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## FCC 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 in a residential installation.

Any changes or modification made to this equipment void the user's authority to operate this equipment.

This equipment generates, uses, and radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- \* Reorient or relocate the receiving antenna.
- \* Increase the separation between the equipment and receiver.
- \* Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- \* Consult the dealer or an experienced radio/TV technician for help.
- \* All external cables connecting to this basic unit must be shielded.

### *C. D. C. Statement*

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations or the Canadian Department of Communications.

### *CE Mark*

This equipment is in conformity with the EMC directive.


## Overview

The information in this document is subject to change without notice and should not be construed as a commitment by the manufacturer.

The manufacturer assumes no responsibility for any errors that might appear in this document.

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## Important Safety Information

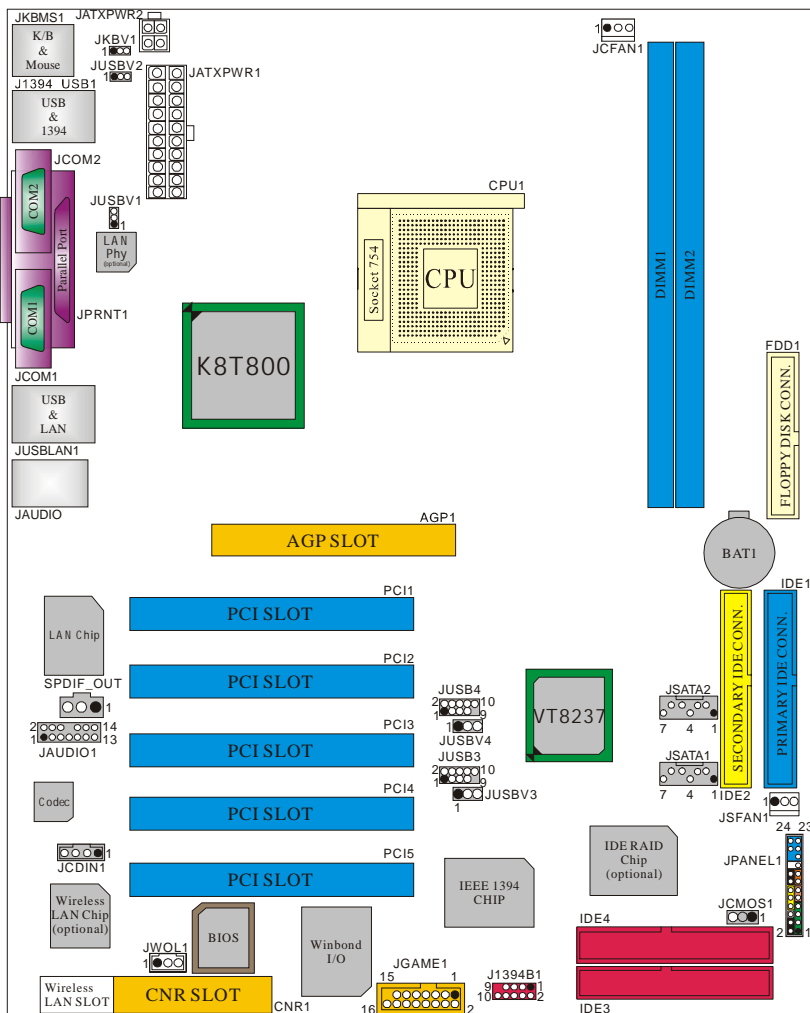
1. Please read these safety instructions carefully.
2. Please keep this User's Manual for later reference.
3. Please disconnect this equipment from AC outlet before cleaning. Don't use liquid or sprayed detergent for cleaning. Use moisture sheet or clothe for cleaning.
4. For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.
5. Please keep this equipment from humidity.
6. Lay this equipment on a reliable surface when install. A drop or fall could cause injury.
7. Do not leave this equipment in an environment unconditioned, storage temperature above 40°C, it may damage the equipment.
8. The openings on the enclosure are for air convection hence protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
9. Make sure the voltage of the power source when connect the equipment to the power outlet.
10. Place the power cord such a way that people can not step on it. Do not place anything over the power cord. The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not use for long time, disconnect the equipment from mains to avoid being damaged by transient over-voltage.
13. Never pour any liquid into ventilation openings, this could cause fire or electrical shock.
14. Never open the equipment. For safety reason, qualified service personnel should only open the equipment.
15. If one of the following situations arises, get the equipment checked by service personnel:
  - a. The Power cord or plug is damaged.
  - b. Liquid has penetrated into the equipment.
  - c. The equipment has been exposed to moisture.
  - d. The equipment has not work well or you can not get it work according to user's manual.
  - e. The equipment has dropped and damaged.
  - f. If the equipment has obvious sign of breakage

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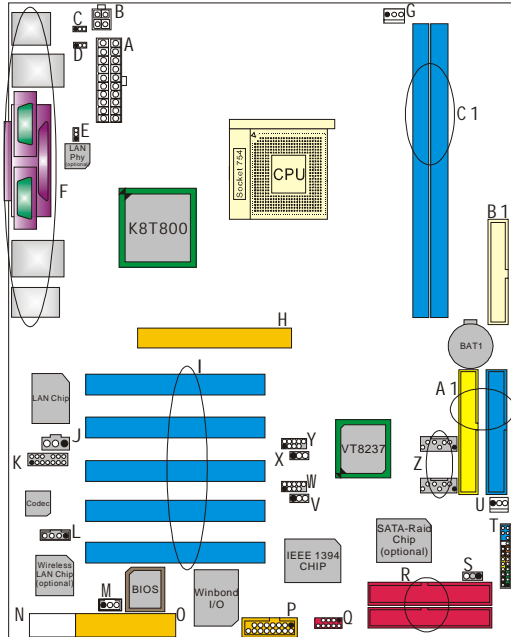
# Section 1. Layout of K8VHA Pro



NOTE: “●” represents the first pin.

# Section 2. Component Index

This section helps you to locate the components in the motherboard and to find the details about them.



- |  |  |
|--|--|
| A. ATX Power Connector (JATXPWR1)                        | B. ATX Power Connector (JATXPWR2)          |
| C. Power Source Selection for Keyboard and Mouse (JKBV1) | D. Power Source Selection for USB (JUSBV2) |
| E. Power Source Selection for USB (JUSBV1)               | F. Back Panel Connectors                   |
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| I. PCI BUS Slots (PCI 1-5)                               | J. Digital Audio Connector (SPDIF_OUT)     |
| K. Front Audio Header (JAUDIO1)                          | L. CD-ROM Audio-In Header (JCDIN1)         |
| M. Wake On LAN Header (JWOL1)                            | N. Wireless LAN Slot (optional)            |
| O. Communication Network Riser Slot (CNR1)               | P. Game Port Header (JGAME1)               |
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| U. System FAN Header (JSFAN1)                            | V. Power Source Selection for USB (JUSBV3) |
| W. Front USB Header (JUSB3)                              | X. Power Source Selection for USB (JUSBV4) |
| Y. Front USB Header (JUSB4)                              | Z. Serial ATA Connectors (JSATA1-2)        |
| A1. IDE Connectors (IDE1-2)                              | B1. Floppy Disk Connector (FDD1)           |
| C1. DIMM Modules (DIMM1/DIMM2)                           |  |

## Section 3. K8VHA Pro Features

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**In this section, you shall find all the information about the motherboard in your computer, including its features, layout, component index, various jumpers, headers, connectors, and also the installation guide to help you a quick and correct installation of your system.**

### *A. Hardware*

#### **CPU**

- \* Supports Socket 754.
- \* Supports AMD Athlon™ 64 K8/ ClawHammer™ processor with 6.4 GB.
- \* Processor interface via Hyper-Transport™ Technology.
- \* 800/ 600/ 400/ 200 clock rates with “Double Data Rate” style operation for 1600/ 1200/ 800/ 400 MT/s in both directions simultaneously.

#### **Chipset**

- \* North Bridge: VIA K8T800.
- \* South Bridge: VIA VT8237.

#### **Main Memory**

- \* Supports 72-bit (64-bits + 8-bits ECC) DDR SDRAM.
- \* Supports 266, 333, 400 and 200 MHz DDR technologies.
- \* Maximum memory size is 2 GB.

#### **Super I/O**

Chip: Winbond W83697HF.

- Low Pin Count Interface.
- Integrate hardware monitor functions.

#### **Slots**

- \* Five 32-bit PCI bus master slots.
- \* One CNR slot.
- \* One AGP 4X/ 8X slot.
- \* One wireless LAN slot. (optional)



## **On Board IDE**

- \* Supports four IDE disk drives.
- \* Supports PIO Mode 5, Bride Mode and Ultra DMA 33/ 66/ 100/ 133 Bus Master Mode.

## **LAN Chip (optional)**

- \* Chip: Realtek RTL8100C/ RTL8110S.
- \* Supports 10 Mb/s, 100 Mb/s auto-negotiation operation. (1000Mb/s only for RTL8110S.)
- \* Half/ Full duplex capability.
- \* Supports ACPI, PCI power management.

## **LAN PHY (optional)**

- \* Chip: Realtek RTL8201BL.
- \* Supports 10/ 100 Mb/s operation. (1000Mb/s operation only for RTL8110s)
- \* Half/ Full duplex operation.
- \* Supports MII interface.

## **Wireless LAN - Air Link™ (optional)**

- \* Chip: Realtek RTL8180.
- \* Full compliance with IEEE802.11b specifications.
- \* Supports Advanced Configuration Power management Interface (ACPI) and PCI power management system for modern operating systems.
- \* Supports remote wake-up in both ACPI and APM environments.
- \* Keeps network maintenance costs low and eliminates usage barriers.
- \* Uses one RF card for Wireless LAN.

## **IEEE 1394 Chip**

- \* Chip: VIA VT6307.
- \* Support 2 ports with transfer up to 400 mb/s.
- \* Compliant with PCI specification v2.2.

## **On Board AC'97 Sound Codec**

- \* Chip: CMI9739A.
- \* Compliant with AC'97 specification.
- \* AC97 2.2 interface.
- \* Supports 6 channels.







## IDE RAID Chip (optional)

- \* Supports RAID Level 0, RAID Level 1, RAID Level 0+1 and JBOD.
- \* Complies with PCI Local Bus Specification Revision 2.2.
- \* Dual channel master mode hard disk controller supporting four Enhanced IDE devices.
- \* Transfer rate up to 22 MB/s to cover PIO mode 4, multi-word DMA mode 2 drivers and beyond.
- \* Extension to UltraDMA-133 interface for up to 133 MB/s transfer rate.
- \* Supports UltraDMA-mode0.

## On Board Peripherals

### *a. Rear side*

- 2 serial ports, 1 parallel port. (SPP/EPP/ECP mode)
- Audio ports in vertical position.
- 1 RJ-45 LAN jack. (optional)
- PS/2 mouse and PS/2 keyboard.
- 4 USB2.0 ports.
- 1 IEEE1394 (Firewire™) connector. (optional)

### *b. Front Side*

- 1 floppy port supports 2 FDDs with 360K, 720K, 1.2M, 1.44M and 2.88 Mbytes.
- 4 USB2.0 ports.
- 1 front audio header, 1 S/PDIF Out header.
- 1 IEEE1394 (Firewire™) port. (optional)

## Dimensions

ATX Form Factor: 24.4 cm x 30.5 cm (W X L)

## B. BIOS & Software

### BIOS

- \* Award legal BIOS.
- \* APM1.2.
- \* ACPI.
- \* USB Function.

### Software

- \* Supports Warpspeeder™, 9th Touch™, BootBlocker™, WinFlasher™, FLASHER™ and StudioFun™ (optional).
- \* Offers the highest performance for Windows 98 SE, Windows 2000, Windows Me, Windows XP, SCO UNIX, etc.





## Section 4. Package contents

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**Check what you have bought before you start your DIY action. If there are anything missing, please contact your dealer immediately.**

- \* HDD Cable x 1
- \* FDD Cable x 1
- \* User's Manual x 1
- \* Fully Setup Driver CD x 1
- \* StudioFun! Application CD x 1 (optional)
- \* USB 2.0 Cable x 1 (optional)
- \* S/PDIF Cable x 1 (optional)
- \* Rear I/O Panel for ATX Case x 1
- \* Serial ATA Cable x 1 (optional)
- \* Serial ATA Power Switch Cable x 1 (optional)
- \* Front IEEE 1394 Cable x 1 (optional)

# Section 5. Installation and Setup

In this section, you will learn how to install the CPU, DDR Module, and also how to set up jumpers and all the information about the components on the motherboard. Not only can you find the installation steps, but also the details and locations of the components on the motherboard.

## 1. CPU Installation

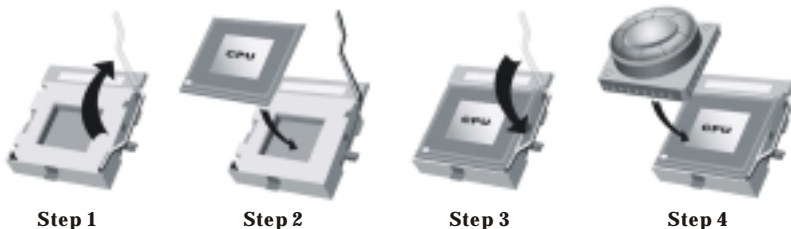
The motherboard supports VIA processor in the 754 pin package. The motherboard uses a CPU socket called PGA754 for easy CPU installation. When you are installing the CPU, make sure the CPU has a cooling fan attached on the right to prevent overheating. If you do not find the cooling fan, contact your dealer and make sure to install them before turning on the computer.

**Step1:** Pull the lever sideways away from the socket and then raise the lever up to a 90-degree angle.

**Step2:** Look for the white dot/cut edge. The white dot/cut edge should point towards the lever pivot. The CPU will fit only in the correct orientation.

**Step3:** Hold the CPU down firmly, and then close the lever.

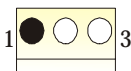
**Step4:** Put the CPU fan on the CPU and buckle it. Connect the CPU fan power cable to the JCFAN1. This completes the installation.



## 2 Central Processing Unit: CPU

These fan headers support cooling fans built in the computer. Orient the fans to make the heat sink fins to allow air flow to go across the onboard heat sinks instead of the expansion slots. The fan wiring and plug may be different according to the fan manufacturer. Connect the fan cable to the connector while matching the black wire to the ground pin.

(1) CPU Fan Headers: JCFAN1



Pin	Assignment
1	Ground
2	+12V
3	FAN RPM Sense



(2) System Fan Header: JSFAN1

Pin	Assignment
1	Ground
2	+12V
3	FAN RPM Sense

### 3. Installing DDR Module

1. Unlock a DIMM slot by pressing the retaining clips outward. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.
2. Insert the DIMM firmly and vertically into the slot until the retaining chip snap back in place and the DIMM is properly seated.



### 4. DDR DIMM Modules: DIMM1/ DIMM2

DRAM Access Time: 2.5V Unbuffered/ no registered DDR SDRAM  
 PC2100/ PC2700/ PC3200 Type required.

DRAM Type: 128MB/ 256MB/ 512MB/ 1GB DIMM Module. (184 pin)

**Total Memory Size with Unbuffered DIMMs**

DIMM Socket Location	DDR Module	Total Memory Size (MB)
DIMM1	64MB/ 128MB/ 256MB/ 512MB/ 1GB *1	Max is 2GB
DIMM2	64MB/ 128MB/ 256MB/ 512MB/ 1GB *1	

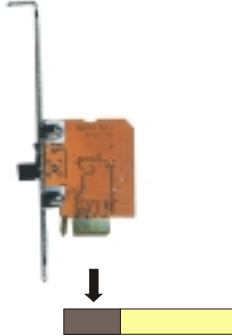
\*\*\*Only for reference\*\*\*



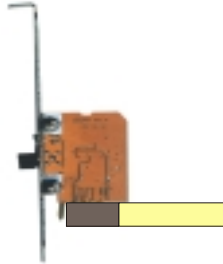


## 5. Wireless LAN Card Installation (optional)

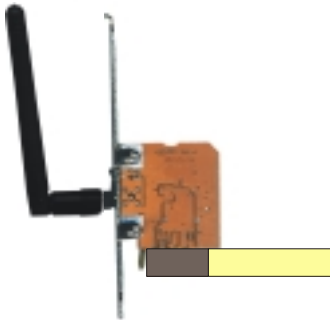
1. Align the wireless LAN on the slot such a way that wireless LAN card matches in the slot. Be sure to face the wireless LAN card with its components towards the inner part of the motherboard.



2. Insert the wireless LAN card vertically and firmly into the slot till the wireless card is properly seated.



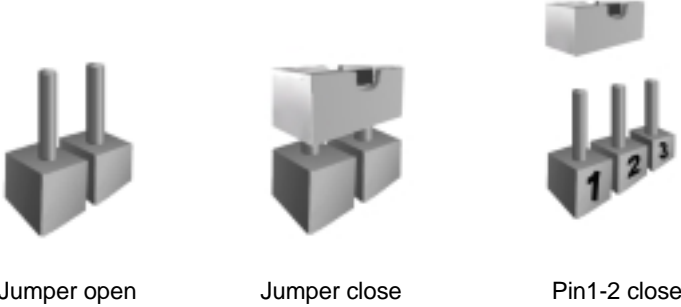
3. Screw the brackets.
4. Insert the wireless LAN antenna by turning it clockwise.





## 6. How to set up Jumpers?

The illustration shows how to set up jumpers. When the Jumper cap is placed on pins, the jumper is “close”. If no jumper cap is placed on the pins, the jumper is “open”. The illustration shows a 3-pin jumper whose pin1 and 2 are “close” when jumper cap is placed on these 2 pins.



## 7. Jumpers, Headers, Connectors & Slots:

### (1) Floppy Disk Connector: FDD1

The motherboard provides a standard floppy disk connector that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.

### (2) Hard Disk Connectors: IDE1/ IDE2

The motherboard has a 32-bit Enhanced PCI IDE Controller that provides PIO Mode 0~4, Bus Master, and Ultra DMA 33/ 66/ 100/ 133 functionality. It has two HDD connectors IDE1 (primary) and IDE2 (secondary).

The IDE connectors can connect a master and a slave drive, so you can connect up to four hard disk drives. The first hard drive should always be connected to IDE1.

### (3) Peripheral Component Interconnect Slots: PCI1-5

This motherboard is equipped with 5 standard PCI slots. PCI stands for Peripheral Component Interconnect, and it is a bus standard for expansion cards. This PCI slot is designed as 32 bits.

### (4) Accelerated Graphics Port Slot: AGP1

Your monitor will attach directly to that video card. This motherboard supports video cards for PCI slots, but it is also equipped with an Accelerated Graphics Port (AGP). An AGP card will take advantage of AGP technology to improve video efficiency and performance, especially with 3D graphics.

### (5) Communication Network Riser Slot: CNR1

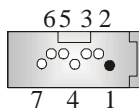
The CNR specification is an open Industry Standard Architecture, and it defines a hardware scalable riser card interface, which supports modem only.



**(6) Serial ATA Connector: JSATA1/ JSATA2**

The motherboard has a PCI to SATA Controller with 2 channels SATA interface. It satisfies the SATA 1.0 spec and can transfer data with 1.5GHz speed.

Pin	Assignment	Pin	Assignment
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground		



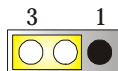
**(7) IDE-Raid Connector: IDE3/ IDE4 (optional)**

This connector supports RAID0 or RAID1 or RAID 0+1 configuration through the onboard Parallel ATA (VT6410) controller chip. You can use the IDE feature to set up a disk array configuration and to support additional IDE devices. However, it can only support master mode IDE HDD.

**(8) Clear CMOS Jumper: JCMOS1**

This jumper helps you to clear the Real Time Clock (RTC) Ram in CMOS. You can erase the CMOS RTC Ram data to clear the CMOS memory of date, time, and system setup parameters.

JCMOS1	Assignment
Pin 1-2 Close	Normal Operation (default)
Pin 2-3 Close	Clear CMOS Data



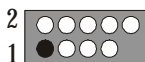
\* Clear CMOS Procedures:

1. Remove AC power line.
2. Set the jumper to "Pin 2-3 Close".
3. Wait for five seconds.
4. Set the jumper to "Pin 1-2 Close".
5. Power on the AC.
6. Reset your desired password or clear the CMOS data.


**(9) Front USB Header: JUSB3/ JUSB4**

The motherboard provides two USB 2.0 Pin Header. USB 2.0 technology increases data transfer rate up to a maximum of 480 Mbps, which is 40 times faster than USB 1.1, and is ideal for connecting high-speed USB interface peripherals such as USB HDD, digital cameras, MP3 players, printers, modems, etc.

Pin	Assignment	Pin	Assignment
1	+5V(fused)	2	+5V(fused)
3	USBP4-	4	USBP5-
5	USBP4+	6	USBP5+
7	Ground	8	Ground
9	KEY	10	NC



**(10) Power Source Selection for USB: JUSBV1/ JUSBV2/ JUSBV3/ JUSBV4**

JUSBV1/ JUSBV2/ JUSBV3/ JUSBV4	Assignment	Description
Pin 1-2 close	+5V	JUSBV1: 5V for USB port located at the JUSBLAN1 connector port. JUSBV2: 5V for USB port located at the J1394_USB1 connector port. JUSBV3: 5V for USB port located at the JUSB3 connector port. JUSBV4: 5V for USB port located at the JUSB4 connector port.
 Pin 2-3 close	+5V Standby Voltage	JUSBV1: JUSBLAN1 port powered with standby voltage of 5V. JUSBV2: J1394_USB1 port powered with standby voltage of 5V. JUSBV3: JUSB3 port powered with standby voltage of 5V. JUSBV4: JUB4 port powered with standby voltage of 5V.

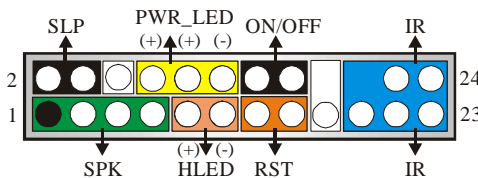
**Note:** 1. In order to support this function “Power-on the sytem via USB devices”, "JUSBV1/JUSBV2/ JUSBV3/ JUSBV4" jumper cap should be placed on pin 2-3 respectively.

2. Use +5V Standby Voltage for S3 mode.

**(11) Front Panel Connector: JPANEL1**

The connector is for electrical connection to the front panel switches and LEDs.

Pin	Assignment	Function	Pin	Assignment	Function
1	+5V		2	Sleep Control	Sleep Button
3	NA	Speaker	4	Ground	
5	NA	Connector	6	NA	NA
7	Speaker		8	Power LED (+)	Power LED
9	HDD LED (+)	Hard Drive	10	Power LED (+)	
11	HDD LED (+)	LED	12	Power LED (-)	
13	Ground	Reset	14	Power Button	Power-on Button
15	Reset Control	Button	16	Ground	
17	NA		18	KEY	
19	NA	IrDA	20	KEY	IrDA Connector
21	+5V	Connector	22	Ground	
23	IRTX		24	IRRX	



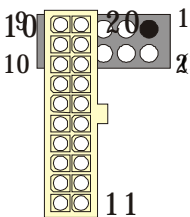
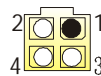


**(13) Power Connectors: JATXPWR1/ JATXPWR2**

The motherboard supports ATX power supply for the power system. Before installing the power supply connector, please make sure that all components are installed properly.

PIN	Assignment	PIN	Assignment
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	Ground	13	Ground
4	+5V	14	PS_ON
5	Ground	15	Ground
6	+5V	16	Ground
7	Ground	17	Ground
8	PW_OK	18	-5V
9	Standby Voltage +5V	19	+5V
10	+12V	20	+5V

PIN	Assignment	PIN	Assignment
1	+12V	3	Ground
2	+12V	4	Ground



**(14) Front 1394 Header: J1394B1**

Pin	Assignment	Pin	Assignment
1	A1+	2	A1-
3	Ground	4	Ground
5	B1+	6	B1-
7	+12V	8	+12V
9	KEY	10	NA

**(15) Digital Audio Connector: SPDIF\_OUT**

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

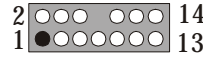
Pin	Assignment
1	+5V
2	SPDIF_OUT
3	Ground



**(16) Front Panel Audio Header: JAUDIO1**

The connector allows you to connect to the front panel audio.

Pin	Assignment	Pin	Assignment
1	Mic In	2	Ground
3	Mic Power	4	Audio Power
5	RT Line Out	6	RT Line Out
7	Reserved	8	Key
9	LFT Line Out	10	LFT Line Out
11	RT Line In	12	RT Line In
13	LFT Line In	14	LFT Line In



**(17) CD-ROM Audio-In Header: JCDIN1**

This header allows you to receive stereo audio input from sound sources, such as CD-ROM, TV Tuner, MPEG card, etc.

Pin	Assignment
1	Left Channel Input
2	Ground
3	Ground
4	Right Channel Input

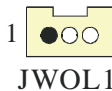


**(18) Game Header: JGAME1**

Pin	Assignment	Pin	Assignment
1	+5V	2	+5V
3	Joystick B Button 1	4	Joystick A Button 1
5	Joystick B Coordinate X	6	Joystick A Coordinate X
7	MIDI Output	8	Ground
9	Joystick B Coordinate Y	10	Ground
11	Joystick B Button 2	12	Joystick A Coordinate Y
13	MIDI Input	14	Joystick A Button 2
15	NA	16	+5V



**(19) Wake On LAN Header: JWOL1**

Pin	Assignment
1	+5V_SB
2	Ground
3	Wake up

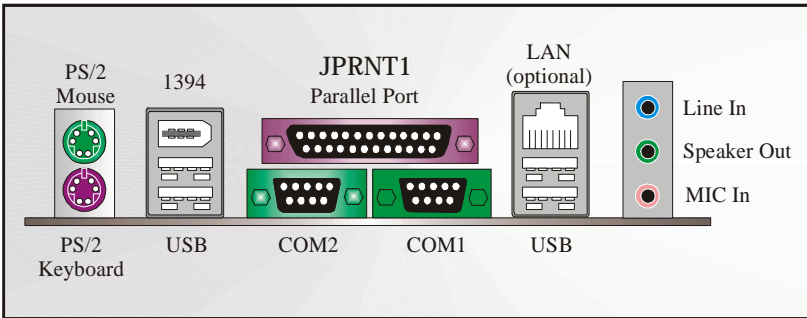


JWOL1

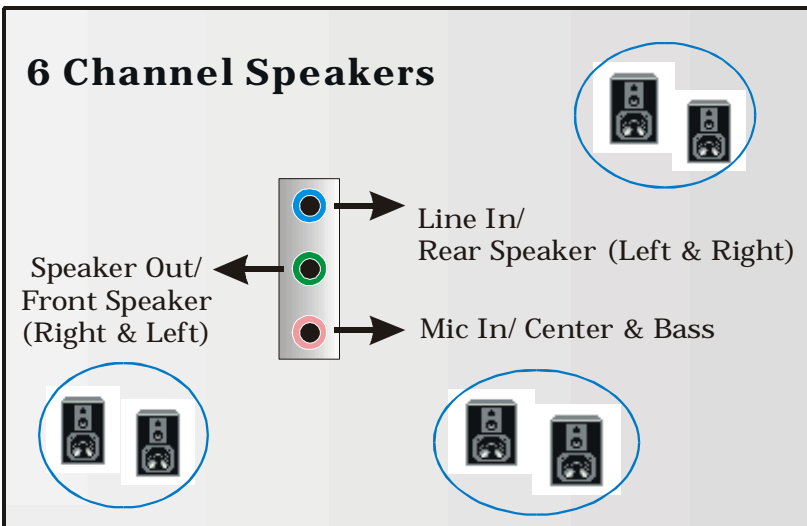
**(12) Power Source Selection for Keyboard and Mouse: JKBV1**

JKBV1	Assignment	Description	
Pin 1-2 close	+5V	5V for keyboard and mouse	1 
Pin 2-3 close	+5V Standby voltage	5V standby for keyboard and mouse to power on your system	1 

**(20) Back Panel Connectors**



**6 Channel Speakers**





# Section 6. Trouble Shooting

PROBABLE	SOLUTION
<p>No power to the system at all; power light doesn't illuminate; fan inside power supply does not turn on. Indicator light on keyboard does not turn on.</p>	<ul style="list-style-type: none"> <li>* Make sure power cable is securely plugged in.* Replace cable.</li> <li>* Contact technical support.</li> </ul>
<p>System inoperative. Keyboard lights are on, power indicator lights are lit, and hard drive is spinning.</p>	<ul style="list-style-type: none"> <li>* Using even pressure on both ends of the DIMM, press down firmly until the module snaps back in places.</li> </ul>
<p>System does not boot from hard disk drive, but it can be booted from CD-ROM drive.</p>	<ul style="list-style-type: none"> <li>* Check cable running from disk to disk controller board. Make sure both ends are securely plugged in; check the drive type in the standard CMOS setup.</li> <li>* Backing up the hard drive is extremely important. All hard disks are capable of breaking down at any time.</li> </ul>
<p>System only boots from CD-ROM. Hard disk can be read and applications can be used but booting from hard disk is impossible.</p>	<ul style="list-style-type: none"> <li>* Back up data and applications files. Reformat the hard drive. Re-install applications and data using backup disks.</li> </ul>
<p>Screen message says "Invalid Configuration" or "CMOS Failure."</p>	<ul style="list-style-type: none"> <li>* Review system's equipment. Make sure correct information is in setup.</li> </ul>
<p>Cannot boot system after installing second hard drive.</p>	<ul style="list-style-type: none"> <li>* Set master/slave jumpers correctly.</li> <li>* Run SETUP program and select correct drive types. Call drive manufacturers for compatibility with other drives.</li> </ul>
<p>Error message reading "SECTOR NOT FOUND" or other error messages not allowing certain data to be retrieved.</p>	<ul style="list-style-type: none"> <li>* Back up any salvageable data. Then, low-level format, partition, and high-level format the hard drive. Re-install all saved data when completed.</li> </ul>





PROBABLE	SOLUTION
Screen is blank.	* Check the power connectors to monitor and to system. Make sure monitor is connected to display card.
Screen goes blank periodically.	* Disable screen saver.
Memory problem.	* Reboot computer. Reinstall memory, and make sure that all memory modules are installed in correct sockets.
Computer virus.	* Use anti-virus programs to detect and clean viruses.
Keyboard failure.	* Reconnect keyboard. Check keys again. If no improvement, replace keyboard.
No display on screen.	* If possible, connect monitor to another system. If no color still, replace monitor.
C: drive failure.	* Check hard drive cable.
Missing operating system on hard drive.	* Run setup and select correct drive type.
Certain keys do not function.	* Replace keyboard.
Keyboard is locked, no keys function.	* Unlock keyboard.





# StudioFun!™

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## *Introduction*

StudioFun!™ is a media-player based on optimized GNU/Linux distribution to bring a "Room Theater" experience into life. It plays DVD, VCD, MP3, Audio CD and other multimedia. Furthermore, Users can take snapshots of video and customize the saved images as screensavers or photo slideshows. Of course, the images can be stored in USB mass storage devices like flash disks and USB floppy disks.

## *Hardware Requirements*

The supported hardware list of StudioFun! updates regularly. So please check the "hwreq.txt" located in the root of StudioFun! CD to get the latest supporting information.

## *Installation and Usage*

Please refer to the manual, located in the "Manual" folder under the root of StudioFun! CD, to get the most updated and detailed information of StudioFun. The manual comes in 3 different formats - Word format, PDF file format, or HTML format. Users can choose the favorite one.

# WarpSpeeder™

---



## *Introduction*

[ WarpSpeeder™ ], a new powerful control utility, features three user-friendly functions including Overclock Manager, Overvoltage Manager, and Hardware Monitor.

With the Overclock Manager, users can easily adjust the frequency they prefer or they can get the best CPU performance with just one click. The Overvoltage Manager, on the other hand, helps to power up CPU core voltage and Memory voltage. The cool Hardware Monitor smartly indicates the temperatures, voltage and CPU fan speed as well as the chipset information. Also, in the About panel, you can get detail descriptions about BIOS model and chipsets. In addition, the frequency status of CPU, memory, AGP and PCI along with the CPU speed are synchronically shown on our main panel.

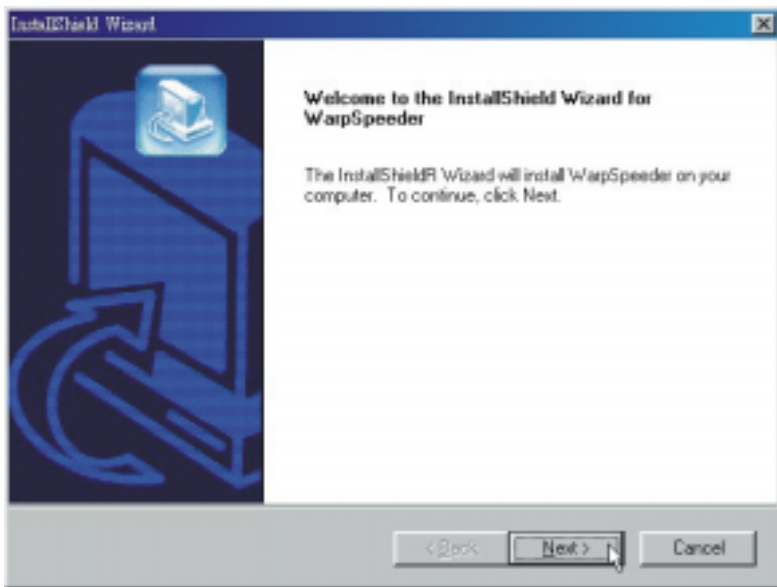
Moreover, to protect users' computer systems if the setting is not appropriate when testing and results in system fail or hang, [ WarpSpeeder™ ] technology assures the system stability by automatically rebooting the computer and then restart to a speed that is either the original system speed or a suitable one.

## *System Requirement*

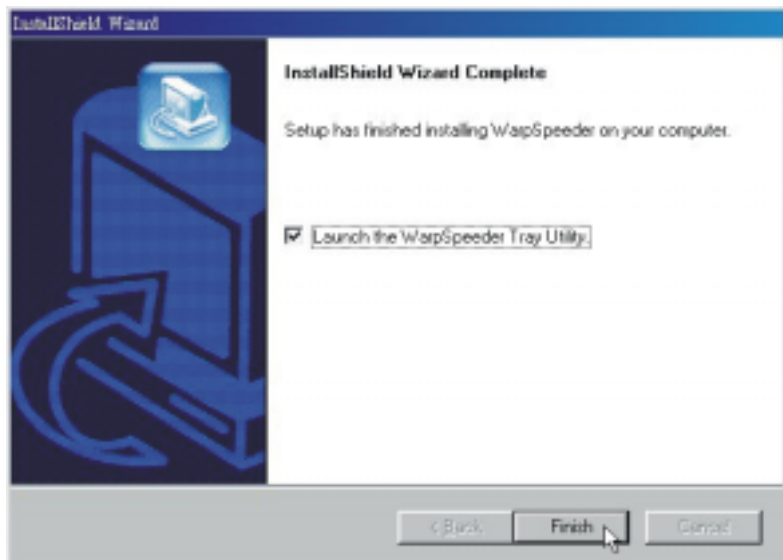
OS Support: Windows 98 SE, Windows Me, Windows 2000, Windows XP  
DirectX: DirectX 8.1 or above. (The Windows XP operating system includes DirectX 8.1. If you use Windows XP, you do not need to install DirectX 8.1.)

## *Installation*

1. Execute the setup execution file, and then the following dialog will pop up. Please click "Next" button and follow the default procedure to install.



2. When you see the following dialog in setup procedure, it means setup is completed. If the "Launch the WarpSpeeder Tray Utility" checkbox is checked, the Tray Icon utility and [WarpSpeeder™] utility will be automatically and immediately launched after you click "Finish" button.







## Usage

*The following figures are just only for reference, the screen printed in this user manual will change according to your motherboard on hand.*

[WarpSpeeder™] includes 1 tray icon and 5 panels:

1. Tray Icon:

Whenever the Tray Icon utility is launched, it will display a little tray icon on the right side of Windows Taskbar.



This utility is responsible for conveniently invoking [WarpSpeeder™] Utility. You can use the mouse by clicking the left button in order to invoke [WarpSpeeder™] directly from the little tray icon or you can right-click the little tray icon to pop up a popup menu as following figure. The "Launch Utility" item in the popup menu has the same function as mouse left-click on tray icon and "Exit" item will close Tray Icon utility if selected.



2. Main Panel

If you click the tray icon, [WarpSpeeder™] utility will be invoked. Please refer do the following figure; the utility's first window you will see is Main Panel.

Main Panel contains features as follows:

- a. Display the CPU Speed, CPU external clock, Memory clock, AGP clock, and PCI clock information.
- b. Contains About, Voltage, Overclock, and Hardware Monitor Buttons for invoking respective panels.



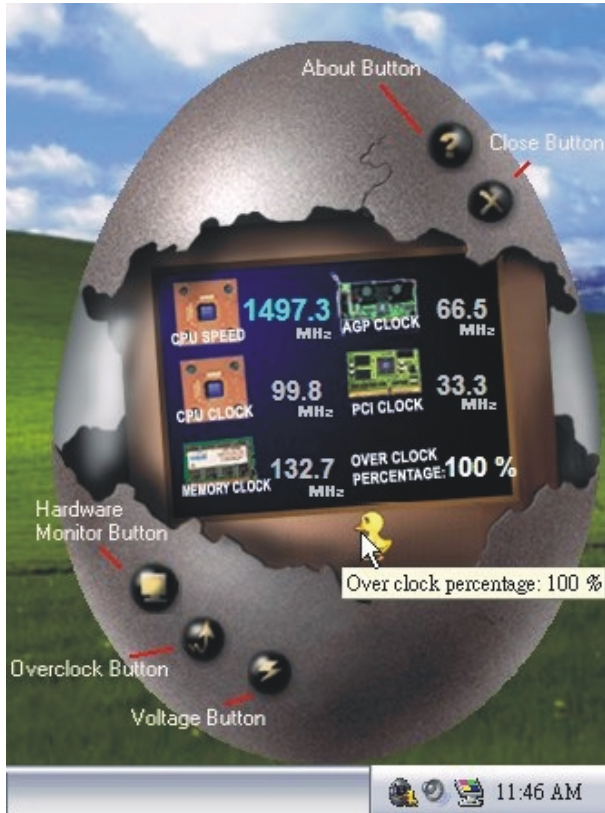


c. With a user-friendly Status Animation, it can represent 3 overclock percentage stages:

Duck walking => overclock percentage from 100% ~ 110 %

Duck running => overclock percentage from 110% ~ 120%

Duck burning => overclock percentage from 120% ~ above



### 3. Voltage Panel

Click the Voltage button in Main Panel, the button will be highlighted and the Voltage Panel will slide out up as the following figure.

In this panel, you can decide to increase CPU core voltage and Memory voltage or not. The default setting is "No". If you want to get the best performance of overclocking, we recommend you click the option "Yes".





#### 4. Overclock Panel

Click the Overclock button in Main Panel, the button will be highlighted and the Overclock Panel will slide out to left as the following figure.

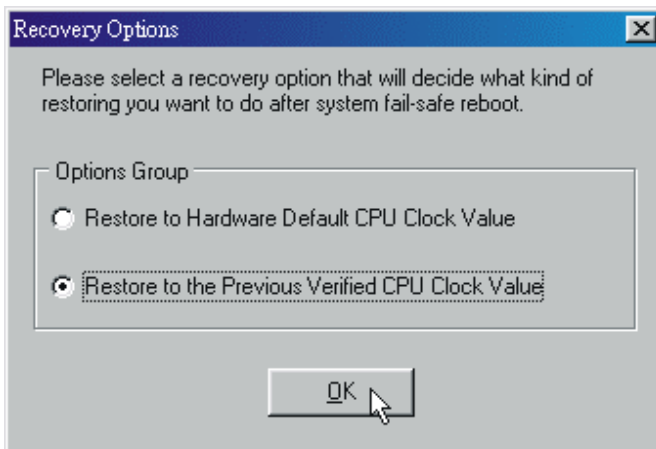


Overclock Panel contains these features:

a. "-3MHz button", "-1MHz button", "+1MHz button", and "+3MHz button": provide user the ability to do real-time overclock adjustment.

*Warning: Manually overclock is potentially dangerous, especially when the overclocking percentage is over 110 %. We strongly recommend you verify every speed you overclock by click the Verify button. Or, you can just click Auto overclock button and let [ WarpSpeeder™ ] automatically gets the best result for you.*

b. "Recovery Dialog button": Pop up the following dialog. Let user select a restoring way if system need to do a fail-safe reboot.



c. "Auto-overclock button": User can click this button and [ WarpSpeeder™ ] will set the best and stable performance and frequency automatically. [WarpSpeeder™] utility will execute a series of testing until system fail. Then system will do fail-safe reboot by using Watchdog function. After reboot, the [ WarpSpeeder™ ] utility will restore to the hardware default setting or load the verified best and stable frequency according to the Recovery Dialog's setting.

d. "Verify button": User can click this button and [ WarpSpeeder™ ] will proceed a testing for current frequency. If the testing is ok, then the current frequency will be saved into system registry. If the testing fail, system will do a fail-safe rebooting. After reboot, the [ WarpSpeeder™ ] utility will restore to the hardware default setting or load the verified best and stable frequency according to the Recovery Dialog's setting.

*Note: Because the testing programs, invoked in Auto-overclock and Verify, include DirectDraw, Direct3D and DirectShow tests, the DirectX 8.1 or newer runtime library is required. And please make sure your display card's color depth is High color (16 bit) or True color (24/32 bit) that is required for Direct3D rendering.*



### 5. Hardware Monitor Panel

Click the Hardware Monitor button in Main Panel, the button will be highlighted and the Hardware Monitor panel will slide out to left as the following figure. In this panel, you can get the real-time status information of your system. The information will be refreshed every 1 second.



### 6. About Panel

Click the About button in Main Panel, the button will be highlighted and the About Panel will slide out to up as the following figure. In this panel, you can get model name and detail information in hints of all the chipset that are related to overclocking. You can also get the mainboard's BIOS model and the Version number of [ WarpSpeeder™ ] utility.





Note: Because the overclock, overvoltage, and hardware monitor features are controlled by several separate chipset, [ WarpSpeeder™ ] divide these features to separate panels. If one chipset is not on board, the correlative button in Main panel will be disabled, but will not interfere other panels' functions. This property can make [ WarpSpeeder™ ] utility more robust.





09/3/2003



# K8VHA Pro BIOS Setup

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<b>BIOS Setup</b> .....	<b>1</b>
1 Main Menu.....	3
2 Standard CMOS Features .....	6
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5 Integrated Peripherals .....	18
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9 Frequency Control .....	33





# BIOS Setup

## Introduction

This manual discussed Award™ Setup program built into the ROM BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

The Award BIOS™ installed in your computer system's ROM (Read Only Memory) is a custom version of an industry standard BIOS. This means that it supports Intel Pentium® 4 processor input/output system. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports.

Adding important has customized the Award BIOS™, but nonstandard, features such as virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

The rest of this manual is intended to guide you through the process of configuring your system using Setup.

## Plug and Play Support

These AWARD BIOS supports the Plug and Play Version 1.0A specification. ESCD (Extended System Configuration Data) write is supported.

## EPA Green PC Support

This AWARD BIOS supports Version 1.03 of the EPA Green PC specification.

## APM Support

These AWARD BIOS supports Version 1.1&1.2 of the Advanced Power Management (APM) specification. Power management features are implemented via the System Management Interrupt (SMI). Sleep and Suspend power management modes are supported. This AWARD BIOS can manage power to the hard disk drives and video monitors .

## ACPI Support

Award ACPI BIOS support Version 1.0 of Advanced Configuration and Power interface specification (ACPI). It provides ASL code for power management and device configuration capabilities as defined in the ACPI specification, developed by Microsoft, Intel and Toshiba.





### PCI Bus Support

This AWARD BIOS also supports Version 2.1 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

### DRAM Support

DDR DRAM (Double Data Rate Synchronous DRAM) are supported.

### Supported CPUs

This AWARD BIOS supports the AMD<sup>®</sup> CPU.

### Using Setup

In general, you 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 in the Setup program by using the keyboard.

Keystroke	Function
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left (menu bar)
Right arrow	Move to the item on the right (menu bar)
Move Enter	Move to the item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ Key	Increase the numeric value or make changes
- Key	Decrease the numeric value or make changes
Esc key	Main Menu – Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu – Exit Current page and return to Main Menu
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F7 key	Load the optimized defaults
F10 key	Save all the CMOS changes and exit



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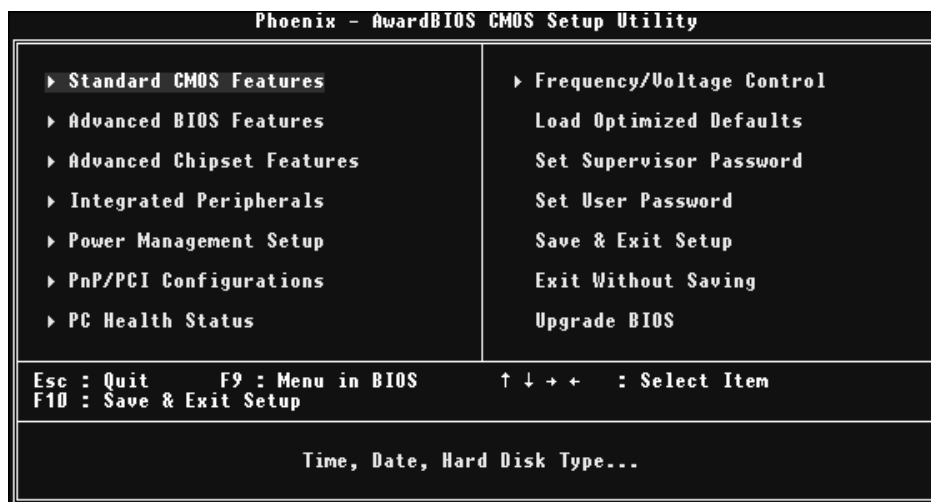
# 1 Main Menu

Once you enter Award BIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

**⚠WARNING**

The information about BIOS defaults on manual (**Figure 1,2,3,4,5,6,7,8,9**) is just for reference, please refer to the BIOS installed on board, for update information.

■ **Figure 1. Main Menu**



## Standard CMOS Features

This submenu contains industry standard configurable options.

## Advanced BIOS Features

This submenu allows you to configure enhanced features of the BIOS.

## Advanced Chipset Features

This submenu allows you to configure special chipset features.



### **Integrated Peripherals**

This submenu allows you to configure certain IDE hard drive options and Programmed Input/ Output features.

### **Power Management Setup**

This submenu allows you to configure the power management features.

### **PnP/PCI Configurations**

This submenu allows you to configure certain “Plug and Play” and PCI options.

### **PC Health Status**

This submenu allows you to monitor the hardware of your system.

### **Frequency/ Voltage Control**

This submenu allows you to change CPU Vcore Voltage and CPU/ PCI clock. **(However, this function is strongly recommended not to use. Not properly change the voltage and clock may cause CPU or M/B damage!)**

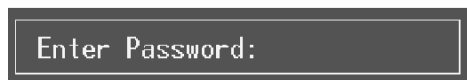
### **Load Optimized Defaults**

This selection allows you to reload the BIOS when the system is having problems particularly with the boot sequence. These configurations are factory settings optimized for this system. A confirmation message will be displayed before defaults are set.



### **Set Supervisor Password**

Setting the supervisor password will prohibit everyone except the supervisor from making changes using the CMOS Setup Utility. You will be prompted with to enter a password.



### **Set User Password**

If the Supervisor Password is not set, then the User Password will function in the same way as the Supervisor Password. If the Supervisor Password is set and the User Password is set, the “User” will only be able to view configurations but will not be able to change them.





### **Save & Exit Setup**

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

```
SAVE to CMOS and EXIT (Y/N)? Y
```

### **Exit Without Saving**

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

```
Quit Without Saving (Y/N)? N
```

### **Upgrade BIOS**

This submenu allows you to upgrade bios.

```
BIOS UPDATE UTILITY (Y/N)? N
```

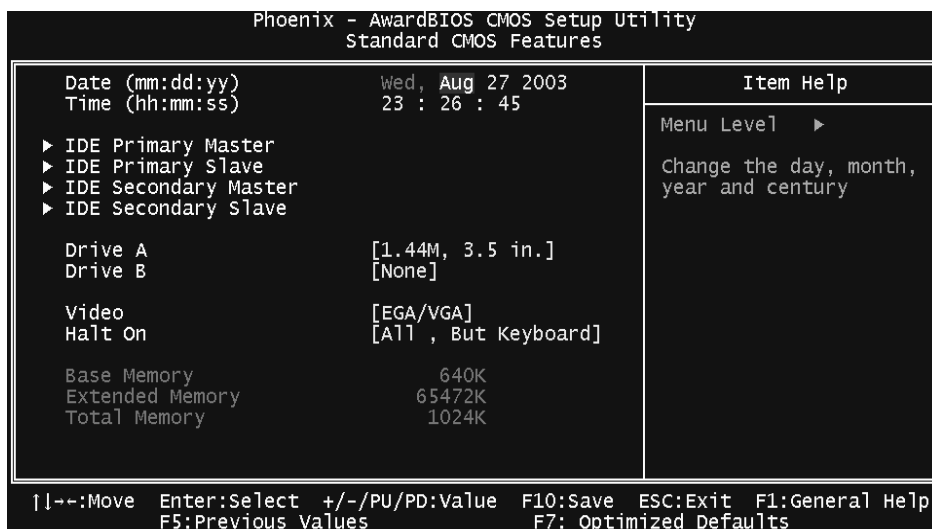


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## 2 Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

■ **Figure 2. Standard CMOS Setup**



---



### **Main Menu Selections**

This table shows the selections that you can make on the Main Menu.

<b>Item</b>	<b>Options</b>	<b>Description</b>
Date	mm : dd : yy	Set the system date. Note that the 'Day' automatically changes when you set the date.
Time	hh : mm : ss	Set the system internal clock.
IDE Primary Master	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options
IDE Primary Slave	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
IDE Secondary Master	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
IDE Secondary Slave	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
Drive A Drive B	360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in None	Select the type of floppy disk drive installed in your system.
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device.



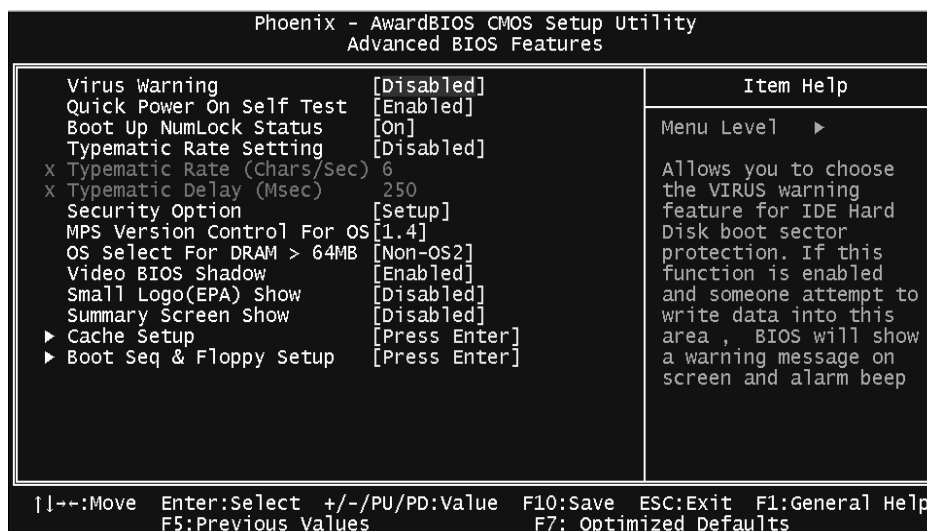
<b>Item</b>	<b>Options</b>	<b>Description</b>
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/ Key	Select the situation in which you want the BIOS to stop the POST process and notify you.
Base Memory	N/A	Displays the amount of conventional memory detected during boot up.
Extended Memory	N/A	Displays the amount of extended memory detected during boot up.
Total Memory	N/A	Displays the total memory available in the system.





## 3 Advanced BIOS Features

■ Figure 3. Advanced BIOS Setup



### Virus Warning

This option allows you to choose the VIRUS Warning feature that is used to protect the IDE Hard Disk boot sector. If this function is enabled and an attempt is made to write to the boot sector, BIOS will display a warning message on the screen and sound an alarm beep.

**Disabled** (default) Virus protection is disabled.

**Enabled** Virus protection is activated.

### Quick Power On Self Test

Enabling this option will cause an abridged version of the Power On Self-Test (POST) to execute after you power up the computer.

**Disabled** Normal POST.

**Enabled** (default) **Enable quick POST.**

### Boot Up NumLock Status

Selects the NumLock. State after power on.

**On** (default) Numpad is number keys.

**Off** Numpad is arrow keys.



### **Typematic Rate Setting**

When a key is held down, the keystroke will repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be configured.

**The Choices:** Disabled (default), Enabled.

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

Sets the rate at which a keystroke is repeated when you hold the key down.

**The Choices:** 6 (default), 8, 10, 12, 15, 20, 24, 30.

### **Typematic Delay (Msec)**

Sets the delay time after the key is held down before it begins to repeat the keystroke.

**The Choices:** 250 (default), 500, 750, 1000.

### **Security Option**

This option will enable only individuals with passwords to bring the system online and/or to use the CMOS Setup Utility.

**System:** A password is required for the system to boot and is also required to access the Setup Utility.

**Setup (default):** A password is required to access the Setup Utility only.

*This will only apply if passwords are set from the Setup main menu.*

### **MPS Version Control For OS**

The BIOS supports version 1.1 and 1.4 of the Intel multiprocessor specification.

Select version supported by the operation system running on this computer.

**The Choices:** 1.4 (default), 1.1.

### **OS Select For DRAM > 64MB**

A choice other than Non-OS2 is only used for OS2 systems with memory exceeding 64MB.

**The Choices:** Non-OS2 (default), OS2.

### **Video BIOS Shadow**

Determines whether video BIOS will be copied to RAM for faster execution.

**Enabled (default)** Optional ROM is enabled.

**Disabled** Optional ROM is disabled.

### **Small Logo (EPA) Show**

This item allows you to enable/ disable display the small EPA logo.

**The Choices:** Disabled (default), Enabled.





### **Summary Screen Show**

This item allows you to enable/disable the summary screen. Summary screen means system configuration and PCI device listing.

**The Choices:** Enabled, **Disabled** (default).

### **Cache Setup**

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

This item allows you to enable/disable CPU L2 Cache ECC Checking.

**The Choices:** Enabled (default), Disabled.

#### **External Cache**

This option you to enable or disable “Level 2” secondary cache on the CPU, which may improve performance.

**The Choices:**

**Enabled** (default)            Enable cache.

Disabled                      Disable cache.

### **Boot Seq & Floppy Setup**

#### **First/ Second/ Third/ Boot Other Device**

These BIOS attempt to load the operating system from the device in the sequence selected in these items.

**The Choices:** Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, LAN, HPT370, Disabled, Enabled.

#### **Swap Floppy Drive**

For systems with two floppy drives, this option allows you to swap logical drive assignments.

**The Choices:** Disabled (default), Enabled.

#### **Boot Up Floppy Seek**

Enabling this option will test the floppy drives to determine if they have 40 or 80 tracks. Disabling this option reduces the time it takes to boot-up.

**The Choices:** Disabled (Default), Enabled.

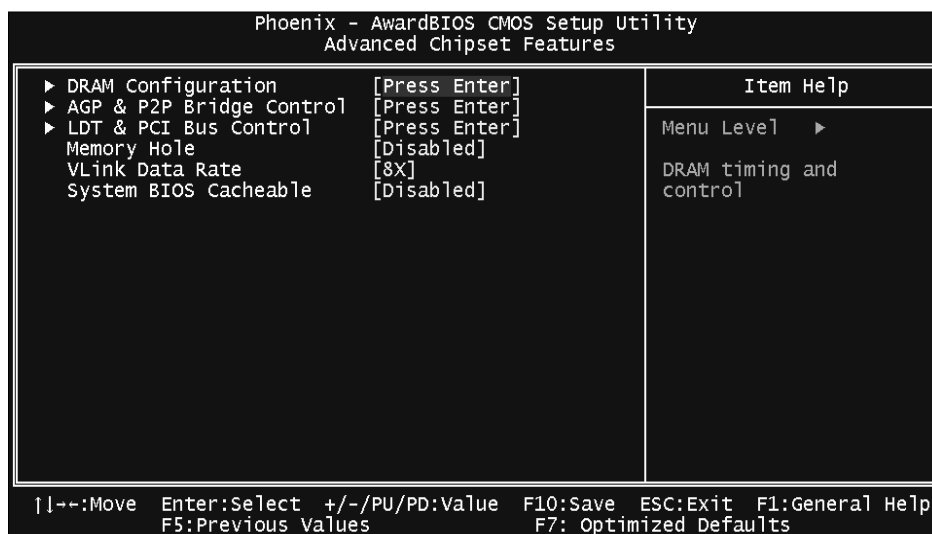


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## 4 Advanced Chipset Features

This submenu allows you to configure the specific features of the chipset installed on your system. This chipset manage bus speeds and access to system memory resources, such as DRAM. It also coordinates communications with the PCI bus. The default settings that came with your system have been optimized and therefore should not be changed unless you are suspicious that the settings have been changed incorrectly.

### ■ Figure 4. Advanced Chipset Setup



### DRAM Configuration

#### **DDR Timing Setting by**

DDR Timing Setting by SPD or ITEM.

**The Choices:** Auto (Default), Manual.

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

Places an artificial memory clock limit on the system. Memory is prevented from running faster than this frequency.

The Choices: 200 (Default), 166, 133, 100.


#### **CAS# Latency**

This field specify the cas# latency, i.e. cas# to read data valid.

**The Choices:** CL=2.5 (Default), CL=3.0, CL=2.0

---

---



**Row cycle time (tRC)**

This field specifies the ROW Cycle Time. RAS# active to RAS# active or auto refresh of the same bank. Typically -70 Nsec.

**The Choices: 9 BUS CLOCKS** (Default), 7 BUS CLOCKS, 8 BUS CLOCKS, 10 BUS CLOCKS, 11 BUS CLOCKS, 12 BUS CLOCKS, 13 BUS CLOCKS, 14 BUS CLOCKS, 15 BUS CLOCKS, 16 BUS CLOCKS, 17 BUS CLOCKS, 18 BUS CLOCKS, 19 BUS CLOCKS, 20 BUS CLOCKS, 21 BUS CLOCKS, 22BUS CLOCKS.

**Row refresh cyc time (tRFC)**

This field specifies the ROW Refresh Cycle Time. Auto-refresh active to RAS# active or RAS# to Auto-refresh. Similar to Trc. Typically 75-90 Nsec.

**The Choices: 10 BUS CLOCKS** (Default), 9 BUS CLOCKS, 11 BUS CLOCKS, 12 BUS CLOCKS, 13 BUS CLOCKS, 14 BUS CLOCKS, 15 BUS CLOCKS, 16 BUS CLOCKS, 17 BUS CLOCKS, 18 BUS CLOCKS, 19 BUS CLOCKS, 20 BUS CLOCKS, 21 BUS CLOCKS, 22 BUS CLOCKS, 23 BUS CLOCKS, 24 BUS CLOCKS

**RAS# to CAS# Delay (tRCD)**

This field specifies the RAS# to CAS# Delay to read/ write command to the same bank. Typically -20 Nsec.

**The Choices: 3 BUS CLOCKS** (Default), 2 BUS CLOCKS, 4 BUS CLOCKS, 5 BUS CLOCKS, 6 BUS CLOCKS, 7 BUS CLOCKS

**Row to Row Delay (tRRD)**

This field specifies the Row# of different banks. Typically -15 Nsec.

**The Choices: 2 BUS CLOCKS** (Default), 3 BUS CLOCKS, 4 BUS CLOCKS.

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

This field specifies the minimum RAS# active time. Typically -45-60 Nsec.

**The Choices: 6 BUS CLOCKS** (Default), 13 BUS CLOCKS, 14 BUS CLOCKS, 15 BUS CLOCKS.

**Row precharge Time (tRP)**

This field specifies the Row precharge Time. Precharge to Active or Auto-Refresh of the same bank. Typically 20-24 Nsec.

**The Choices: 3 BUS CLOCKS** (Default), 2 BUS CLOCKS, 4 BUS CLOCKS, 5 BUS CLOCKS, 6 BUS CLOCKS.

**Write recovery time (tWR)**

This bit specifies the Write recovery time. Called Trdl by Samsung, measures when the last write datum is safely registered by the DRAM. It measures from the last data to precharge. Samsung measures as 1.25 -1.75CK but Jedec says 15-20 ns.

**The Choices: 2 BUS CLOCKS** (Default), 3 BUS CLOCKS

---

  
**Write to Read Delay (tWTR)**

This bit specifies the write to read delay. Samsung called this Tcdlr (last data in to read command). It is measured from the rising edge following the last non-masked data strobe to the rising edge of the next Read Command (Jedec specs this as exactly one clock)

**The Choices:** 1 BUS CLOCKS (Default), 2 BUS CLOCKS

**Read to Write Delay (tRWT)**

This bit specifies the Read to write delay. This is not a DRAM specified timing parameter but must be considered due to routing latencies on the clock forwarded bus. It is counted from first address bus slot which was not associated with part of the read burst.

**The Choices:** 4 BUS CLOCKS (Default), 1 BUS CLOCKS, 2 BUS CLOCKS, 3 BUS CLOCKS, 5 BUS CLOCKS, 6 BUS CLOCKS.

**Refresh period (tREF)**

This field specifies the number of clock cycles between refresh.

**The Choices:** 1x 2064 Cycles (Default).

**AGP & P2P Bridge Control**

If you highlight the literal “Press Enter” next to the “AGP & P2P Bridge Control” label and then press the enter key, it will take you a submenu with the following options:

**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.

**The Choices:** 64M, 256M, 128M (Default), 32M, 16M, 8M, 4M.

**AGP Mode**

This item allows you to select the AGP Mode.

**The Choices:** 4X (default), 2X, 1X.

**AGP Driving Control**

By choosing “Auto” the system BIOS will the AGP output Buffer Drive strength P Ctrl by AGP Card. By choosing “Manual”, it allows user to set AGP output Buffer Drive strength P Ctrl by manual.

**The Choices:** Auto (default), Manual.

**AGP Driving Value**

While AGP driving control item set to “Manual”, it allows user to set AGP driving.

**The Choices:** DA (default).

**AGP Fast Write**

**The Choices:** Enabled, Disabled (default).

---



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**AGP Master 1 WS Write**

When Enabled, writes to the AGP (Accelerated Graphics Port) are executed with one wait states.

**The Choices:** Disabled (default), Enabled.

**AGP Master 1 WS Read**

When Enabled, read to the AGP (Accelerated Graphics Port) are executed with one wait states.

**The Choices:** Disabled (default), Enabled.

**LDT & PCI Bus Control**

If you highlight the literal “Press Enter” next to the “LDT & PCI Bus Control” label and then press the enter key, it will take you a submenu with the following options:

**Upstream LDT Bus Width**

**The Choices:** 8 bit, 16 bit (Default).

**Downstream LDT Bus Width**

**The Choices:** 8 bit, 16 bit (Default).

**LDT Bus Frequency**

**The Choices:** 800MHz (Default), Auto, 600MHz, 400MHz, 200MHz.

**PCI1 Master 0 WS Write**

When Enabled, writes to the PCI bus are executed with zero-wait states.

**The Choices:** Enabled (default), Disabled.

**PCI2 Master 0 WS Write**

When Enabled, writes to the PCI bus are executed with zero-wait states.

**The Choices:** Enabled (default), Disabled.

**PCI1 Post Write**

**The Choices:** Enabled (default), Disabled.

**PCI2 Post Write**

**The Choices:** Enabled (default), Disabled.

**PCI Delay Transaction**

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification.

**The Choices:** Disabled (Default), Enabled.

**DRAM Clock/ Drive Control**

To control the Clock. If you highlight the literal “Press Enter” next to the “DRAM Clock” label and then press the enter key, it will take you to a submenu with the following options:

**DRAM Clock**


This item determines DRAM clock following 100MHz, 133MHz or By SPD.

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**The Choices:** 100MHz, 133MHz, **By SPD** (default).

**DRAM Timing**

This item determines DRAM clock/ timing follow SPD or not.

**The Choices:** **By SPD** (default), Manual.

**SDRAM CAS Latency**

When DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

**The Choices:** 2.5, **2** (default).

**Bank Interleave**

This item allows you to enable or disable the bank interleave feature.

**The Choices:** **Disabled** (default).

**Precharge to Active (Trp)**

This items allows you to specify the delay from precharge command to activate command.

**The Choices:** 2T, **3T** (default).

**Active to Precharge (Tras)**

This items allows you to specify the minimum bank active time.

**The Choices:** **7T** (default), 6T.

**Active to CMD (Tred)**

Use this item to specify the delay from the activation of a bank to the time that a read or write command is accepted.

**The Choices:** 2T, **3T** (default).

**DRAM Command Rate**

This item controls clock cycle that must occur between the last valid write operation and the next command.

**The Choices:** **1T Command** (default), 2T Command.

**DRAM Burst Len**

**The Choices:** **4** (default), 8.

**Write Recovery Time**

**The Choices:** **3T** (default), 2T.

**Memory Hole At 15M-16M**

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved it cannot be cached. The user information of peripherals that need to use this area of system memory usually<sup>2</sup> discussed their memory requirements.

**The Choices:** **Disabled** (default), Enabled.





### **VLink Data Rate**

This item allows you to enable or disable VLink Data Rate.

**The Choices:** 8X (Default).

### **System BIOS Cacheable**

Selecting the “Enabled” option allows caching of the system BIOS ROM at F0000h-FFFFFh which can improve system performance. However, any programs writing to this area of memory will cause conflicts and result in system errors.

**The Choices:** Enabled, **Disabled** (default).



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## 5 Integrated Peripherals

■ Figure 5. Integrated Peripherals



### VIA OnChip IDE Device

If you highlight the literal “Press Enter” next to the “VIA OnChip IDE Device” label and then press the enter key, it will take you a submenu with the following options:

#### **IDE DMA Transfer Access**

**The Choices:** Enabled (default), Disabled.

#### **OnChip IDE Channel 0/1**

The motherboard 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.

**The Choices:** Enabled (default), Disabled.

#### **IDE Prefetch Mode**


The “onboard” IDE drive interfaces supports IDE prefetching for faster drive access. If the interface does not support prefetching. If you install a primary and/or secondary add-in IDE interface, set this option to “Disabled”.

**The Choices:** Enabled (default), Disabled.

#### **IDE Prefetch Mode**

The “onboard” IDE drive interfaces supports IDE prefetching for faster drive access. If the interface does not support prefetching. If you install a primary

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and/or secondary add-in IDE interface, set this option to “Disabled”.

**The Choices:** 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 increased performance progressively. In Auto mode, the system automatically determines the best mode for each device.

**The Choices:** Auto (default), Mode0, Mode1, Mode2, Mode3, Mode4.

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

Ultra DMA/100 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/100, select Auto to enable BIOS support.

**The Choices:** Auto (default), Disabled.

**IDE HDD Block Mode**

Block mode is also called block transfer, multiple commands, or multiple sector read / write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read / write per sector where the drive can support.

**The Choices:** Enabled (default), Disabled.

**VIA OnChip PCI Device**

If you highlight the literal “Press Enter” next to the “VIA OnChip PCI Device” label and then press the enter key, it will take you a submenu with the following options:

**VIA-3058 AC97 Audio**

This option allows you to control the onboard AC97 audio.

**The Choices:** Auto (default), Disabled.

**VIA-3068 MC97 Modem**

This option allows you to control the onboard MC97 modem.

**The Choices:** Auto (default), Disabled.

**Onboard 8110 LAN**

This option allows you to enable or disable the onboard LAN 8110.

**The Choices:** Enabled (Default), Disabled.

**Onboard 8110 LAN Boot ROM**

This item allows you to enable or disable Onboard 8110 LAN Boot ROM.

**The Choices:** Disabled (default), Enabled.

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#### **OnChip USB Controller**

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

**The Choices:** 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.

#### **Onchip EHCI Controller**

This item allows you to enable or disable the onchip EHCI controller.

**The Choices:** Enabled (Default), Disabled.

#### **USB Device Legacy Support**

This item allows you to support the USB device legacy.

**The Choices:** Disabled (Default), Enabled.

#### **USB Mouse Support**

Enables support for USB attached mouse.

**The Choices:** Disabled (default), Enabled.

### **Super IO Device**

Press Enter to configure the Super I/O 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 install and FDC or the system has no floppy drive, select Disabled in this field.

**The Choices:** Enabled (default), Disabled.

#### **Onboard Serial Port 1**

Select an address and corresponding interrupt for the first and second serial ports.

**The Choices:** 3F8/IRQ4 (default), Disabled, Auto, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3.

#### **Onboard Serial Port 2**

Select an address and corresponding interrupt for the first and second serial ports

**The Choices:** 2F8/IRQ3 (default), Disabled, Auto, 3F8/IRQ4 , 3E8/IRQ4, 2E8/IRQ3.

#### **UART Mode Select**

This item allows you to determine which Infrared (IR) function of onboard I/O chip.

**The Choices:** Normal(default), ASKIR, IrDA, SCR .

#### **RxD, TxD Active**

This item allows you to determine which Infrared (IR) function of onboard I/O chip.

**The Choices:** Hi / Lo (default), Hi / Hi, Lo / Hi, Lo / Lo.

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### **IR Transmission Delay**

This item allows you to enable/disable IR transmission delay.

**The Choices:** **Enabled** (default), Disabled.

### **UR2 Duplex Mode**

Select the value required by the IR device connected to the IR port. Full-duplex mode permits simultaneous two-direction transmission. Half-duplex mode permits transmission in one direction only at a time.

**The Choices:** **Half** (default), Full.

### **Use IR Pins**

Consult your IR peripheral documentation to select the correct setting of the TxD and RxD signals.

**The Choices:** **IR-Rx2Tx2** (default), RxD2, TxD2.

### **Onboard Parallel Port**

This item allows you to determine access onboard parallel port controller with which I/O Address.

**The Choices:** **378/IRQ7** (default), 278/IRQ5, 3BC/IRQ7, Disabled.

### **Parallel Port Mode**

The default value is SPP.

**The Choices:**

<b>SPP</b> (Default)	Using Parallel Port as Standard Printer Port.
EPP	Using Parallel Port as Enhanced Parallel Port.
ECP	Using Parallel Port as Extended Capabilities Port.
ECP+EPP	Using Parallel Port as ECP & EPP mode.

### **EPP Mode Select**

Select EPP port type 1.7 or 1.9.

**The Choices:** **EPP 1.7**(default), EPP1.9.

### **Game Port Address**

Game Port I/O Address.

**The Choices:** **201** (default), 209, Disabled.

### **Midi Port Address**

Midi Port Base I/O Address.

**The Choices:** **330** (default), 300, Disabled.

### **Midi Port IRQ**

This determines the IRQ in which the Midi Port can use.

**The Choices:** **10** (default), 5.



**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.

**The Choices:** PCI Slot (default), AGP.

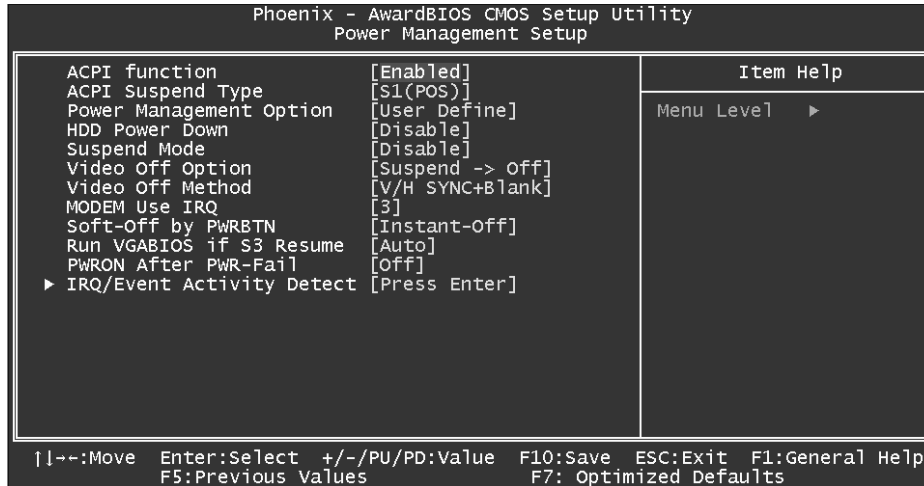


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## 6 Power Management Setup

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

■ **Figure 6. Power Management Setup**



### ACPI Function

This item displays the status of the Advanced Configuration and Power Management (ACPI).

**The Choices:** Enabled (default), Disabled.

### ACPI Suspend Type

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

**The Choices:** S1 (POS) (default)      Power on Suspend  
S3 (STR)                                  Suspend to RAM  
S1 + S3                                      POS+STR

### Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

- 1.HDD Power Down.
- 2.Doze Mode.
- 3.Suspend Mode.

There are four options of Power Management, three of which have fixed mode settings

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### Min. Saving

Minimum power management.  
Doze Mode = 1 hr.  
Standby Mode = 1 hr.  
Suspend Mode = 1 hr.  
HDD Power Down = 15 min

### Max Saving

Maximum power management only available for sl CPU's.  
Doze Mode = 1 min  
Standby Mode = 1 min.  
Suspend Mode = 1 min.  
HDD Power Down = 1 min.

### User Defined (default)

Allows you to set each mode individually.  
When not disabled, each of the ranges are from 1 min. to 1 hr. except for  
HDD Power Down which ranges from 1 min. to 15 min. and disable.

### **HDD Power Mode**

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

**The Choices: Disabled** (default), 1Min, 2Min, 3Min, 4Min, 5Min, 6Min, 7Min, 8Min, 9Min, 10Min, 11Min, 12Min, 13Min, 14Min, 15Min.

### **Suspend Mode**

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

**The Choices: Disabled** (default), 1Min, 2Min, 4Min, 8Min, 12Min, 20Min, 30Min, 40Min, 1Hour.

### **Video Off Option**

This field determines when to activate the video off feature for monitor power management.

**The Choices: Suspend→Off** (default), Always on.

### **Video Off Method**

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

**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.





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### Blank Screen

This option only writes blanks to the video buffer.

### DPMS

Initial display power management signaling.

### **MODEM Use IRQ**

This determines the IRQ, which can be applied in MODEM use.

**The Choices:** 3 (default) / 4 / 5 / 7 / 9 / 10 / 11 / NA

### **Soft-Off by PWR-BTN**

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has “hung.”

**The Choices:** Delay 4 Sec, **Instant-Off** (default).

### **Run VGABIOS if S3 Resume**

Choosing Enabled will make BIOS run VGA BIOS to initialize the VGA card when system wakes up from S3 state . The system time is shortened if you disable the function , but system will need AGP driver to initialize the card . So , if the AGP driver of the VGA card does not support the initialization feature , the display may work abnormally or not function after S3 .

**The Choices:**Auto (default), Yes, No.

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

This field determines the action the system will automatically take when power is restored to a system that had lost power previously without any subsequent manual intervention. There are 3 sources that provide current to the CMOS area that retains these Power-On instructions; the motherboard battery (3V), the Power Supply (5VSB), and the Power Supply (3.3V). While AC is not supplying power, the motherboard uses the motherboard battery (3V). If AC power is supplied and the Power Supply is not turned on, 5VSB from the Power Supply is used. When the Power Supply is eventually turned on 3.3V from the Power Supply will be used.

There are 3 options: “Former-Sts”, “On”, “Off”.

“**Off**” (default) Means always set CMOS to the “Off” status when AC power is lost.

“On” Means always set CMOS to the “On” status when AC power is lost

“Former-Sts” Means to maintain the last status of the CMOS when AC power is lost.

For example: If set to “Former-Sts” and AC power is lost when system is live, then after AC power is restored, the system will automatically power on. If AC power is lost when system is not live, system will remain powered off.

### **IRQ/Event Activity Detect**

If you highlight the literal “Press Enter” next to the “IRQ/Event Activity Detect” label and

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then press the enter key, it will take you a submenu with the following options:

**PS2KB Wakeup Select**

When select Password, please press Enter key to change password with a maximum of 8 characters.

**The Choices:** Hot Key (default).

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

This item allows you to wake up from S3/ S4/ S5 with PS2 keyboard.

**The Choices:** Disabled (default), Ctrl+F1, Ctrl+F2, Ctrl+F3, Ctrl+F4, Ctrl+F5, Ctrl+F6, Ctrl+F7, Ctrl+F8, Ctrl+F9, Ctrl+F10, Ctrl+F11, Ctrl+F12, Power, Wake, Any Key.

**PS2MS Wakeup from S3/ S4/ S5**

This item allows you to wake up from S3/ S4/ S5 with PS2 mouse.

**The Choices:** Disabled (default).

**USB Resume from S3**

This item allows you to enable or disabled USB resume from S3.

**The Choices:** Disabled (Default), Enabled.

**VGA**

When set to **On**, any event occurring at a VGA Port will awaken a system which has been powered down.

**The Choices:** 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 powered down.

**The Choices:** LPT/COM (default), COM, LPT, NONE.

**HDD & FDD**

When this option is set to **On**, any event occurring on a hard drive or a floppy drive will awaken a system which has been powered down.

**The Choices:** On (default), Off.

**PCI Master**

When set to **On**, you need a LAN add-on card which supports the power function. It should also support the wake-up on LAN jump.

**The Choices:** Off (default), On.

**PowerOn by PCI Card**

When you select Enabled, a PME signal from PCI card returns the system to Full ON state.

**The Choices:** Disabled (default), Enabled.

**Modem Ring Resume**

**The Choices:** Disabled (Default), Enabled.



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**RTC Alarm Resume**

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

**The Choices:** Enabled, **Disabled** (default).

**Date (of Month)**

You can choose which month the system will boot up. This field is only configurable when “RTC Resume” 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 Resume” is set to “Enabled”.

**IRQs Activity Monitoring**

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

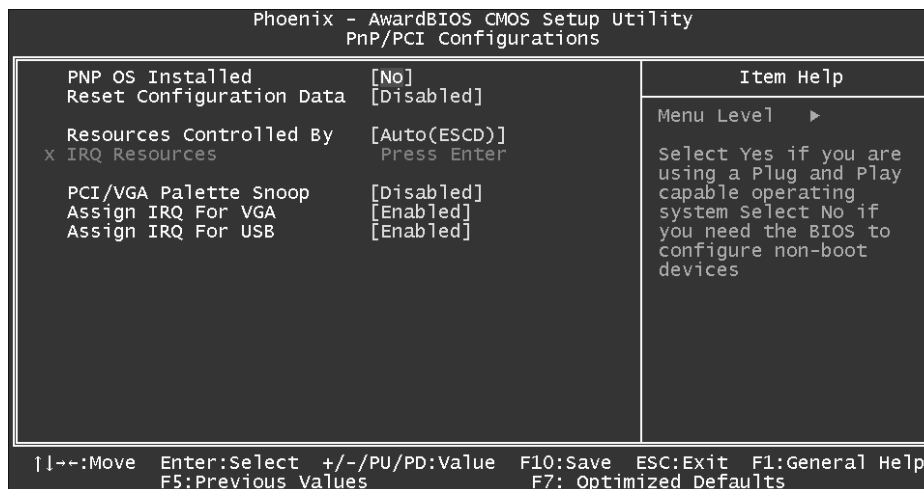
Primary INTR	On
IRQ3 (COM2)	Disabled
IRQ4 (COM1)	Enabled
IRQ5 (LPT2)	Enabled
IRQ6 (Floppy Disk)	Enabled
IRQ7 (LPT1)	Enabled
IRQ8 (RTC Alarm)	Disabled
IRQ9 (IRQ2 Redir)	Disabled
IRQ10 (Reserved)	Disabled
IRQ11 (Reserved)	Disabled
IRQ12 (PS/2 Mouse)	Enabled
IRQ13 (Coprocessor)	Enabled
IRQ14 (Hard Disk)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

---

## 7 PnP/PCI Configurations

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own 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.

### ■ Figure 7. 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 Window™ 95. When set to NO, BIOS will initialize all the PnP cards. For non-PnP operating systems (DOS, Netware™), this option must set to NO.

**The Choices:** No (default), Yes.

### Reset Configuration Data

The system BIOS supports the PnP feature which requires the system to record which resources are assigned and protects resources from conflict. Every peripheral device has a node, which is called ESCD. This node records which resources are assigned to it. The system needs to record and update ESCD to the memory locations. These locations (4K) are reserved in the system BIOS. If the Disabled (default) option is chosen, the system's ESCD will update only when the new configuration varies from the last one. If the Enabled option is chosen, the system is forced to update ESCDs and then is automatically set to the



“Disabled” mode.

The above settings will be shown on the screen only if “Manual” is chosen for the resources controlled by function.

Legacy is the term, which signifies that a resource is assigned to the ISA Bus and provides non-PnP ISA add-on cards. PCI / ISA PnP signifies that a resource is assigned to the PCI Bus or provides for ISA PnP add-on cards and peripherals.

**The Choices:** Disabled (default), Enabled.

### **Resources Controlled By**

By Choosing “**Auto(ESCD)**” (default), the system BIOS will detect the system resources and automatically assign the relative IRQ and DMA channel for each peripheral. By Choosing “Manual”, the user will need to assign IRQ & DMA for add-on cards. Be sure that there are no IRQ/DMA and I/O port conflicts.

### **IRQ Resources**

This submenu will allow you to assign each system interrupt a type, depending on the type of device using the interrupt. When you press the “Press Enter” tag, you will be directed to a submenu that will allow you to configure the system interrupts. 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
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**

Choose Disabled or Enabled. Some graphic controllers which 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.

However, the color information coming from the VGA controller is drawn from the palette table inside the VGA controller to generate the proper colors, and the graphic controller needs to know what is in the palette of the VGA controller. To do this, the non-VGA graphic controller watches for the Write access to the VGA palette and registers the snoop data. In PCI based systems, where the VGA controller is on the PCI bus and a non-VGA graphic controller is on an ISA bus, the Write Access to the palette will not show up on the ISA bus if the PCI VGA controller responds to the Write.

In this case, the PCI VGA controller should not respond to the Write, it should only snoop





the data and permit the access to be forwarded to the ISA bus. The non-VGA ISA graphic controller can then snoop the data on the ISA bus. Unless you have the above situation, you should disable this option.

<b>Disabled</b> (default)	Disables the function.
Enabled	Enables the function.

#### **Assign IRQ For VGA**

This item allows the users to choose which IRQ to assign for the VGA.  
**The Choices:** **Enabled** (default), Disabled.

#### **Assign IRQ For USB**

This item allows the users to choose which IRQ to assign for the USB.  
**The Choices:** **Enabled** (default), Disabled.



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## 8 PC Health Status

■ Figure 8. PC Health Status



### CPU Warning Temperature

This item shows the warning temperature of the CPU.

**The Choices:** 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.

### Show H/W Monitor in POST

If your computer contains a monitoring system, it will show PC health status during POST stage. The item offers several delay times to select what you want.

**The Choices:** Enabled (default), Disabled.

### Chassis Open Warning

This item allows you to enable or disable chassis open warning beep.

**The choices:** Disabled (default), Enabled.

### Current CPU Temperature

Show you the current CPU temperature.



**Current CPUFAN Speed**

This field displays the current CPUFAN speed.

**Current SYSFAN Speed**

This field displays the current speed SYSTEM fan.

**CPU Voltage/ 3.3V/ +5.0V/ +12V**

Detect the system's voltage status automatically.

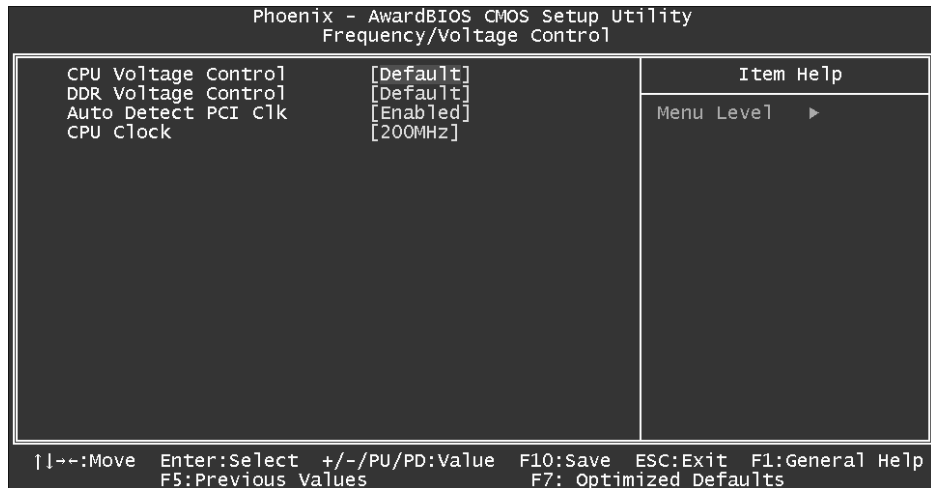




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## 9 Frequency Control

■ Figure 9. Frequency Control



### CPU Voltage Control

This item allows you to select CPU Voltage Control.

**The Choices:** **Default** (default).

### DDR Voltage

This item allows you to select DDR Voltage Control.

**The Choices:** **2.5V** (Default), 2.6V, 2.7V, 2.8V.

### Auto Detect PCI Clk

This item allows you to enable / disable auto Detect PCI Clock.


**The Choices:** **Enabled** (default), Disabled.

### CPU Clock

This item allows you to select CPU Host Clock.

**The Choices:** **200MHz (Min)** (default) ~ 132MHz (Max).

---



*If unfortunately, the system's frequency that you are selected is not functioning, there are two methods of booting-up the system.*

*Method 1: Clear the CMOS data by setting the JCMOS1 ((2-3) closed)) as "ON" status. All the CMOS data will be loaded as defaults setting.*

*Method 2: Press the <Insert> key and Power button simultaneously, after that keep-on pressing the <Insert> key until the power-on screen showed. This action will boot-up the system according to FSB of the processor.*