

# K8Ultra-V Series

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## FCC Compliance Statement

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. 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. However, there is no guarantee that interference will not occur in a particular installation.

## CE Mark

The device is in accordance with 89/336 ECC-ENC Directive.

120410126M1N

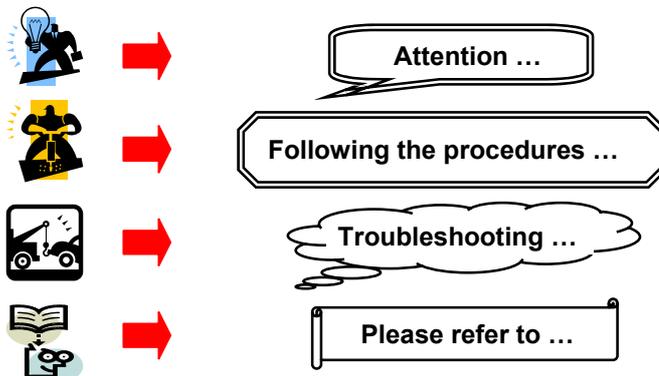
## You have to know !!!

- The images and pictures in this manual are for reference only and may vary slightly from actual product installation depending on specific hardware models, third party components and software versions.
- Unplug your computer when installing components and configuring switches and pins.
- This mainboard contains very delicate IC chips. Use a grounded wrist strap when working with the system.
- Do not touch the IC chips, leads, connectors or other components.
- Unplug the AC power when you install or remove any device on the mainboard.

## Package Contents

- ◆ K8Ultra-V series mainboard
- ◆ IDE Cable/ FDC Cable
- ◆ USB Bracket (optional)
- ◆ 1394 Bracket (optional)
- ◆ COM Port & Game Port Bracket (optional)
- ◆ SPDIF & FRONT AUDIO Port Bracket (optional)
- ◆ SATA Power cord/ SATA Cable (optional)
- ◆ I/O Shield / WinCinema software (optional)
- ◆ Installation and Setup Driver CD
- ◆ K8Ultra-V Series User Manual

## Symbols



# **K8Ultra-V Series**

VIA® K8T800 PRO & VT8237  
Supports Socket 754 AMD® Athlon™ 64 Processor

## **USER Manual**

### **Dimensions (ATX form-factor):**

- 244mm x 305mm (WxL)

### **Operating System:**

- Supports most popular operating systems: Windows® 98/ME/2000/XP etc.

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# **Chapter 1. Getting Started**

## **Introduction**

Congratulations on choosing the K8Ultra-V Series mainboard! The K8Ultra-V series includes the K8Ultra-V PRO II, K8Ultra-V PRO-1394, K8Ultra-V PRO and K8Ultra-V. The K8Ultra-V series is based on K8T800 PRO and VT8237 chipset. It also supports AMD® Athlon™ 64 Processor.

The series provide 3 sockets using 184 pin DDR SDRAM. You can install DDR400/ 333/ 266/ 200 (PC3200/ 2700/ 2100/ 1600) SDRAM. It supports a total capacity of up to 3GB.

The series provides one AGP Slot for 2X/ 4X/ 8X (1.5V only) AGP cards.

The series include built in IDE facilities that support Ultra ATA 33/ 66/ 100/ 133. It also includes built in Serial ATA facilities that support SATA RAID 0 or 1 and supports transfer rate to 150 MB/s per channel.

The K8Ultra-V PRO II comes with a PCI multi channel audio controller (VT1720) which supports high quality 8 channel audio (7.1 channel audio effect). The K8Ultra-V PRO-1394, K8Ultra PRO and K8Ultra-V also come with a AC'97 codec which supports 6 channel audio (5.1 channel audio effect). All of them also support Sony/ Philips Digital Interface.

The K8Ultra-V series also comes with eight USB 2.0 ports. And the K8Ultra-V PRO II and K8Ultra-V PRO-1394 also include a IEEE 1394 controller (VT 6307) that supports two IEEE 1394 ports. The series also includes an infrared header.

The K8Ultra-V PRO II comes preinstalled with **Voice Genie and BIOS Mirror**. Voice Genie allows you to select between four languages for audio diagnostics. BIOS Mirror allows you to have a backup (mirror) BIOS when the primary BIOS is damaged by virus or flash update.

The K8Ultra-V PRO II, K8Ultra-V PRO-1394 and K8Ultra-V PRO also come with a Gb LAN Chip which supports a back panel LAN port capable of 1Gbit/s transmission speeds.

All of the information in this manual only for reference. This specification is subject to change without notice.

## **Specification**

### **CPU**

- Supports Socket 754
- Supports AMD® Athlon™ 64 processor
- HyperTransport™ Link
  - supports 16-bit to be capable of operating up to 1 GHz (2000 MT/s) with a bandwidth of up to 3.2 GB/s in each direction

### **Speed**

- 33 MHz, 32 bit PCI interface (PCI 2.2 compliant)
- 66 MHz AGP 2.0 compliant interface that supports 2X/ 4X data transfer modes
- 66 MHz AGP 3.0 compliant interface that supports 8X data transfer modes

### **Chipset**

- Northbridge – VIA® K8T800 PRO
- Southbridge – VIA® VT8237
- I/O Controller – Winbond Super I/O W83697HF
- PCI Audio Controller – VIA® VT1720 (only for K8Ultra-V PRO II)
- AC'97 Codec – Realtek ALC655 (for K8Ultra-V PRO-1394, K8Ultra-V PRO and K8Ultra-V)
- IEEE 1394 Controller – VIA® VT6307 (for K8Ultra-V PRO II and K8Ultra-V PRO-1394)
- LAN Controller – Marvell MV8001 (for K8Ultra-V PRO II, K8Ultra-V PRO-1394 and K8Ultra-V PRO)

### **DRAM Memory**

- Supports DDR400 (PC3200)/ DDR333 (PC2700)/ DDR266 (PC2100)/ DDR200 (PC1600) SDRAM
- Supports 64 MB/ 128 MB/ 256 MB/ 512 MB/ 1 GB unbuffered with (or without) ECC DIMM modules
- Supports up to three memory modules with a total capacity of 3 GB
- Supports up to two DDR400 memory modules with a total capacity of 2 GB (see memory installation section for more details)

### **Shadow RAM**

- This mainboard is equipped with a memory controller providing shadow RAM and support for ROM BIOS

### **BUS Slots**

- Provides one AGP slot (1.5V only)
- Provides six PCI bus slots

### **Flash Memory**

- Supports flash memory functionality
- Supports ESCD functionality

### **Hardware Monitor Function**

- Monitors CPU and Chassis Fan Speed
- Monitors CPU & system Temperature
- Monitors System Voltage

### **PCI Multi Channels Audio Controller Onboard (only for K8Ultra-V PRO II)**

- Supports sample rates up to 96 KHz
- Multi-channel AC-link supported alternatively
- Integrated S/ PDIF transmitter
- 8-channel playback capability (7.1 Channel Audio Effect)

### **AC'97 Sound Codec Onboard (for K8Ultra-V PRO-1394/ K8Ultra-V PRO/K8Ultra-V)**

- High performance CODEC with high S/N ration (> 90dB)
- Compliant with AC'97 2.2 specification
- 6-channel playback capability (Super 5.1 channel audio effect)
- 3D Stereo enhancement
- Sony/ Philips Digital interface (S/PDIF)

## K8Ultra-V Series

### **LAN Chip (for K8Ultra-V PRO II/ K8Ultra PRO-1394 and K8Ultra-V PRO)**

- 10/ 100/ 1000 Mbps Ethernet support

### **IDE Facilities**

- Supports Ultra ATA 33, Ultra ATA 66, Ultra ATA 100, Ultra ATA 133
- Supports IDE interface with CD-ROM
- Supports high capacity hard disk drives
- Supports installation of up to 4 drives, with separate IDE connections for Primary and Secondary connectors

### **IEEE 1394 Controller (for K8Ultra-V PRO II/ K8Ultra-V PRO-1394)**

- Supports two IEEE 1394 ports for 1394 interface devices

### **Universal Serial Bus:**

- Supports up to eight USB ports for USB interface devices
- Supports USB 2.0 Enhanced Host Controller Interface (EHCI) and dual USB 1.1 Open Host Controller Interface (OHC1)

### **I/O facilities**

- One multi-mode Parallel Port capable of supporting the following specifications:
  1. Standard & Bi-direction Parallel Port
  2. Enhanced Parallel Port (EPP)
  3. Extended Capabilities Port (ECP)
- Supports two serial ports (one of the back panel and one of the front panel) 16550 UART
- Supports PS/2 mouse and PS/2 keyboard
- Supports 360 KB, 720 KB, 1.2 MB, 1.44 MB, and 2.88 MB floppy disk drives
- MIDI compatible
- Game port compatible

### **Serial ATA facilities**

- Compatible with SATA Spec 1.0
- Supports Serial ATA specification of 150 MB/sec transfers
- Supports SATA RAID 0 or RAID 1 mode

### **BIOS**

- Phoenix-Award™ BIOS
- Supports APM1.2
- Supports ACPI power management
- Supports "BIOS Mirror" technology (only for K8Ultra-V PRO II)

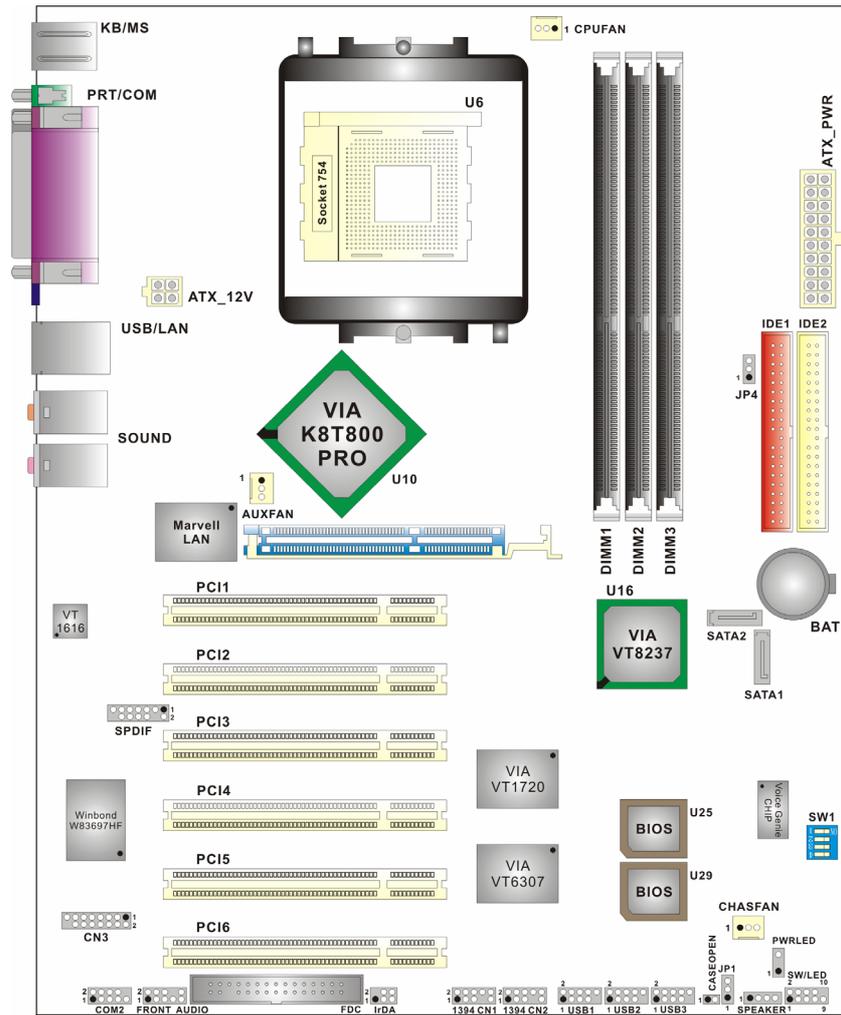
### **Voice Genie (only for K8Ultra-V PRO II)**

- Voice Genie can generate audio diagnostics in 4 different languages (English · Chinese · Japanese · German)

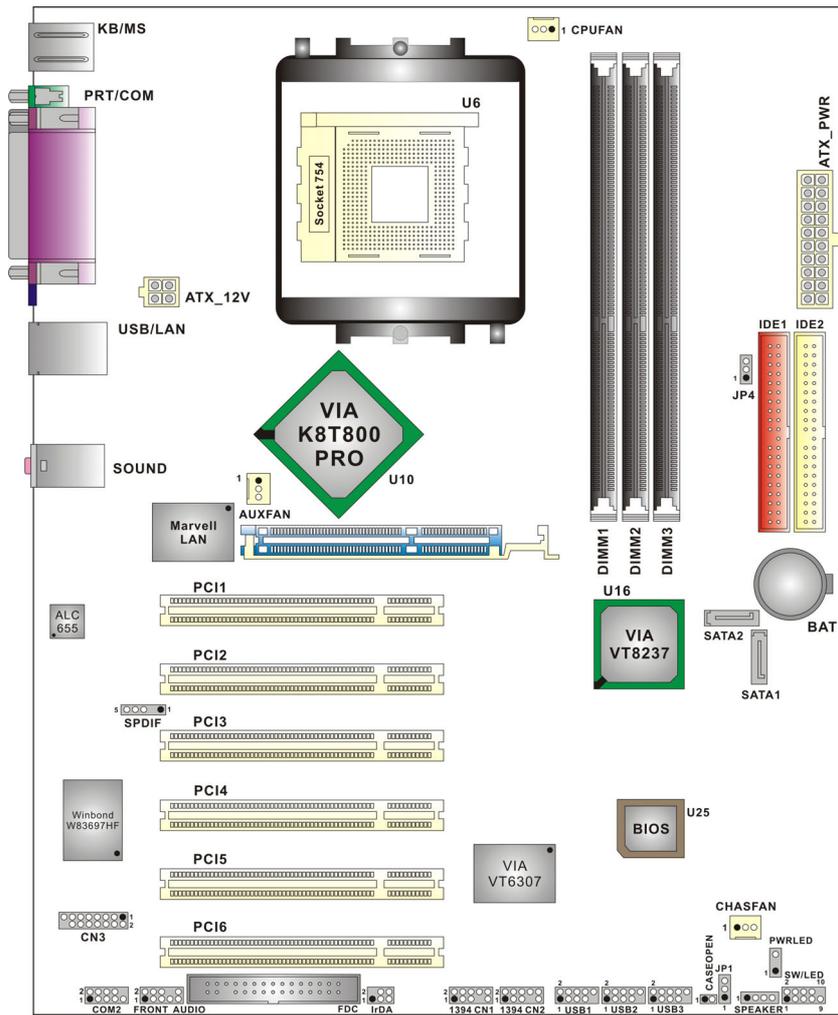
### **Watch Dog Timer**

- The mainboard contains a special feature called the "Watch Dog Timer" which is used to detect when the system is unable to handle over-clocking configurations during POST stage. Once detected the system will reset the configurations and reboot the system after five seconds.

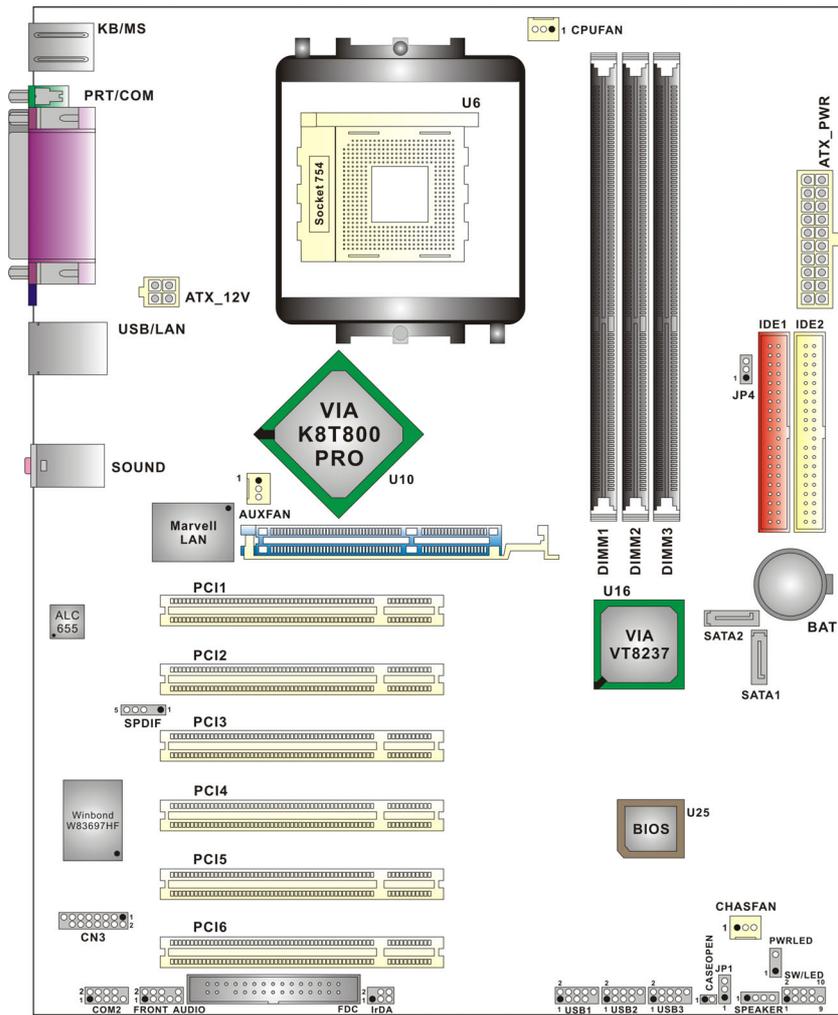
# Configuration Layout of K8Ultra-V PRO II



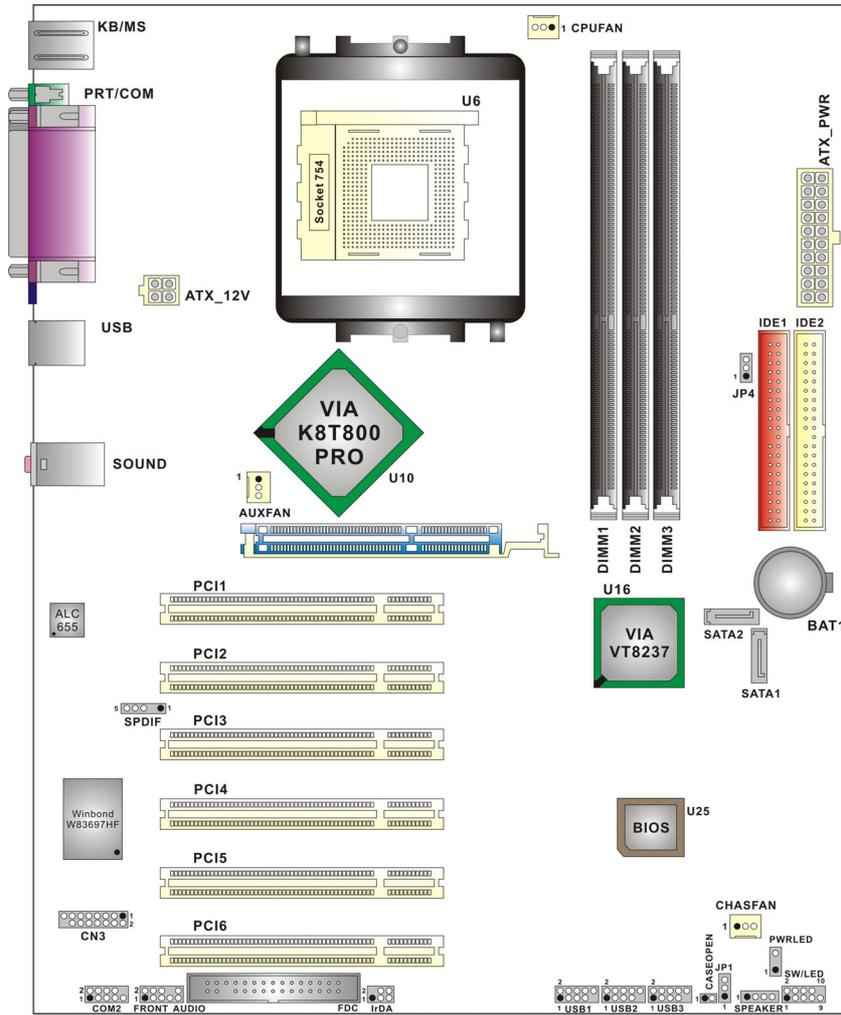
# Layout of K8Ultra-V PRO-1394



# Layout of K8Ultra-V PRO



# Layout of K8Ultra-V



## Hardware Installation

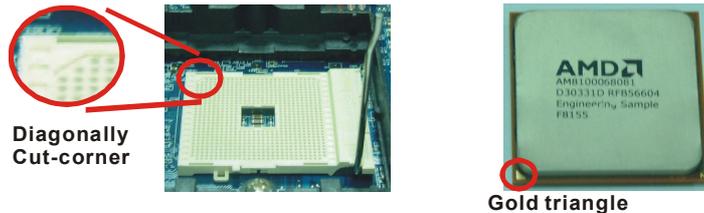
This section will assist you in quickly installing your system hardware. Wear a wrist ground strap before handling components. Electrostatic discharge may damage your system components.

### CPU Processor Installation

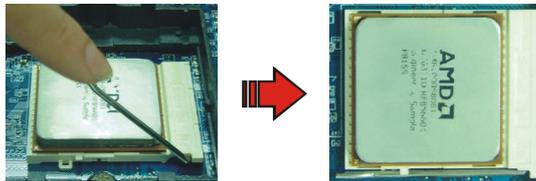
This mainboard supports AMD® Athlon™ 64 processor using a Socket 754. Before building your system, we suggest you visit the AMD website and review the processor installation procedures. <http://www.amd.com>

#### CPU Socket 754 Configuration Steps:

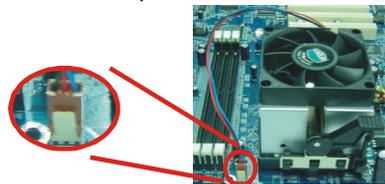
1. Locate the CPU socket on your mainboard and nudge the locking lever away from the socket. Then lift the lever to a 90-degree angle.
2. On the socket, locate the corner which has the "diagonally cut-corner" on the rectangular shaped pattern of pinholes (see diagram below-left). Match that corner with the "gold triangle" on the CPU (see diagram below-right) and lower the CPU onto the socket. The bottom of the CPU should be flush with the face of the socket.



3. Lower the lever until it snaps back into position. This will lock down the CPU.



4. Smear thermal grease on top of the CPU. Lower the CPU fan onto the CPU and use the clasps on the fan to attach it to the socket. Finally, extend the power cable from the fan and insert it onto the "CPUFAN" adapter.

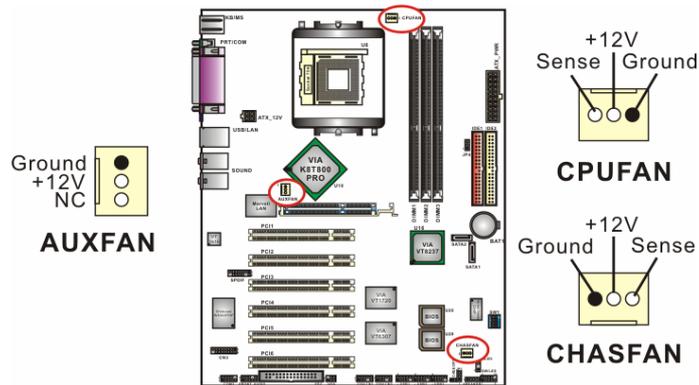


**Attention:** Overheating may damage the CPU and other sensitive components. Please check the installation completely before starting the system. Make sure the heatsink and the CPU fan are properly installed.

## K8Ultra-V Series

### FAN Headers

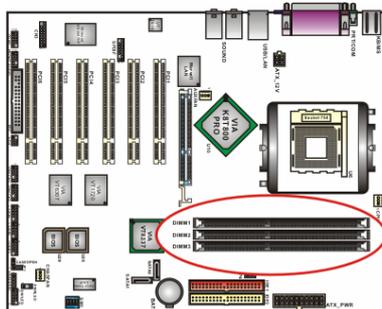
Three power headers are available for cooling fans, which play an important role in maintaining the ambient temperature in your system.



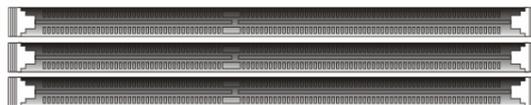
**Attention:** We strongly recommend that you use a CPU fan sink with your CPU. You can attach the CPU fan to the CPUFAN header.

### Memory Installation

The K8Ultra-V series contain 3 sockets, which use 184-pin DDR SDRAM with a total memory capacity of up to 3 GB. You can install unbuffered with (or without) ECC DDR400/ 333/ 266/ 200 (PC3200/ 2700/ 2100/ 1600) SDRAM.



DIMM1  
DIMM2



DIMM3

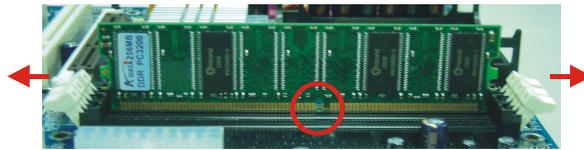
## **K8Ultra-V Series**

Please refer the table below to install the memory DIMMs.

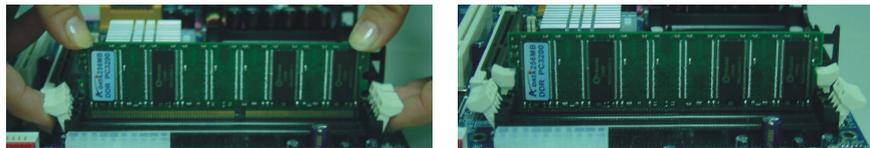
Number of DIMMs	DIMM 1	DIMM 2	DIMM 3	Maximum DRAM SPEED	
				1T	2T
1	x8 or x16 single side	X	X	DDR400	DDR400
1	X	x8 or x16 single side	X	DDR400	DDR400
1	X	X	x8 or x16 single side	DDR400	DDR400
1	x8 double side	X	X	DDR400	DDR400
1	X	x8 double side	X	DDR400	DDR400
1	X	X	x8 double side	DDR400	DDR400
2	x8 or x16 single side	x8 or x16 single side	X	DDR400	DDR400
2	x8 or x16 single side	x8 double side	X	DDR400	DDR400
2	x8 or x16 single side	X	x8 or x16 single side	DDR400	DDR400
2	x8 or x16 single side	X	x8 double side	DDR400	DDR400
2	x8 double side	x8 or x16 single side	X	DDR400	DDR400
2	x8 double side	x8 double side	X	DDR333	DDR333
2	x8 double side	X	x8 or x16 single side	DDR400	DDR400
2	x8 double side	X	x8 double side	DDR333	DDR333
2	X	x8 or x16 single side	x8 or x16 single side	DDR333	DDR400
2	X	x8 or x16 single side	x8 double side	DDR200	DDR400
2	X	x8 double side	x8 or x16 single side	DDR200	DDR400
2	X	x8 double side	x8 double side	DDR200	DDR333
3	x8 or x16 single side	x8 or x16 single side	x8 or x16 single side	DDR333	DDR400
3	x8 or x16 single side	x8 or x16 single side	x8 double side	DDR200	DDR333
3	x8 or x16 single side	x8 double side	x8 or x16 single side	DDR200	DDR333
3	x8 or x16 single side	x8 double side	x8 double side	DDR200	DDR333
3	x8 double side	x8 or x16 single side	x8 or x16 single side	DDR333	DDR333
3	x8 double side	x8 or x16 single side	x8 double side	DDR200	DDR333
3	x8 double side	x8 double side	x8 or x16 single side	DDR200	DDR333
3	x8 double side	x8 double side	x8 double side	DDR200	DDR333

## **RAM Module Installation:**

1. Pull the white plastic tabs on each side of the slot away from the slot.
2. Match the notch on the bottom of the RAM module with the corresponding pattern in the DIMM slot. This ensures that the module is inserted properly.



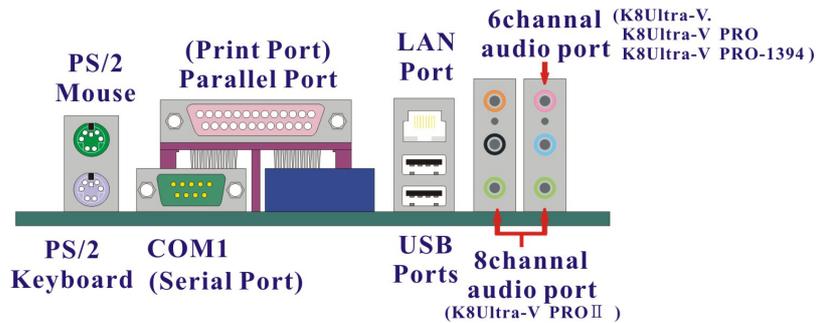
3. Lower the RAM module into the DIMM Slot and press firmly using both thumbs until the module snaps into place.



4. Repeat steps 1, 2 and 3 for the remaining RAM modules.

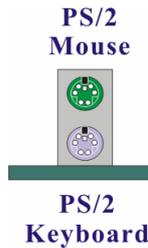
\* The pictures above are for reference only and may vary slightly for your

## Back Panel Configuration



### PS/2 Mouse & PS/2 Keyboard Connectors: KB/MS

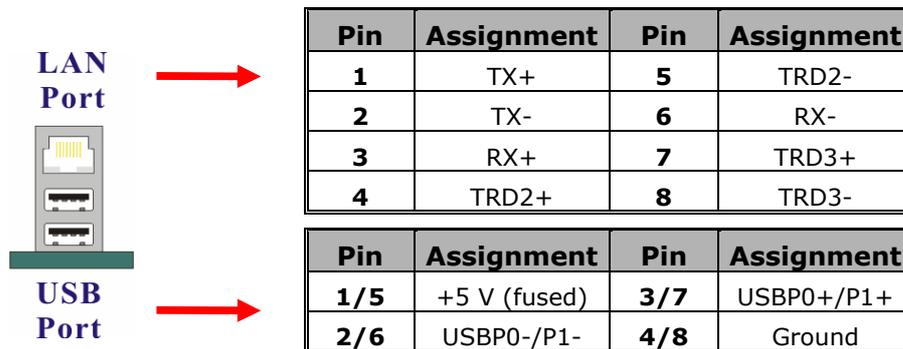
This series provides a standard PS/2 mouse connector and PS/2 Keyboard connector. The pin assignments are described below:



Pin	Assignment	Pin	Assignment
1	Data	4	+5 V (fused)
2	No connect	5	Clock
3	Ground	6	No connect

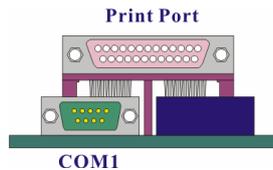
### USB & LAN Connectors: USB/ LAN

There are two USB connectors on the back panel. These USB connectors are used to attach to USB devices such as: keyboards, mice and other USB devices. You can plug the USB devices directly into this connector. The K8Ultra-V PRO II/ PRO-1394/ PRO also provide a LAN port. You can plug LAN devices directly into this connector.



## Serial and Parallel Interface Ports

The K8Ultra-V series come equipped with one serial port and one parallel port on the back panel. The interface ports will be explained below:



### The Serial Interface: COM1

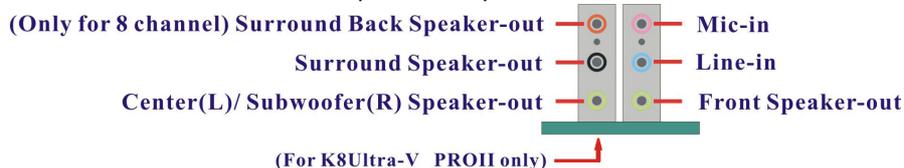
The serial interface port is sometimes referred to as a RS-232 port or an asynchronous communication port. Mice, modems and other peripheral devices can be connected to a serial port.

### Parallel Interface Port: PRT

The parallel port on your system has a 25-pin, DB25 connector and is used to interface with parallel printers and other devices using a parallel interface.

## Audio Port Connectors: Sound1 / Sound2

The series comes equipped with six Audio Ports. The three ports, Mic-in, Line-in and Front Speaker-out are standard audio ports that provides basic audio functionality. The other three surround sound ports are disabled until you install the 8 or 6 Channel Audio Effects driver which provide 8 or 6 channel (8 or 6 speaker) sound functionality. After you install these drivers and setup 8 or 6 channel Audio effect, the three additional audio ports are enabled and added to the Front Speaker-out port.



**Front Speaker-Out (Green)** Connects to standard audio speakers. This port becomes the front speakers when 8 or 6 Channel Audio Effects driver is installed and enabled. Also note that this port provides the most amperage of all the ports making it suitable for headphones and speakers without power cables.

**Line In (Blue)** Connects to an external audio device such as a CD player, tape player or other audio devices that provide audio out.

**Mic In (Pink)** Connects to a microphone.

**Surround Back Speaker-out (Orange)** This port represents the surround sound back speakers and is only functional when the 8 Channel Audio Effects driver is installed and enabled.

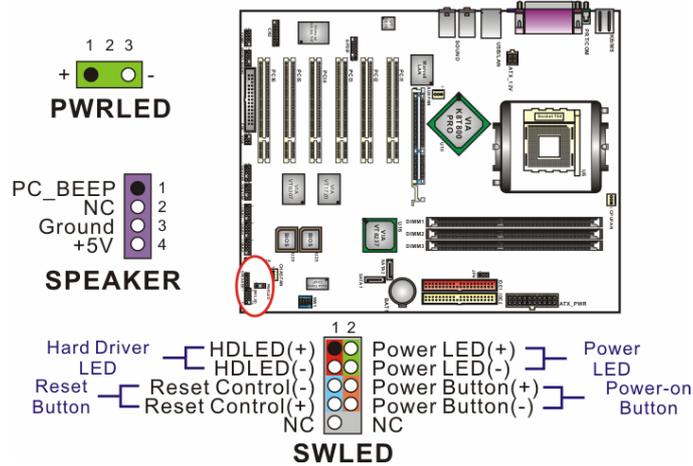
**Surround Speaker-out (Black)** This port represents an auxiliary port and is only functional when 8 or 6 Channel Audio Effects driver is installed and enabled.

**Center/Subwoofer (Green)** This port represents the Center/Subwoofer speakers and is only functional when the 8 or 6 Channel Audio Effects driver is installed and enabled.



This series supports 8 or 6 Channel Audio effects. See appendix I or II for more information.

## Front Panel Indicator: SW/LED、PWRLLED、SPEAKER



### HD LED (Hard Drive LED Connector/ red)

This connector can be attached to an LED on the front panel of a computer case. The LED will flicker during disk activity. This disk activity only applies to those IDE drives directly attached to the system board.

### RST SW (Reset Switch Connector/ blue)

This connector can be attached to a momentary SPST switch. This switch is normally left open. When closed it will cause the mainboard to reset and run the POST (Power On Self Test).

### PWR-LED (2-pin Power LED Connector/ green)

The mainboard provides two power LED connector. If there is a 2-pin power LED cable on the front panel of a computer case. You can attach it to the 2-pin power LED connector. The LED will illuminate while the computer is powered on.

### PWR SW (Power Button Connector/ orange)

This connector can be attached to a front panel power switch. The switch must pull the Power Button pin to ground for at least 50 ms to signal the power supply to switch on or off (the time required is due to internal debounce circuitry on the system board). At least two seconds must pass before the power supply will recognize another on/off signal.

### PWR-LED (3-Pin Power LED Connector/ green)

The mainboard provides two power LED connector. If there is a 3-pin power LED cable on the front panel of a computer case. You can attach it to the 3-pin power LED connector.

### SPEAKER (Speaker Header/ violet)

A front panel speaker can be connected to this connector. When you boot your computer, the speaker sounds a short "beep". If there is something wrong during the Power On Self-Test, the speaker sounds "irregular beep" to warning you.

## Connectors

### Floppy Disk Connector: FDC

The mainboard provides a standard floppy disk connector (FDC) that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy diskettes. This connector supports the floppy drive ribbon cables provided in the packaging.

### Hard Disk Connectors: IDE1/ IDE2 、 SATA1/ SATA2

The mainboard has a 32-bit Enhanced PCI IDE Controller that supports Ultra ATA 33, Ultra ATA 66, Ultra ATA 100 and Ultra ATA 133. It has two HDD connectors, IDE1 and IDE2.

#### IDE1 (Primary IDE Connector)

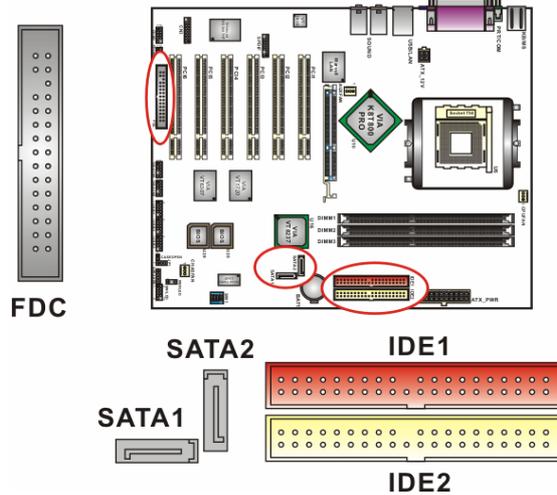
You can connect up to two hard drives to IDE1. If you attach two drives, you must use a ribbon cable with three connectors. You must also configure one drive as the master and one drive as the slave, using the jumpers located on each drive.

#### IDE2 (Secondary IDE Connector)

The IDE2 controller can also support a Master and a Slave drive. The configuration is similar to IDE1.

#### SATA1/ SATA2

The SATA connectors support transfer rate to 150 MB/s and SATA RAID 0 or 1 mode. The connectors only can connect one serial ATA hard disk device each. Please

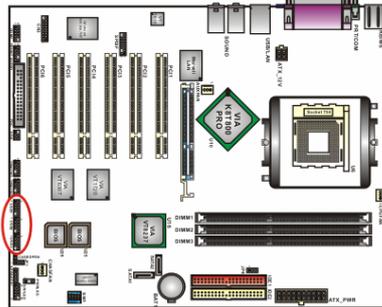


This mainboard supports SATA RAID 0 or 1. See appendix III for more information.

## Headers & Jumpers

### Front USB Headers: USB1/ USB2/ USB3

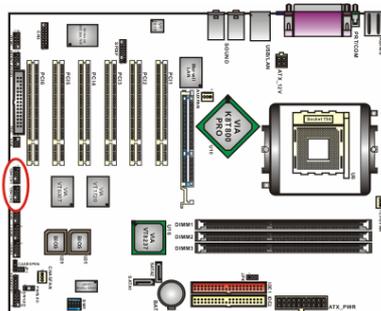
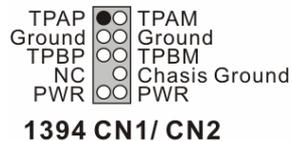
The K8Ultra-V series also provides three USB headers on the board allowing for 6 more USB ports. These attach to USB connectors embedded into the computer case or connected to a USB bracket (optional).



If you are using a USB 2.0 device with Windows 2000/XP, you will need to install the USB 2.0 driver from the Microsoft® website. If you are using Service pack 1 (or later) for Windows® XP, and using Service pack4 (or later) for Windows® 2000, you will not have to install the driver.

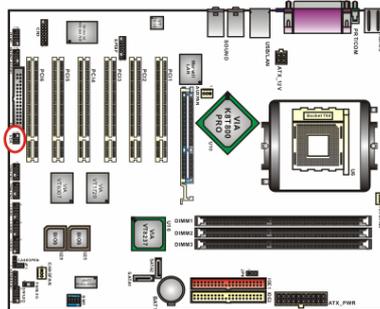
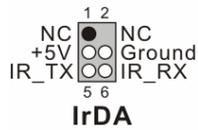
### IEEE 1394 Headers: 1394 CN1/ 1394 CN2 (for K8Ultra-V PRO II/ K8Ultra-V PRO-1394)

The IEEE 1394 high-speed serial bus provides enhanced PC connectivity for consumer electronics audio/video (A/V) appliances, storage peripherals, other PCs, and portable devices. This mainboard supports up to two IEEE 1394 devices. You can connect the IEEE 1394 bracket (optional) to the 1394 CN1 and 1394 CN2 headers.



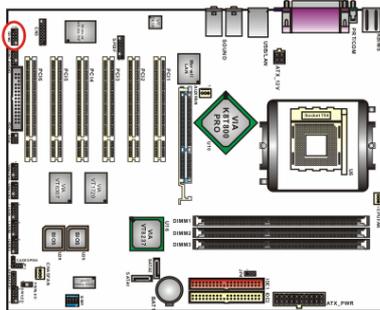
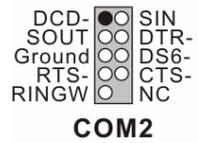
## Infrared Header: IrDA

This IrDA connector can be configured to support wireless infrared and is used to attach to an infrared sensing device. After the IrDA interface is configured, you can use this connector for connectionless data transfer to and from portable devices such as laptops and PDAs.



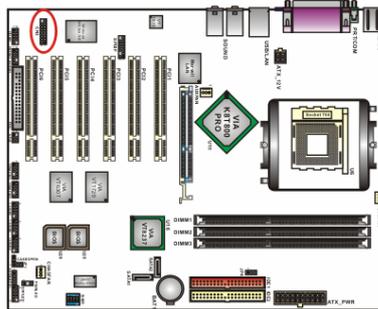
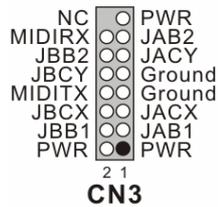
## COM Port Header: COM2

This mainboard supports a front serial port header. To use this header, you can install a COM port & Game port bracket (optional) with a COM port wire extending to this header. You can then attach your serial device to the serial port on the bracket.



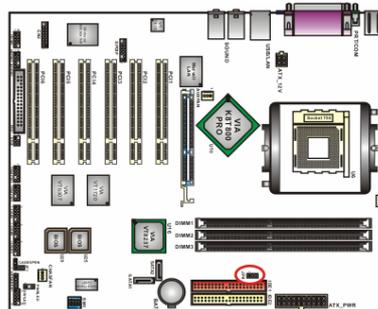
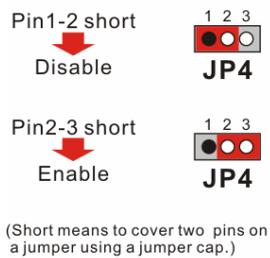
### Game Port Header: CN3

This mainboard supports a front game port header. To use this header you can install a COM port & Game port bracket (optional) with a Game port wire extending to this header. You can then attach gaming devices to the game port on the bracket.



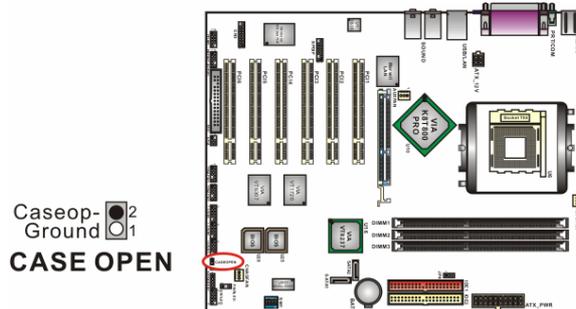
### OTP (Over Temperature Protection) Jumper: JP4

There is an OTP jumper that located on the JP4. This is a special design for CPU Over Temperature Protection. If this function is "Enable" and the CPU temperature rises above the normal range, the system will automatically shut down and you have to unplug the ATX\_PWR connector. Remove and reinstall the CPU heat sink also check to make sure the CPU fan is working properly.



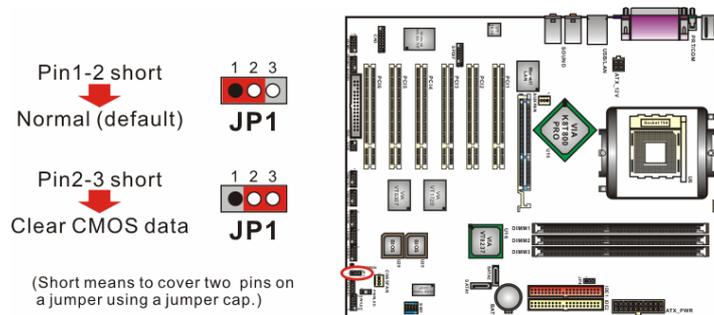
## Case Open Warning Header: CASE OPEN

This connector is used to notify the user when the computer case has been previously opened. To configure this functionality, your computer case must be equipped with a "case open" cable which you need to attach to the CASE OPEN header. Also, you must enable the CASE OPEN warning functionality in the BIOS Setup Utility. When your computer case is opened, your system will display alert messages upon boot up.



## Clear CMOS Jumper: JP1

The "Clear CMOS" jumper is used when you cannot boot your system due to some CMOS configuration such as a password that is forgotten. This jumper allows you to reset the CMOS configurations, and then reconfigure.

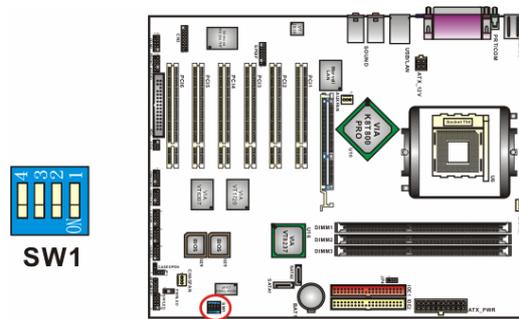


The following steps explain how to reset your CMOS configurations when you have forgotten your system password.

1. Turn off your system and disconnect the AC power cable.
2. Set JP1 to OFF (2-3 Closed).
3. Wait several seconds.
4. Set JP1 to ON (1-2 closed).
5. Connect the AC power cable and turn on your system.
6. Reset your new password.

## **Voice Genie and BIOS Mirror Function switch: SW1 (only for K8Ultra-V PRO II only)**

This switch is used to configure the Voice Genie and BIOS Mirror functions. With SW1-1 and SW1-2, you can select the appropriate language for audio diagnostics. With the SW1-3 switch, you can begin using the alternate or mirror BIOS by switching this switch to "rescue". This is used when the primary BIOS had been infected with a virus or damaged during a flash update.



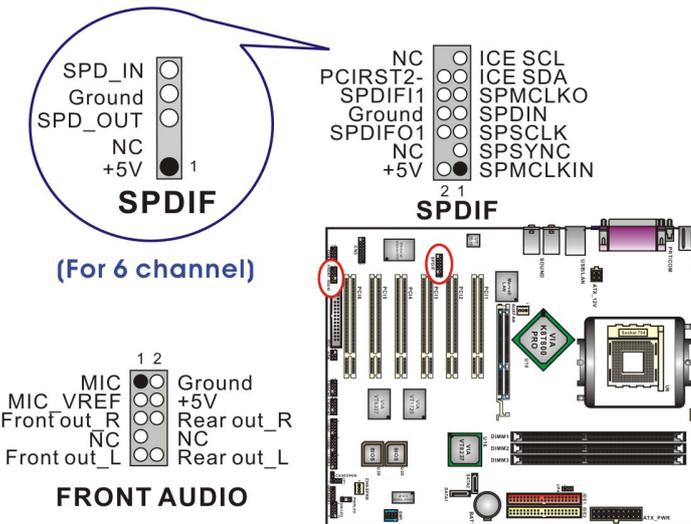
### **Voice Genie**

<b>Voice Genie</b>	<b>SW1-1</b>	<b>SW1-2</b>
<b>English</b>	ON	ON
<b>Chinese</b>	ON	OFF
<b>Japanese</b>	OFF	ON
<b>German</b>	OFF	OFF

### **BIOS Mirror**

<b>BIOS Mirror</b>	<b>SW1-3</b>
<b>Enable(default)</b>	ON (Main BIOS=>U25)
<b>Disable (rescue)</b>	OFF (Backup BIOS=>U29)

## Audio Connectors



### Front Panel Audio Header: FRONT AUDIO

If your computer case has been designed with embedded audio equipment or you are using an audio bracket (optional). You can attach these components to the FRONT\_AUDIO header of the mainboard. First remove the jumper caps covering the FRONT\_AUDIO pins. Use pins 1, 3 to connect to the case microphone. Use pins 9,5 to connect to the earphone. If you do not intend to use the FRONT\_AUDIO panel, do not remove the jumper caps. The front panel audio & the back panel audio can not use simultaneously.



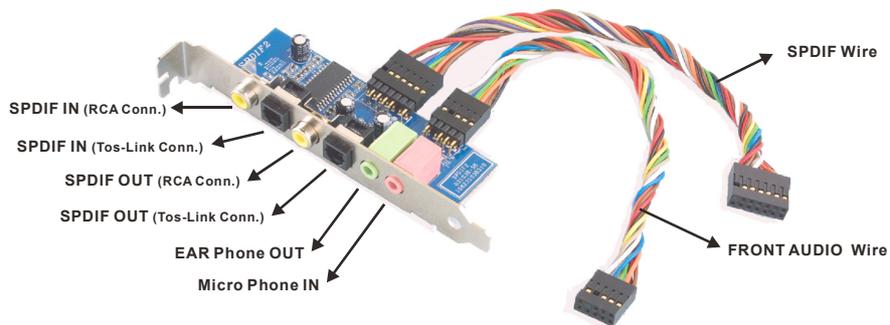
If the jumper caps are in place, jumper cap 1 is on pin 5, pin 6 and jumper cap 2 is on pin 9, pin 10. If you do not intend to use the FRONT\_AUDIO panel, do not remove the jumper caps.

## **S/PDIF Header: SPDIF**

S/PDIF (Sony/Philips Digital Interface) is an audio transfer file format, which provides high quality audio using optical fiber and digital signals. This mainboard is capable of delivering audio output and receiving audio input through the SPDIF header. One way you would use this header is by using an SPDIF & FRONT AUDIO bracket (optional) attached to your computer. This bracket will have two wires that you can attach to the SPDIF header and the FRONT\_AUDIO header. This bracket has RCA connectors similar to that used with most consumer audio products. Using the RCA connectors, the data can then be output to and input from an S/PDIF device. This bracket will also have the TOS-LINK connectors. You can also use the TOS-LINK connectors to output and input audio from an S/PDIF device. The devices that are receiving and sending information from this header must be S/PDIF compliant for optimal effect. Note that the SPDIF bracket is optional in the packaging that comes with this mainboard.

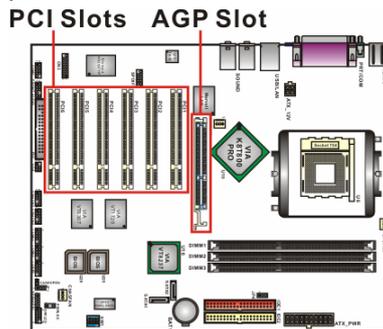
### **SPDIF & FRONT AUDIO bracket**

You can connect the bracket to the SPDIF and FRONT AUDIO Headers (This photo can be varied with a 6 channel device).



## Slots

The slots in this mainboard are designed for expansion cards used to complement and enhance the functionality of the mainboard.



### AGP Slot: AGP

The mainboard is equipped with a 2X/ 4X/ 8X & 1.5V only Accelerated Graphics Port (AGP) to support video cards.

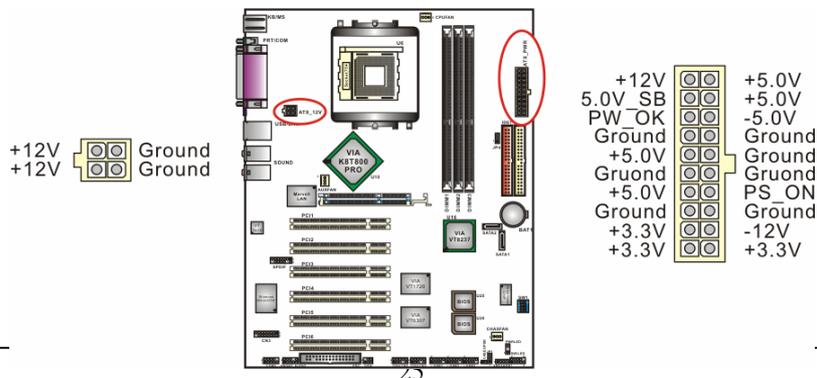
### PCI Slots: PCI1-6

This mainboard is equipped with 6 standard PCI slots. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which has, for the most part, supplanted the older ISA bus standard. This PCI slot is designated as 32 bit. (PCI6 = > is slave.)

## Power Supply Attachments

### ATX Power Connector: ATX\_PWR \ ATX\_12V

This mainboard requires two ATX power connectors; a 20-pin connector and a 4-pin connector. Your power supply must have both connectors. Attach the 4-pin connector first, then attach the 20-pin connector. Make sure the connectors are secure before applying power.



## **Chapter 2. BIOS Setup**

### **Introduction**

This section describes PHOENIX-AWARD™ BIOS Setup program which resides in the ROM BIOS firmware. The Setup program allows users to modify the basic system configuration. The configuration information is then saved to CMOS RAM where the data is sustained by Li-battery after power-down.

The BIOS provides critical low-level support for standard devices such as disk drives, serial ports and parallel ports. As well, the BIOS controls the first stage of the boot process, loading and executing the operating system.

The PHOENIX-AWARD™ BIOS installed in Flash ROM is a custom version of an industry standard BIOS. This means that it supports the BIOS of AMD® based processors.

This version of the PHOENIX-AWARD™ BIOS includes additional features such as virus and password protection as well as special configurations for fine-tuning the system chipset. The defaults for the BIOS values contained in this document may vary slightly with the version installed in your system. (When you boot up the computer, the BIOS version will appear at up-left of the POST screen.)

### **Plug and Play Support**

This PHOENIX-AWARD™ BIOS supports the Plug and Play Version 1.0A specification as well as ESCD (Extended System Configuration Data) write.

### **APM Support**

This PHOENIX-AWARD™ BIOS supports Version 1.1 & 1.2 of the Advanced Power Management (APM) specification. These features include system sleep and suspend modes in addition to hard disk and monitor sleep modes. Power management features are implemented using the System Management Interrupt (SMI).

### **PCI Bus Support**

This PHOENIX-AWARD™ BIOS also supports Version 2.2 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

## Supported CPUs

This PHOENIX-AWARD™ BIOS supports the AMD® Athlon™ 64 CPU.

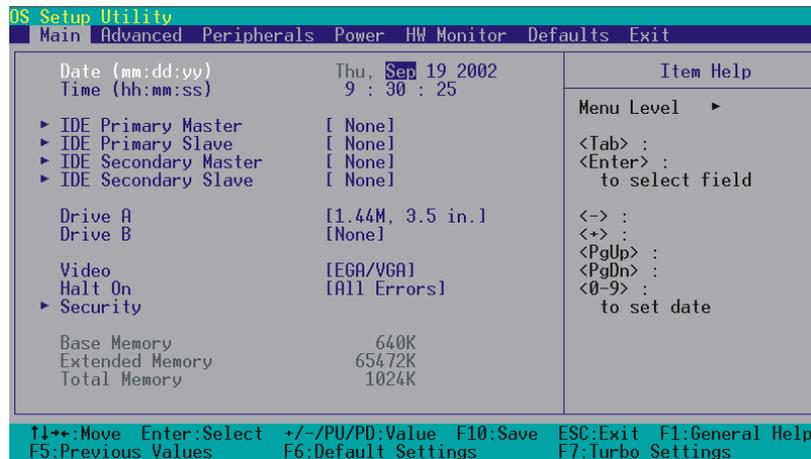
## Key Function

In general, you can use the arrow keys to highlight items, press <Enter> to select, use the <PgUp> and <PgDn> keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate within the BIOS Setup program.

<b>Keystroke</b>	<b>Function</b>
<b>Up arrow</b>	Move to previous item
<b>Down arrow</b>	Move to next item
<b>Left arrow</b>	Move to the item on the left (menu bar)
<b>Right arrow</b>	Move to the item on the right (menu bar)
<b>Esc</b>	Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu
<b>Move Enter</b>	Move to the item you desire
<b>PgUp key</b>	Increase the numeric value or enter changes
<b>PgDn key</b>	Decrease the numeric value or enter changes
<b>+ Key</b>	Increase the numeric value or enter changes
<b>- Key</b>	Decrease the numeric value or enter changes
<b>F1 key</b>	General help on Setup navigation keys
<b>F5 key</b>	Load previous values from CMOS
<b>F6 key</b>	Load the fail-safe defaults from BIOS default table
<b>F7 key</b>	Load the optimized defaults
<b>F10 key</b>	Save all the CMOS changes and exit

## Main Menu

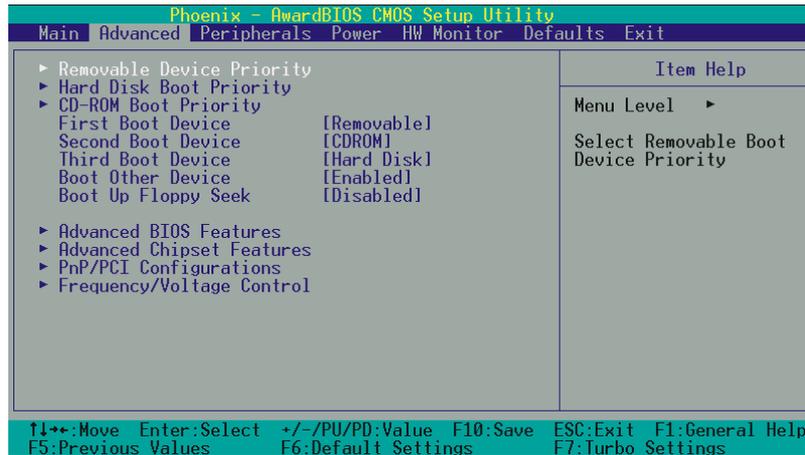
When you enter the PHOENIX-AWARD™ BIOS Utility, the Main Menu will appear on the screen. The Main menu allows you to select from several configuration options. Use the left/right arrow keys to select a particular configuration screen from the top menu bar or use the down arrow key to access and configure the information below.



## Main Menu Setup Configuration Options

Item	Options	Description
<b>Date</b>	mm dd yyyy	Set the system date. Note that the 'Day' automatically changes when you set the date.
<b>Time</b>	Hh: mm: ss	Set the current time of the system.
<b>IDE Primary Master</b>	Options contained in sub menu.	Press <Enter> to enter the sub menu.
<b>IDE Primary Slave</b>	Options contained in sub menu.	Press <Enter> to enter the sub menu.
<b>IDE Secondary Master</b>	Options contained in sub menu.	Press <Enter> to enter the sub menu.
<b>IDE Secondary Slave</b>	Options contained in sub menu.	Press <Enter> to enter the sub menu.
<b>Drive A</b>  <b>Drive B</b>	360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5in 2.88M, 3.5 in None	Select the type of floppy disk drive installed in your system.
<b>Video</b>	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device.
<b>Halt On</b>	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/ Key	Select the situation in which you want the BIOS to stop the POST process and notify you.
<b>Security</b>	Options contained in sub menu.	Press <Enter> to enter the sub menu.
<b>Base Memory</b>	N/A	Displays the amount of conventional memory detected during boot up.
<b>Extended Memory</b>	N/A	Displays the amount of extended memory detected during boot up.
<b>Total Memory</b>	N/A	Displays the total memory available in the system.

## Advanced BIOS Features



### Removable Device Priority

Select removable device priority. Just like floppy, LS120, ZIP-100, USB-FDD and USB-ZIP.

### Hard Disk Boot Priority

Select hard disk boot priority.

### CD-ROM Boot Priority

Select CD-ROM boot priority.

### First /Second/Third Boot Device

Select the order in which devices will be searched in order to find a boot device.

Options: Removable (default for first boot device) \ CD ROM (default for second boot device) \ Hard Disk (default for third boot device) \ Legacy LAN \ Disabled

### Boot Other Device

Set to "Enabled" allows the system to try to boot from other devices if the system fails to boot from the 1st/ 2nd/ 3rd boot devices. Options: Enabled (default) \ Disabled

## **Boot Up Floppy Seek**

When Enabled, the BIOS tests (seeks) floppy drives to determine whether they have 40 or 80 tracks. Only 360-KB floppy drives have 40 tracks. Drives with 720KB, 1.2MB, and 1.44MB capacity all have 80 tracks. Because very few modern PCs have 40-track floppy drives, we recommend that you set this field to "Disabled". Options: Enabled \ Disabled (default)

## **Advanced BIOS Features**

### **Virus Warning**

Set the virus warning feature for IDE hard disk boot sector protection. If the function is enabled, any attempt to write data into this area will cause a beep and warning message display on screen. Options: Disabled (default) \ Enabled

### **CPU Internal Cache**

Make CPU internal cache active or inactive. System performance may degrade if you disable this item. Options: Enabled (default) \ Disable.

### **External Cache**

This option allows you to enable or disable "Level 2" secondary cache on the CPU to enhance performance. Options: Enabled (default) \ Disabled

### **CPU L2 Cache ECC Checking**

Make CPU L2 cache ECC function active or inactive. Options: Disabled \ Enabled (default)

### **Quick Power On Self Test**

Allow the system to skip certain tests while booting. This will speed up the boot process. Options: Enabled (default) \ Disabled.

### **Swap Floppy Drive**

If the system has two floppy drives, choose "Enabled" to assign physical drive B to logical drive A and vice-versa. Options: Disabled (default) \ Enabled.

### **Boot Up NumLock Status**

Selects the power on state for NumLock.

Options: On (default) Numpad keys are number keys.  
Off Numpad keys are arrow keys.

### **Typematic Rate Setting**

When "Enabled", the "typematic rate" and "typematic delay" can be configured. Typematic Rate determines the keystroke repeat rate used by the keyboard controller. Options: Disabled (default) \ Enabled

### **Typematic Rate (Chars/Sec)**

The rate at which a character repeats when you hold down a key.  
Options: 6 (default) \ 8 \ 10 \ 12 \ 15 \ 20 \ 24 \ 30

**Typematic Delay (Msec)**

The delay before keystrokes begin to repeat. Options: 250 (default) · 500 · 750 · 1000

**APIC Mode**

By enabling this option, "MPS version control for OS" can be configured.

Options: Disabled · Enabled (default)

**MPS Version Control For OS**

The 1.1 version is the older version that supports 8 more IRQs in the Windows NT environment. Choose the new 1.4 version for Windows 2000 and Windows XP.

Options: 1.4 (default) · 1.1

**OS Select For DRAM > 64MB**

Select "OS2" only if you are running the OS/2 operating system with greater than 64 MB of RAM. Options: Non-OS2 (default) · OS2

**HDD S.M.A.R.T. Capability**

Self Monitoring Analysis and Reporting Technology is a technology that enables a PC to attempt to predict the possible failure of storage drives. Options: Disabled (default) · Enabled

**Small LOGO (EPA) Show**

This item allows you to show or hide the small LOGO EPA.

Options: Disabled (default) · Enabled

**Advanced Chipset Features**

**CAS# latency (Tcl)**

This item determines CAS Latency. When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer. Options: Auto (default) · 2.0 · 2.5 · 3

**RAS# to CAS# delay (Trcd)**

Select the DRAM delay time when being read.

Options: Auto (default) · 2 · 3 · 4 · 5 · 6 · 7

**Min RAS# active time (Tras)**

This item allows you to select DRAM Active to Precharge Delay.

Options: Auto · 5 · 6 · 7 · 8 · 9 · 10 · 11 · 12 · 13 · 14 · 15

**Row precharge Time (Trp)**

You can set the time to precharge. Options: Auto · 2 · 3 · 4 · 5 · 6

**1T/2T Memory Timing**

Use this item to select the memory timing that you installed.

Options: Auto (default) · 1T · 2T

## **K8Ultra-V Series**

### **Upstream LDT Bus Width**

This item allows you to select the upstream LDT bus width that is between the CPU and north-bridge. Options: 8 bit (default) · 16 bit

### **Downstream LDT Bus Width**

This item allows you to select the upstream LDT bus width that is between the CPU and north-bridge. Options: 8 bit (default) · 16 bit

### **LDT Bus Frequency**

This item allows you to select the bus frequency between the CPU and Northbridge. Options: Auto · 1 GHz · 800 MHz · 600 MHz · 400 MHz · 200 MHz

### **PCI 1/2 Master 0 WS Write**

When enabled, writes to the PCI bus are executed with zero-wait states. Options: Enabled (default) · Disabled

### **PCI Delay Transaction**

The chipset has an embedded 32-bit post write buffer to support delay transactions cycles. Select Enabled to comply with PCI specifications. Options: Disabled (default) · Enabled

### **Memory Hole**

When enabled, you can reserve an area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. Refer to the user documentation of the peripheral you are installing for more information. Options: Disabled (default) · 15M-16M

### **AGP Aperture Size**

Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

Options: 1G · 512M · 256M · 128M (default) · 64M · 32M

(The 1G and 512M options only appear when you install 8X AGP card.)

### **AGP 2.0 or 3.0 Mode**

This item allows you to select the AGP Mode. Options: 1X · 2X · 4X · 8X

(\*If you install the 8X AGP card, then the item will be lock in 8X option.)

### **AGP Driving Control**

By choosing "Auto" the system BIOS will automatically set the AGP output buffer drive strength. By choosing "Manual", it allows user to set the AGP output buffer driver strength.

### **AGP Driving Value**

While the AGP Driving Control option is set to "Manual", it allows the user to set AGP Driving Value. Options: 9B (default) · 00 ~ FF

**AGP Fast Write**

The AGP Fast Write technology allows the CPU to write directly to the graphics card bypassing the system AGP 4X speed. Choose "Enable" only when you used with AGP card support. Options: Disabled (default) · Enabled

**AGP Master 1 WS Write**

When enabled, writes to the AGP (Accelerated Graphics Port) are executed with one wait state. Options: Disabled (default) · Enabled

**AGP Master 1 WS Read**

When enabled, reads from AGP (Accelerated Graphics Port) are executed with one wait state. Options: Disabled (default) · Enabled

**System BIOS Cacheable**

When enabled, accesses to system BIOS ROM addressed at F0000H-FFFFFH are cached, provided that the cache controller is enabled. Options: Enabled · Disabled (default)

**PnP/PCI Configurations**

**PNP OS Installed**

When set to "YES", BIOS will only initialize the PnP cards used for the boot sequence (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Windows' 95. When set to "NO", BIOS will initialize all the PnP cards. For non-PnP operating systems (DOS, Netware), this option must be set to "NO". Options: No (default) · Yes

**Reset Configuration Data**

Select "Enabled" to reset the Extended System Configuration Data (ESCD) if you have installed a new add-on card and the system reconfiguration has caused such a serious conflict that the OS cannot boot. Options: Disabled (default) · Enabled

**Resources Controlled By**

BIOS can automatically configure all the boot and Plug and Play compatible devices. If you choose Auto, you will not be able to manually assign IRQ DMA and memory base address fields, since BIOS automatically assigns them. Options: Auto <ESCD> (default) · Manual

**IRQ Resources**

When resources are controlled manually, you can assign each system interrupt a type, depending on the type of device using the interrupt. This is only configurable when "Resources Controlled By" is set to "Manual".

- IRQ-3      assigned to: PCI device
- IRQ-4      assigned to: PCI device
- IRQ-5      assigned to: PCI device
- IRQ-7      assigned to: PCI device
- IRQ-9      assigned to: PCI device
- IRQ-10     assigned to: PCI device

## **K8Ultra-V Series**

IRQ-11 assigned to: PCI device  
IRQ-12 assigned to: PCI device  
IRQ-14 assigned to: PCI device  
IRQ-15 assigned to: PCI device

### **PCI / VGA Palette Snoop**

Some graphic controllers that are not VGA compatible take the output from a VGA controller and map it to their display as a way to provide boot information and VGA compatibility. Options: Disabled (default) · Enabled

### **PCI Latency Timer (CLK)**

This item allows you to set up the PCI Latency Time (0-255). If you select the "32" it will optimize PCI speeds. Options: 0-255 · 32 (default)

### **PCI 1-5 IRQ Assignmen**

This item allows you to select an IRQ address for your PCI slot 1-5.  
Options: Auto (default) · 3 · 4 · 5 · 7 · 9 · 10 · 11 · 12 · 14 · 15

## **Frequency/Voltage Control**

### **CPU Speed Detected**

This item displays the CPU speed information detected by the system.

### **CPU Clock Ratio**

This item displays the CPU ratio information detected by the system.

Options: The options that will be available will depend on the default value of the CPU installed. For example, if the CPU default value is 10 then the options will be from 4 to 10.

Note: Before you try to make any adjustments to this option, make sure that your CPU Ratio is adjustable and has not been locked by the CPU manufacturer.

### **Auto Detect PCI Clk**

This item can auto detect PCI clock. Options: Enabled (default) · Disabled

### **Spread Spectrum**

The Spread Spectrum function can reduce the EMI (Electromagnetic Interference) generated. Options: Enabled (default) · Disabled

### **CPU Host Frequency (MHz)**

This item displays the CPU Host frequency. You can set it from 200 to 400 for overclock. The default depends on your CPU frequency. Default: depends on CPU

### **Max Memclock (MHz)**

This item allows you to select the memory clock. When it set to "auto", the system will automatically detected the memory clock. Options: Auto (default) · 100 · 133 · 166 · 200

**DDR Speed (strobe/sec)**

This item display the current DDR speed (CPU Host frequency \* Max Memclock ÷ 100).



CPU Speed = Current CPU Host Frequency x CPU Clock Ratio,  
DDR Speed = Current CPU Host Frequency x (Max Memclock ÷ 100)

**Fixed AGP/ PCI Frequency**

Use this item to fix the AGP / PCI frequencies to 66 MHz/ 33 MHz.

Options: Disabled (default) · Enabled

**AGP/PCI Frequency (MHz)**

This item displays the AGP/PCI Frequency.

When Default CPU Host frequency is 200 =>

AGP frequency = current CPU Host frequency / 3

PCI frequency = current CPU Host frequency / 6

**Default CPU Voltage (Volt)**

This item displays the CPU Voltage information which is detected by the system.

**CPU Voltage (Volt)**

This item allows you to adjust your CPU core voltage. Options range from 0.8V ~ 1.9V

**DDR Voltage (Volt)**

This item allows you to adjust the RAM voltage. Options: 2.6 (default) · 2.7 · 2.8 · 2.9

**AGP Voltage (Volt)**

This item allows you to adjust the AGP Voltage. Options: 1.5 (default) · 1.6 · 1.7 · 1.8

**NB Voltage (Volt)**

This item allows you to adjust the NB Voltage. Options: 1.5 (default) · 1.6 · 1.7 · 1.8

**SB Voltage (Volt)**

This item allows you to adjust the SB Voltage. Options: 2.5 (default) · 2.6 · 2.7 · 2.8

**LDT Voltage (Volt)**

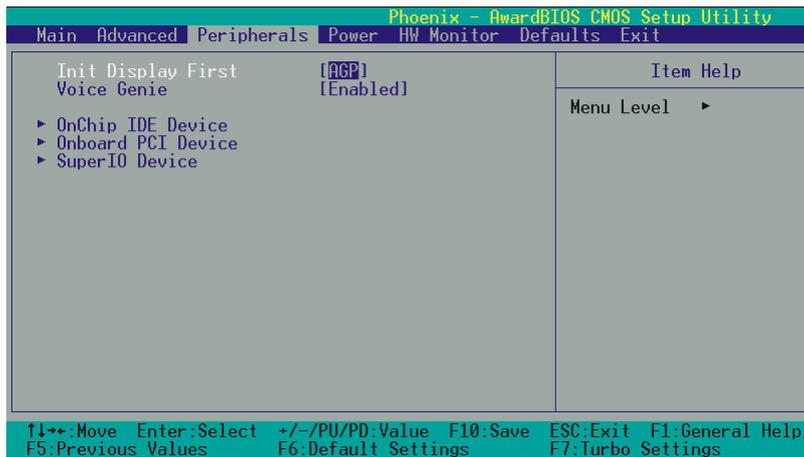
This item allows you to adjust the LDT Voltage. Options: 1.2 (default) · 1.3



**Attention**

Before overclocking, please make sure your system components are capable of overclocking. If you are familiar with the overclocking, we strongly recommend you to set the clock to the default settings. We do not guarantee that damage will or will not occur when overclocking.

## Integrated Peripherals



### **Init Display First**

With systems that have multiple video cards, this option determines whether the primary display uses a PCI slot or an AGP slot. Options: AGP (default) \- PIC Slot

### **Voice Genie**

This item allows you to enabled or disabled the Voice Genie. Options: Enabled (default) \- Disabled

### **OnChip IDE Device**

#### **OnChip SATA**

This item allows you to enabled or disabled on-chip SATA function.

Options: Enabled (default) \- Disabled

#### **SATA Mode**

This item allows you to select the SATA Mode.

Options: RAID (default) \- IDE

#### **IDE DMA transfer access**

This item allows you to enabled or disabled the IDE DMA transfer access.

Options: Enabled (default) \- Disabled

**IDE Channel0/1**

The mainboard chipset contains a PCI IDE interface with support for two IDE channels. Select "Enabled" to activate the first and/or second IDE interface. Select "Disabled" to deactivate an interface if you are going to install a primary and/or secondary add-in IDE interface. Options: Enabled (default) \ Disabled

**IDE Prefetch Mode**

The "onboard" IDE drive interfaces supports IDE prefetching for faster drive access. If you install a primary and/or secondary add-in IDE interface, set this option to "Disabled" if the interface does not support prefetching. Options: Enabled (default) \ Disabled

**Primary/Secondary/Master/Slave PIO**

The IDE PIO (Programmed Input / Output) fields let you set a PIO mode (0-4) for each of the IDE devices that the onboard IDE interface supports. Modes 0 to 4 will increase performance incrementally. In Auto mode, the system automatically determines the best mode for each device. Options: Auto (default) \ Mode0 \ Mode1 \ Mode2 \ Mode3 \ Mode4.

**Primary / Secondary /Master / Slave UDMA**

Ultra DMA/133 functionality can be implemented if it is supported by the IDE hard drives in your system. As well, your operating environment requires a DMA driver (Windows 95 OSR2 or a third party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/133, select "Auto" to enable BIOS support.

Options: Auto (default) \ Disabled

**IDE HDD Block Mode**

Block mode is otherwise known as block transfer, multiple commands, or multiple sector read/write. Select the "Enabled" option if your IDE hard drive supports block mode (most new drives do). The system will automatically determine the optimal number of blocks to read and write per sector. Options: Enabled (default) \ Disabled

**Onboard PCI Device**

**Onboard Audio Device**

This option allows you to enabled or disabled the onboard audio device.

Options: Auto (default) \ Disabled

**Onboard LAN Device**

This option allows you to control the onboard LAN device.

Options: Enabled (default) \ Disabled

**Onboard LAN Boot ROM**

This item allows you to invoke the boot ROM of the onboard LAN chip.

Options: Disabled (default) \ Enabled

**Onboard 1394 Device**

This item allows you to control the onboard 1394 device.

Options: Enabled (default) \ Disabled

**USB Controller**

This option should be enabled if your system has a USB port installed on the system board. You will need to disable this feature if you add a higher performance controller.

Options: All Enabled (default) \ All Disabled \ 1&2 USB Port \ 2&3 USB Port \ 1&3 USB Port \ 1 USB Port \ 2 USB Port \ 3 USB Port

**USB 2.0 Support**

This option should be enabled if your system has a USB 2.0 device installed on the system board. You will need to disable this feature if you install a USB 1.1 device.

Options: Enabled (default) \ Disabled

**USB Keyboard Support**

Enables support for USB attached keyboard. Options: Disabled (default) \ Enabled

**Super IO Device**

**Onboard FDC Controller**

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select "Disabled" in this field. Options: Enabled (default) \ Disabled

**Onboard Serial Port 1**

Select an address and corresponding interrupt for the first serial port.

Options: Disabled \ 3F8/IRQ4 (default) \ 2F8/IRQ3 \ 3E8/IRQ4 \ 2E8/IRQ3 \ Auto

**Onboard Serial Port 2**

Select an address and corresponding interrupt for the second serial port.

Options: Disabled \ 2F8/IRQ3 (default) \ 3F8/IRQ4 \ 3E8/IRQ4 \ 2E8/IRQ3 \ Auto.

**UART Mode Select**

This item allows you to select the Infra Red (IR) standard to be used.

Options: Normal (default) \ ASKIR \ IrDA

**RxD,TxD Active**

This item determines the RxD and TxD frequencies. This field only configurable if "UART Mode" is set to "ASKIR" or "IrDA". Options: Hi/Lo (default) \ Hi/Hi \ Lo/Hi \ Lo/Lo

**IR Transmission Delay**

This item allows you to enable/ disable IR transmission delay. This field only configurable if "UART Mode" is set to "ASKIR" or "IrDA". Options: Enabled (default) \ Disabled

**UR2 Duplex Mode**

Select the transmission mode used by the IR interface. Full-duplex mode permits simultaneous bi-directional transmission. Half-duplex mode permits transmission in only one direction at a time. This field only configurable if " UART Mode" is set to "ASKIR" or "IrDA". Options: Half (default) \ Full

**Onboard Parallel Port**

This item allows you to determine the parallel port interrupt and address.

Options: 378/IRQ7 (default) \ 278/IRQ5 \ 3BC/IRQ7 \ Disabled

**Parallel Port Mode**

This option allows you to select an operating mode for the on board parallel port.

Options: ECP(default)      Extended Capabilities Port.  
          EPP                    Enhanced Parallel Port.  
          SPP                    Standard Printer Port.  
          ECP + EPP            ECP & EPP mode.  
          Normal

**EPP Mode Select**

Select EPP port type 1.7 or 1.9. Options: EPP 1.7(default), EPP1.9.

**ECP Mode Use DMA**

Select a DMA Channel for the port. Options: 3 (default) \ 1

**Game Port Address**

Game Port I/O Address. Options: 201 (default) \ 209 \ Disabled

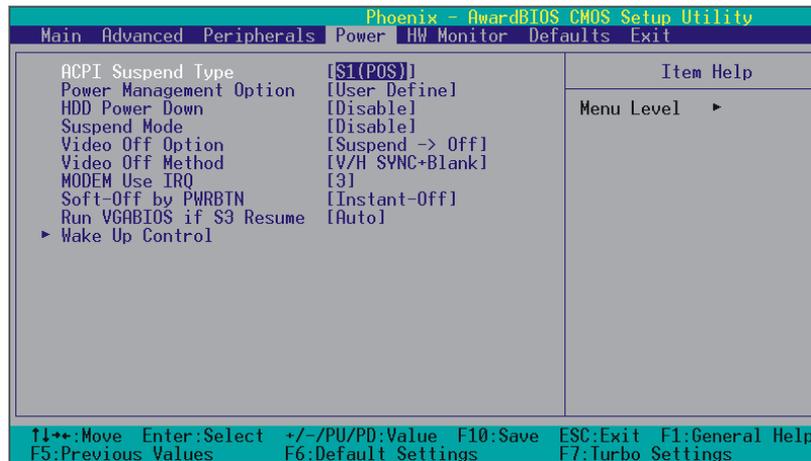
**Midi Port Address**

Midi Port Base I/O Address. Options: 330 (default) \ 300 \ 290 \ Disabled

**Midi Port IRQ**

This determines the IRQ that Midi Port will use. Options: 5 (default) \ 7

## Power Management



The Power Management Setup Menu allows you to configure your system to utilize energy conservation features as well as power-up/ power-down options.

### ACPI Suspend Type

The item allows you to select the suspend type using the ACPI operating system.

Options: S1 (POS) (default)      Power on Suspend  
           S3 (STR)                      Suspend to RAM  
           S1 & S3                        POS and STR

### Power Management Option

There are three options of Power Management:

#### 1. Min. Saving

Minimum power management

Suspend Mode = 1hour

HDD Power Down = 30 minutes

#### 2. Max. Saving

Maximum power management (only available for si CPUs).

Suspend Mode = 1 min.

HDD Power Down = 6 min.

3. User Defined (default)

Allows you to set each mode individually.

When this option is enabled, the "suspend mode" time is configurable from 1 minute to 1 hour. The HDD Power Down, which ranges from 1 min. to 15 min. and includes a "disable" option.

Note: If you select Min. or Max. Power Saving modes, the "HDD Power Down" value and the "Suspend Mode" value are both fixed.

## **HDD Power Down**

When enabled, the hard disk drive will power down after a certain configurable period of system inactivity. All other devices remain active.

Options: Disabled (default) · 1 Min · 2 Min · 3 Min · 4 Min · 5 Min · 6 Min · 7 Min · 8 Min · 9 Min · 10 Min · 11 Min · 12 Min · 13 Min · 14 Min · 15Min

## **Suspend Mode**

This item allows you to select the period of inactivity before the system is suspended or put into suspend mode.

Options: Disabled(default) · 1Min · 2Min · 4Min · 6Min · 8Min · 10Min · 20Min · 30Min · 40Min · 1Hour

## **Video Off Option**

This field determines when to activate the video off feature for monitor power management. Options: Suspend→Off (default), Always On.

## **Video Off Method**

This option determines the manner in which the monitor goes blank.

Options:

V/H SYNC + Blank (default) This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Blank Screen This option only writes blanks to the video buffer.

DPMS Support Initial display power management signaling.

## **Modem Use IRQ**

This determines the modem's IRQ. Options: 3 (default) · 4 · 5 · 7 · 9 · 10 · 11 · NA.

## **Soft-Off by PWRBTN**

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung." Options: Delay 4 Sec, Instant-Off (default).

## **Run VGABIOS if S3 Resume**

Select whether you want to run VGABIOS when the system wakes up from the S3 resume function. Options: Auto (default) · Yes · No

## **Wake Up Control**

### **PWRON After PWR-Fail**

This option determines whether you want to restart the system after a power failure. Select "On", to boot the system whether or not the system was on before power failure. Choose Former-Sts, to restore the system to the status before the power failure.

Options: Off (default) · On · Former-Sts

### **PS2KB Wakeup Select**

Use this option to configure the PS2 keyboard Wake Up feature.

"Password" Use this selection to force the user to enter a password after the system awakens from PS2 keyboard activity.

"Hot Key" Use PS2KB key to awake the system. See "PS2KB Wake Up from S3-S5" to configure the hotkey.

### **PS2KB Wakeup from S3/S4/S5**

This option is used when "PS2KB Wake Up Select" is configured as "HOT KEY".

Options: Disable (default), Ctrl + F1(to F12), Power, Wake, Anykey

### **USB Wake Up from S3**

This item allows you to select USB devices to awaken the system from suspend mode.

Options: Disabled (default) · Enabled

### **VGA**

When set to "On", any event occurring at a VGA Port will awaken a system which had been previously powered down. Options: OFF (default) · ON

### **LPT & COM**

When this option is set to On, any event occurring at a COM(serial)/LPT (printer) port will awaken a system which has been suspended.

Options: LPT/COM (default) · COM · LPT · NONE

### **HDD & FDD**

When set to "On", any event occurring on a hard drive activity or a floppy drive activity will awaken the system which had been previously suspended. Options: ON · OFF (default)

### **PCI Master**

When set to "On", you need a LAN add-on card which supports the power on function. It should also support the wake-up on LAN jumper. Options: OFF (default) · ON

**PCI PME Wake Up**

When you select "Enabled", a PME signal from any PCI card will awaken the system from suspend mode. Options: Disabled (default) · Enabled

**Ring Wake Up**

This option allows you to awaken the system upon receiving an incoming call to a modem device. Option: Disabled (default) · Enabled

**RTC Wake Up**

When "Enabled", you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode. Options: Enabled · Disabled (default)

**Date (of Month)**

You can choose which month the system will boot up. This field is only configurable when "RTC Wake Up" is set to "Enabled"

**Resume Time (hh: mm: ss)**

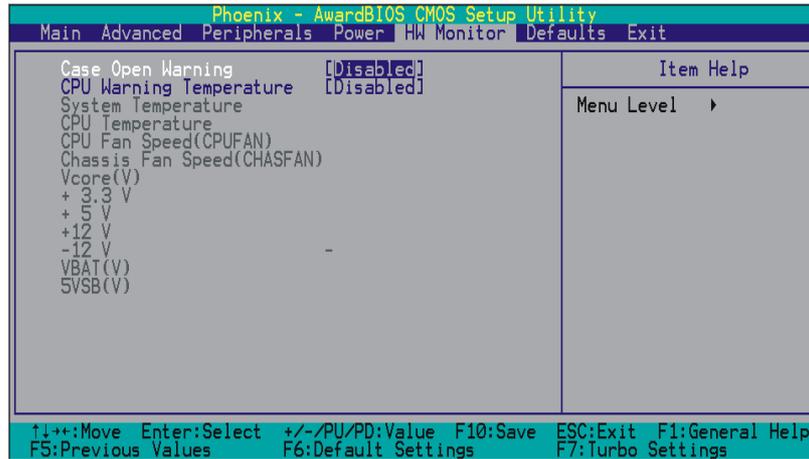
You can choose the hour, minute and second the system will boot up. This field is only configurable when "RTC Wake Up" is set to "Enabled"

**IRQs Activity Monitoring**

Press Enter to access a sub menu used to configure the different wake up events (i.e. wake on LPT & COMM activity).

Primary INTR	On
IRQ3 (COM2)	Enabled
IRQ4 (COM1)	Enabled
IRQ5 (LPT2)	Enabled
IRQ6 (Floppy Disk)	Enabled
IRQ7 (LPT1)	Enabled
IRQ8 (RTC Alarm)	Disabled
IRQ9 (IRQ2 Redir)	Disabled
IRQ10 (Reserved)	Disabled
IRQ11 (Reserved)	Disabled
IRQ12 (PS/2 Mouse)	Enabled
IRQ13 (Coprocessor)	Enabled
IRQ14 (Hard Disk)	Enabled
IRQ15 (Reserved)	Disabled

## Hardware Monitor



### Case Open Warning

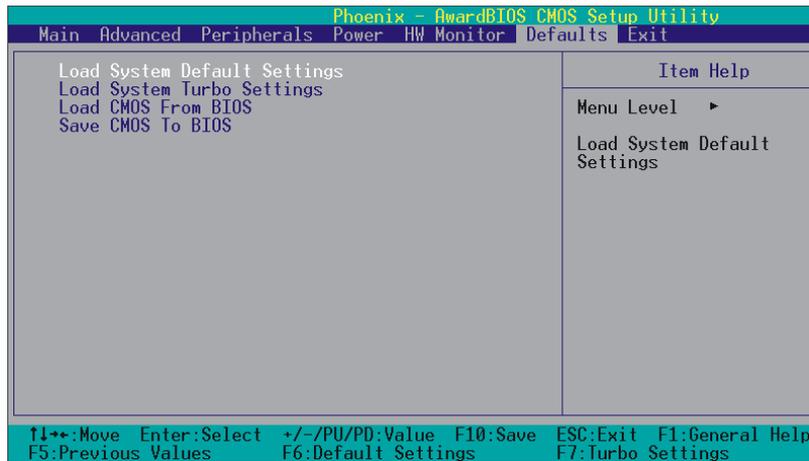
If this function is set to "Enabled" and the case had been previously opened, the system will automatically display alert messages on the screen when you power on your computer. If this function is set to "Disabled", the system will not show alert messages when you power on your computer even if the case is opened by others.

Options: Disabled (default) · Enabled

### CPU Warning Temperature

When the CPU temperature is higher than this setting, the warning mechanism will be activated. Options: Disabled (default) · 50°C/122°F · 53°C/127°F · 56°C/133°F · 60°C/140°F · 63°C/145°F · 66°C/151°F · 70°C/158°F

## Load Defaults



### **Load System Default Settings**

Load System Default Settings.

### **Load System Turbo Settings**

Load System Turbo Settings.

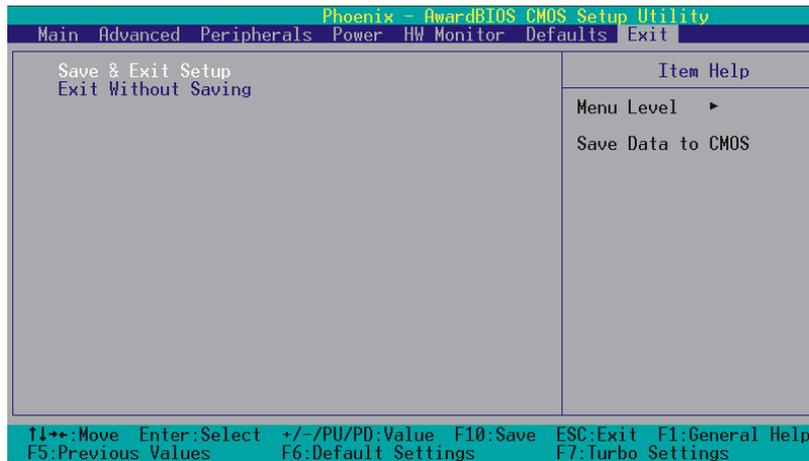
### **Load CMOS From BIOS**

Load defaults from flash ROM for systems without batteries.

### **Save CMOS To BIOS**

Save defaults to flash ROM for systems without batteries.

## Exit Menu



### **Save & Exit Setup**

Save all configuration changes to CMOS (memory) and exit setup. A confirmation message will be displayed before proceeding.

### **Exit Without Saving**

Abandon all changes made during the current session and exit setup. A confirmation message will be displayed before proceeding.

# Chapter 3: Software Setup

## Software List

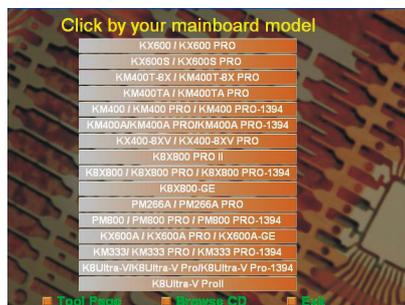
Category	Platform
VIA 4 IN 1 Driver	Windows 98 /ME /2000 /XP
Marvell LAN Driver	Windows 98 /ME /2000 /XP
VIA 7.1 Channel Audio Driver (for K8Ultra-V PRO II only)	Windows 98 /ME /2000 /XP
Realtek Audio Driver (for K8Ultra-V/ PRO/ PRO-1394)	Windows 98 /ME /2000 /XP
VIA Serial ATA Driver	Windows 98 /ME /2000 /XP
VIA USB 2.0 Driver	Windows 98 /ME
Trend PC-Cillin	Windows 98 /ME /2000 /XP
Mircosoft DirectX	Windows 98 /ME /2000 /XP
Adobe Acrobat Reader	Windows 98 /ME /2000 /XP
VCT (for K8Ultra-V PRO II only)	Windows 98 /ME /2000 /XP

## Software Installation

© The screen and images are only for general reference. The version of the screens you received with your software may vary slightly.

Place the Driver CD into the CD-ROM drive and the Installation Utility will auto-run. You can also launch the Driver CD Installation Utility manually by executing the via.exe program located on the Driver CD. (For more details, please refer to the Readme.txt files that in each folder of the Driver CD.)

1. The first screen (Main Screen) will display several buttons. Choose by your mainboard model.



## **K8Ultra-V Series**



2. On the next screen, click the drivers that you want to install.



3. If you click the "VIA USB2.0 Driver" from the screen in step 2, it will display the screen as left.



4. Back to the main screen, click the "Tool Page" button, you can choose the software to install.

Note: If you click the "Browse CD" button from the screen in step 1, you can browse all the files in the Driver CD.

## **K8Ultra-V Series**

### **Installing SATA RAID Driver during Windows® 2000/XP Installation.**

Follow the instructions in this section if you are performing a new installation of Windows® 2000/XP and you wish to boot from a drive attached to the SATA connector.

1. Copy the "VIA Serial ATA Driver" from the bundle CD Driver to a floppy disk. 【CD File Location Path = > D: \ Driver \ SATA\ 3.10D\ Driver Disk\ copy the TXSETUP.OEM file and the RAID folder.】
2. Power off the system. Connect the SATA hard disk to one of the SATA connectors. Power up the system.
3. Place your Windows® 2000/XP CD into the CD-ROM/DVD drive. When the "Windows Setup" screen displays, press "F6".
4. Press 's' when setup asks if you want to specify an additional device. Insert the floppy disk which includes the "VIA Serial ATA Driver" into the floppy drive. Press 'Enter' and select the appropriate OS device driver.
5. Press 'Enter' again to continue the setup process.
6. Follow the setup instructions and select your choice for partition and file system.
7. After setup examines your disks, it will copy files to the Windows® 2000/ XP installation folders and restart the system. After the system is rebooted the setup program will continue with the installation all the way to completion.
8. Wait until Windows® 2000/ XP finishes installing devices, regional settings, networking settings, components, and the final set of tasks. Reboot the system if you are asked to do so.

## **Chapter 4: Troubleshooting**

### **Problem 1:**

No power to the system. Power light does not illuminate. Fan inside power supply does not turn on. Indicator lights on keyboard are not lit.

Causes:

1. Power cable is unplugged.
2. Defective power cable.
3. Power supply failure.
4. Faulty wall outlet; circuit breaker or fuse blown.

Solutions:

1. Make sure power cable is securely plugged in.
2. Replace cable.
3. Contact technical support.
4. Use different socket, repair outlet, reset circuit breaker or replace fuse.

### **Problem 2:**

System inoperative. Keyboard lights are on, power indicator lights are lit, hard drive is active but system seems "hung"

Causes: Memory DIMM is partially dislodged from the slot on the mainboard.

Solutions:

1. Power Down
2. Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.

### **Problem 3:**

System does not boot from the hard disk drive but can be booted from the CD-ROM drive.

Causes:

1. Connector between hard drive and system board unplugged.
2. Damaged hard disk or disk controller.
3. Hard disk directory or FAT is corrupted.

Solutions:

1. Check the cable running from the disk to the disk controller board. Make sure both ends are securely attached. Check the drive type in the standard CMOS setup.
2. Contact technical support.
3. Backing up the hard drive is extremely important. Make sure you periodically perform backups to avoid untimely disk crashes.



## **K8Ultra-V Series**

### **Problem 4:**

System only boots from the CD-ROM. The hard disk can be read and applications can be used but booting from the hard disk is impossible.

Causes: Hard Disk boot sector has been corrupted.

Solutions: Back up data and applications files. Reformat the hard drive. Re-install applications and data using backup disks.

### **Problem 5:**

Error message reading "SECTOR NOT FOUND" displays and the system does not allow certain data to be accessed.

Causes: There are many reasons for this such as virus intrusion or disk failure.

Solutions: Back up any salvageable data. Then performs low level format, partition, and then a high level format the hard drive. Re-install all saved data when completed.

### **Problem 6:**

Screen message says "Invalid Configuration" or "CMOS Failure."

Causes: Incorrect information entered into the BIOS setup program.

Solutions: Review system's equipment. Reconfigure the system.

### **Problem 7:**

The Screen is blank.

Causes: No power to monitor.

Solutions: Check the power connectors to the monitor and to the system.

### **Problem 8:**

Blank screen.

Causes:

1. Memory problem.
2. Computer virus.

Solutions:

1. Reboot computer. Reinstall memory. Make sure that all memory modules are securely installed.
2. Use anti-virus programs to detect and clean viruses.

### **Problem 9:**

Screen goes blank periodically.

Causes: Screen saver is enabled.

Solutions: Disable screen saver.



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### **Problem 10:**

Keyboard failure.

Causes: Keyboard is disconnected.

Solutions: Reconnect keyboard. Replace keyboard if you continue to experience problems.

### **Problem 11:**

No color on screen.

Causes:

1. Faulty Monitor.
2. CMOS incorrectly set up.

Solutions:

1. If possible, connect monitor to another system. If no color appears, replace monitor.
2. Call technical support.

### **Problem 12:**

The screen displays "C: drive failure."

Causes: Hard drive cable not connected properly.

Solutions: Check hard drive cable.

### **Problem 13:**

Cannot boot the system after installing a second hard drive.

Causes:

1. Master/slave jumpers not set correctly.
2. Hard drives are not compatible / different manufacturers.

Solutions:

1. Set master/slave jumpers correctly.
2. Run SETUP program and select the correct drive types. Call drive manufacturers for possible compatibility problems with other drives.

### **Problem 14:**

Missing operating system on hard drive.

Causes: CMOS setup has been changed.

Solutions: Run setup and select the correct drive type.

### **Problem 15:**

Certain keys do not function.

Causes: Keys jammed or defective.

Solutions: Replace keyboard.



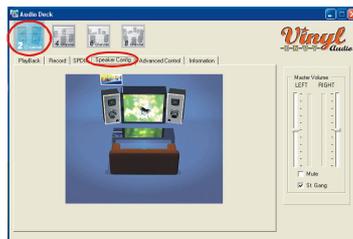
## Appendix I: 7.1 Channel Setup

1. After you have installed the "VIA Audio Driver", reboot the system. The Audio Icon will be displayed in the lower-right corner of the Windows desktop. Click on the Audio Icon to display the audio configuration screen.

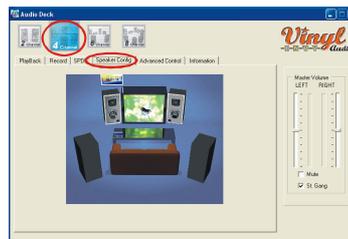


2. When the audio configuration screen displays, click on the "Config Speaker" button to access the speaker configuration page as shown below. Then you can choose a configuration of 2, 4, 6 or 8 channels (speakers).

### 2 Channel



### 4 Channel



### 6 Channel



### 8 Channel



### Speaker Test

To test the speakers you must first make sure that all speaker cables are firmly attached to their respective connectors. Then locate the speaker that you want to test in the picture containing all the speakers (above). Then click on the speaker to test it.



#### Attention

- ▶ Only Windows® XP supports 7.1 Channel audio effects.
- ▶ Windows® 98/ ME/ 2000 supports 5.1 Channel audio effects only.
- ▶ To take advantage of 7.1 Channel Audio Effects, you must use audio software (ex. WinCinema software) that supports this functionality. You also have to make sure your software is specifically configured for 7.1 Channel Audio Effect.

## Appendix II: Super 5.1 Channel Setup

1. After into the system, click the audio icon  from the Windows screen.
2. Click Speaker Configuration button, you can see the screen like the picture below.
3. You can choice 2, 4 or 6 channels by your speakers.



### Super 5.1 Channel Audio Effect

This mainboard comes with an ALC655 Codec which supports high quality 5.1 Channel audio effects. With ALC655, you are able to use standard line-jacks for surround audio output without connecting to any auxiliary external modules. To use this function, you have to install the audio driver in the bonus Pack CD as well as an audio application supporting 5.1 Channel audio effects. See the audio Port Connectors in the Hardware Installation section for a description of the output connectors.

### Speaker Test

Make sure the cable is firmly into the connector.

1. Click the audio icon  from the Windows screen.
2. Click Speaker Test button, you can see the screen like the pictures below.
3. Select the speaker which you want to test by clicking on it.



# Appendix III: SATA RAID 0/1 Setup

## Introduction to RAID (Redundant Array of Independent Disks)

RAID technology is a sophisticated disk management system that manages multiple disk drives, enhancing I/O performance and providing redundancy in order to prevent the loss of data in case any of the individual disks fail. The SATA RAID facility on this board provides RAID 0 (striped), RAID 1 (mirrored) and RAID SPAN.

### Disk Striping (RAID 0)

Striping is a performance-oriented, non-redundant disk storage technology. With RAID striping, multiple disks are used to form a larger virtual disk. Data is then striped or mapped across all the physical disks. In this way modern SATA and ATA bus mastering technology can be used to perform multiple I/O operations in parallel, enhancing performance. While Striping is discussed as a RAID Set type, it actually does not provide fault tolerance.

### Disk Mirroring (RAID 1)

With Disk Mirroring there is a redundant disk that mirrors the main disk. Data that is written to the main disk is also written to the redundant disk. This redundancy provides fault tolerant protection from a single disk failure. If a read/write failure occurs on one drive, the system can still read and write data using the other drive.

### RAID SPAN

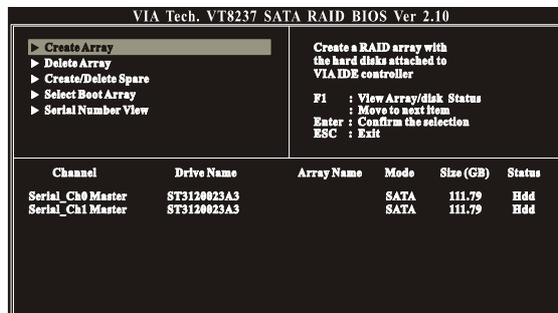
RAID SPAN is not one of the standard RAID levels. It is however considered a JBOD (Just Bundle Of Disks) configuration which simply uses multiple disks to form a larger virtual disk without any other specialized disk management functionality.

## RAID BIOS Configuration

When the system boots up during the POST (Power-On Self Test), the user will be given an opportunity to enter the "VIA RAID BIOS Configuration" utility. Wait for the following prompt:

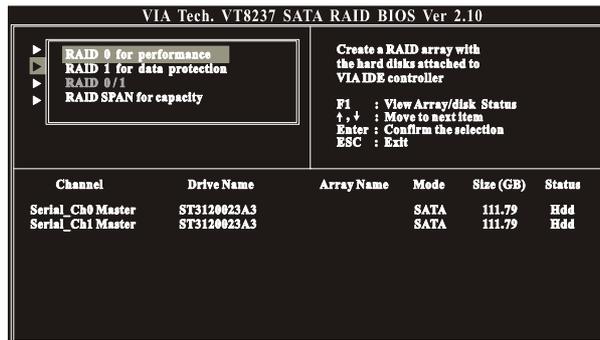
*Press <Tab> Key into User Window*

Then press the "Tab" key to enter the VIA RAID BIOS Configuration utility. The VIA RAID BIOS screen will display as shown below.



**Create Array**

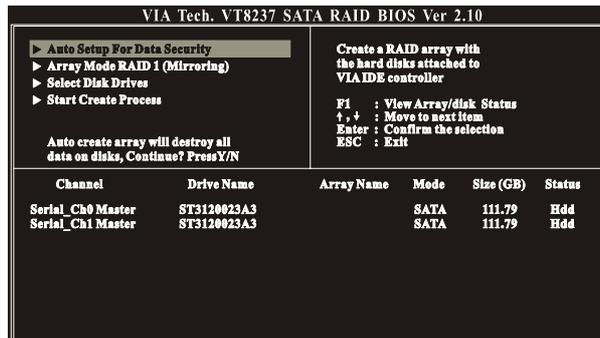
1. The “Create Array” option will allow you to initialize a RAID array. Choose the “Create Array” on the main screen and press <Enter>. The screen below will display. According to your needs, select “RAID 0 for performance” (striping), “RAID 1 for data protection” (mirroring) or “RAID SPAN for capacity” (JBOD). Then press <Enter>.



**Attention**

The “Channel” 、 “Drive Name” 、 “Mode” 、 “Size (GB)”, located at the bottom portion of the screen above, reflect the devices that are currently installed on the SATA connectors. The example information above may therefore differ with the information that displays on your screen.

2. Next, choose the “Auto Setup for Data Security” option and press <Enter>. The screen will display a confirmation message as shown below. Press <Y> to continue with the creation of the new array.



**Attention**

For RAID 1 (Mirrored Arrays), you can manually select the “source device” instead of having the system determine it for you. After step 1, select the “Select Disk Drives” to manually select the “source device”. Then choose the “Start Create Process” and press <Enter> to complete the RAID 1 array creation.

## K8Ultra-V Series

- After the array has been successfully created, one of the screens will display as shown below according to the type of array you created.

### RAID 1 mode

VIA Tech. VT8237 SATA RAID BIOS Ver 2.10					
<ul style="list-style-type: none"> <li>▶ Auto Setup For Data Security</li> <li>▶ <b>Array Mode RAID 1 (Mirroring)</b></li> <li>▶ Select Disk Drives</li> <li>▶ Start Create Process</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			
Channel	Drive Name	Array Name	Mode	Size (GB)	Status
Serial_C0 Master	ST3120023A3	ARRAY 0	SATA	111.79	Source
Serial_C1 Master	ST3120023A3	ARRAY 0	SATA	111.79	Mirror

### RAID 0 mode

VIA Tech. VT8237 SATA RAID BIOS Ver 2.10					
<ul style="list-style-type: none"> <li>▶ Auto Setup For Data Security</li> <li>▶ <b>Array Mode RAID 0 (Striping)</b></li> <li>▶ Select Disk Drives</li> <li>▶ Block Size 64K</li> <li>▶ Start Create Process</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			
Channel	Drive Name	Array Name	Mode	Size (GB)	Status
Serial_C0 Master	ST3120023A3	ARRAY 0	SATA	111.79	Stripe 0
Serial_C1 Master	ST3120023A3	ARRAY 0	SATA	111.79	Stripe 1

### RAID SPAN mode

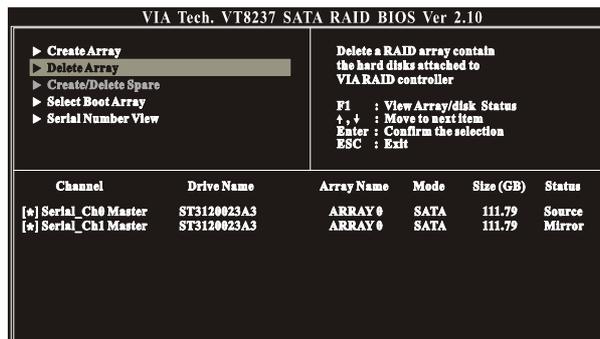
VIA Tech. VT8237 SATA RAID BIOS Ver 2.10					
<ul style="list-style-type: none"> <li>▶ Auto Setup For Data Security</li> <li>▶ <b>Array Mode SPAN (JBOD)</b></li> <li>▶ Select Disk Drives</li> <li>▶ Start Create Process</li> <li>▶ Expand Span (JBOD) Array</li> </ul>		Create a RAID array with the hard disks attached to VIA IDE controller  F1 : View Array/disk Status ↑, ↓ : Move to next item Enter : Confirm the selection ESC : Exit			
Channel	Drive Name	Array Name	Mode	Size (GB)	Status
Serial_C0 Master	ST3120023A3	ARRAY 0	SATA	111.79	Span 0
Serial_C1 Master	ST3120023A3	ARRAY 0	SATA	111.79	Span 1



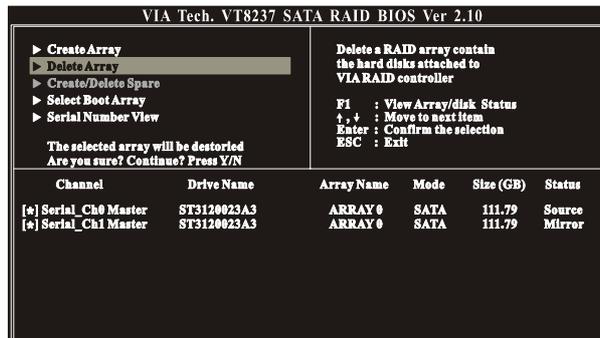
The RAID 0 screen (above) contains the option, "Block Size 64K". With this option you can manually select the block size for your array. However, we recommend that you to select the "64K" for optimal performance.

**Delete Array**

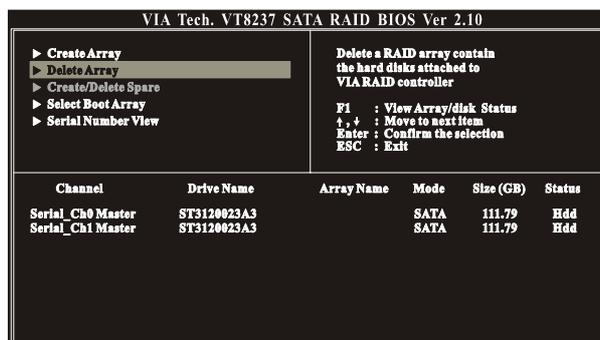
1. You can delete an existing array with the “Delete Array” option on the main screen. Choose the “Delete Array” option and press <Enter>. Then press the <Enter> key once again and the system will mark all the existing SATA devices with an asterisk (as shown below in the bottom section). (Note that the example information below may differ slightly depending on the RAID type you are configuring.)



2. Press <Enter>. A warning/confirmation message will display (as shown below). Press <Y> to confirm.

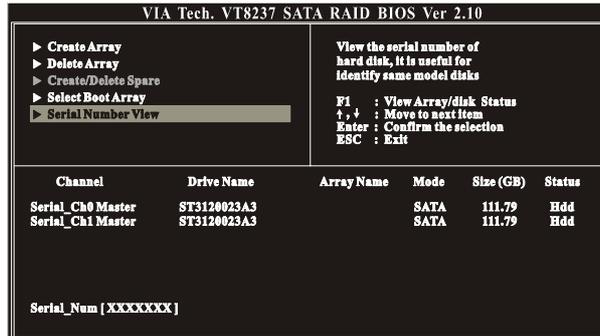


3. After the array is successfully deleted, the screen will display as shown below.



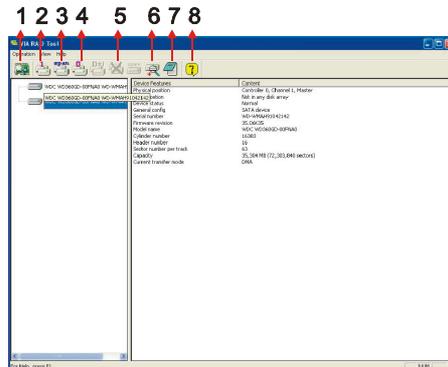
**Serial Number View**

You can choose the "Serial Number View" to view the serial number of the serial ATA device. The serial number is assigned to the device by the manufacturer.



**VIA RAID Tool (VIA Raid Tool icon )**

The VIA RAID Tool allows the user to configure and monitor RAID arrays from the Windows environment. After booting your operating system, click the "VIA RAID Tool" icon from the Windows desktop. The screen below will display. You can simply click on one of the toolbar buttons on the menu bar to execute their respective functions.



- Toolbar Button 1: View the controller status.
- Toolbar Button 2: Create a array with RAID 1.
- Toolbar Button 3: Create a array with SPAN.
- Toolbar Button 4: Create a array with RAID 0.
- Toolbar Button 5: Delete the array that you created before.
- Toolbar Button 6: View the devices status.
- Toolbar Button 7: View the event log.
- Toolbar Button 8: Help topics.