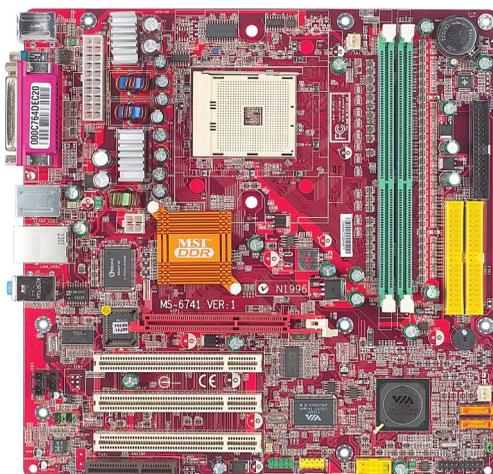




**K8TM / K8MM**  
**MS-6741 (v1.X) M-ATX Mainboard**



**Version 1.0**  
**G52-M6741X1**

Manual Rev: 1.0

Release Date: September 2003



## **FCC-B Radio Frequency Interference Statement**

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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 when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

### **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.**



## Copyright Notice

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## Revision History

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Revision	Revision History	Date
V1.0	First release with chipset VIA KT800 / K8M800 & VIA VT8237	September 2003

## Safety Instructions

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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 a service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment has 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° 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.

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# *Getting Started*

Thank you for purchasing the K8TM/K8MM (MS-6741 v1.x), an excellent Micro-ATX mainboard from MSI. Based on the innovative **VIA K8T800 / K8M800** and **VIA VT8237** chipsets for optimal system efficiency, the K8TM mainboard accommodates latest AMD K8 processor in the 754-pin lidded ceramic micro PGA package, and supports up to 2 DIMMs to provide the maximum of 2 GB memory capacity. This mainboard provides a high professional desktop platform solution.

## **Mainboard Specifications**

### **CPU**

- Supports 64-bit AMD® K8 Athlon 64 processor (Socket 754).
- Supports 3100+, 3200+ or higher CPU.

### **Chipset**

- VIA K8T 800/K8M800 Chipset (578-pin BGA)
  - HyperTransport™ connection to AMD K8 Athlon64 processor
  - 8 or 16 bit control/address/data transfer both directions
  - 800/600/400/200 MHz “Double Data Rate” operation both direction
  - AGP v3.0 compliant with 8x transfer mode
  - Graphic integrated (K8M800)
- VIA VT8237 Chipset (539-pin BGA)
  - Integrated Faster Ethernet LPC
  - Integrated Hardware Sound Blaster/Direct Sound AC97 audio
  - Ultra DMA 66/100/133 master mode PCI EIDE controller
  - ACPI
  - Supports 2 Serial ATA ports
  - Supports 8 USB2.0 ports

### **Main Memory**

- Supports DDR266/333 DDR SDRAM, and unbuffered DDR400 DIMMs for two 184-pin DDR DIMMs.
- Supports DIMM sizes up to 2GB of memory in total.

### **Slots**

- One AGP Pro 8x/4x slot.
- Three 32-bit/33 MHz PCI slots.
- One CNR slot.

### **On-Board IDE**

- An IDE controller on the VT8237 chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA133/100/66 operation modes.
  - Can connect up to four Ultra ATA drives.
- Serial ATA/150 controller integrated in VT8237.
  - Up to 150MB/sec transfer speeds.
  - Can connect up to two Serial ATA drives.

### **On-Board Peripherals**

- On-Board Peripherals include:
  - 1 floppy port supports 2 FDDs with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes
  - 1 serial port (COM A)
  - 1 parallel port supports SPP/EPP/ECP mode
  - 1 IrDA connector for SIR/ASKIR/HPSIR (Optional)
  - 1 audio port (Line-in/Line-out/MIC)
  - 1 SPDIF out header
  - 8 USB 1.1/2.0 ports (Rear \* 4/ Front \* 4)

### **IEEE 1394 (Optional)**

- Supports up to 2 \* 1394 ports (Rear \* 1/ onboard header \* 1).  
Transfer rate is up to 400Mbps
- Controlled by VIA 6307 chipset

### **Audio**

- AC'97 link controller integrated in VIA VT8237.
- 6 channels software audio codec ALC655.
  - Compliance with AC97 v2.3 Spec.
  - Meet PC2001 audio performance requirement.

### **LAN**

- VIA VT8237 MAC + VIA 6103 Ethernet PHY
  - Supports 10/100Mb/s auto-negotiation operation.
  - Compliant with PCI v2.2 and PC99 standard.
  - Supports ACPI Power Management.

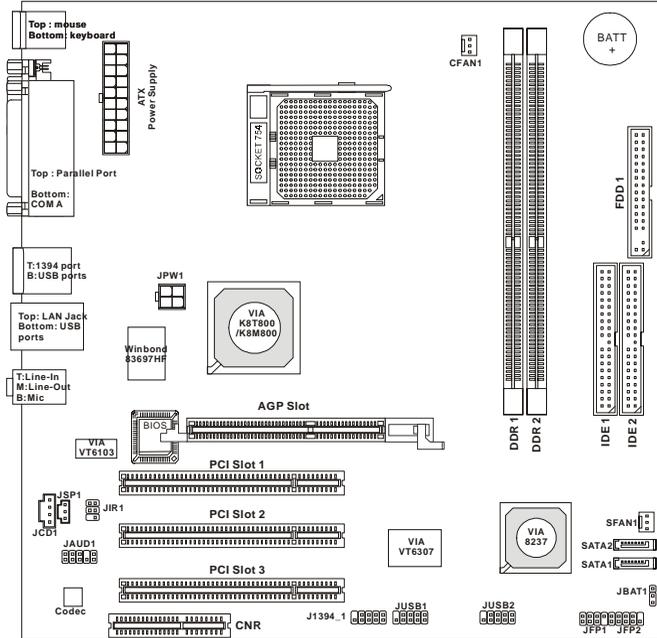
### **BIOS**

- The mainboard BIOS provides “Plug & Play” BIOS which detects the peripheral devices and expansion cards of the board automatically.
- The mainboard provides a Desktop Management Interface (DMI) function which records your mainboard specifications.

### **Dimension**

- Micro-ATX Form Factor: 24.5 cm (L) x 24.5 cm (W).

# Mainboard Layout



K8TM/K8MM (MS-6741 v1.X) Mainboard

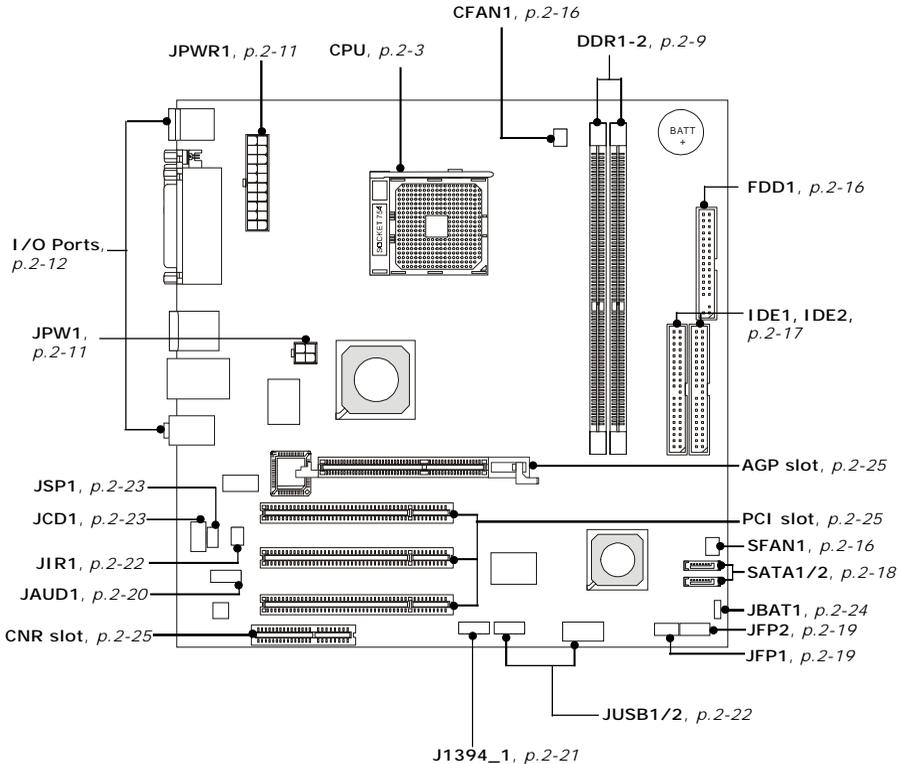
# 2

## *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



## Central Processing Unit: CPU

The mainboard supports AMD® Athlon64 processor. The mainboard uses a CPU socket called Socket-754 for 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.

### Memory Speed/CPU FSB Support Matrix

	DDR 266	DDR 333	DDR 400
FSB 400	OK	OK	OK



#### MSI Reminds You...

##### **Overheating**

*Overheating will seriously damage the CPU and system, always make sure the cooling fan can work properly to protect the CPU from overheating.*

##### **Replacing the CPU**

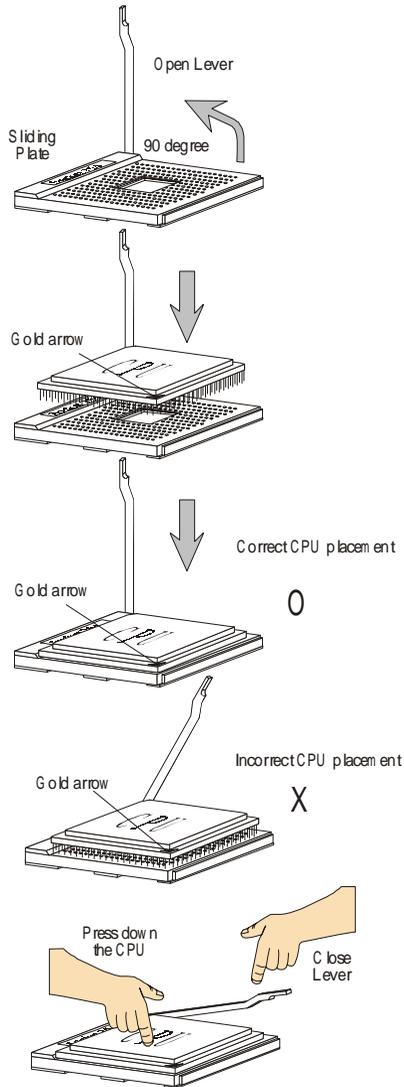
*While replacing the CPU, always turn off the ATX power supply or unplug the power supply's power cord from grounded outlet first to ensure the safety of CPU.*

##### **Overclocking**

*This motherboard 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 754

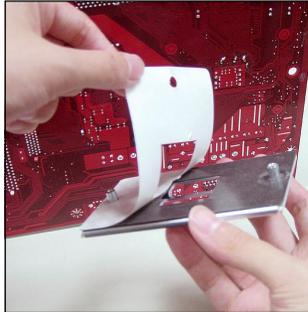
1. Please turn off the power and unplug the power cord before installing the CPU.
2. Pull the lever sideways away from the socket. Make sure to raise the lever up to a 90-degree angle.
3. Look for the gold arrow. The gold arrow should point towards the lever pivot. The CPU can only fit in the correct orientation.
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 damages 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.



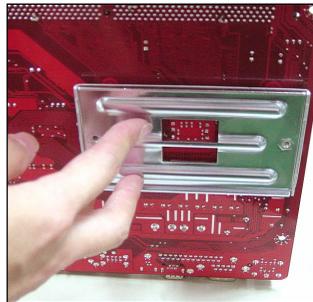
## Installing AMD Athlon64 CPU Cooler Set

*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.*

1. Detach the shield of the backplate's paster.



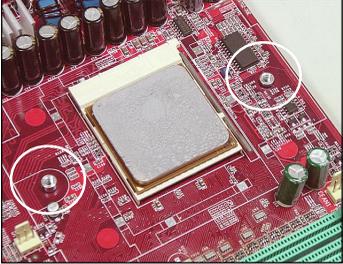
2. Turn over the mainboard, and install the backplate to the proper position.



- 3. Turn over the mainboard again, and place the mainboard on the flat surface.

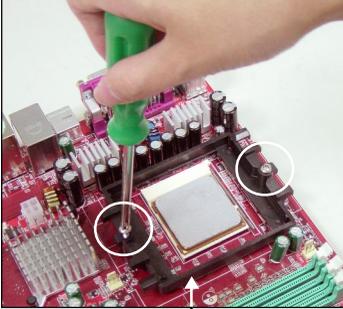
Locate the two screw holes of the backplate.

Properly place the CPU onto the CPU socket .



- 4. Align the retention mechanism and the backplate.

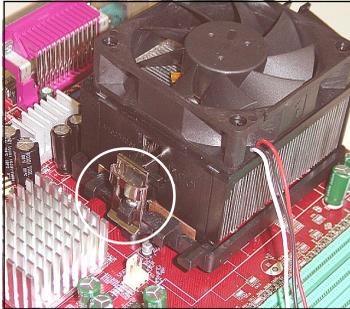
Fix the retention mechanism and the backplate with two screws.



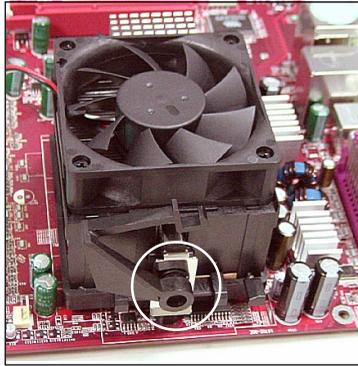
retention mechanism

- 5. Position the cooling set onto the retention mechanism.

Hook one end of the clip to hook first.

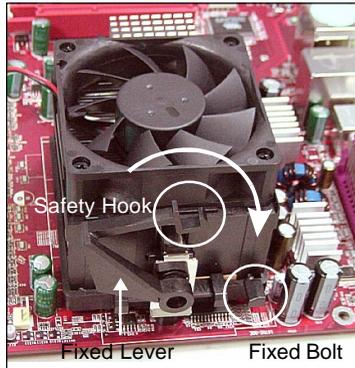


6. Press down the other end of the clip to fasten the cooling set on the top of the retention mechanism.

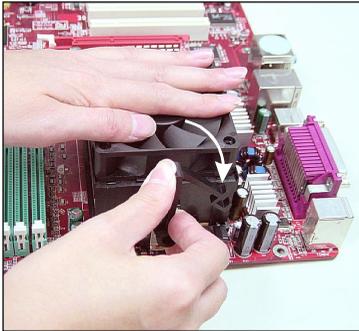


7. Locate the Fix Lever, Safety Hook and the Fixed Bolt.

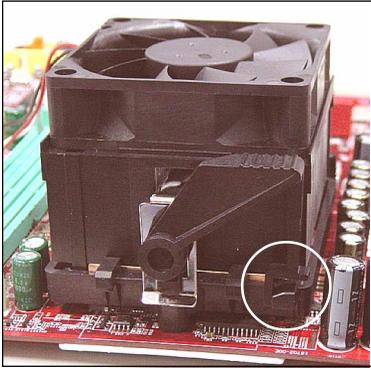
Lift up the intensive fixed lever.



8. Fastened down the lever.



9. Make sure the safety hook completely clasps the fixed bolt of the retention mechanism.

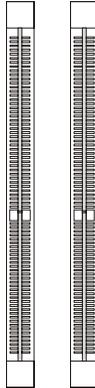


**MSI Reminds You...**

*While disconnecting the Safety Hook from the fixed bolt, it is necessary to keep an eye on your fingers, because once the Safety Hook is disconnected from the fixed bolt, the fixed*

## Memory

The mainboard provides two slots for 184-pin DDR SDRAM DIMM (Double In-Line Memory Module) modules and supports up to 2GB memory size. You can install PC2700/DDR333 & PC2100/DDR266 modules on the DDR DIMM slots (DDR 1~2).



**DDR DIMM Slots  
(DDR1~2)**

### **Introduction to DDR SDRAM**

DDR (Double Data Rate) SDRAM is similar to conventional SDRAM, but doubles the rate by transferring data twice per cycle. It uses 2.5 volts as opposed to 3.3 volts used in SDR SDRAM, and requires 184-pin DIMM modules rather than 168-pin DIMM modules used by SDR SDRAM. High memory bandwidth makes DDR an ideal solution for high performance PC, workstations and servers.

## DDR DIMM Module Combination

Install at least one DIMM module on the slots. Memory modules can be installed on the slots in any order. You can install either single- or double-sided modules to meet your own needs.

Memory modules can be installed in any combination as follows:

Slot	Memory Module	Total Memory
DIMM 1 (Bank 0 & 1)	S/D	64MB~1GB
DIMM 2 (Bank 2 & 3)	S/D	64MB~1GB
<b>Maximum System Memory Supported</b>		64MB~2GB

**S: Single Side**

**D: Double Side**

## Installing DDR Modules

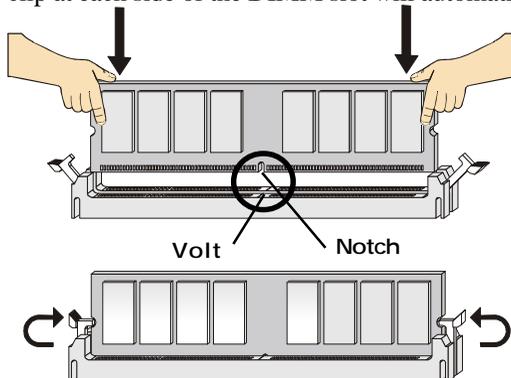
1. The DDR DIMM has only one notch on the center of module. The module will only fit in the right orientation.
2. Insert the DIMM memory module vertically into the DIMM slot. Then push it in until the golden finger on the memory module is deeply inserted in the socket.



### MSI Reminds You...

*You can barely see the golden finger if the module is properly inserted in the socket.*

3. The plastic clip at each side of the DIMM slot will automatically close.



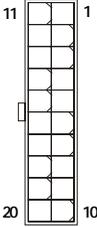
## Power Supply

The mainboard supports ATX power supply for the power system. Before inserting the power supply connector, always make sure that all components are installed properly to ensure that no damage will be caused.

### ATX 20-Pin Power Connector: JWR1

This connector allows you to connect to an ATX power supply. To connect to the ATX 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.

**JWR1 Pin Definition**



PIN	SIGNAL	PIN	SIGNAL
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS_ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW_OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

### ATX 12V Power Connector: JPW1

This 12V power connector is used to provide power to the CPU.



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

**JPW1 Pin Definition**



#### MSI Reminds You...

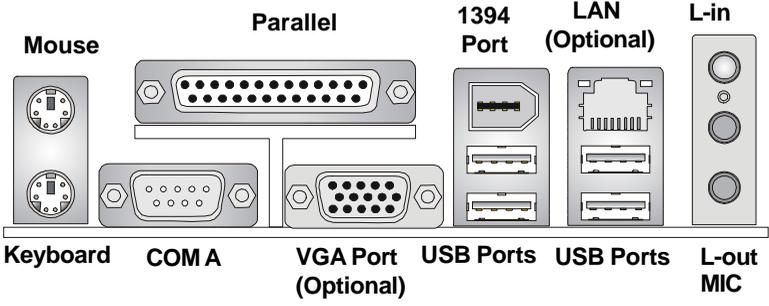
*There is a mechanism of this mainboard to protect it from being damaged. The power will shut down automatically in two conditions: the temperature of CPU reaches 100°C, or the low voltage occurs during booting up. Please follow the instructions below for this issue:*

1. *The power LED will blink continuously. You should unplug the power cord or turn off the power switch.*
2. *After the power LED stop blinking, plug on the power cord or turn on the power switch, then you can reboot your system again.*

# Back Panel

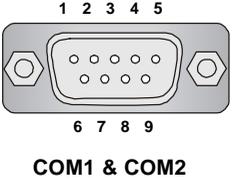
## View of the Back Panel

The back panel provides the following connectors:



## Serial Port: COMA

The mainboard provides one 9-pin mail DIN connector as serial port COMA. The serial port is a 16550A high speed communication port that sends/ receives 16 bytes FIFOs. You can attach a serial mouse or other serial device directly to it.



**Pin Definition**

PIN	SIGNAL	DESCRIPTION
1	DCD	Data Carry Detect
2	SIN	Serial In or Receive Data
3	SOUT	Serial Out or Transmit Data
4	DTR	Data Terminal Ready
5	GND	Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicate

## Mouse Connector

The mainboard provides a standard PS/2<sup>®</sup> mouse mini DIN connector for attaching a PS/2<sup>®</sup> mouse. You can plug a PS/2<sup>®</sup> mouse directly into this connector. The connector location and pin assignments are as follows.



**PS/2 Mouse  
(6-pin Female)**

**Pin Definition**

PIN	SIGNAL	DESCRIPTION
1	Mouse Data	Mouse data
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Mouse Clock	Mouse clock
6	NC	No connection

## Keyboard Connector

The mainboard provides a standard PS/2<sup>®</sup> keyboard mini DIN connector for attaching a PS/2<sup>®</sup> keyboard. You can plug a PS/2<sup>®</sup> keyboard directly into this connector. The connector location and pin assignments are as follows.



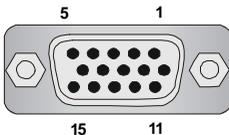
**PS/2 Keyboard  
(6-pin Female)**

**Pin Definition**

PIN	SIGNAL	DESCRIPTION
1	Keyboard Data	Keyboard data
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Keyboard Clock	Keyboard clock
6	NC	No connection

## VGA Connector

The mainboard provides a DB 15-pin female connector to connect a VGA monitor.



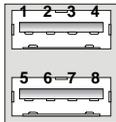
**VGA Connector  
(DB 15-pin)**

**Pin Definition**

Pin	Signal Description	Pin	Signal Description
1	RED	9	+5V
2	GREEN	10	GND
3	BLUE	11	N/C
4	N/C	12	SDA
5	GND	13	Horizontal Sync
6	GND	14	Vertical Sync
7	GND	15	SCL
8	GND		

## USB Ports

The mainboard provides a UHCI (Universal Host Controller Interface) Universal Serial Bus root for attaching USB devices such as keyboard, mouse or other USB-compatible devices. You can plug USB devices directly into the ports.



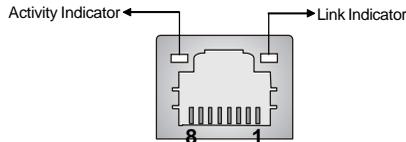
**USB Ports**

**Pin Definition**

PIN	SIGNAL	DESCRIPTION
1	VCC	+5V
2	-Data 0	Negative Data Channel 0
3	+Data 0	Positive Data Channel 0
4	GND	Ground
5	VCC	+5V
6	-Data 1	Negative Data Channel 1
7	+Data 1	Positive Data Channel 1
8	GND	Ground

## RJ-45 LAN Jack (Optional)

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



**RJ-45 LAN Jack**

**10/100 LAN Pin Definition**

PIN	SIGNAL	DESCRIPTION
1	TDP	Transmit Differential Pair
2	TDN	Transmit Differential Pair
3	RDP	Receive Differential Pair
4	NC	Not Used
5	NC	Not Used
6	RDN	Receive Differential Pair
7	NC	Not Used
8	NC	Not Used

## IEEE 1394 Port (Optional)

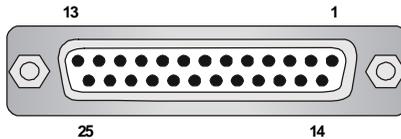
The mainboard provides one IEEE 1394 port, which connects to IEEE 1394 devices without external power. The IEEE 1394 high-speed serial bus components provide the enhanced PC connectivity for a wide range of devices, including consumer electronics audio/video (A/V) appliances, storage peripherals, other PCs, and portable devices.



IEEE 1394 Port

## Parallel Port

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



Pin Definition

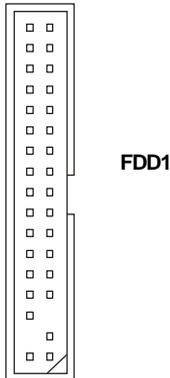
PIN	SIGNAL	DESCRIPTION
1	STROBE	Strobe
2	DATA0	Data0
3	DATA1	Data1
4	DATA2	Data2
5	DATA3	Data3
6	DATA4	Data4
7	DATA5	Data5
8	DATA6	Data6
9	DATA7	Data7
10	ACK#	Acknowledge
11	BUSY	Busy
12	PE	Paper End
13	SELECT	Select
14	AUTO FEED#	Automatic Feed
15	ERR#	Error
16	INIT#	Initialize Printer
17	SLIN#	Select In
18	GND	Ground
19	GND	Ground
20	GND	Ground
21	GND	Ground
22	GND	Ground
23	GND	Ground
24	GND	Ground
25	GND	Ground

## Connectors

The mainboard provides connectors to connect FDD, IDE HDD, front panel of the system case, audio ports, USB Ports, and CPU/System FANs.

### Floppy Disk Drive Connector: FDD1

The mainboard provides a standard floppy disk drive connector that supports 360KB, 720KB, 1.2MB, 1.44MB and 2.88MB floppy disk types.



### Fan Power Connectors: CFAN1, SFAN1

The CAN1 (processor fan) and SFAN1 (system fan) support system cooling fan with +12V. It supports 3-pin head connector. When connecting the wire to the connectors, always take note that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. If the mainboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.



Fan Connector  
Pin Definition

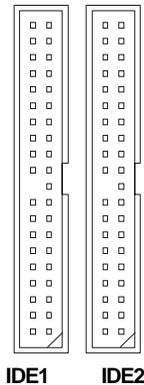


#### MSI Reminds You...

*Always consult the vendors for proper CPU cooling fan.*

## **Hard Disk Connectors: IDE1 & IDE2**

The mainboard provides a 32-bit Enhanced PCI IDE and Ultra DMA 33/66/100/133 controller that supports PIO mode 0 ~ 4, Bus Master, and Ultra DMA 33/66/100/133 function. You can connect up to four hard disk drives, CD-ROM drives, 120MB floppy disk drive (reserved for future BIOS), and other devices.



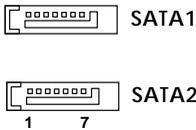
### **MSI Reminds You...**

*If you install two hard disks on cable, you must configure the second drive to Slave mode by setting its jumper. Refer to the hard disk documentation supplied by hard disk vendors for jumper setting instructions.*

## Serial ATA/Serial ATA RAID Connectors controlled by VT8237: SATA1 & SATA2

The Southbridge of this mainboard is VIA VT8237 which supports two serial connectors SATA1 & SATA2.

SATA1 & SATA2 are dual high-speed Serial ATA interface ports. Each supports 1<sup>st</sup> generation serial ATA data rates of 150 MB/s. Both connectors are fully compliant with Serial ATA 1.0 specifications. Each Serial ATA connector can connect to 1 hard disk device. Please refer to *Appendix A: VIA VT8237 Serial ATA RAID Introduction* at page A-1 for detail software installation procedure.

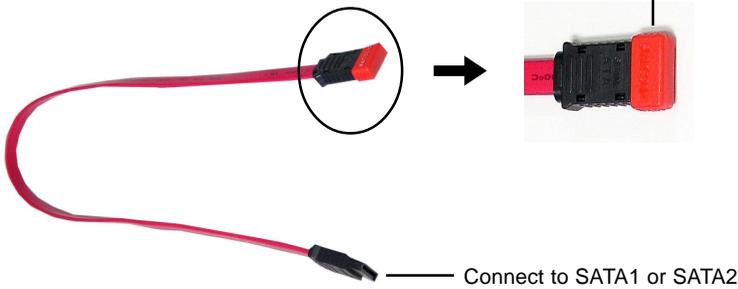


**SATA1 & SATA2 Pin Definition**

Pin	Signal	Pin	Signal
1	GND	2	TXP
3	TXN	4	GND
5	RXN	6	RXP
7	GND		

### Optional Serial ATA cable

Take out the dust cover and connect to the hard disk devices

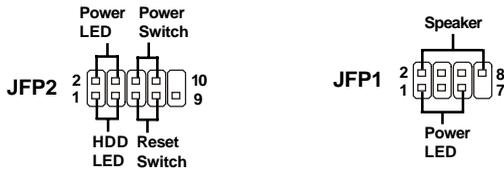


#### MSI Reminds You...

*Please do not fold the serial ATA cable in a 90-degree angle, which will cause the loss of data during the transmission.*

## Front Panel Connectors: JFP1 & JFP2

The mainboard provides two front panel connectors for electrical connection to the front panel switches and LEDs. JFP2 is compliant with Intel® Front Panel I/O Connectivity Design Guide.



**JFP2 Pin Definition**

PIN	SIGNAL	DESCRIPTION
1	HD_LED_P	Hard disk LED pull-up
2	FP PWR/SLP	MSG LED pull-up
3	HD_LED_N	Hard disk active LED
4	FP PWR/SLP	MSG LED pull-up
5	RST_SW_N	Reset Switch low reference pull-down to GND
6	PWR_SW_P	Power Switch high reference pull-up
7	RST_SW_P	Reset Switch high reference pull-up
8	PWR_SW_N	Power Switch low reference pull-down to GND
9	RSVD_DNU	Reserved. Do not use.

**JFP1 Pin Definition**

PIN	SIGNAL	PIN	SIGNAL
1	GND	2	SPK-
3	SLED	4	BUZ+
5	PLED	6	BUZ-
7	NC	8	SPK+

### Front Panel Audio Connector: JAUD1

The mainboard provides one front audio connector for users to connect the optional audio cable.



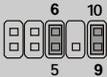
**Pin Definition**

PIN	SIGNAL	DESCRIPTION
1	AUD_MIC	Front panel microphone input signal
2	AUD_GND	Ground used by analog audio circuits
3	AUD_MIC_BIAS	Microphone power
4	AUD_VCC	Filtered +5V used by analog audio circuits
5	AUD_FPOUT_R	Right channel audio signal to front panel
6	AUD_RET_R	Right channel audio signal return from front panel
7	HP_ON	Reserved for future use to control headphone amplifier
8	KEY	No pin
9	AUD_FPOUT_L	Left channel audio signal to front panel
10	AUD_RET_L	Left channel audio signal return from front panel



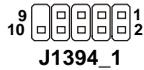
**MSI Reminds You...**

*If you don't want to connect to the front audio header, pins 5 & 6, 9 & 10 have to be jumpered in order to have signal output directed to the rear audio ports. Otherwise, the Line-Out connector on the back panel will not function.*



## IEEE 1394 Connector: J1394\_1

The mainboard provides one IEEE1394 pin header that allows you to connect IEEE 1394 port via an external IEEE1394 bracket (optional).



**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

Connected to J1394\_1



## Front USB Connectors: JUSB1 & JUSB2

The mainboard provide two front Universal Serial Bus connectors for users to connect to USB ports.



**Pin Definition**

Pin	Description	Pin	Description
1	USBPWR	2	USBPWR
3	USBP2-	4	USBP3-
5	USBP2+	6	USBP3+
7	GND	8	GND
9	NC	10	OC #

## IrDA Infrared Module Header: JIR1 (Optional)

The connector allows you to connect to IrDA Infrared module. You must configure the setting through the BIOS setup to use the IR function. JIR1 is compliant with Intel® Front Panel I/O Connectivity Design Guide.

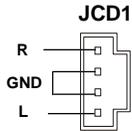


**JIR1 Pin Definition**

Pin	Signal
1	NC
2	NC
3	VCC5
4	GND
5	IRTX
6	IRRX

### **CD-In Connector: JCD1**

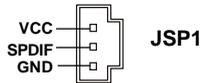
This connector is provided for CD-ROM audio.



---

### **SPDIF-Out Connector: JSP1 (Optional)**

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



Connected to JSP1



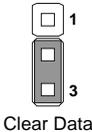
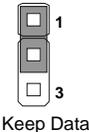
**SPDIF Bracket (Optional)**

# Jumpers

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

## Clear CMOS Jumper: JBAT1

There is a CMOS RAM on board that has a power supply from 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, use the JBAT1 (Clear CMOS Jumper ) to clear data. Follow the instructions below to clear the data:



### **MSI Reminds You...**

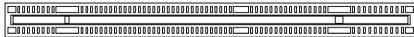
*You can clear CMOS by shorting 2-3 pin while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on; it will damage the mainboard.*

## Slots

The motherboard provides one AGP slot, three 32-bit PCI bus slots and one CNR slot.

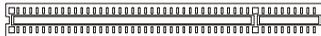
### AGP (Accelerated Graphics Port) Slot

The AGP slot allows you to insert the AGP graphics card. AGP is an interface specification designed for the throughput demands of 3D graphics. It introduces a 66MHz, 32-bit channel for the graphics controller to directly access main memory. The slot supports 8x/4x AGP card.



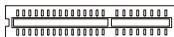
### PCI (Peripheral Component Interconnect) Slots

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



### CNR Slot

The CNR slot allows you to insert the CNR expansion cards. CNR is a specially designed audio, or modem riser card for ATX family motherboards. Its main processing is done through software and controlled by the motherboard's chipset.



### **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 INT A# ~ INT D# pins as follows:

	Order 1	Order 2	Order 3	Order 4
PCI Slot 1	INT A#	INT B#	INT C#	INT D#
PCI Slot 2	INT B#	INT C#	INT D#	INT A#
PCI Slot 3	INT C#	INT D#	INT A#	INT B#

# 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 you are requested to run SETUP.
- ◆ You want to change the default settings for customized features.

## Entering Setup

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

DEL:Setup    F11:Boot Menu    F12:Network boot    TAB:Logo

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.

### Selecting the First Boot Device

You are allowed to select the 1st boot device without entering the BIOS setup utility by pressing <F11>. When the same message as listed above appears on the screen, press <F11> to trigger the boot menu.

The POST messages might pass by too quickly for you to respond in time. If so, restart the system and press <F11> after around 2 or 3 seconds to activate the boot menu similar to the following.

<b>Select First Boot Device</b>		
Floppy	: 1st Floppy	
IDE-0	: IBM-DTLA-307038	
CDROM	: ATAPI CD-ROM DRIVE 40X M	
[Up/Dn] Select	[RETURN] Boot	[ESC] cancel

The boot menu will list all the bootable devices. Select the one you want to boot from by using arrow keys, and then press <Enter>. The system will boot from the selected device. The selection will not make changes to the settings in the BIOS setup utility, so next time when you power on the system, it will still use the original first boot device to boot up.

## 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
<F7>	Load BIOS Setup Defaults
<F9>	Load High Performance Defaults
<F10>	Save all the CMOS changes and exit

## Getting Help

After entering the Setup utility, the first screen you see is the Main Menu.

### Main Menu

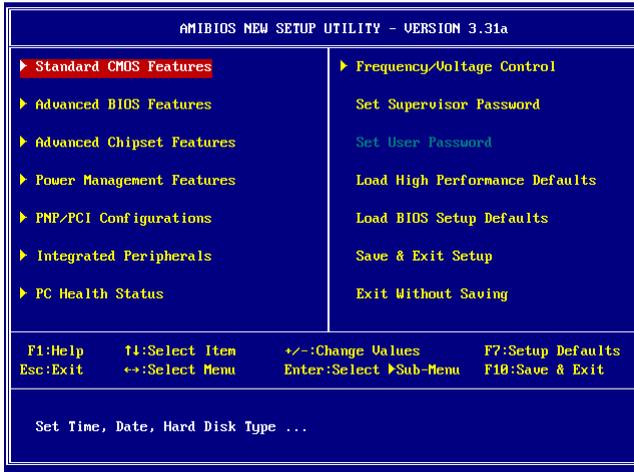
The main menu displays the setup categories the BIOS supplies. You can use the arrow keys (↑↓) to select the item. The on-line description for the selected setup category is displayed at the bottom of the screen.

### Default Settings

The BIOS setup program contains two kinds of default settings: the BIOS Setup and High Performance defaults. BIOS Setup defaults provide stable performance settings for all devices and the system, while High Performance defaults provide the best system performance but may affect the system stability.

## The Main Menu

Once you enter AMIBIOS NEW SETUP UTILITY, the Main Menu will appear on the screen. The Main Menu displays twelve configurable functions and two exit choices. Use arrow keys to move among the items and press <Enter> to enter the sub-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 AMI® special enhanced features.

### Advanced Chipset Features

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

### Power Management Features

Use this menu to specify your settings for power management.

### PNP/PCI Configurations

This entry appears if your system supports PnP/PCI.

### Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

**PC Health Status**

This entry shows your PC health status.

**Frequency/Voltage Control**

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

**Set Supervisor Password**

Use this menu to set Supervisor Password.

**Set User Password**

Use this menu to set User Password.

**Load High Performance Defaults**

Use this menu to load the BIOS values for the best system performance, but the system stability may be affected.

**Load BIOS Setup Defaults**

Use this menu to load factory default settings into the BIOS for stable system performance operations.

**Save & Exit Setup**

Save changes to CMOS and exit setup.

**Exit Without Saving**

Abandon all changes and exit setup.

## Standard CMOS Features

The items inside STANDARD CMOS SETUP menu are divided into 9 categories. Each category includes none, one or more setup items. Use the arrow keys to highlight the item you want to modify and use the <PgUp> or <PgDn> keys to switch to the value you prefer.

Standard CMOS Features		[ Setup Help ]
System Time	13:21:11	Time is 24 hour format
System Date	Aug 26 2003 Tue	
▶ Primary IDE Master	Not Installed	Hour: 00 - 23
▶ Primary IDE Slave	Not Installed	Minute: 00 - 59
▶ Secondary IDE Master		Second: 00 - 59
▶ Secondary IDE Slave		(1:30AM = 01:30:00, 1:30PM = 13:30:00)
Floppy Drive A	1.44 MB 3½	
Floppy Drive B	Not Installed	
Boot Sector Virus Protection	Disabled	

F1:Help    F1:Select Item    +/-:Change Values    F7:Setup Defaults  
Esc:Previous Menu    Enter>Select    ▶Sub-Menu    F6:Hi-Performance

### 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 to the date that you want (usually the current date). The format is <month> <date> <year> <day>.

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

### Primary/Secondary IDE Master/Slave

Press PgUp/<+> or PgDn/<-> to select the hard disk drive type. The specification of hard disk drive will show up on the right hand according to your selection.

Type	Select how to define the HDD parameters
Cylinders	Enter cylinder number
Heads	Enter head number
Write Precompensation	Enter write precomp cylinder
Sectors	Enter sector number
Maximum Capacity	Read the maximal HDD capacity
LBA Mode	Select <i>Auto</i> for a hard disk > 512 MB under Windows and DOS, or <i>Disabled</i> under Netware and UNIX
Block Mode	Select <i>Auto</i> to enhance the hard disk performance
Fast Programmed I/O Modes	Select <i>Auto</i> to enhance hard disk performance by optimizing the hard disk timing
32 Bit Transfer Mode	Enable 32 bit to maximize the IDE hard disk data transfer rate

**Floppy Drive A:/B:**

This item allows you to set the type of floppy drives installed. Available options: *Not Installed*, *1.2 MB 5¼*, *720 KB 3½*, *1.44 MB 3½* and *2.88 MB 3½*.

**Boot Sector Virus Protection**

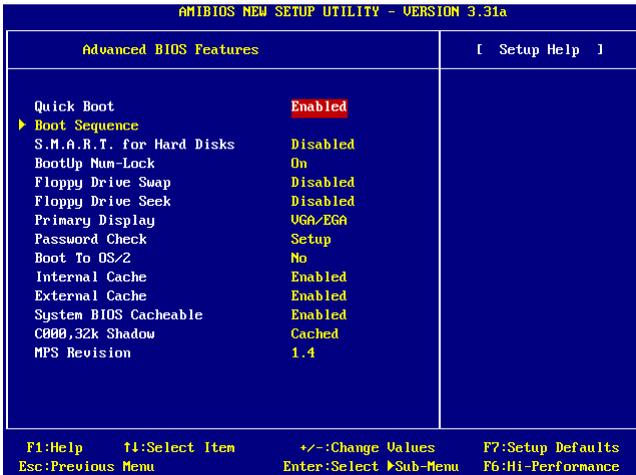
The item is to set the Virus Warning feature for IDE Hard Disk boot sector protection. When *Enabled*, BIOS will issue a virus warning message and beep if a write to the boot sector or the partition table of the HDD is attempted. Setting options: *Disabled* and *Enabled*.



**MSI Reminds You...**

*This feature only protects the boot sector, not the whole hard disk.*

## Advanced BIOS Features

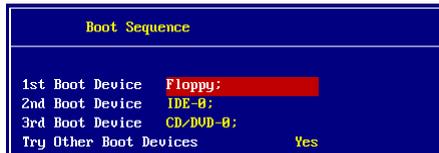


### Quick Boot

Setting the item to *Enabled* allows the system to boot within 5 seconds since it will skip some check items. Available options: *Enabled, Disabled*.

### Boot Sequence

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



### 1st/2nd/3rd Boot Device

The items allow you to set the sequence of boot devices where BIOS attempts to load the disk operating system.



#### MSI Reminds You...

Available settings for “1st/2nd/3rd Boot Device” vary depending on the bootable devices you have installed. For example, if you did not install a floppy drive, the setting “Floppy” does not show up.

**Try Other Boot Devices**

Setting the option to *Yes* allows the system to try to boot from other devices if the system fails to boot from the 1st/2nd/3rd boot device.

**S.M.A.R.T. for Hard Disks**

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. Settings: *Enabled, Disabled*.

**BootUpNum-Lock**

This item 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 end users to use the arrow keys on the numeric keypad. Setting options: *On, Off*.

**Floppy Drive Swap**

Setting to *Enabled* will swap floppy drives A: and B:.

**Floppy Drive Seek**

This setting causes the BIOS to search for floppy disk drives at boot time. When enabled, the BIOS will activate the floppy disk drives during the boot process: the drive activity light will come on and the head will move back and forth once. First A: will be done and then B: if it exists. Setting options: *Disabled, Enabled*.

**Primary Display**

This configures the primary subsystem in the computer. Available options: *Mono (monochrome), CGA40x25, CGA80x25, VGA/EGA, Absent*.

**Password Check**

This specifies the type of AMIBIOS password protection that is implemented. Setting options are described below.

<b>Option</b>	<b>Description</b>
Setup	The password prompt appears only when end users try to run Setup.
Always	A password prompt appears every time when the computer is powered on or when end users try to run Setup.

**Boot To OS/2**

This allows you to run the OS/2® operating system with DRAM larger than 64MB. When you choose *No*, you cannot run the OS/2® operating system with DRAM larger than 64MB. But it is possible if you choose *Yes*.

**Internal Cache**

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. The setting controls the internal cache (also known as L1 or level 1 cache). Setting options: *Enabled, Disabled*.

**External Cache**

Cache memory is additional memory that is much faster than conventional DRAM (system memory). Most, but not all, modern PCs have additional (external) cache 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. Setting options: *Enabled, Disabled*.

**System BIOS Cacheable**

Selecting *Enabled* allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result. Setting options: *Enabled, Disabled*.

**C000, 32k Shadow**

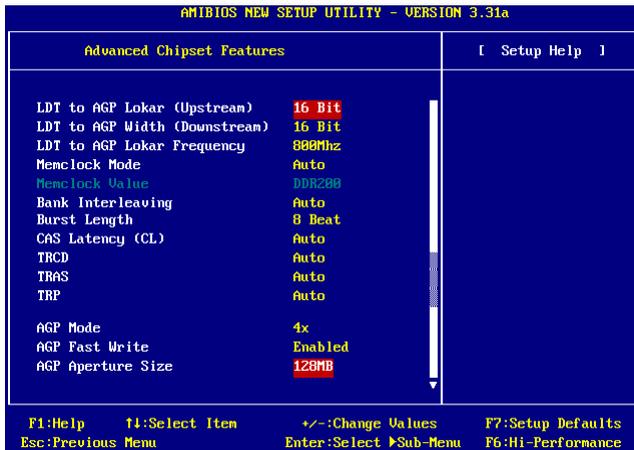
This item specifies how the contents of the adapter ROM named in the item are handled. Settings are described below:

<b>Option</b>	<b>Description</b>
Disabled	The specified ROM is not copied to RAM.
Enabled	The contents of specified ROM are copied to RAM for faster system performance.
Cached	The contents of specified ROM are not only copied to RAM, the contents of the ROM area can be written to and read from cache memory.

**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. Settings: *1.4, 1.1*.

## Advanced Chipset Features



### MSI Reminds You...

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

### LDT to AGP Lokar (Upstream) / LDT to AGP Width (Downstream)

These two items control the utilized widths of the HyperTransport link. Setting options: 8 bit, 16 bit.

### LDT to AGP Lokar Frequency

This item specifies the maximum operating frequency of the link's transmitter clock. Setting options: 800 MHz, 600 MHz, 400 MHz, 200 MHz.

### Memclock Mode

This field allows you to select the DDR timing setting. Setting to *Auto* enables Memclock Mode automatically to be determined by SPD. Selecting *Limit* allows users to configure these fields manually.

### Memclock Value

When it is set to *Limit* in "Memclock Mode", user can place an artificial memory clock limit on the system. Please note that memory is prevented from running faster than this frequency. Setting options: DDR200, DDR266, DDR300, DDR333, DDR400.

**Bank Interleaving**

This field selects 2-bank or 4-bank interleave for the installed SDRAM. Disable the function if 16MB SDRAM is installed. Settings: *Disabled, Auto*.

**Burst Length**

This setting allows you to set the size of Burst-Length for DRAM. Bursting feature is a technique that DRAM itself predicts the address of the next memory location to be accessed after the first address is accessed. To use the feature, you need to define the burst length, which is the actual length of burst plus the starting address and allows internal address counter to properly generate the next memory location. The bigger the size, the faster the DRAM performance. Settings: *4 Beat* and *8 Beat*.

**CAS Latency (CL)**

This controls the timing delay (in clock cycles) before SDRAM starts a read command after receiving it. Settings: *Auto, CL2.0, CL2.5, CL3.0*. *CL2* increases the system performance the most while *CL3.0* provides the most stable performance.

**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. Settings: *2CLK* to *5CLK*.

**TRAS**

This setting determines the time RAS takes to read from and write to a memory cell. Setting options: *Auto, 5CLK* to *15CLK*.

**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, refreshing may be incomplete and DRAM may fail to retain data. This item applies only when synchronous DRAM is installed in the system. Setting options: *Auto, 2CLK* to *6CLK*.

**AGPMode**

The item sets an appropriate mode for the installed AGP card. Setting options: *1x, 2x, 4x*. Select *4x* only if your AGP card supports it.

### **AGP Fast Write**

This option enables or disables the AGP Fast Write feature. The Fast Write technology allows the CPU to write directly to the graphics card without passing anything through the system memory and improves the AGP 4X speed. Select *Enabled* only when the installed AGP card supports this function. Settings: *Enabled, Disabled*.

### **AGP Aperture Size**

This setting controls just how much system RAM can be allocated to AGP for video purposes. The aperture is a portion of the PCI memory address range dedicated to graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. The option allows the selection of an aperture size of *4MB, 8MB, 16MB, 32MB, 64MB, 128MB*, and *256 MB*.

## Power Management Features

Power Management Features		[ Setup Help ]
ACPI Standby State	<b>S1/POS</b>	
Call VGA BIOS at S3 Resuming	Disabled	
USB Wakeup From S3	Enabled	
Power Management/APM	Enabled	
Suspend Time Out (Minute)	Disabled	
Display Activity	Ignore	
Thermal Active Temperature	65°C/149°F	
Power Button Function	On/Off	
After AC Power Loss	Power Off	
▶ Set Wakeup Events		

F1:Help    F4:Select Item    +/-:Change Values    F7:Setup Defaults  
 Esc:Previous Menu    Enter:Select ▶Sub-Menu    F6:Hi-Performance



### MSI Reminds You...

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

### ACPI Standby State

This item specifies the power saving modes for ACPI function. If your operating system supports ACPI, such as Windows 98SE, Windows ME and Windows 2000, you can choose to enter the Standby mode in S1 (POS) or S3 (STR) fashion through the setting of this field. Options are:

- S1/POS**    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 context.
- S3/STR**    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.
- Auto**        BIOS determines the best automatically.

### Call VGA BIOS at S3 Resuming

Selecting *Enabled* allows BIOS to call VGA BIOS to initialize the VGA card when system wakes up (resumes) from S3 sleep state. The system resume time

is shortened when you disable the function, but system will need an AGP driver to initialize the VGA card. Therefore, if the AGP driver of the card does not support the initialization feature, the display may work abnormally or not function after resuming from S3.

### **USB Wakeup From S3**

This item allows the activity of the USB device to wake up the system from S3 (Suspend to RAM) sleep state. Settings: *Enabled, Disabled*.

### **Power Management/APM**

Setting to *Enabled* will activate an Advanced Power Management (APM) device to enhance Max Saving mode and stop CPU internal clock. Settings: *Disabled, Enabled*.

### **Suspend Time Out (Minute)**

After the selected period of system inactivity, all devices except the CPU shut off. Settings: *Disabled, 1, 2, 4, 8, 10, 20, 30, 40, 50, 60*.

### **Display Activity**

These items specify if the BIOS will monitor the activity of the specified hardware peripheral or component. If set to *Monitor*, any activity detected on the specified hardware peripheral or component will wake up the system or prevent the system from entering the power saving modes. Settings: *Monitor, Ignore*.

### **Thermal Active Temperature**

If the CPU temperature reaches the upper limit preset in this setting, the warning mechanism will be activated. This helps you to prevent the CPU overheating problem.

### **Power Button Function**

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

- |                |   |
|----------------|---|
| <i>On/Off</i>  | The power button functions as normal power off button.  |
| <i>Suspend</i> | 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. |

### **After AC Power Loss**

This setting specifies whether your system will reboot after a power failure or interrupt occurs. Available settings are:

- |                  |   |
|------------------|---|
| <i>Power Off</i> | Leaves the computer in the power off state. |
| <i>Power On</i>  | Leaves the computer in the power on state.  |

**Last State** Restores the system to the previous status before power failure or interrupt occurred.

## Set WakeUp Events

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

Set WakeUp Events	
Wake Up On PME	Enabled
Resume On KBC	Disabled
Wake-Up Key	Any Key
Wake-Up Password	1/0
Resume On PS/2 Mouse	Disabled
Resume By Alarm	Disabled
Alarm Date	15
Alarm Hour	12
Alarm Minute	38
Alarm Second	38

### Wake Up On PME, Resume On KBC (with “Wake-Up Key” and “Wake-Up Password”), Resume On PS/2 Mouse

These fields specify whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or component is detected. Settings: *Enabled, Disabled*.



#### MSI Reminds You...

For “Wake-Up Key” function, the option “Specific Key” refers to the password you specify in the “Wake-Up Password” field. Once you set up a password, it will disable “Resume on PS/2 Mouse”.

### Resume By Alarm

This is used to enable or disable the feature of booting up the system on a scheduled time/date from the soft off (S5) state. Settings: *Enabled, Disabled*.

#### Alarm Date/Hour/Minute/Second

If *Resume By Alarm* is set to *Enabled*, the system will automatically resume (boot up) on a specific date/hour/minute/second specified in these fields. Available settings for each item are:

Alarm Date	01 ~ 31, Every Day
Alarm Hour	00 ~ 23
Alarm Minute	00 ~ 59
Alarm Second	00 ~ 59



#### MSI Reminds You...

If you have changed this setting, you must let the system boot up until it enters the operating system, before this function will work.

## PNP/PCI Configurations

This section describes configuring the PCI bus system and PnP (Plug & Play) feature. PCI, or **P**eripheral **C**omponent **I**nterconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

PNP/PCI Configurations		[ Setup Help ]
Plug and Play Aware O/S	No	
Clear NVRAM	No	
PCI Latency Timer	32	
Primary Graphics Adapter	AGP	
PCI IDE BusMaster	Enabled	
PCI Slot1 IRQ	Auto	
PCI Slot2 IRQ	Auto	
PCI Slot3 IRQ	Auto	

F1:Help    F4:Select Item    +/-:Change Values    F7:Setup Defaults  
 Esc:Previous Menu    Enter:Select Sub-Menu    F6:Hi-Performance

### Plug and Play Aware O/S

When set to *Yes*, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Windows® 98, 2000 or ME. When set to *No*, BIOS will initialize all the PnP cards. Select *Yes* if the operating system is Plug & Play.

### Clear NVRAM

The ESCD (Extended System Configuration Data) NVRAM (Non-volatile Random Access Memory) is where the BIOS stores resource information for both PNP and non-PNP devices in a bit string format. When the item is set to *Yes*, the system will reset ESCD NVRAM right after the system is booted up and then set the setting of the item back to *No* automatically.

### 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. Settings range from 32 to 248 at a 32 increment.

**PCIIDE BusMaster**

Set this option to *Enabled* to specify that the IDE controller on the PCI local bus has bus mastering capability. Settings options: *Disabled, Enabled*.

**Primary Graphics Adaptor**

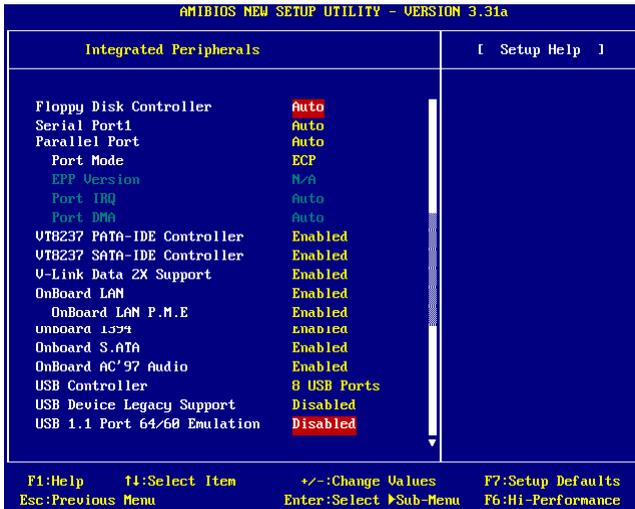
This setting specifies which VGA card is your primary graphics adapter. Setting options are:

- AGP*                    The system initializes the installed AGP card first. If the AGP card is not available, it will initialize the PCI VGA card.
  
- PCI*                     The system initializes the installed PCI VGA card first. If the PCI VGA card is not available, it will initialize the AGP card.

**PCI Slot1 IRQ, PCI Slot2 IRQ, PCI Slot3 IRQ**

These items specify the IRQ line for each PCI slot. Setting options: 3, 4, 5, 7, 9, 10, 11, *Auto*. Selecting *Auto* allows BIOS to automatically determine the IRQ line for each PCI slot.

## Integrated Peripherals



### Floppy Disk Controller

This is used to enable or disable the onboard Floppy controller.

Option	Description
Auto	BIOS will automatically determine whether to enable the onboard Floppy controller or not.
Enabled	Enables the onboard Floppy controller.
Disabled	Disables the onboard Floppy controller.

### Serial Port 1

This item specifies the base I/O port addresses of the onboard Serial Port 1 (COM A). Selecting *Auto* allows AMIBIOS to automatically determine the correct base I/O port address. Settings: *Auto*, *3F8/COM1*, *2F8/COM2*, *3E8/COM3*, *2E8/COM4* and *Disabled*.

### Parallel Port

This field specifies the base I/O port address of the onboard parallel port. Selecting *Auto* allows AMIBIOS to automatically determine the correct base I/O port address. Settings: *Auto*, *378*, *278*, *3BC*, *Disabled*.

**Port Mode**

This item selects the operation mode for the onboard parallel port: *ECP*, *Normal*, *Bi-Dir* or *EPP*.

**EPP Version**

The item selects the EPP version used by the parallel port if the port is set to *EPP* mode. Settings: *1.7*, *1.9*.

**Port IRQ**

When *OnBoard Parallel Port* is set to *Auto*, the item shows *Auto* indicating that BIOS determines the IRQ for the parallel port automatically.

**Port DMA**

This feature needs to be configured only when *Parallel Port Mode* is set to the *ECP* mode. When Parallel Port is set to *Auto*, the field will show *Auto* indicating that BIOS automatically determines the DMA channel for the parallel port.

**VT8237 PATA-IDE Controller**

This setting is used to enable/disable the VT8237 PATA-IDE controller. Setting options: *Enabled*, *Disabled*.

**VT8237 SATA-IDE Controller**

This setting is used to enable/disable the VT8237 SATA-IDE controller. Setting options: *Disabled*, *Enabled*.

**V-Link Data 2X Support**

This setting controls the onboard V-Link Data 2X Support. Setting options: *Enabled*, *Disabled*.

**OnBoard LAN, OnBoard LAN P.M.E.**

This is used to enable or disable the onboard LAN controller and the wake-on-LAN function. Setting options: *Enabled*, *Disabled*.

**Onboard 1394, Onboard S.ATA, OnBoard AC'97 Audio**

Set these options to *Enabled* to enable the controllers of these 3 PCI devices.

**USB Controller**

This setting is used to enable/disable the onboard USB ports. Setting options: *Disabled*, *2 USB Ports*, *4 USB Ports*, *6 USB Ports*, *8 USB Ports*.

**USB Device Legacy Support**

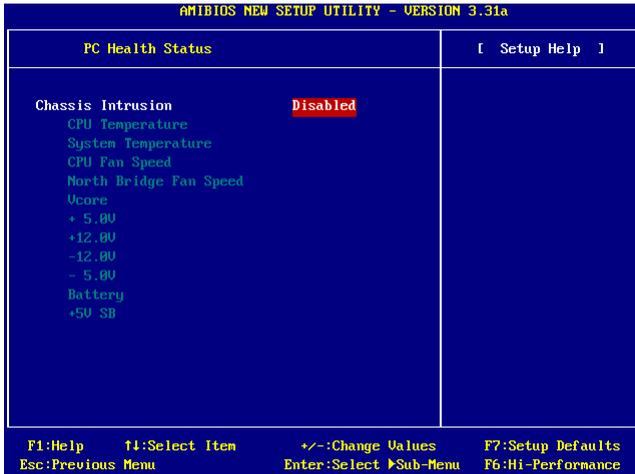
Set to *All Device* if you need to use any USB device in the operating system that does not support or have any USB driver installed, such as DOS and SCO Unix. Set to *No Mice* only if you want to use any USB device other than the USB mouse.

**USB 1.1 Port 64/60 Emulation**

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.

## PC Health Status

This section shows the status of your CPU, fan, overall system status, etc. Monitor function is available only if there is hardware monitoring mechanism onboard.



### Chassis Intrusion

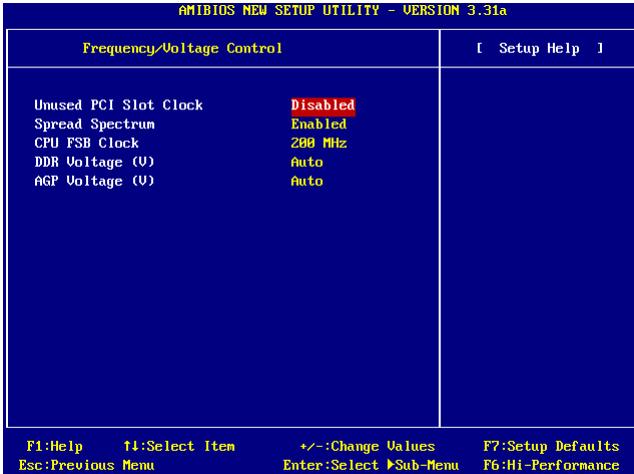
The field enables or disables the feature of recording the chassis intrusion status and issuing a warning message if the chassis is once opened. To clear the warning message, set the field to *Reset*. The setting of the field will automatically return to *Enabled* later. Settings: *Enabled, Reset, Disabled*.

### CPU/System Temperature, CPU/System Fan Speed, Vcore, +5.0V, +12.0V, -12.0V, -5.0V, Battery, +5V SB

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

## Frequency/Voltage Control

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



### Unused PCI Slot/DIMM Clk

This setting enables you to stop or activate the unused PCI slot & DIMM clock. Setting options: *Stop, Action*.

### Spread Spectrum

When the motherboard's clock generator pulses, the extreme values (spikes) of the pulses creates 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. 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 *Enabled* for EMI reduction. 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. Available options: *Enabled, Disabled*.

### CPU FSB Clock

This item allows you to select the CPU Front Side Bus clock frequency (in MHz) and overclock the processor by adjusting the FSB clock to a higher frequency. Select the number between 200~280 for needed frequency.

**MSI Reminds You...**

*Changing CPU FSB clock could result in the instability of the system; therefore, it is NOT recommended to change the default setting for long-term usage.*

**DDR Voltage (V)**

Adjusting the DDR voltage can increase the DDR speed. Any changes made to this setting may cause a stability issue, so ***changing the DDR voltage for long-term purpose is NOT recommended***. Setting options: 2.55, 2.60, 2.65, 2.70, 2.75, 2.80, 2.85.

**AGP Voltage (V)**

AGP voltage is adjustable in the field, allowing you to increase the performance of your AGP display card when overclocking, but the stability may be affected. Setting options: *Auto, 1.55, 1.60, 1.65, 1.70, 1.75, 1.80, 1.85.*

**MSI Reminds You...**

*The settings shown in different color in **DDR Voltage (V)** and **AGP Voltage (V)** helps to verify if your setting is proper for your system.*

*White: Safe setting.*

*Yellow: High performance setting.*

*Red: Not recommended setting and the system may be unstable.*

## Set Supervisor/User Password

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



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

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

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

Additionally, when a password is enabled, you can also have AMIBIOS to request a password each time the system is booted. This would prevent unauthorized use of your computer. The setting to determine when the password prompt is required is the PASSWORD CHECK option of the ADVANCED BIOS FEATURES menu. If the PASSWORD CHECK option is set to *Always*, the password is required both at boot and at entry to Setup. If set to *Setup*, password prompt only occurs when you try to enter Setup.



### MSI Reminds You...

#### *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.

## Load High Performance/BIOS Setup Defaults

The two options on the main menu allow users to restore all of the BIOS settings to High Performance defaults or BIOS Setup defaults. The High Performance Defaults are the values set by the mainboard manufacturer for the best system performance but probably will cause a stability issue. The BIOS Setup Defaults are the default values also set by the mainboard manufacturer for stable performance of the mainboard.

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

```
[ Load High Performance Defaults ]
WARNING! This default might have potential reliability risk.
Press [Enter] to Continue
Or [ESC] to Abort
```

Pressing 'Enter' loads the default BIOS values that enable the best system performance but may lead to a stability issue.



### MSI Reminds You...

*The option is for power or overclocking users only. Use of high performance defaults will tighten most timings to increase the system performance. Therefore, a high-end system configuration is a must, which means you need high-quality VGA adapter, RAM and so on. We don't recommend that users should apply the high performance defaults in their regular systems. Otherwise, the system may become unstable or even crash. If the system crashes or hangs after enabling the feature, please CLEAR CMOS DATA to resolve the problem. For more information, refer to "Clear CMOS Jumper:JBAT1" in Chapter 2.*

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

```
[ Load BIOS Setup Defaults ]
Press [Enter] to Continue
Or [ESC] to Abort
```

Pressing 'Enter' loads the default values that are factory settings for stable system performance.

## ***Appendix A: Using 4- or 6-Channel Audio Function***

The motherboard is equipped with Realtek ALC655 chip, which provides support for 6-channel audio output, including 2 Front, 2 Rear, 1 Center and 1 Subwoofer channel. ALC655 allows the board to attach 4 or 6 speakers for better surround sound effect. The section will tell you how to install and use 4-/6-channel audio function on the board.

## Installing the Audio Driver

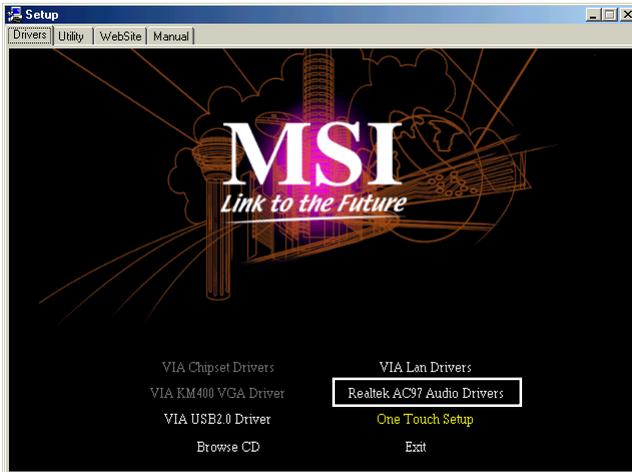
You need to install the driver for Realtek ALC655 chip to function properly before you can get access to 4-/6-channel audio operations. Follow the procedures described below to install the drivers for different operating systems.

### Installation for Windows 98SE/ME/2000/XP

For Windows® 2000, you must install Windows® 2000 Service Pack2 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.

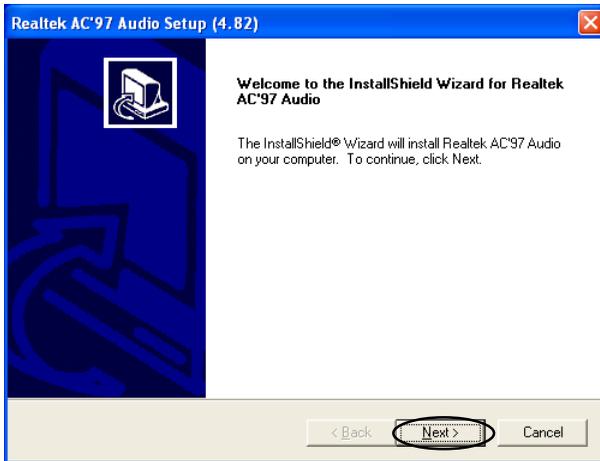
1. Insert the companion CD into the CD-ROM drive. The setup screen will automatically appear. (*Please note the screen below might be different depending on the different mainboard you purchased.*)
2. Click **Realtek AC97 Audio Drivers**.



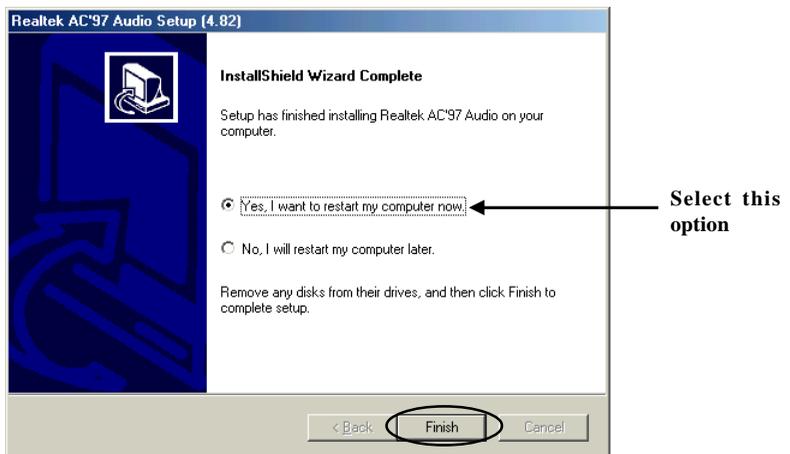
#### MSI Reminds You...

The **AC97 Audio Configuration**  software utility is under continuous update to enhance audio applications. Hence, the program screens shown here in this appendix may be slightly different from the latest software utility and shall be held for reference only.

3. Click **Next** to start installing files into the system.



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



## Using 4- or 6-Channel Audio Function

After installing the audio driver, you are able to use the 4-/6-channel audio feature now. To enable 4- or 6-channel audio operation, first connect 4 or 6 speakers to the appropriate audio connectors, and then select 4- or 6-channel audio setting in the software utility.

### Using the Back Panel

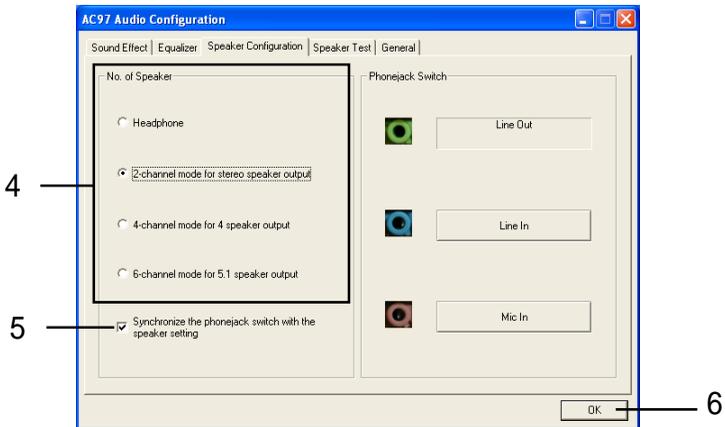
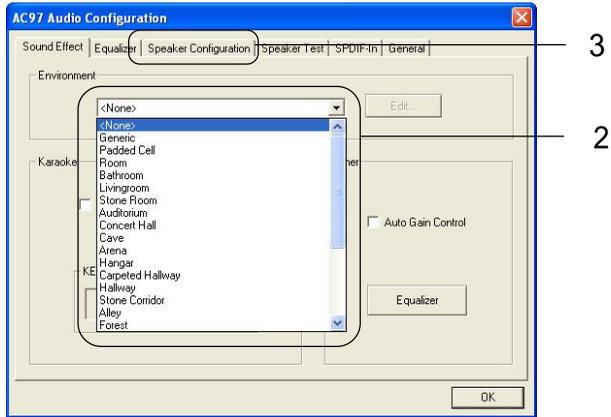
In addition to a default 2-channel analog audio output function, the audio connectors on the Back Panel also provide 4- or 6-channel analog audio output function if a proper setting is made in the software utility.

Read the following steps to have the Multi-Channel Audio Function properly set in the software utility, and have your speakers correctly connected to the Back Panel.

#### Configuration in the Software Utility

1. Click the audio icon  from the window tray at the lower-right corner of the screen.
2. Select a desired surround sound effect from the “Environment” drop-down menu.
3. Click the **Speaker Configuration** tab.
4. Select **Synchronize the phonejack switch with the settings**.
5. Select a desired multi-channel operation from **No. of Speakers**.
  - a. Headphone
  - b. 2-Channel Mode for Stereo-Speaker Output
  - c. 4-Channel Mode for 4-Speaker Output
  - d. 6-Channel Mode for 5.1-Speaker Output
6. Click **OK** to close this window.

## Using 4- or 6-Channel Audio Function



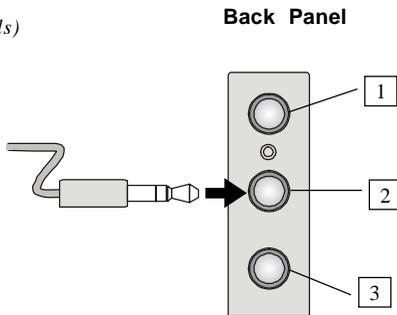
### **Connecting the Speakers**

When you have set the Multi-Channel Audio Function mode properly in the software utility, connect your speakers to the correct phone jacks in accordance with the setting in software utility.

#### **■ 2-Channel Mode for Stereo-Speaker Output**

Refer to the following diagram and caption for the function of each phone jack on the back panel when 2-Channel Mode is selected.

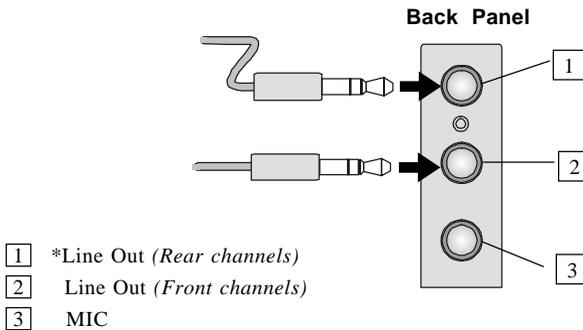
- 1 Line In
- 2 Line Out (*Front channels*)
- 3 MIC



■ **4-Channel Mode for 4-Speaker Output**

The audio jacks on the back panel always provide 2-channel analog audio output function, however these audio jacks can be transformed to 4- or 6- channel analog audio jacks by selecting the corresponding multi-channel operation from **No. of Speakers**.

Refer to the following diagram and caption for the function of each jack on the back panel when 4-Channel Mode is selected.



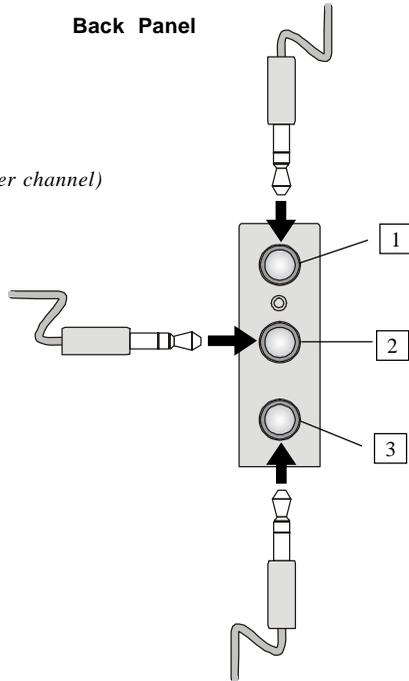
\* Line In function is converted to Line Out function when 4-Channel Mode for 4-Speaker Output is selected.

**■ 6-Channel Mode for 6-Speaker Output**

Refer to the following diagram and caption for the function of each jack on the back panel when 6-Channel Mode is selected.

- 1 \* Line Out (Rear channels)
- 2 Line Out (Front channels)
- 3 \* Line Out (Center and Subwoofer channel)

\* Both Line In and MIC function are converted to Line Out function when 4-Channel Mode for 6-Speaker Output is selected.



**MSI Reminds You...**

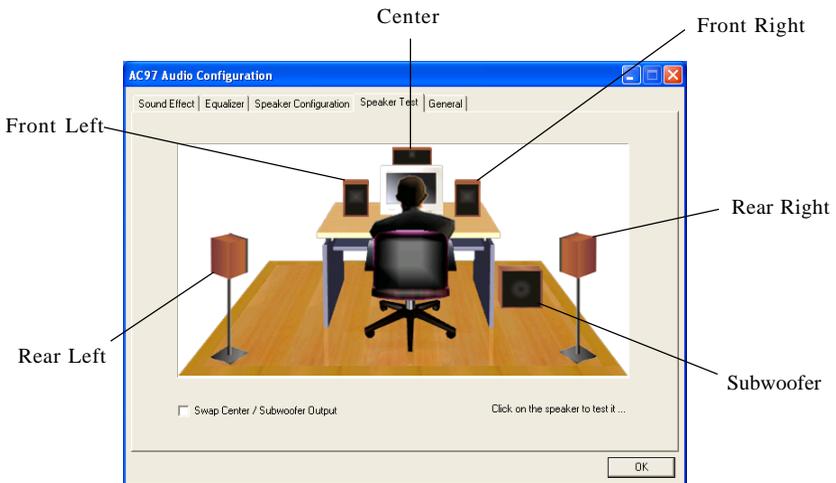
*If the Center and Subwoofer speaker exchange their audio channels when you play video or music on the computer, a converter may be required to exchange center and subwoofer audio signals. You can purchase the converter from a speaker store.*

## Testing the Connected Speakers

To ensure that 4- or 6-channel audio operation works properly, you may need to test each connected speaker to make sure every speaker work properly. 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.

### Testing Each Speaker

1. Click the audio icon  from the window tray at the lower-right corner of the screen.
2. Click the **Speaker Test** tab.
3. The following window appears. Select the speaker which you want to test by clicking it.



#### MSI Reminds You...

*6 speakers appear on the "Speaker Test" window only when you select "6-Channel Mode" in the "No. of Speakers" column. If you select "4-Channel Mode", only 4 speakers appear on the window.*

4. While you are testing the speakers in 6-Channel Mode, if the sound coming from the center speaker and subwoofer is swapped, you should select **Swap Center/Subwoofer Output** to readjust these two channels.



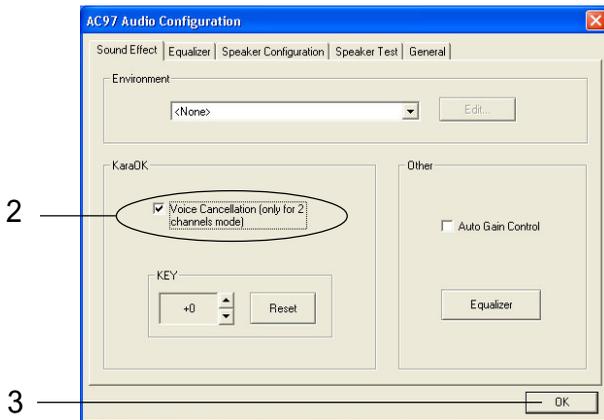
Select this function

## Playing KaraOK

The KaraOK function will automatically remove human voice (lyrics) and leave melody for you to sing the song. Note that this function applies only for 2-channel audio operation.

### Playing KaraOK

1. Click the audio icon  from the window tray at the lower-right corner of the screen.
2. In the Sound Effect tab, select **Voice Cancellation** under “KaraOK.”
3. Click **OK** to close this window.



## ***Appendix B: VIA VT8237 Serial ATA RAID Introduction***

The Southbridge VT8237 provides a hybrid solution that combines two independent SATA ports for support of up to two Serial ATA (Serial ATA RAID) drives.

Serial ATA (SATA) is the latest generation of the ATA interface. SATA hard drives deliver blistering transfer speeds of up to 150MB/sec. Serial ATA uses long, thin cables, making it easier to connect your drive and improving the airflow inside your PC.

The key features of VT8237 SATA RAID are:

1. Support two SATA hard disk drives.
2. Only SATA supports RAID.
3. Supports ATA 133 high performance hard disk drive.
4. Dual independent ATA channels and maximum connection of four hard disk drives allowed.
5. Supports Ultra DMA mode 6/5/4/3/2/1/0, DMA mode 2/1/0, and PIO mode 4/3/2/1/0.
6. Supports RAID 0 and RAID 1.
7. 4 KB to 64 KB striping block size support.
8. Bootable disk or disk array support.
9. Windows-based RAID configure and management software tool. (Compatible with BIOS)
10. Supports hot-swap failed disk drive in RAID 1 array.
11. ATA SMART function support.
12. Microsoft Windows 98, Me, NT4.0, 2000, XP operating systems support.
13. Event log for easy troubleshooting.

## Introduction

This section gives a brief introduction on the RAID-related background knowledge and a brief introduction on VIA SATA RAID Host Controller. For users wishing to install their VIA SATA RAID driver and RAID software, proceed to **Driver and RAID Software Installation** section.

### RAID Basics

RAID (Redundant Array of Independent Disks) is a method of combining two or more hard disk drives into one logical unit. The advantage of an Array is to provide better performance or data fault tolerance. Fault tolerance is achieved through data redundant operation, where if one drives fails, a mirrored copy of the data can be found on another drive. This can prevent data loss if the operating system fails or hangs. The individual disk drives in an array are called “members”. The configuration information of each member is recorded in the “reserved sector” that identifies the drive as a member. All disk members in a formed disk array are recognized as a single physical drive to the operating system.

Hard disk drives can be combined together through a few different methods. The different methods are referred to as different RAID levels. Different RAID levels represent different performance levels, security levels and implementation costs. The RAID levels which the VIA VT8237 SATA RAID Host Controller supports are RAID 0 and RAID 1. The table below briefly introduced these RAID levels.

RAID Level	No. of Drives	Capacity	Benefits
RAID 0 (Striping)	2	Number drives * 2	Highest performance without data protection
RAID 1 (Mirroring)	2	Smallest size	Data protection

### **RAID 0 (Striping)**

RAID 0 reads and writes sectors of data interleaved between multiple drives. If any disk member fails, it affects the entire array. The disk array data capacity is equal to the number of drive members times the capacity of the smallest member. The striping block size can be set from 4KB to 64KB. RAID 0 does not support fault tolerance.

### **RAID 1 (Mirroring)**

RAID 1 writes duplicate data onto a pair of drives and reads both sets of data in parallel. If one of the mirrored drives suffers a mechanical failure or does not respond, the remaining drive will continue to function. Due to redundancy, the drive capacity of the array is the capacity of the smallest drive. Under a RAID 1 setup, an extra drive called the .spare drive. can be attached. Such a drive will be activated to replace a failed drive that is part of a mirrored array. Due to the fault tolerance, if any RAID 1 drive fails, data access will not be affected as long as there are other working drives in the array.

## BIOS Configuration

When the system powers on during the POST (Power-On Self Test) process, press <Tab> key to enter the BIOS configuration.

```
VIA Technologies, Inc. VIA V16420 RAID BIOS Setting Utility V1.10
Copyright (C) VIA Technologies, Inc. All Right reserved.

Press < Tab > key into User Window!
Scan Devices, Please wait...
Channel 0 Master: Maxtor 34098H4
Channel 1 Master: Maxtor 34098H4
```

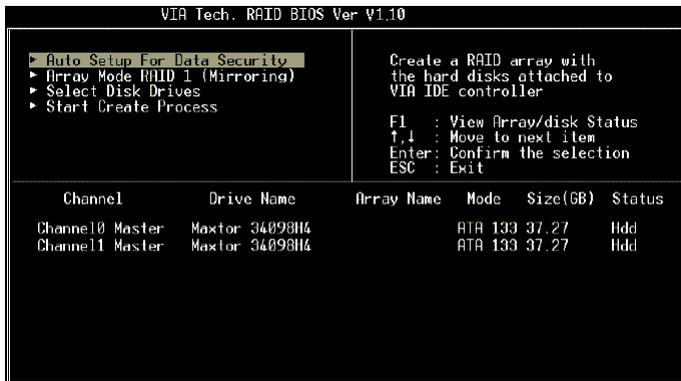
The Serial ATA RAID volume may be configured using the VIA Tech. RAID BIOS. Always use the arrow keys to navigate the main menu, use up and down arrow key to select the each item and press <Enter> to call out the list of creation steps. The main interface of BIOS configuration utility is as below:

```
VIA Tech. RAID BIOS Ver V1.10
```

<pre>▶ Create Array ▶ Delete Array ▶ Create/Delete Spare ▶ Select Boot Array ▶ Serial Number View</pre>	<pre>Create a RAID array with the hard disks attached to VIA IDE controller  F1 : View Array/disk Status ↑,↓ : Move to next item Enter: Confirm the selection ESC : Exit</pre>				
Channel	Drive Name	Array Name	Mode	Size(GB)	Status
Channel0 Master	Maxtor 34098H4		ATA 133	37.27	Hdd
Channel1 Master	Maxtor 34098H4		ATA 133	37.27	Hdd

## Create Disk Array

Use the up and down arrow keys to select the **Create Array** command and press <Enter>.



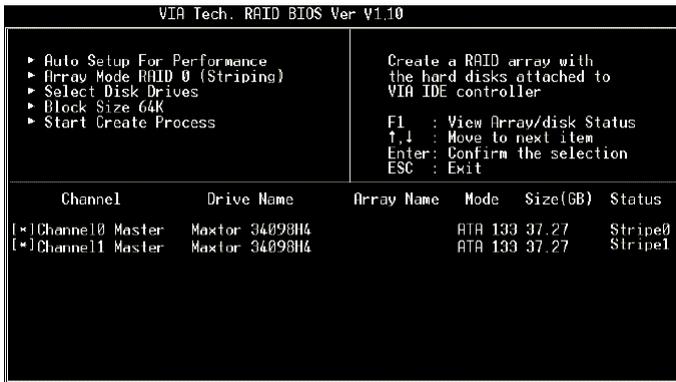
### MSI Reminds You...

*The “Channel”, “Drive Name”, “Mode” and “Size (GB)” in the following example might be different from your system.*

Select **Array Mode** and press <Enter>, a list of array modes will appear. Highlight the target array mode that you want to create, and press <Enter> to confirm the selection. If RAID 1 or RAID 0/1 is selected, an option list will popup and enable the users to select **Create only** or **Create and duplicate**. **Create only** will allow BIOS to only create an array. The data on the mirroring drive may be different from the source drive. **Create and duplicate** lets BIOS copy the data from the source to the mirroring drive.



After array mode is selected, there are two methods to create a disk array. One method is “**Auto Setup**” and the other one is “**Select Disk Drives**”. **Auto Setup** allows BIOS to select the disk drives and create arrays automatically, but it does not duplicate the mirroring drives even if the user selected **Create and duplicate** for RAID 1. It is recommended all disk drives are new ones when wanting to create an array. **Select Disk Drives** lets the user select the array drives by their requirements. When using **Select Disk Drives**, the channel column will be activated. Highlight the target drives that you want to use and press <Enter> to select them. After all drives have been selected, press <Esc> to go back to the creation steps menu.



If user selects a RAID 0 array in step 2, the block size of the array can also be selected. Use the arrow key to highlight **Block Size** and press <Enter>, then select a block size from the popup menu. The block size can be 4KB to 64KB.





**MSI Reminds You...**

*Even though 64KB is the recommended setting for most users, you should choose the block size value which is best suited to your specific RAID usage model.*

**4KB:** *For specialized usage models requiring 4KB blocks*

**8KB:** *For specialized usage models requiring 8KB blocks*

**16KB:** *Best for sequential transfers*

**32KB:** *Good for sequential transfers*

**64KB:** *Optimal setting*

Use the arrow key to highlight **Start Create Process** and press <Enter>. A warning message will appear, Press **Y** to finish the creation, or press **N** to cancel the creation.

Important note: All existing content in the hard drive will be destroyed after array creation.

## Delete Disk Array

A RAID can be deleted after it has been created. To delete a RAID, use the following steps:

1. Select **Delete Array** in the main menu and press <Enter>. The channel column will be activated.
2. Select the member of an array that is to be deleted and press <Enter>. A warning message will show up, press Y to delete or press N to cancel.

```
VIA Tech. RAID BIOS Ver V1.10

▶ Create Array
▶ Delete Array
▶ Create/Delete Spare
▶ Select Boot Array
▶ Serial Number View

The selected array will be destroyed.
Are you sure? Continue? Press Y/N

Delete a RAID array contain
the hard disks attached to
VIA IDE controller

F1 : View Array/disk Status
↑,↓ : Move to next item
Enter: Confirm the selection
ESC : Exit

Channel      Drive Name      Array Name  Mode  Size(GB)  Status
[*]Channel0 Master Maxtor 34098H4  ARRAY 0  ATA 133 37.27  Stripe0
[*]Channel1 Master Maxtor 34098H4  ARRAY 0  ATA 133 37.27  Stripe1
```

Deleting a disk array will destroy all the data on the disk array except RAID 1 arrays. When a RAID is deleted, the data on these two hard disk drives will be reserved and become two normal disk drives.

## Create and Delete Spare Hard Drive

If a RAID 1 array is created and there are drives that do not belong to other arrays, the one that has a capacity which is equal to or greater than the array capacity can be selected as a spare drive for the RAID 1 array. Select **Create/Delete Spare** and press <Enter>, the channel column will then be activated. Select the drive that you want to use as a spare drive and press <Enter>, the selected drive will be marked as **Spare**. The spare drive cannot be accessed in an OS.

To delete a spare drive, highlight **Create/Delete Spare** and press <Enter>. The spare drive will be highlighted, press <Enter> to delete the spare drive.



## View Serial Number of Hard Drive

Highlight **Serial Number View** and press <Enter>. Use arrow key to select a drive, the selected drive's serial number can be viewed in the last column. The serial number is assigned by the disk drive manufacturer.

Press the **F1** key to show the array status on the lower screen. If there are no disk arrays then nothing will be displayed on the screen.



VIA Tech. RAID BIOS Ver V1.10

<ul style="list-style-type: none"><li>▶ Create Array</li><li>▶ Delete Array</li><li>▶ Create/Delete Spare</li><li>▶ Select Boot Array</li><li>▶ Serial Number View</li></ul>	Create a RAID array with the hard disks attached to VIA IDE controller		
	F1 : View Array/disk Status ↑,↓ : Move to next item Enter: Confirm the selection ESC : Exit		
Array Name	Array Mode	Block Size(GB)	Size(GB)
ARRAY 0	Mirror	N/A	37.27
ARRAY 1	Mirror	N/A	37.27

## Duplicate Critical RAID 1 Array

When booting up the system, BIOS will detect if the RAID 1 array has any inconsistencies between user data and backup data. If BIOS detects any inconsistencies, the status of the disk array will be marked as critical, and BIOS will prompt the user to duplicate the RAID 1 in order to ensure the backup data consistency with the user data.



If user selects **Continue to boot**, it will enable duplicating the array after booting into OS.

## Rebuild Broken RAID 1 Array

When booting up the system, BIOS will detect if any member disk drives of RAID has failed or is absent. If BIOS detects any disk drive failures or missing disk drives, the status of the array will be marked as broken.

If BIOS detects a broken RAID 1 array but there is a spare hard drive available for rebuilding the broken array, the spare hard drive will automatically become the mirroring drive. BIOS will show a main interface just like a duplicated RAID 1. Selecting **Continue to boot** enables the user to duplicate the array after booting into operating system.

If BIOS detects a broken RAID 1 array but there is no spare hard drive available for rebuilding the array, BIOS will provide several operations to solve such problem.



### 1. Power off and Check the Failed Drive:

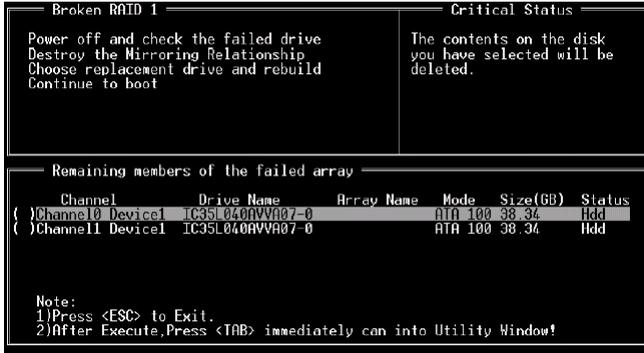
This item turns off the computer and replaces the failed hard drive with a good one. If your computer does not support APM, you must turn off your computer manually. After replacing the hard drive, boot into BIOS and select **Choose replacement drive and rebuild** to rebuild the broken array.

### 2. Destroy the Mirroring Relationship:

This item cancels the data mirroring relationship of the broken array. For broken RAID 1 arrays, the data on the surviving disk will remain after the destroy operation. However, **Destroy the Mirroring Relationship** is not recommend because the data on the remaining disk will be lost when the hard drive is used to create another RAID 1 array.

### 3. Choose Replacement Drive and Rebuild:

This item enables users to select an already-connected hard drive to rebuild the broken array. After choosing a hard drive, the channel column will be activated.



Highlight the target hard drive and press <Enter>, a warning message will appear. Press **Y** to use that hard drive to rebuild, or press **N** to cancel. Please note selecting option **Y** will destroy all the data on the selected hard drive.

### 4. Continue to boot:

This item enables BIOS to skip the problem and continue booting into OS.

## Installing RAID Software & Drivers

### Install Driver in Windows OS

#### ► New Windows OS (2000/XP/NT4) Installation

The following details the installation of the drivers while installing Windows XP.

1. Start the installation:

Boot from the CD-ROM. Press **F6** when the message "Press F6 if you need to install third party SCSI or RAID driver" appears.

2. When the Windows Setup window is generated, press **S** to specify an Additional Device(s).

3. Insert the driver diskette you make into drive A: and press <Enter>.



#### **MSI Reminds You...**

*Please follow the instruction below to make a VIA Serial ATA RAID driver for yourself.*

- 1. Insert the MSI CD into the CD-ROM drive.*
- 2. Ignore the Setup screen and use "Explorer" to browse the CD.*
- 3. Copy all the contents (including the sub-folders) in the \\IDE\VIA\Driver to a formatted floppy disk.*
- 4. The driver disk for VIA Serial ATA driver is done.*

4. Depending on your operation system, choose **VIA Serial ATA RAID Controller(Windows XP)**, **VIA Serial ATA RAID Controller (Windows 2000)** or **VIA Serial ATA RAID Controller (Windows NT4)** from the list that appears on Windows XP Setup screen, press the <Enter> key.

5. Press <Enter> to continue with installation or if you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, press <Enter> to continue with installation.

6. From the Windows XP Setup screen, press the <Enter> key. Setup will now load all device files and then continue the Windows XP installation

#### ► Existing Windows XP Driver Installation

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 **VIA SATA RAID Utility**.

4. The drivers will be automatically installed.

► **Confirming Windows XP Driver Installation**

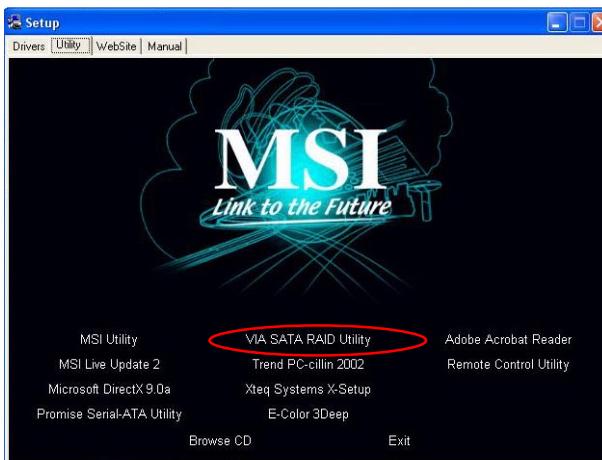
1. From Windows XP, open the **Control Panel** from **My Computer** followed by the System icon.
2. Choose the **Hardware** tab, then click the **Device Manager** tab.
3. Click the "+" in front of the **SCSI and RAID Controllers** hardware type. The driver **VIA IDE RAID Host Controller** should appear.

## Installation of VIA SATA RAID Utility

The VIA SATA RAID Utility is the software package that enables high-performance RAID 0 arrays in the Windows\* XP operating system. This version of VIA SATA RAID Utility contains the following key features:

- Serial ATA RAID driver for Windows XP
- VIA SATA RAID utility
- RAID0 and RAID1 functions

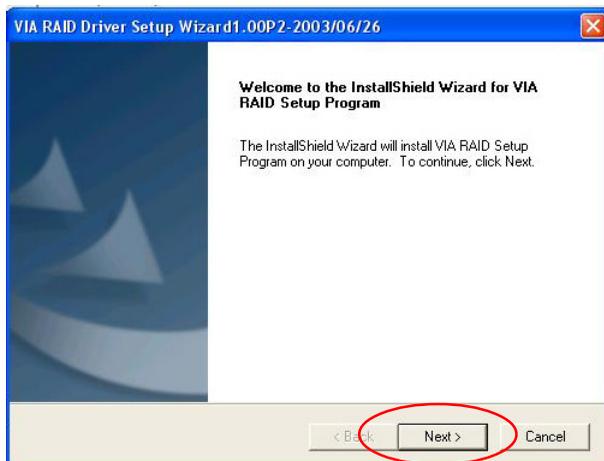
Insert the MSI CD and click on the **VIA SATA RAID Utility** to install the software.



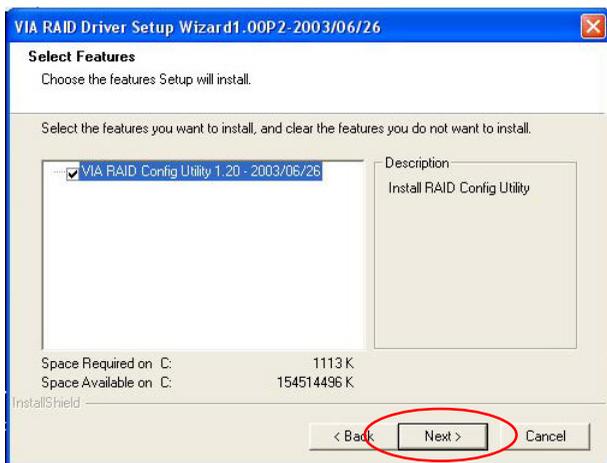
### MSI Reminds You...

*Please note the Setup screen may be different as shown as following depending on the mainboard you purchased.*

The **InstallShield Wizard** will begin automatically for installation. Click on the **Next** button to proceed the installation in the welcoming window.

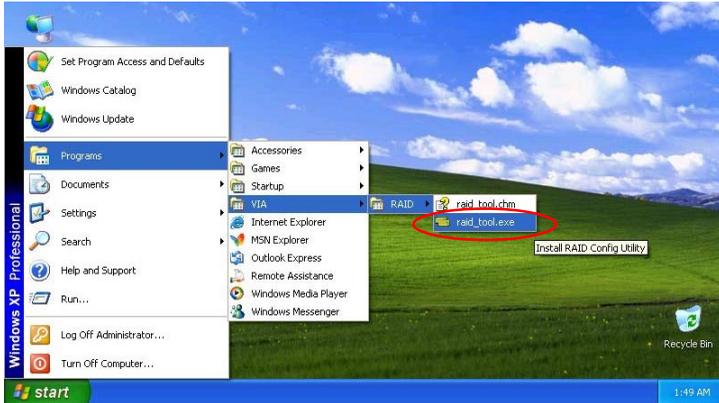


Put a check mark in the check box to install the feature you want. Then click **Next** button to proceed the installation.



## Using VIA RAID Tool

Once the installation is complete, go to **Start** ---> **Programs** ---> **VIA** --> **raid\_tool.exe** to enable **VIA RAID Tool**.



After the software is finished installation, it will automatically started every time Windows is initiated. You may double-click on the  icon shown in the system tray of the tool bar to launch the **VIA RAID Tool** utility.



The main interface is divided into two windows and the toolbar above contain the main functions. Click on these toolbar buttons to execute their specific functions. The left windowpane displays the controller and disk drives and the right windowpane displays the details of the controller or disk drives. In KT6 Delta, the available features are as following:



View by Controller



View by Devices



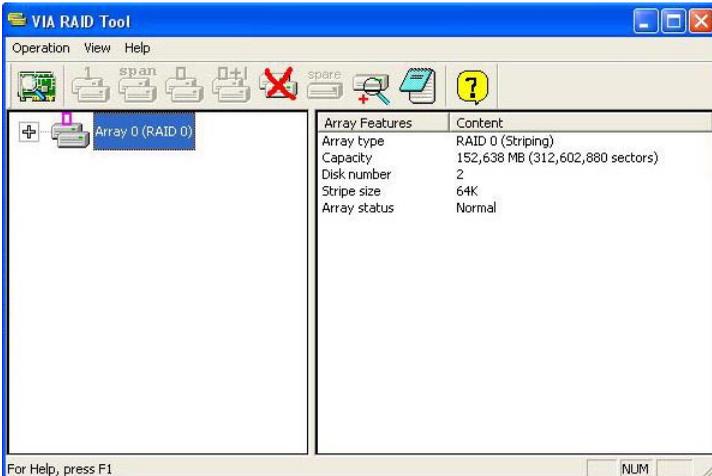
View Event log



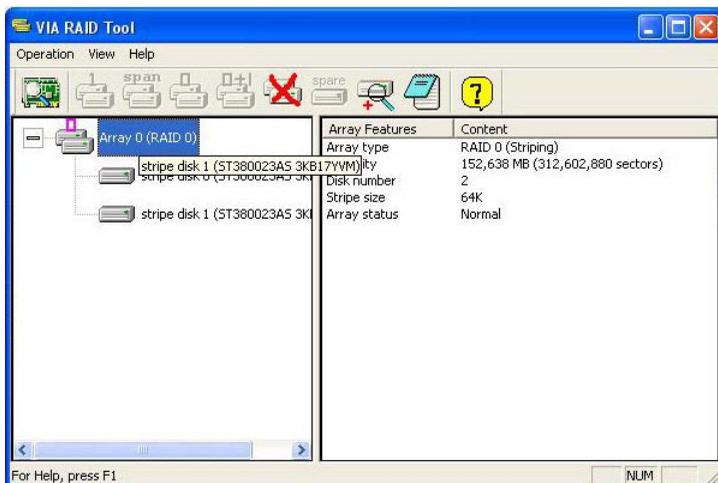
Help Topics

It means that VT8237 SATA RAID in KT6 Delta only has the feature of monitoring the statuses of RAID 0 and RAID 1.

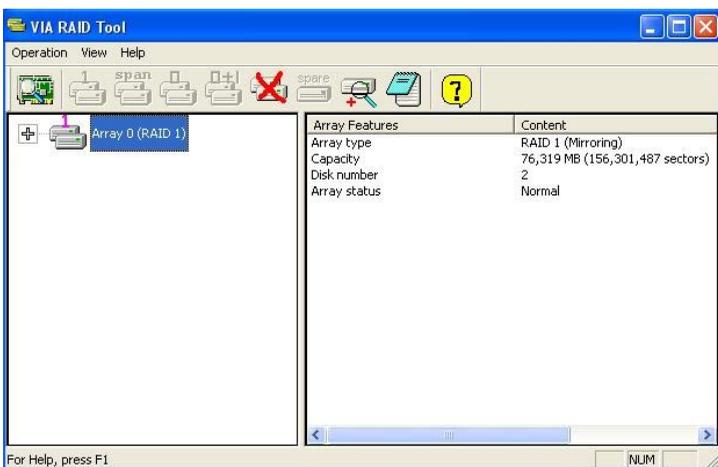
Click on  or  button to determine the viewing type of left window pane. There are two viewing types: By controllers and by device. Click on the object in the left window pane to display the status of the object in the right windowpane. The following screen shows the status of Array 0---RAID 0.



Click on the plus (+) symbol next to Array 0---RAID 0 to see the details of each disk.



You may also use the same  or  button to view the statuses of Array 0---RAID 1.



Click on the plus (+) symbol next to Array 0---RAID 1 to see the details of each disk.

