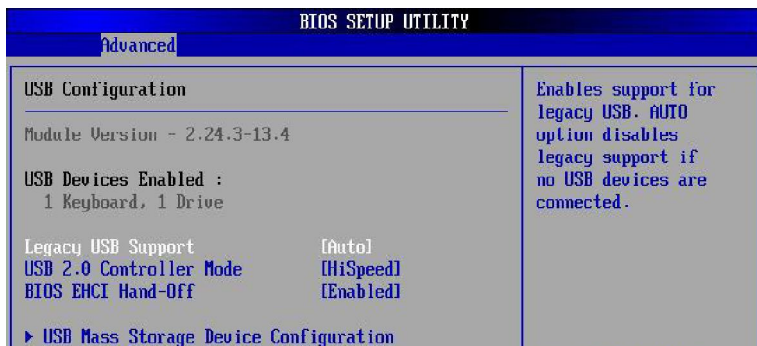
Module Version - 2.24.3-13.4

USB Devices Enabled: 1 Keyboard, 1 Drive

Legacy USB Support
Set to [Enabled] if your need to use any USB 1.1/ 2.0 device in the operating system that does not support or have any USB 1.1/ 2.0 driver installed, such as DOS and SCO Unix. Set to [Disabled] only if you want to use any USB device other than the USB mouse.

USB 2.0 Controller Mode
Set to [Enabled] if you need to use any USB 2.0 device in the operating system that does not support or have any USB 2.0 driver installed, such as DOS and SCO Unix.

BIOS EHCI Hand-Off
This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should claim by EHCI driver.

USB Mass Storage Device Configuration
Press <Enter> and the following sub-menu appears:

USB Mass Storage Reset Delay
This option specifies amount of time the BIOS should wait after issuing a reset to the USB mass storage devices.

Device #1 Lenovo USB Flash Drive PMAP
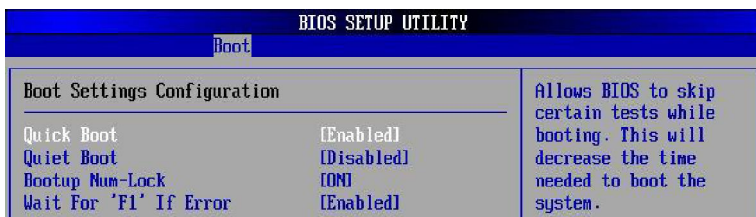
Emulation Type
This field allows you to enable or disable the USB Port 64/60 Emulation function. When the function is enabled, the USB keyboard is allowed to type some special combination keys.

Boot
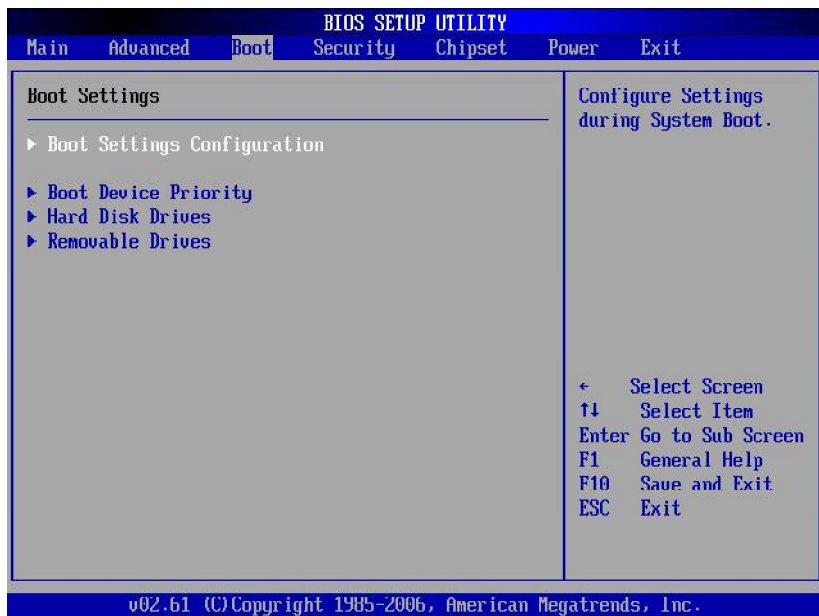
▶ **Boot Settings Configuration**

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

Quick Boot
Setting the item to [Enabled] allows the system to boot within 5 seconds since it will skip some check items.

Quiet Boot
If set to [enabled] the OS boots straight to the GUI without showing the POST screen, if set to [disabled] it boots to the POST first.

Bootup Num-Lock
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.

Wait For 'F1' If Error
This BIOS feature controls the system's response when an error is detected during the boot sequence. When enabled, the BIOS will halt the boot sequence when an error is detected. You will need to press the F1 button at this point. It brings you to the BIOS setup menu where you can adjust the settings to fix the problem. When disabled, the BIOS will not halt the boot sequence, even when an error is detected. The system will continue to boot into the operating system.

▶ Boot Device Priority
Press <Enter> and the following sub-menu appears:

```
                        BIOS SETUP UTILITY
            Boot

 Boot Device Priority                              Specifies the boot
                                                   sequence from the
 1st Boot Device            [USB:Lenovo USB Fla]   available devices.
 2nd Boot Device            [SATA:3S-ST3160815A]
```

1st/ 2nd Boot Device
These items allow you to set the sequence of boot devices where BIOS attempts to load the operating system.

▶ Hard Disk Drives
Press <Enter> and the following sub-menu appears:

```
                        BIOS SETUP UTILITY
            Boot

 Hard Disk Drives                                  Specifies the boot
                                                   sequence from the
 1st Drive                  [SATA:3S-ST3160815A]   available devices.
```

1st Drive
This item allows you to set the type of hard disk drives installed.

► Removable Drives
Press <Enter> and the following sub-menu appears:

```
                    BIOS SETUP UTILITY
              Boot

 Removable Drives                            Specifies the boot
                                             sequence from the
 1st Drive                [USB:Lenovo USB Fla]  available devices.
```

1st Drive
This item allows you to set the type of removable drives installed.

Security
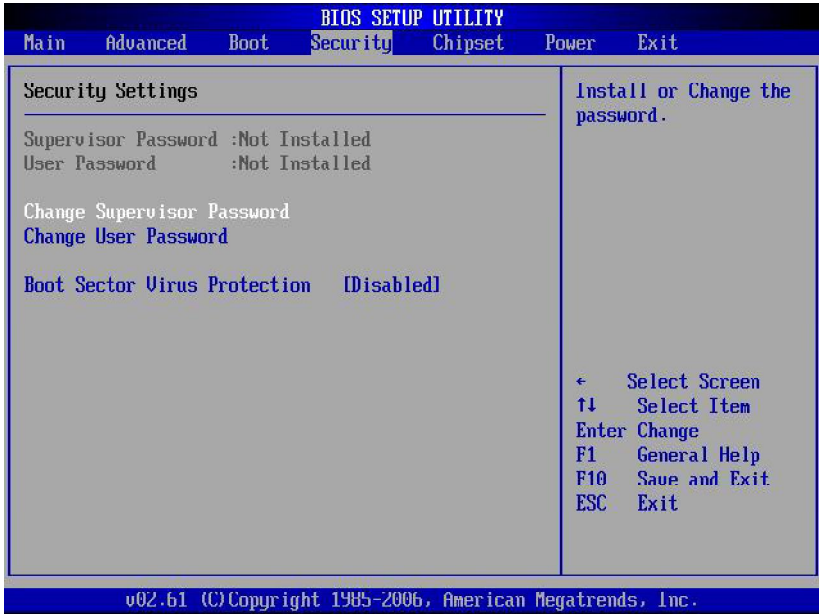
```
                        BIOS SETUP UTILITY
 Main     Advanced     Boot    Security    Chipset    Power     Exit

 Security Settings                                 Install or Change the
                                                   password.
 Supervisor Password :Not Installed
 User Password       :Not Installed

 Change Supervisor Password
 Change User Password

 Boot Sector Virus Protection    [Disabled]


                                                   ←    Select Screen
                                                   ↑↓   Select Item
                                                   Enter Change
                                                   F1   General Help
                                                   F10  Save and Exit
                                                   ESC  Exit

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```

Supervisor Password   : Not Installed
User Password   : Not Installed

► **Change Supervisor Password**
Use this item to change the supervisor password that controls access to the BIOS Setup utility.

► **Change User Password**
Use this item to change the user password that controls access to the system at boot.

► **Boot Sector Virus Protection**
When you enable this item and someone attempt to write data into this area, BIOS will show a warning message on screen and it will alarm beep.

3-21

Chipset
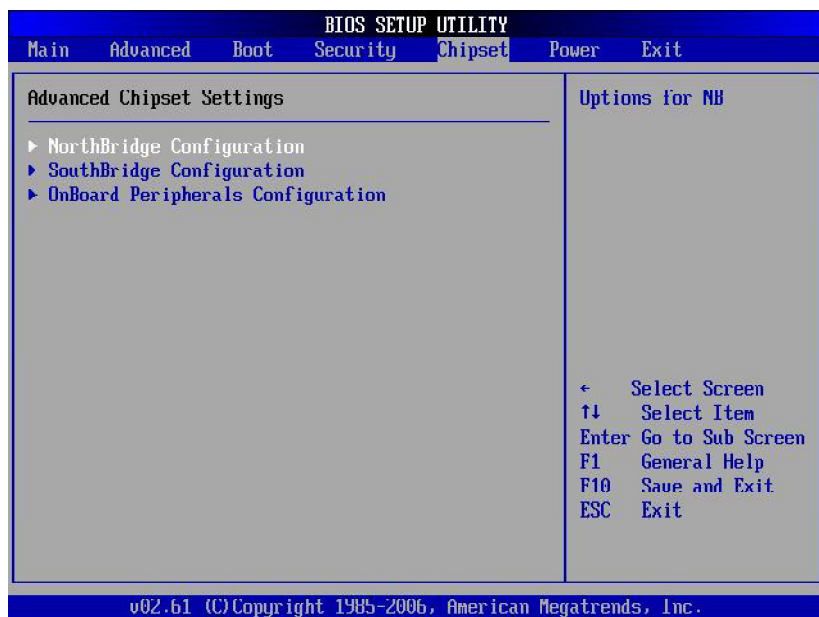
► **NorthBridge Configuration**
Press <Enter> and the following sub-menu appears:

Internal Graphics Configuration
Press <Enter> and the following sub-menu appears:

Internal Graphics Mode
The field allows you to select whether the UMA (Unified Memory Architecture) or Sideport (Local Frame Buffer) memory allocated for video memory.

UMA Frame Buffer Size
Frame Buffer is the video memory that stores data for video display (frame). This field is used to determine the memory size for Frame Buffer. Larger frame buffer size increases video performance.

SIDEPORT Clock Speed
This item is used to adjust the Side Port Memory Clock.

GFX Engine Clock Override
This item is used to adjust the GFX Engine Clock Clock.

Primary Video Controller
This item used to select the Primary Video Controller interface.

AMD 780 HD Audio
This item used to Enable or Disable the AMD® 780M(NB) HD Audio.

► SouthBridge Configuration
Press <Enter> and the following sub-menu appears:

```
                        BIOS SETUP UTILITY
                             Chipset

SouthBridge Chipset Configuration                      Options

SB700 CIMx Version : 3.1.2                          Auto
                                                    Disabled
HD Audio Azalia Device            [Enabled]         Enabled

OnChip SATA Channel               [Enabled]
OnChip SATA Type                  [Native IDE]
SATA IDE Combined Mode            [Enabled]
PATA Channel Config               [SATA as primary]
```
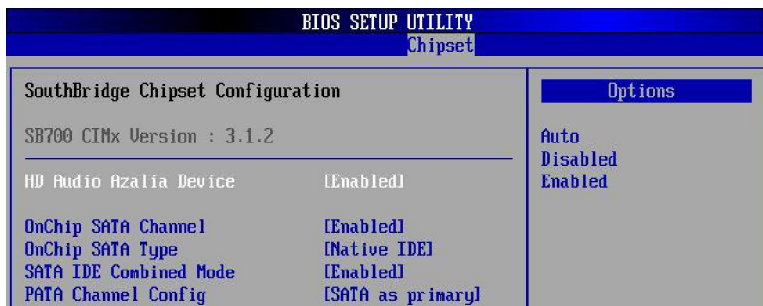
HD Audio Azalia Device
This item is used to Enable or Disable the AMD SB700(SB) HD Audio.

OnChip SATA Channel/ Type
This setting is used to specify the SATA controller. The settings are:

[Disabled] Disable the SATA controller.
[Auto] PATA and SATA will be arranged by BIOS, and you will be able to see the IDE Device status listed in Standard COMS Features.
[Legacy Mode] PATA and SATA will be combined. Max. of 2 IDE drives in each channel are available.
[Native IDE] PATA and SATA will both be enabled. Max. of 6 IDE drives are supported.

SATA IDE Combined Mode
This item is used to Enable or Disable the SATA IDE Combined Mode.

PATA Channel Config
This item is used to select the PATA Channel.

► **OnBoard Peripherals Configuration**
Press <Enter> and the following sub-menu appears:

Realtek 8111C PCIE NIC
This item is used to Enable or Disable OnBoard LAN (Realtek® 8111C) Device.

Realtek 8111C Option ROM
This item is used to Enable or Disable OnBoard LAN (Realtek® 8111C) Option ROM.

Onboard 1394 Controller
This setting is used to Enable or Disable the onboard IEEE 1394 controller.

Power
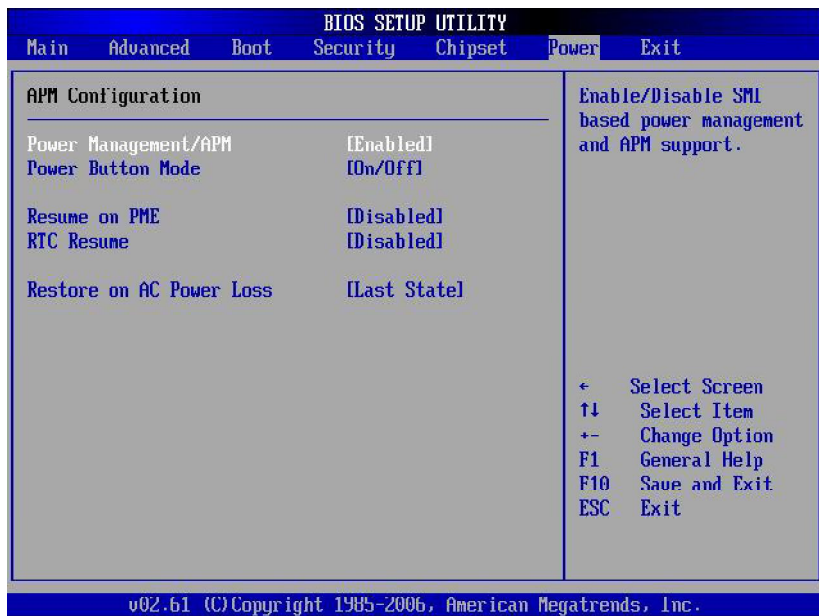
► **Power Management/ APM**

Setting to [Enabled] will activate an Advanced Power Management (APM) device to enhance Max Saving mode and stop CPU internal clock.

► **Power Button Mode**

This feature allows users to configure the Power Button function. Settings are:

[Off]　　　　The power button functions as a 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.

► **Resume on PME**

When setting to [Enabled], this setting allows your system to be awakened from the power saving modes through any event on PME (Power Management Event).

► **RTC Resume**

When [Enabled], your can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.

► Restore on AC Power Loss
This setting specifies whether your system will reboot after a power failure or interrupt occurs. Available settings are:

[Off]	Leaves the computer in the power off state.
[On]	Leaves the computer in the power on state.
[Last State]	Restores the system to the previous status before power failure or interrupt occurred.

Exit

```
                        BIOS SETUP UTILITY
 Main     Advanced     Boot     Security     Chipset     Power     Exit

 Exit Options                                    Exit system setup
                                                 after saving the
 Save Changes and Exit                           changes.
 Discard Changes and Exit
 Discard Changes                                 F10 key can be used
                                                 for this operation.
 Load Optimal Defaults
 Load Failsafe Defaults




                                                 ←     Select Screen
                                                 ↑↓    Select Item
                                                 Enter Go to Sub Screen
                                                 F1    General Help
                                                 F10   Save and Exit
                                                 ESC   Exit

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```

► Save Changes and Exit
Save changes to CMOS and exit setup.

► Discard Changes and Exit
Abandon all changes and exit setup.

► Discard Changes
Abandon all changes.

► Load Optimal Defaults
Use this menu to load the default values set by the mainboard manufacturer specifi-
cally for optimal performance of the mainboard.

► Load Failsafe Defaults
Use this menu to load the default values set by the BIOS vendor for stable
systemperformance.

Appendix A
Realtek ALC888 Audio

The Realtek ALC888 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.

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Installing the Realtek HD Audio Driver

You need to install the driver for Realtek ALC888 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 2000/ XP/ Vista

For Windows® 2000, you must install Windows® 2000 Service Pack4 or later before installing the driver. For Windows® XP, you must install Windows® XP Service Pack1 or later before installing the driver.

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

1. Insert the application CD into the CD-ROM drive. The setup screen will automatically appear.
2. Click **Realtek HD Audio Driver**.
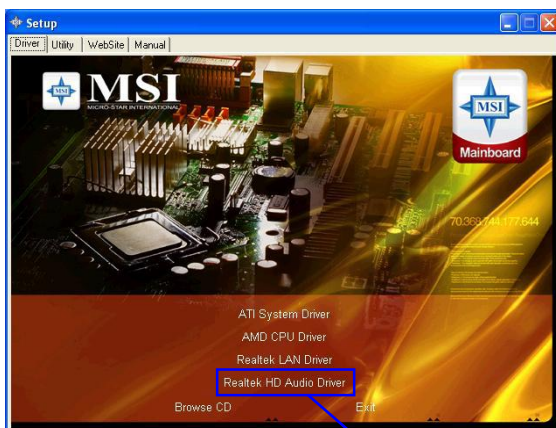
Click here

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.*

3. Click **Next** to install the Realtek High Definition Audio Driver.

Click here

4. Click **Finish** to restart the system.

Select this
option

Click here
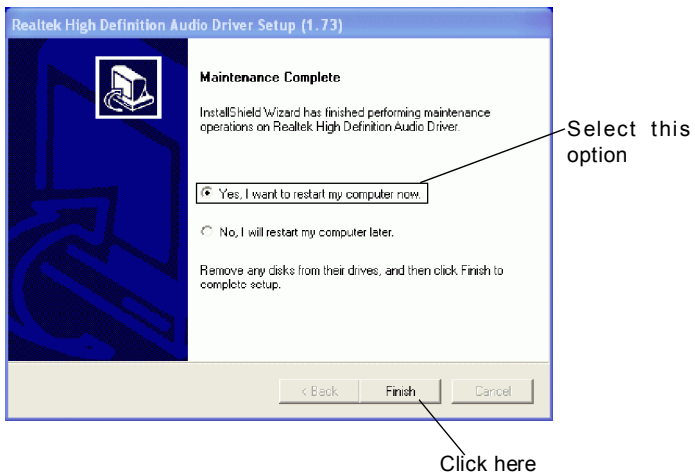
Software Configuration

After installing the audio driver, you are able to use the 2-, 4-, 6- or 8- channel audio feature now. Click the audio icon 🔊 from the system tray at the lower-right corner of the screen to activate the **HD Audio Configuration**. It is also available to enable the audio driver by clicking the **Realtek HD Audio Manager** from the **Control Panel**.

Double click
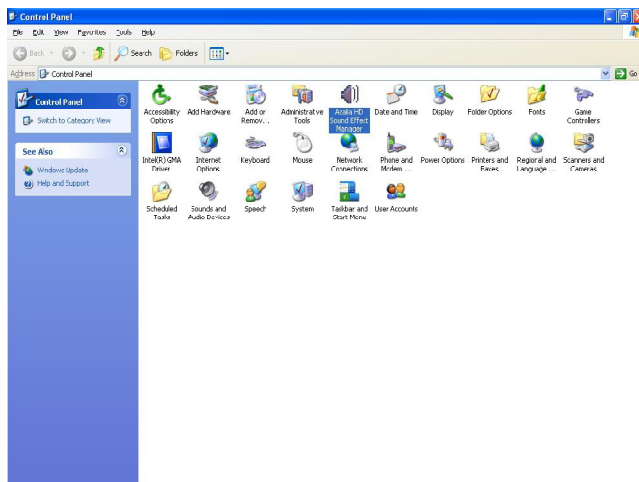
Sound Effect

Here you can select a sound effect you like from the **Environment** list.

Environment Simulation

You will be able to enjoy different sound experience by pulling down the arrow, totally 23 kinds of sound effect will be shown for selection. Realtek HD Audio Sound Manager also provides five popular settings "Stone Corridor", "Bathroom", "Sewer pipe", "Arena" and "Audio Corridor" for quick enjoyment.

You may choose the provided sound effects, and the equalizer will adjust automatically. If you like, you may also load an equalizer setting or make an new equalizer setting to save as an new one by using the "**Load EQ Setting**" and "**Save Preset**" button, click "**Reset EQ Setting**" button to use the default value, or click "**Delete EQ Setting**" button to remove a preset EQ setting.

There are also other pre-set equalizer models for you to choose by clicking "**Others**" under the **Equalizer** part.

Equalizer Selection
Equalizer frees users from default settings; users may create their owned preferred settings by utilizing this tool.

10 bands of equalizer, ranging from 100Hz to 16KHz.
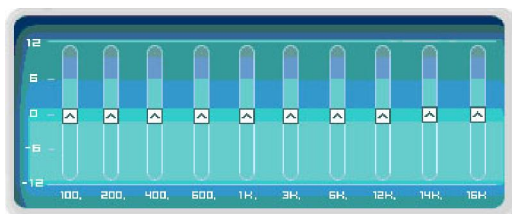
Save
The settings are saved permanently for future use

Reset
10 bands of equalizer would go back to the default setting

Enable / Disable
To disable, you can temporarily stop the sound effect without losing the settings

Load
Whenever you would like to use preload settings, simply click this, the whole list will be shown for your selection.

Delete
To delete the pre-saved settings which are created from previous steps.

Frequently Used Equalizer Setting

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

[How to Use It]

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

Karaoke Mode

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

1.Vocal Cancellation: Single click on "Voice Cancellation", the vocal of the song would be eliminated, while the background music is still in place, and you can be that singer!

2.Key Adjustment: Using "Up / Down Arrow" to find a key which better fits your vocal range.

Remove the human voice

Raise the key

Lower the key
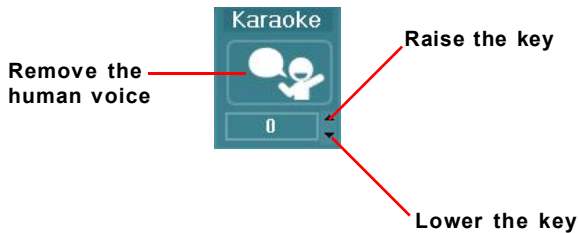
Mixer

In the **Mixer** part, you may adjust the volumes of the rear and front panels individually.

1. Adjust Volume

You can adjust the volume of the speakers that you pluged in front or rear panel by select the **Realtek HD Audio rear output** or **Realtek HD Audio front output** items.

Important

*Before set up, please make sure the playback devices are well plugged in the jacks on the rear or front panel. The **Realtek HD Audio front output** item will appear after you pluging the speakers into the jacks on the front panel.*

2. Multi-Stream Function

ALC888 supports an outstanding feature called Multi-Stream, which means you may play different audio sources simultaneously and let them output respectively from the indicated real panel or front panel. This feature is very helpful when 2 people are using the same computer together for different purposes.

Click the button and the Mixer **ToolBox** menu will appear. Then check the **Enable playback multi-streaming** and click **OK** to save the setup.

Important

*If you use **AC97 front panel**, the device have to be plugged into the jacks on the panel before enable the multi-stream function.*
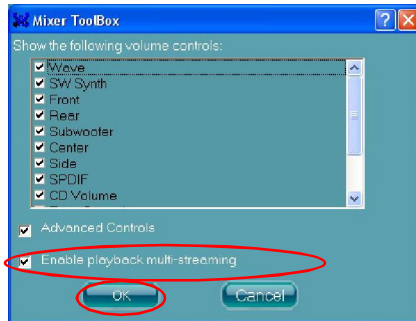
When you are playing the first audio source (for example: use Windows Media Player to play DVD/VCD), the output will be played from the rear panel, which is the default setting.

Then you **must** to select the **Realtek HD Audio front output** from the scroll list **first**, and use a different program to play the second audio source (for example: use Winamp to play MP3 files). You will find that the second audio source (MP3 music) will come out from the Line-Out audio jack of Front Panel.

3. Playback control

Playback device
This function is to let you freely decide which ports to output the sound. And this is essential when multi-streaming playback enabled.
- *Realtek HD Audio Rear Output*
- *Realtek HD Audio Front Output*

Tool   Mute

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

Tool
- *Show the following volume controls*
This is to let you freely decide which volume control items to be displayed.
- Advanced controls
- Enable playback multi-streaming
With this function, you will be able to have an audio chat with your friends via headphone (stream 1 from front panel) while still have music (stream 2 from back panel) in play. At any given period, you can have maximum 2 streams operating simultaneously.
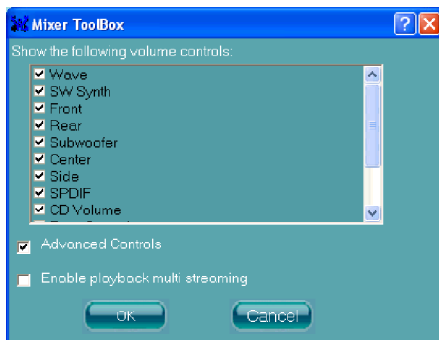
4. Recording control

Tool   *Mute*

Recording device
-Back Line in/Mic, Front Lin in
-Realtek HD Audio Input
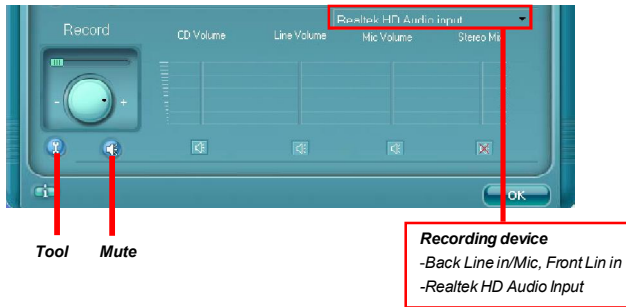
Mute
You may choose to mute single or multiple volume controls or to completely mute sound input.
Tool
- Show the following volume controls
This is to let you freely decide which volume control items to be displayed.
- Enable recording multi-streaming
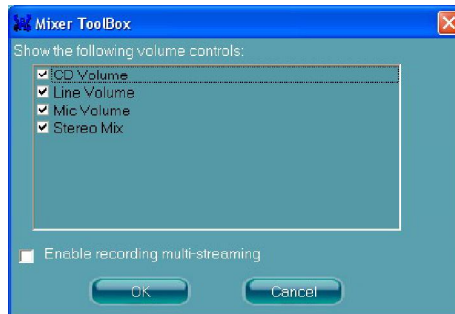
 Important

ALC888 allows you to record the CD, Line, Mic and Stereo Mix channels simultaneously, frees you from mixing efforts. At any given period, you may choose 1 of the following 4 channels to record.

A-11

Audio I/O

In this tab, you can easily configure your multi-channel audio function and speakers. You can choose a desired multi-channel operation here.

- a. **Headphone** for the common headphone
- b. **2CH Speaker** for Stereo-Speaker Output
- c. **4CH Speaker** for 4-Speaker Output
- d. **6CH Speaker** for 5.1-Speaker Output
- e. **8CH Speaker** for 7.1-Speaker Output

Speaker Configuration:

1. Plug the speakers in the corresponding jack.

2. Dialogue "connected device" will pop up for your selection. Please select the device you have plugged in.
   - If the device is being plugged into the correct jack, you will be able to find the icon beside the jack changed to the one that is same as your device.
   - If not correct, Realtek HD Audio Manager will guide you to plug the device into the correct jack.

Connector Settings

Click 🔧 to access connector settings.

Disable front panel jack detection (option)
Find no function on front panel jacks? Please check if front jacks on your system are so-called AC'97 jacks. If so, please check this item to disable front panel jack detection.

Mute rear panel output when front headphone plugged in.

Enable auto popup dialogue, when device has been plugged in
Once this item checked, the dialog "Connected device" would automatically pop up when device plugged in.

S/PDIF
Short for Sony/Philips Digital Interface, a standard audio file transfer format. S/PDIF allows the transfer of digital audio signals from one device to another without having to be converted first to an analog format. Maintaining the viability of a digital signal prevents the quality of the signal from degrading when it is converted to analog.
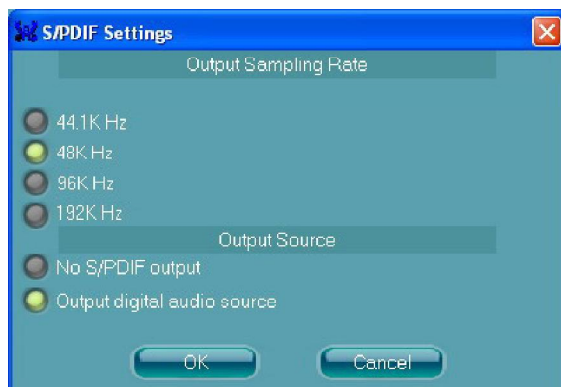
Output Sampling Rate
   44.1KHz: This is recommend while playing CD.
   48KHz: This is recommended while playing DVD or Dolby.
   96KHz: This is recommended while playing DVD-Audio.
   192KHz: This is recommended while playing High quality Audio.

Output Source
   Output digital audio source: The digital audio format (such as .wav, .mp3,.midi etc) will come out through S/PDIF-Out.

Test Speakers

You can select the speaker by clicking it to test its functionality. The one you select will light up and make testing sound. If any speaker fails to make sound, then check whether the cable is inserted firmly to the connector or replace the bad speakers with good ones. Or you may click the **auto test** ▶ button to test the sounds of each speaker automatically.

Center

Front Left

Front Right

Side Right

Side Left

Subwoofer

Rear Left

Rear Right
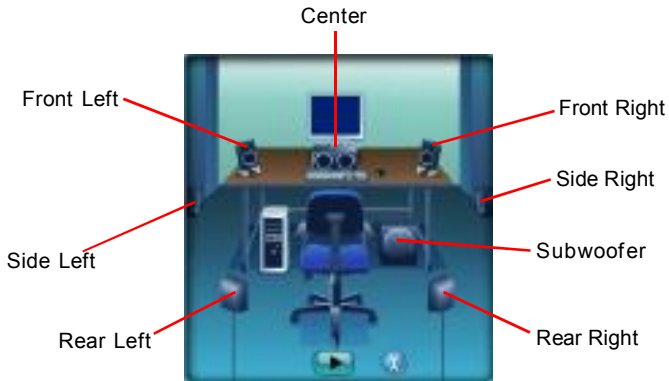
Microphone

In this tab you may set the function of the microphone. Select the **Noise Suppression** to remove the possible noise during recording, or select **Acoustic Echo Cancelltion** to cancel the acoustic echo druing recording.

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

3D Audio Demo

In this tab you may adjust your 3D positional audio before playing 3D audio applications like gaming. You may also select different environment to choose the most suitable environment you like.

Information

In this tab it provides some information about this HD Audio Configuration utility, including Audio Driver Version, DirectX Version, Audio Controller & Audio Codec. You may also select the language of this utility by choosing from the **Language** list.
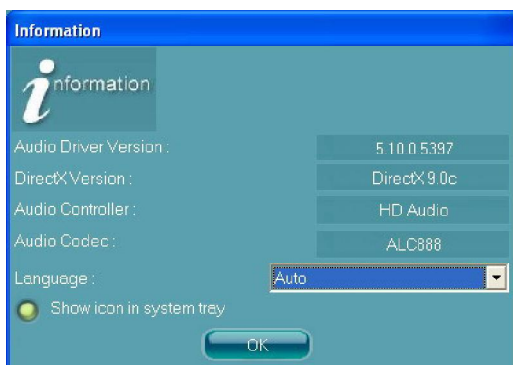
Also there is a selection **Show icon in system tray**. Switch it on and an icon will show in the system tray. Right-click on the icon and the **Audio Accessories** dialogue box will appear which provides several multimedia features for you to take advantage of.

Appendix B
SATA RAID

The Southbridge integrates SATA host controller that supports four SATA ports and RAID function for performance and reliability.

SATA RAID provides support for RAID 0 (Striping), RAID 1 (Mirroring), RAID 0+1 (Striping & Mirroring). RAID 0 greatly improves hard disk I/O performance by concurrently striping data across multiple drives. RAID 1 makes sure data is not lost if a drive fails as data is simultaneously written to two drives. Drives configured for RAID Striping are said to form a RAID 0 set, while drives configured for RAID Mirroring are said to form a RAID 1 set. RAID 0+1 is implemented as a mirrored array whose segments are RAID 0 arrays. RAID has same fault tolerance as mirroring and reduces overhead by striping. It needs at least four drives to form a RAID.

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RAID Configuration

Creating and deleting RAID set and performing other RAID setting up operations are done in the RAID BIOS. During bootup, a screen similar to the one below will appear for about few seconds. Press <Ctrl-F> to enter the FastBuild utility.

RAID BIOS Version 2. 5. 1540. 33-A
(c) 2006 ATI Technology, Inc. All right reserved.

No Array is defined...

Press <Ctrl-F> to enter Fastbuild (tm) Utility

Important

*Be sure to set the **SATA Mode** to "RAID" in BIOS (the path is : **Intergrated Peripherals** => **On-Chip ATA Devices** => **OnChip SATA Controller**) before configuting the RAID BIOS.*

The Fast Build Utility menu screen will appear. The Main Menu is used to choose the operation to be performed.

Fast Build (tm) Utility (c) 2004-2005 ATI Technology, Inc.
=[Main Menu]=

View Drive Assignments........[1]

Define LD.............................[2]

Delete LD.............................[3]

Controller Configuration........[4]

=[Keys Available]=

Press 1..4 to Select Option   [ESC] Exit

View Drives Assignments

This window displays the model number, capacities and assignment of the drives physically attached to the SATA host adapter.
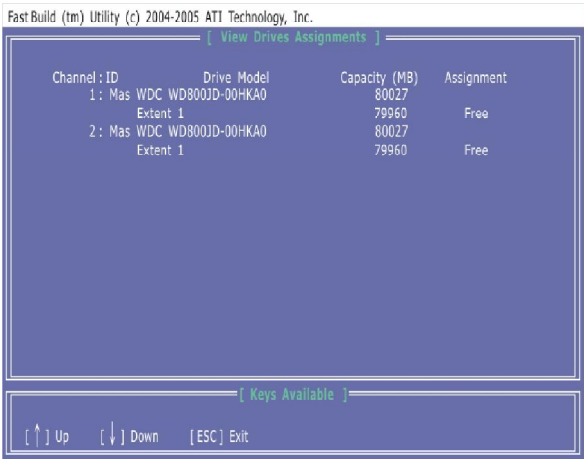
Define LD (Creating RAID)

The selection of the RAID configuration should be based upon factors including performance, data security, and the number of drives available. It is best to carefully consider the long-term role of the system and plan the data storage strategy. RAID sets can be created either automatically, or to allow the greatest flexibility, manually.

1. Press **2** on the Main Menu screen to enter the Define LD Menu.
2. Press the arrow keys to highlight an logical drive number you want to define and press Enter to select it.
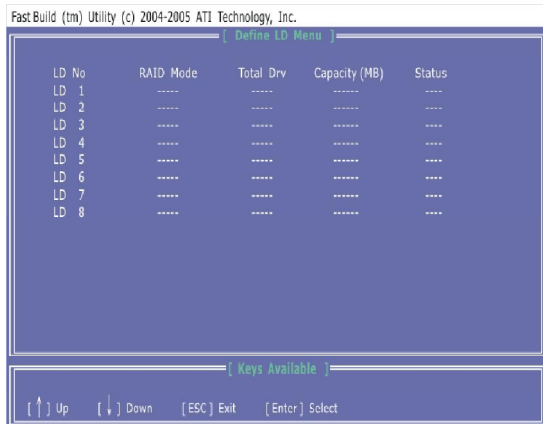
3. On the next screen, use the space key to choose a RAID mode (RAID 0/ 1/ 0+1) and use the arrow key to move to the *Drives Assignments* window.
   • Initialize logical drive, zero the disk drives. RAID 1 or 10 only.
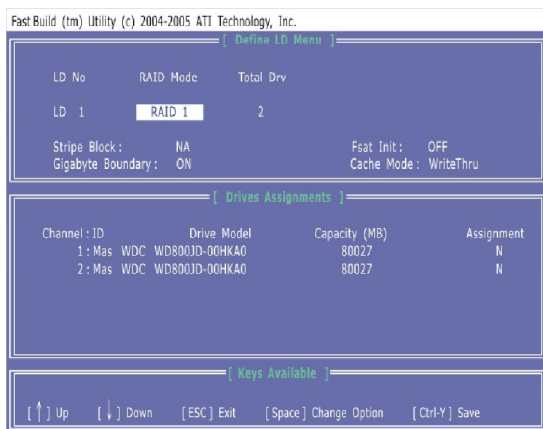
- Stripe Block Size, the default 64KB is best for most applications. RAID 0 or 10 only.
- Gigabyte Boundary, allows use of slightly smaller replacement drives.
- Cache Mode, WriteThru or WriteBack.

4. On the *Drives Assignments* window, use the arrow key to choose the hard drives which you want to make part of the LD, use the space key to change the assignment to "Y". Then press [Ctrl+Y] to save the configuration.
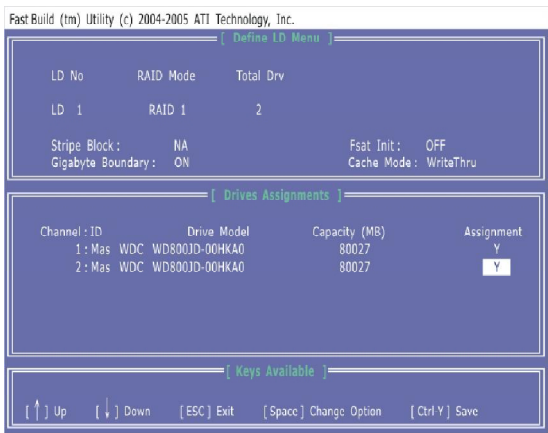
5. A message will show up on the bottom, press any key to save the configuration or press [Ctrl-Y] to allocate the RAID capacity manually.

Important

1. *The default capacity is the full capacity of the selected hard drives.*
2. *If you allocate the first LD capacity manually, you can create second LD with remaining capacity of the selected hard drives.*

6. The LD creation is done, the screen shows the LD information as below. Press ESC key to the main screen.

7. Press ESC key to exit the utility, a message "System is going to REBOOT! Are You Sure?" will display, answer "Y" to exit it and the system will reboot.

Delete LD (Deleting RAID)

1. Select "Delete LD" on the main screen.
2. Choose a LD No you want to delete and press "Del" or "Alt+D" delete the RAID set.
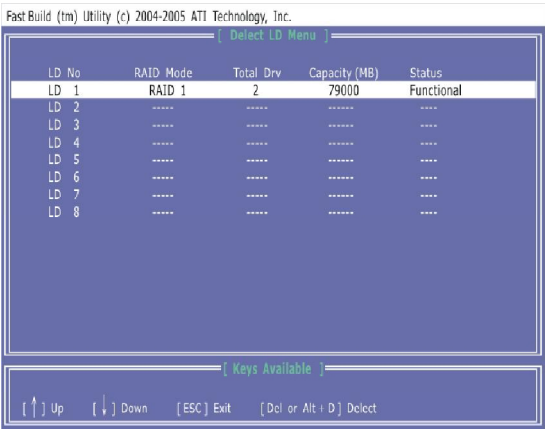
3. On the next screen, a message will display to inform you, press "Ctrl+Y" to delete the RAID set or other key to abort it. Press "Ctrl+Y" to complete the deletion.
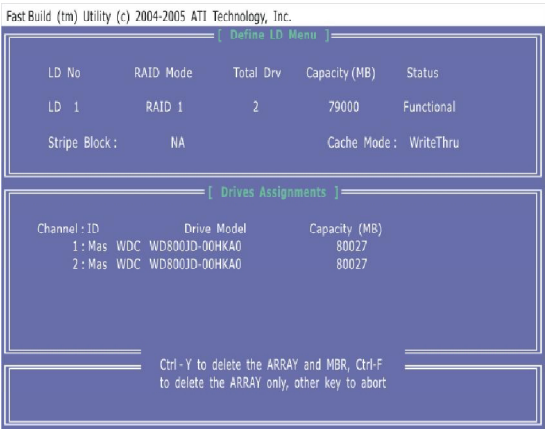
Installing the RAID Driver (for bootable RAID Array)

1. After you complete the RAID BIOS setup, boot from the Windows CD, and the Windows XP Setup program starts.
2. Press **F6** and wait for the Windows Setup screen to appear.

> **Important**
>
> *Please follow the instruction below to make a SATA RAID driver for yourself.*
> 1. *Insert the MSI CD into the CD-ROM drive.*
> 2. *Click the "Browse CD" on the Setup screen.*
> 3. *Copy all the contents in the :*
>   *for Windows XP driver CD*
>   *\ATI\ATIDrv\SBDrv\RAID*
>   *for Windows Vista driver CD*
>   *\ChipSet\ATI\Packages\Drivers\SBDrv\RAID\x86 and*
>   *\ChipSet\ATI\Packages\Drivers\SBDrv\RAID\x64 to a formatted floppy disk.*
> 4. *The driver disk for RAID controller is done.*

3. Insert the floppy that contains the RAID driver,Press the "S" key to select "Specify Additional Device".
4. For Windows Vista:
   During the Operating system installation, after selecting the location to install Vista click on "Load Driver" button to install a third party SCSI or RAID driver.
5. When prompted, insert the floppy disk or media (Floppy, CD/DVD Or USB) and press Enter.
6. You should be shown a list of available SCSI Adapters.
7. Select **"ATI AHCI Compatible RAID Controller -x86 platform"** when the system is 32-bit version or **"ATI AHCI Compatible RAID Controller -x64 platform"** when the system is 64-bit version and then press ENTER.
8. The next screen should confirm that you have selected the ATI RAID controller. Press ENTER again to continue.
9. You have successfully installed the ATI RAID driver, and Windows setup should continue.
10. Leave the disk in the floppy drive until the system reboots itself. Windows setup will need to copy the files from the floppy again after the RAID volume is formatted, and Windows setup starts copying files.

Installing the RAID Driver Under Windows
(for Non-bootable RAID Array)

1. Insert the MSI CD into the CD-ROM drive.
2. The CD will auto-run and the setup screen will appear.
3. Under the Driver tab, click on *ATI System Driver*. The ATI System Driver includes RAID Driver.
4. The driver will be automatically installed.

Important

*You **must** install the RAID driver to enable RAID.*