

# **User's Manual**

**VT310-DP**

Version 1.01  
October 7, 2005

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

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his personal expense.

### **Notice 1**

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### **Notice 2**

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.



Tested To Comply  
With FCC Standards  
FOR HOME OR OFFICE USE

## Safety Instructions

1. Always read the safety instructions carefully.
2. Keep this User's Manual for future reference.
3. Keep this equipment away from humidity.
4. Lay this equipment on a reliable flat surface before setting it up.
5. The openings on the enclosure are for air convection hence protects the equipment from overheating. DO NOT COVER THE OPENINGS.
6. Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
7. Place the power cord in such a way that people cannot step on it. Do not place anything over the power cord.
8. Always unplug the power cord before inserting any add-on card or module.
9. All cautions and warnings on the equipment should be noted.
10. Never pour any liquid into the opening. Liquid can cause damage or electrical shock.
11. If any of the following situations arises, get the equipment checked by a service personnel:
  - The power cord or plug is damaged
  - Liquid has penetrated into the equipment
  - The equipment has been exposed to moisture
  - The equipment has not work well or you cannot get it work according to User's Manual.
  - The equipment has dropped and damaged
  - If the equipment has obvious sign of breakage
12. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, STORAGE TEMPERATURE ABOVE 60 C (140F), IT MAY DAMAGE THE EQUIPMENT.

**CAUTION:** Explosion or serious damage may occur if the battery is incorrectly replaced. Replace only with the same or equivalent battery type recommended by the manufacturer.

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## **Box CONTENTS**

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- ☒ One VIA Mini-ITX mainboard
- ☒ One Quick Installation Guide
- ☒ One ATA-133/100 IDE ribbon cable
- ☒ One driver and utilities CD
- ☒ One IO bracket

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# CHAPTER 1

## Specifications

The ultra-compact and highly integrated VIA VT310-DP uses the Mini-ITX mainboard form-factor developed by VIA Technologies, Inc. as part of the company's open industry-wide total connectivity initiative. The mainboard enables the creation of an exciting new generation of small, ergonomic, innovative and affordable embedded systems. Through a high level of integration, the Mini-ITX occupies 66% of the size of FlexATX mainboard form factor. The mainboard comes with two embedded NanoBGA VIA Processors, offering ultra-low power multi-processing, ultra fast and highly efficient on-die security, cool running and quieter operation.

## **MAINBOARD SPECIFICATIONS**

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### **CPU**

- Dual VIA Eden-N NanoBGA 1.0GHz Processors

### **Chipset**

- VIA CN400 North Bridge
- VIA VT8237R South Bridge

### **Graphics**

- Integrated UniChrome™ Pro IGP graphics with MPEG-2 decoding / MPEG-4 acceleration

### **Audio**

- VIA VT1616 6-channel AC'97 Codec

### **Memory**

- 2 x DDR 400 / 333 / 266 DIMM sockets (up to 1.5GB)

### **Expansion Slot**

- 1 x PCI slot

### **IDE**

- 1 x UltraDMA 133/100 EIDE connector

### **Serial-ATA**

- 2 x S-ATA ports

### **LAN**

- VIA VT6103L 10/100 Base-T Ethernet PHY
- i82551QM 10/100 Base-T Ethernet Controller option
- VIA VT1622 10/100/1000 Base-T Ethernet Controller (GbE LAN)

### **Back Panel I/O Ports**

- 3 x RJ45 LAN ports
- 1 x COM port
- 2 x USB 2.0 ports
- 1 x VGA port

### **Onboard I/O Connectors**

- 1 x USB front pin header for 2 additional USB 2.0 ports
- 1 x VGA pin header for a second VGA port
- 1 x 10-pin connector for RS232
- 1 x AC'97 Audio pin header (Mic-in and Line-out)
- 1 x CD Audio-in connector
- 1 x front panel pin header for Case connector
- 1 x SM Bus connector
- 1 x PS/2 mouse pin header (headless architecture for Kb/Ms)
- 1 4-pin CPU Fan and 2 3-pin chassis Fan
- 1 x Buzzer pin header
- 1 x ATX power connector

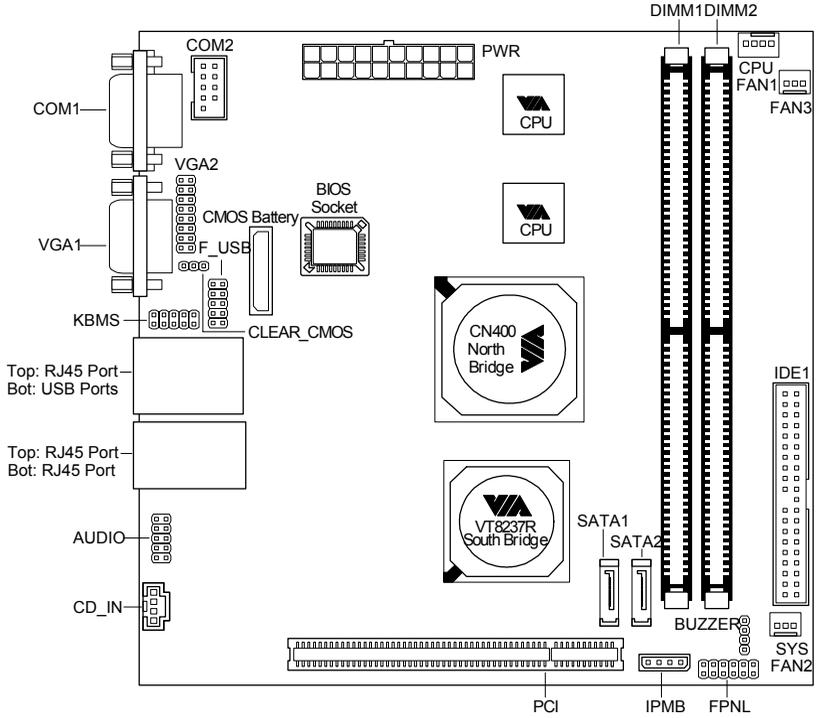
### **BIOS**

- Award BIOS with 4Mbit flash memory capacity
- ACPI2.0, PCI2.3 (WMX and ASF1.0)
- Console Redirection (RS-232C, USB and Ethernet)

### **Form Factor**

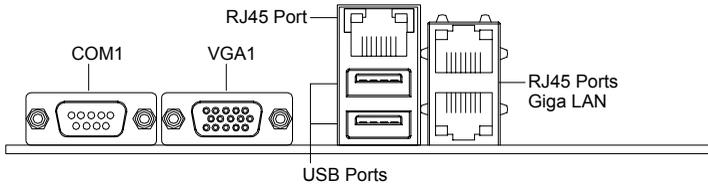
- Mini-ITX (8 Layers)
- 17 cm X 17 cm

# MAINBOARD LAYOUT



## BACK PANEL LAYOUT

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## BACK PANEL PORTS

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<b>Port</b>	<b>Description</b>	<b>Page</b>
COM1	Serial port 1	14
RJ45	RJ45 ports	14-15
USB	USB 2.0 ports	14
VGA1	VGA port 1	14

## SLOTS

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<b>Port</b>	<b>Description</b>	<b>Page</b>
DDR DIMM1-2	Memory module slots	12
PCI	Expansion card for PCI slot	23

---

## ONBOARD CONNECTORS

---

<b>Connector</b>	<b>Description</b>	<b>Page</b>
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Buzzer	Buzzer pin connector	18
CD_IN	Onboard CD audio cable connector	21
COM2	COM port 2 connector	20
CPUFAN1	CPU fan connector	11
AUDIO	Front Audio pin connector	21
FAN3	Extra fan connector	11
FPANL	Front panel pin connector	17
F_USB	Universal Serial Bus 2.0 pin connector	19
IDE1	IDE drive connector	16
KBMS	Keyboard and Mouse pin connector	19
SATA1-2	Serial ATA 1 and 2 connectors	16
SM Bus	SMBus pin connector for IPMB	18
SYSFAN2	System fan connector	11
VGA2	VGA port 2 pin connector	20

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## ONBOARD JUMPERS

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<b>Jumper</b>	<b>Description</b>	<b>Page</b>
CLEAR_CMOS	Reset CMOS settings	22

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# CHAPTER 2

## Installation

This chapter provides you with information about hardware installation procedures. It is recommended to use a grounded wrist strap before handling computer components. Electrostatic discharge (ESD) can damage some components.

## CPU

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### **The VIA Eden-N Processors**

The VIA VT310-DP Mini-ITX mainboard includes two embedded VIA Eden-N Processors. The dual Eden-N Processors provides ultra-low power consumption and advanced thermal dissipation properties. The dual Eden-N Processors requires only a heatsink to provide sufficient cooling, as a fanless solution, by satisfying the VIA recommended system-level thermal guideline. For systems designed to include a CPU fan, please ensure that the CPU fan is correctly installed as shown.



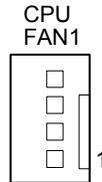
### CPU Fan and System Fan: CPUFAN1, SYSFAN and FAN3

The CPUFAN1 (CPU fan), SYSFAN2 (system fan) and FAN3 runs on +12V and maintain system cooling. When connecting the wire to the connectors, always be aware that the red wire is the Positive and should be connected to the +12V. The black wire is Ground and should always be connected to GND.

CPUFAN\_PWM is a switch that is used by high-quality fans to monitor the system temperature and will automatically adjust according to the environment.

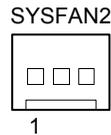
#### CPUFAN1

Pin	Signal
1	GND
2	+12V
3	FANIO1
4	CPUFAN_PWM



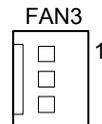
#### SYSFAN2

Pin	Signal
1	NC
2	+12V
3	GND



#### FAN3

Pin	Signal
1	NC
2	+12V
3	GND



**WARNING:** SYSFAN2 and FAN3 rating less than 500mA of current is highly recommended for system stability.

## MEMORY MODULE INSTALLATION

---

The VIA VT310-DP Mini-ITX mainboard provides two 184-pin DIMM slots for DDR400/333/266 SDRAM memory modules and supports the memory size up to 1.5GB.



### DDR SDRAM Module Installation Procedures

- Locate the DIMM sockets in the motherboard.
- Unlock a DIMM socket by pressing the retaining clips outward.
- Align a DIMM on the socket such that the notch on the DIMM matches the break on the socket.
- Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated.

### Available DDR SDRAM Configurations

Refer to the table below for available DDR SDRAM configurations on the mainboard.

Slot	Module Size	Total
DIMM1	64MB, 128MB, 256MB, 512MB, 1GB	64MB-1GB
DIMM2	64MB, 128MB, 256MB, 512MB, 1GB	64MB-1GB
Maximum supported system memory		64MB-1.5GB

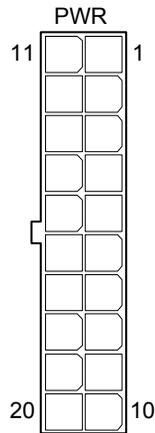
## CONNECTING THE POWER SUPPLY

The VIA VT310-DP Mini-ITX mainboard supports a conventional ATX power supply for the power system. Before inserting the power supply connector, always make sure that all components are installed correctly to ensure that no damage will be caused.

### ATX 20-Pin Power Connector

To connect the ATX power supply, make sure the power plug is inserted in the proper orientation and the pins are aligned. Then push down the plug firmly into the connector.

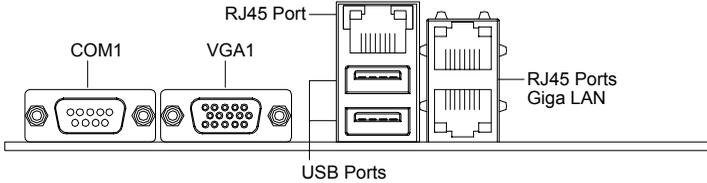
Pin	Signal
1	+3.3V
2	+3.3V
3	GND
4	+5V
5	GND
6	+5V
7	GND
8	Power Good
9	+5V Standby
10	+12V
11	+3.3V
12	-12V
13	GND
14	Power Supply On
15	GND
16	GND
17	GND
18	NC
19	+5V
20	+5V



## BACK PANEL PORTS

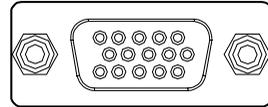
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The back panel has the following ports:



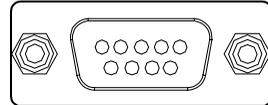
### VGA Out: VGA1

The 15-pin female VGA connector can be used to connect to any analog VGA monitor.



### Serial port: COM 1

This 9-pin COM 1 port is for pointing devices or other serial devices.

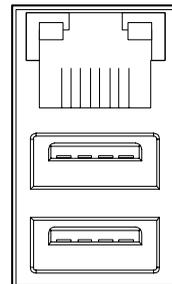


### RJ45 10/100 LAN Connectors

The mainboard provides a standard RJ45 port. This port allows connection to a Local Area Network (LAN) through a network hub

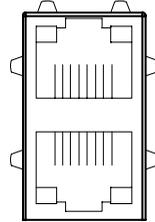
### USB 2.0 ports 1 and 2

These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.



**Stacked RJ45 10/100 & 10/100/1000 LAN Connectors**

The stacked RJ45 connector provides two Ethernet ports. The top RJ45 is a 10/100 Ethernet port, and the bottom RJ45 is a 10/100/1000 Ethernet port

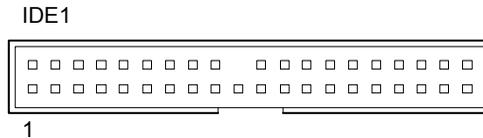


## CONNECTORS

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### Hard Disk Connector: IDE1

The mainboard has a 32-bit Enhanced IDE and Ultra DMA 133/100 controller that provides PIO mode 0~4, Bus Master, and Ultra DMA 133/100 functions. You can connect up to two hard disk drives, CD-ROM and other devices.

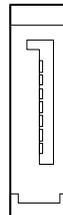


If two drives are connected to a single cable, the jumper on the second drive must be set to slave mode. Refer to the drive documentation supplied by the vendor for the jumper settings.

### Serial ATA Connectors: SATA1 and SATA2

These next generation connectors support the thin Serial ATA cables for primary internal storage devices. The current Serial ATA interface allows up to 150MB/s data transfer rate, faster than the standard parallel ATA with 133 MB/s (Ultra DMA).

Pin	Signal
1	GND
2	SATA Port1 Transmit Positive
3	SATA Port1 Transmit Negative
4	GND
5	SATA Port1 Receive Negative
6	SATA Port1 Receive Positive
7	GND

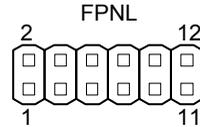


## Case Connector: FPANL

The FPANL pin header allows you to connect the power switch, reset switch, power LED and the HDD LED.

Pin	Signal
1	PW_LED
3	PW_LED
5	GND
7	NC
9	GND
11	-EXTSMI

Pin	Signal
2	5V_P
4	HD_LED
6	PW_BN
8	GND
10	RST_SW
12	GND



### Power Switch (PW\_BN), pin 6 & pin 8

Connect to a 2-pin power button switch. Pressing this button will turn the system power on or off.

### Reset Switch (RST\_SW), pin 10 & pin 12

The reset switch is used to reboot the system rather than turning the power ON/OFF. Avoid rebooting the system, if the HDD is still working. Connect the reset switch from the system case to this pin.

### Power LED (PW\_LED), pin 1, pin 2, & pin 3

The LED will light when the system is on. If the system is in S1 (POS - Power On Suspend) or S3 (STR - Suspend To RAM) state, the LED will blink.

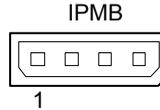
### HDD LED (HD\_LED), pin 2 & pin 4

HDD LED shows the activity of a hard disk drive. Avoid turning the power off when the HDD LED still has a lit. Connect the HDD LED from the system case to this pin.

### System Management Bus Connector: SM Bus

The connector allows you to connect SM Bus (System Management Bus) devices for IPMB. Devices communicate with an SM Bus host and/or other SM Bus devices using the SM Bus interface.

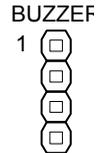
Pin	Signal
1	551SMDAT_IP
2	GND
3	551SMBCLK_IP
4	+3.3VSUS



### Buzzer Connector: Buzzer

This pin header allows you to connect a buzzer device.

Pin	Signal
1	SPEAK-
2	NC
3	NC
4	+5V

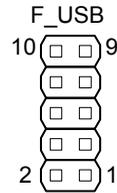


### USB Connector: F\_USB

The mainboard provides a front USB pin header, allowing up to 2 additional USB2.0 ports up to maximum throughput of 480 Mbps. Connect each 2-port USB cable into the pin header. These ports can be used to connect high-speed USB interface peripherals such as USB HDD, digital cameras, MP3 players, printers, modem and the like.

Pin	Signal
1	VDD_5V_U1
3	USBD_T2-R
5	USBD_T2+R
7	GND
9	GND

Pin	Signal
2	VDD_5V_U1
4	USBD_T3-R
6	USBD_T3+R
8	GND
10	GND

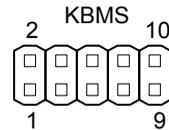


### KBMS Connector: KBMS

The mainboard provides a PS2 pin header to attach a PS2 keyboard and mouse.

Pin	Signal
1	VDD_5_KBFB
3	NC
5	GND
7	KB_DT
9	KB_CK

Pin	Signal
2	VDD_5_KBFB
4	NC
6	GND
8	MS_DT
10	MS_CK

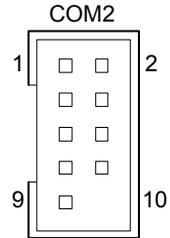


### Serial Port Connector: COM2

COM2 can be used to attach additional port for serial mouse or another serial device.

Pin	Signal
1	DCD2_L_SER
3	RXD2_SER
5	TXD2_SER_R
7	DTR2_L_SER_R
9	GND

Pin	Signal
2	DCD2_L_SER
4	RTS2_L_SER_R
6	CTS2_L_SER
8	RI2_L_SER
10	Key

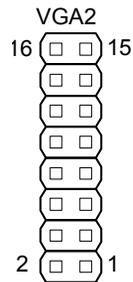


### VGA Connector: VGA2

VGA2 pin header can be used to attach additional port for VGA monitor.

Pin	Signal
1	RED_FB
3	BLUE_FB
5	GND_RGB
7	GND_RGB
9	+5VCRT
11	GND_RGB
13	HSYNC_R
15	SPCLK2_R

Pin	Signal
2	GREEN_FB
4	GND_RGB
6	GND_RGB
8	GND_RGB
10	GND_RGB
12	SPD2_R
14	VSYNC_R
16	NC



### Front Panel Audio Connector: AUDIO

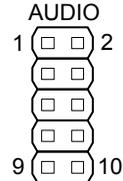
The Line-Out jack is for connecting to external speakers or headphones.

The Line-In jack is for connecting to an external audio device such as a CD player, tape player, etc. The Mic jack is for connecting to a microphone.

See Appendix A for details on using the 6-channel audio mode.

Pin	Signal
1	GND
3	SR_OUTR
5	SR_OUTL
7	NC
9	LINE_OUTL

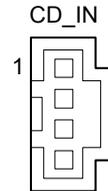
Pin	Signal
2	CENTOUT
4	LEFOUT
6	GND
8	LINE_OUTR
10	GND



### CD Audio Connector: CD\_IN

This connector allows you to receive stereo audio input from sound source such as a CD-ROM.

Pin	Signal
1	CD_L_1
2	CD_GND
3	CD_GND
4	CD_R_4



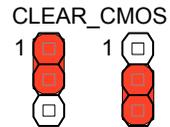
## JUMPERS

The mainboard provides jumpers for setting some mainboard functions. This section will explain how to change the settings of the mainboard functions using the jumpers.

### Clear CMOS: CLEAR\_CMOS

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS that include system setup information such as system passwords.

Setting	1	2	3
Clear CMOS setting	ON	ON	OFF
Keep CMOS setting	OFF	ON	ON



To erase the RTC RAM:

- Turn OFF the computer and unplug the power cord.
- Remove the onboard battery
- Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep cap on pins 2-3 for about 5~10 seconds, then move the cap back to pins 1-2.
- Replace the battery.
- Plug the power cord and turn ON the computer.
- Hold down the <Del> key during the boot process and enter BIOS
- Setup to re-enter data.

**WARNING:** Except when clearing the RTC RAM, never remove the cap on CLEAR\_CMOS jumper default position. Removing the cap will cause system boot failure. Clearing the CMOS while the system is on may damage the mainboard.

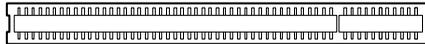
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## SLOTS

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### Peripheral Component Interconnect: PCI

The PCI slot allows you to insert PCI expansion card. When adding or removing expansion card, unplug first the power supply. Read the documentation for the expansion card if any changes to the system are necessary.



### PCI Interrupt Request Routing

The IRQ (interrupt request line) are hardware lines over which devices can send interrupt signals to the microprocessor. The "PCI & LAN" IRQ pins are typically connected to the PCI bus INT A# ~ INT D# pins as follows:

	<b>Order 1</b>	<b>Order 2</b>	<b>Order 3</b>	<b>Order 4</b>
PCI Slot 1	INT A#	INT B#	INT C#	INT D#

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---

# CHAPTER 3

## BIOS Setup

This chapter gives a detailed explanation of the BIOS setup functions.

## **ENTERING SETUP**

---

Power on the computer and press <Delete> during the beginning of the boot sequence to enter the BIOS setup menu. If you missed the BIOS setup entry point, you may restart the system and try again.

---

## CONTROL KEYS

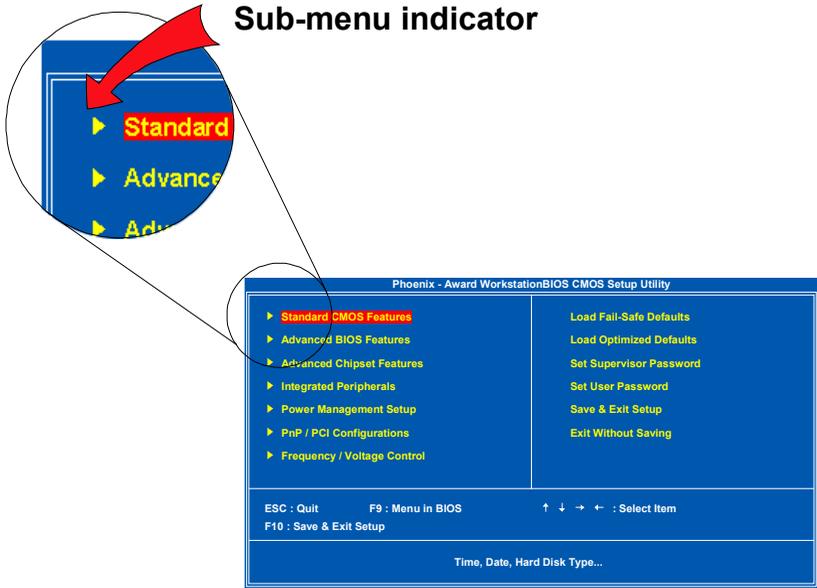
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<b>Keys</b>	<b>Description</b>
Up Arrow	Move to the previous item
Down Arrow	Move to the next item
Left Arrow	Move to the item in the left side
Right Arrow	Move to the item in the right side
Enter	Select the item
Escape	Jumps to the Exit menu or returns to the main menu from a submenu
Page Up / +	Increase the numeric value or make changes
Page Down / -	Decrease the numeric value or make changes
F1	General help, only for Status Page Setup Menu and Option Page Setup Menu
F5	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6	Load the default CMOS value from Fail-Safe default table, only for Option Page Setup Menu
F7	Load Optimized defaults
F9	Jumps to the Main Menu
F10	Save all the CMOS changes and exit

## NAVIGATING THE BIOS MENUS

The main menu displays all the BIOS setup categories. Use the control keys Up/Down arrow keys to select any item/sub-menu. Description of the selected/highlighted category is displayed at the bottom of the screen.

An arrow symbol next to a field indicates that a sub-menu is available (see figure below). Press <Enter> to display the sub-menu. To exit the sub-menu, press <Esc>.



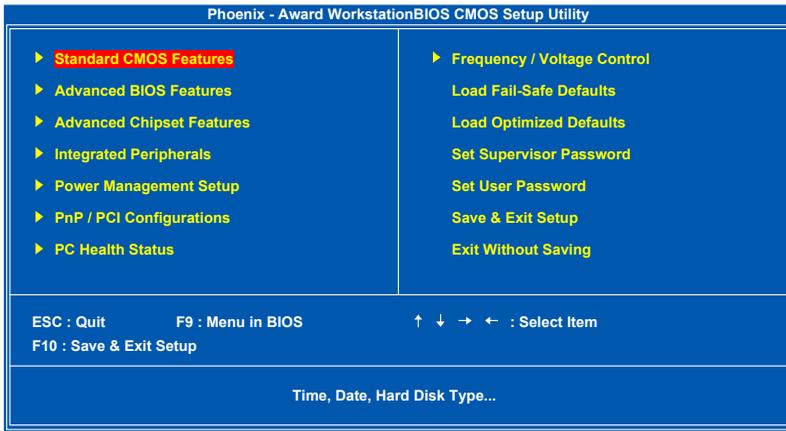
## **GETTING HELP**

---

The BIOS setup program provides a "General Help" screen. You can display this screen from any menu/sub-menu by pressing <F1>. The help screen displays the keys for using and navigating the BIOS setup. Press <Esc> to exit the help screen.

## MAIN MENU

---



### Standard CMOS Features

Use this menu to set basic system configurations.

### Advanced BIOS Features

Use this menu to set the advanced features available on your system.

### Advanced Chipset Features

Use this menu to set chipset specific features and optimize system performance.

### Integrated Peripherals

Use this menu to set onboard peripherals features.

### Power Management Setup

Use this menu to set onboard power management functions.

### PnP/PCI Configurations

Use this menu to set the PnP and PCI configurations.

### Frequency/Voltage Control

Use this menu to set the system frequency and voltage control.

**Load Fail-Safe Defaults**

Use this menu option to load the BIOS default settings for minimal and stable system operations.

**Load Optimized Defaults**

Use this menu option to load BIOS default settings for optimal and high performance system operations.

**Set Supervisor Password**

Use this menu option to set the BIOS supervisor password.

**Set User Password**

Use this menu option to set the BIOS user password.

**Save & Exit Setup**

Save BIOS setting changes and exit setup.

**Exit Without Saving**

Discard all BIOS setting changes and exit setup.

## STANDARD CMOS FEATURES



### Date

The date format is [Day, Month Date Year]

### Time

The time format is [Hour : Minute : Second]

### Video

Select the type of primary video subsystem.

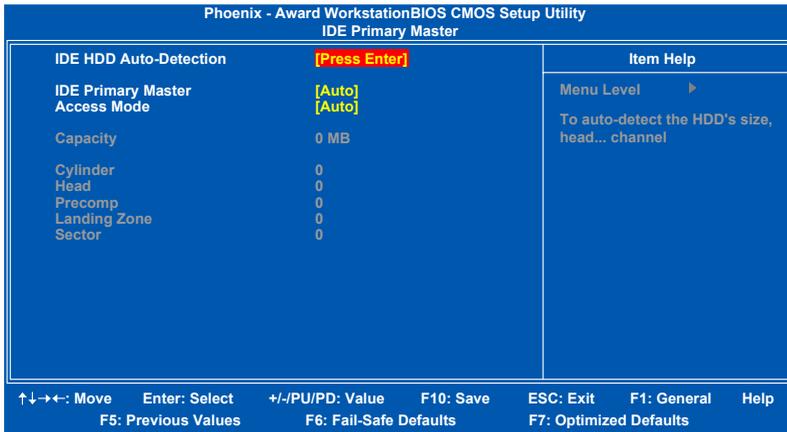
Setting	Description
EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array
CGA 40	Color Graphics Adapter, power up in 40 column mode
CGA 80	Color Graphics Adapter, power up in 80 column mode
Mono	Monochrome adapter

## Halt On

Sets the system's response to specific boot errors. Below is a table that details the possible settings.

<b>Setting</b>	<b>Description</b>
All Errors	System halts when any error is detected
No Errors	System does not halt for any error
All, But Keyboard	System halts for all non-key errors

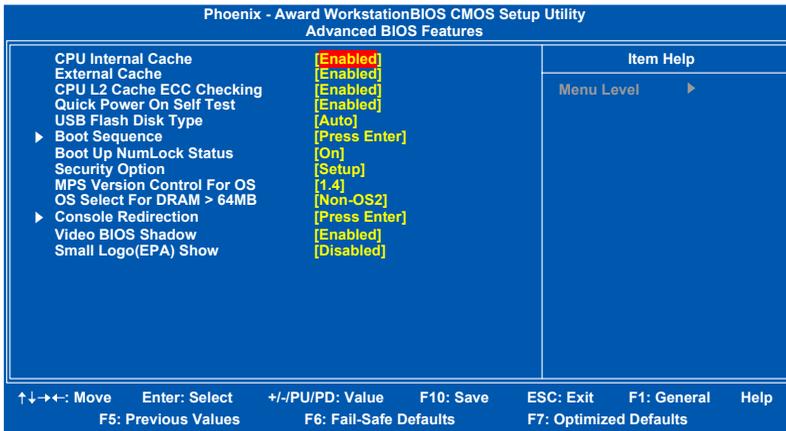
## IDE DRIVES



The specifications of your drive must match with the drive table. The hard disk will not work properly if you enter incorrect information in this category. Select "Auto" whenever possible. If you select "Manual", make sure the information is from your hard disk vendor or system manufacturer. Below is a table that details required hard drive information when using the "Manual" mode.

Setting	Description
IDE Channel	The name of this match the name of the menu. Settings: [None, Auto, Manual]
Access Mode	Settings: [CHS, LBA, Large, Auto]
Capacity	Formatted size of the storage device
Cylinder	Number of cylinders
Head	Number of heads
Precomp	Write precompensation
Landing Zone	Cylinder location of the landing zone
Sector	Number of sectors

## ADVANCED BIOS FEATURES



### CPU Internal Cache / External Cache

Cache memory is additional memory that is much faster than conventional DRAM (system memory). CPU contains internal cache memory, and has additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU.

Setting	Description
Enabled	Turns on CPU internal / External cache
Disabled	Turns off CPU internal / External cache

### CPU L2 Cache ECC Checking

Set the ECC (Error-Correcting Code) feature for Level 2 cache. Facilitates error detection/correction when data passes through Level 2 cache.

Setting	Description
Enabled	Turns on CPU L2 Cache ECC Checking
Disabled	Turns off CPU L2 Cache ECC Checking

### Quick Power On Self-Test

Shortens Power On Self-Test (POST) cycle to enable shorter boot up time.

Setting	Description
Enabled	Shorten Power On Self Test (POST) cycle and bootup time
Disabled	Standard Power On Self Test (POST)

### USB Flash Disk Type

This item sets disk type by USB device and emulation to Floppy/HDD mode.

Settings: [Auto, Floppy, HDD]

### Boot Up NumLock Status

Set the NumLock status when the system is powered on.

Setting	Description
On	Forces keypad to behave as 10-key
Off	Forces keypad to behave as arrow keys

### Security Option

Selects whether the password is required every time the System boots, or only when you enter Setup.

Setting	Description
Setup	Password prompt appears only when end users try to run BIOS Setup
System	Password prompt appears every time when the computer is powered on and when end users try to run BIOS Setup

### MPS Version Control for OS

Settings: [1.1, 1.4]

### OS Select for DRAM > 64MB

Select OS2 only if you are running OS/2 operating system with greater than 64 MB of RAM on your system.

Settings: [Non-OS2, OS2]

### **Video BIOS Shadow**

*Enabled* copies Video BIOS to shadow RAM to improve performance.

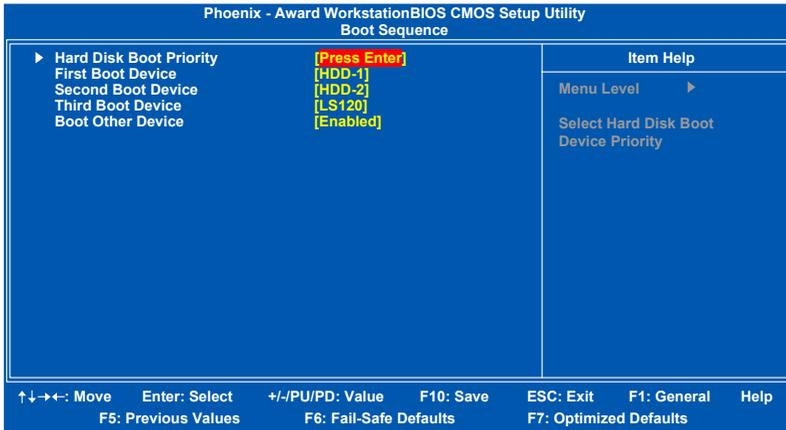
Settings: [Enabled, Disabled]

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

Show small energy star logo during BIOS boot up process.

Settings: [Enabled, Disabled]

## BOOT SEQUENCE



### First/Second/Third Boot Device

Set the boot device sequence as BIOS attempts to load the disk operating system.

Setting	Description
LS120	Boot from LS-120 drive
Hard Disk	Boot from the HDD
SCSI	Boot from SCSI
CD-ROM	Boot from CD-ROM
ZIP100	Boot from ATAPI ZIP drive
USB-FDD	Boot from USB floppy drive
USB-ZIP	Boot from USB ZIP drive
USB-CDROM	Boot from USB CDROM
USB-HDD	Boot from USB HDD
LAN	Boot from network drive
Disabled	Disable the boot device sequence

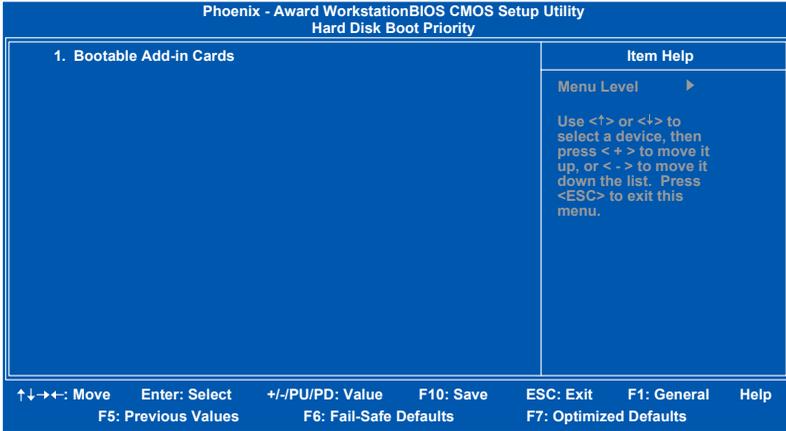
**Boot Other Device**

Enables the system to boot from alternate devices if the system fails to boot from the "First/Second/Third Boot Device" list.

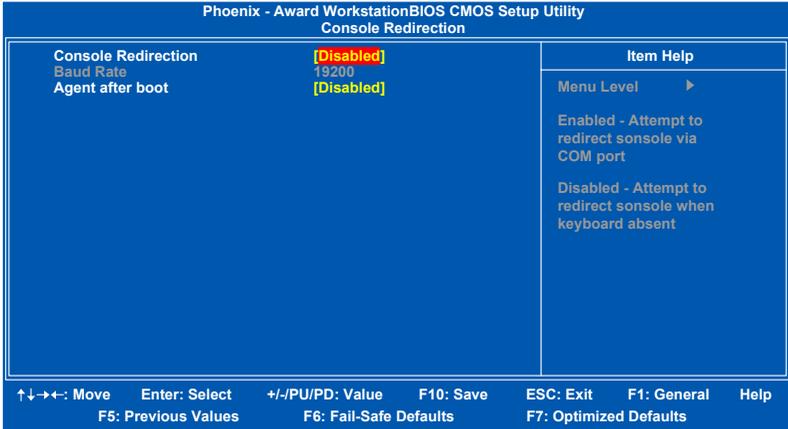
<b>Setting</b>	<b>Description</b>
Enabled	Enable alternate boot device
Disabled	No alternate boot device allowed

## HARD DISK BOOT PRIORITY

---



## CONSOLE REDIRECTION



### Console Redirection

Settings: [Enabled, Disabled]

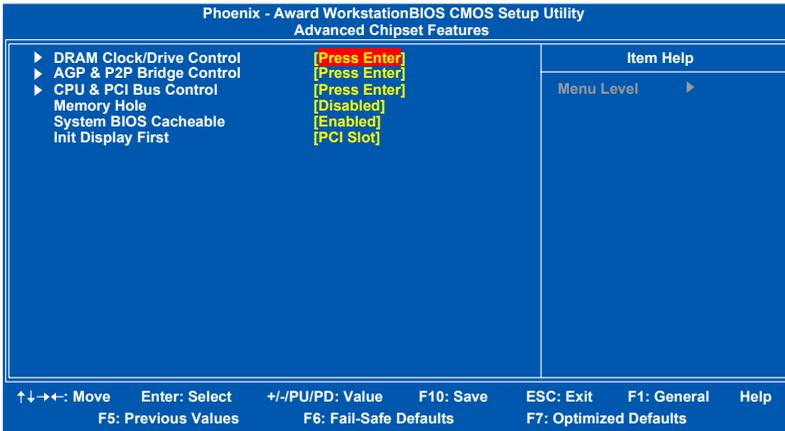
### Baud Rate

Settings: [19200, 38400, 57600, 115200]

### Agent after Boot

Settings: [Enabled, Disabled]

## ADVANCED CHIPSET FEATURES



**WARNING:** The Advanced Chipset Features menu is used for optimizing the chipset functions. Do not change these settings unless you are familiar with the chipset.

### Memory Hole

This setting specifies memory hole.

Settings: [Disabled, 15M-16M]

### System BIOS Cacheable

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

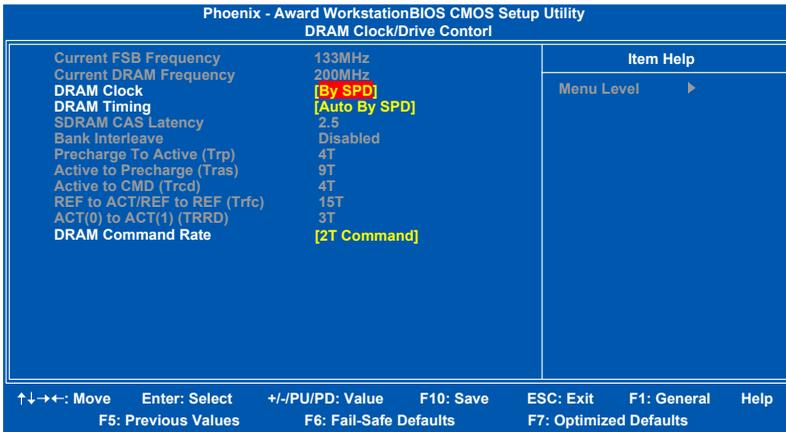
Settings: [Enabled, Disabled]

### Init Display First

This setting specifies which VGA card is your primary graphics adapter.

Settings: [PCI Slot, Onboard]

## DRAM CLOCK / DRIVE CONTROL



### Current FSB Frequency

This setting specifies the maximum operating frequency of the link's transmitter clock.

### Current DRAM Frequency

This setting specifies the maximum memory clock limit on the system.

### DRAM Clock

This item allows you to set the speed of Direct Memory Access (DMA) at either equal to or one-half of the SYSClk (system clock signal) speed.

Settings: [By SPD, 100MHz, 133MHz, 166MHz, 200MHz]

**Note:** While speed is always desirable, choosing the higher setting may prove to be too fast for some components.

## DRAM Timing

The value in this field depends on performance parameters of the installed memory chips (DRAM). Do not change the value from the factory setting unless you install new memory that has a different performance rating than the original DRAMs.

Settings: [Manual, Auto By SPD, Turbo, Ultra]

**Warning:** Do not change the value from the factory setting unless you install new memory that has a different performance rating than the original DRAMs.

## SDRAM CAS Latency

This controls the timing delay (in clock cycles) before SDRAM starts a read command. 2 (clocks) increases the system performance the most while 3 (clocks) provides the most stable performance. This field is only available when "DRAM Timing" is set to "Manual".

Settings: [1.5, 2, 2.5, 3]

## Bank Interleave

This field selects 2-bank or 4-bank interleave for the installed SDRAM. This field is only available when "DRAM Timing" is set to "Manual".

Settings: [Disabled, 2 bank, 4 bank]

## Precharge to Active (Trp)

This setting controls the number of cycles for Row Address Strobe (RAS) to be allowed to precharge. If insufficient time is allowed for the RAS to accumulate its charge before DRAM refresh, refresh may be incomplete and DRAM may fail to retain data. This item applies only when synchronous DRAM is installed in the system. This field is only available when "DRAM Timing" is set to "Manual".

Settings: [2T, 3T, 4T, 5T]

**Active to Precharge (Tras)**

This setting determines the time RAS takes to read from and write to a memory. This setting determines the time RAS takes to read from and write to a memory cell. This field is only available when "DRAM Timing" is set to "Manual".

Settings: [6T, 7T, 8T, 9T]

**Active to CMD (Trcd)**

This field is only available when "DRAM Timing" is set to "Manual".

Settings: [2T, 3T, 4T, 5T]

**REF to ACT / REF to REF (Trfc)**

This field is only available when "DRAM Timing" is set to "Manual".

Settings: [12T, 13T, 14T, 15T]

**ACT(0) to ACT(1) (TRRD)**

This field is only available when "DRAM Timing" is set to "Manual".

Settings: [2T, 3T]

**DRAM Command Rate**

This field is for setting how fast the memory controller sends out commands. Lower setting equals faster command rate.

**NOTE:** Some memory modules may not be able to handle lower settings.

Settings: [2T Command, 1T Command]

## AGP & P2P BRIDGE CONTROL



### VGA Share Memory Size

Specify the size of system memory to allocate for video memory.

Settings: [Disabled, 16M, 32M, 64M]

### Direct Frame Buffer Size

Enable the CPU to directly access the frame buffer.

Settings: [16M, 32M, 64M, Disabled]

### Select Display Device

This setting refers to the type of display being used with the system.

Settings: [Auto, CRT, LCD, CRT + LCD, TV, CRT + TV, LCD + TV, DVI, CRT + DVI, TV + DVI]

### Panel Type

Key in a HEX number.

Settings: [Min = 0000, Max = 000F]

**TV H/W Layout**

Settings: [Default, COMPOSITE + S-Video, S-Video + S-Video, COMP. + R/G/B, COMP. + Y/Cb/Cr, COMP. + SDTV-R.G.B, COMP. + SDTV-Y.Pb.Pr, COMPOSITE, S-Video, R.G.B, Y.Cb.Cr, SDTV – R.G.B, SDTV – Y.Pb.Pr, S-Video + R.G.B, S-Video + Y.b.Cr]

**HDTV Type**

This setting refers to the native resolution of the HDTV display being used with the system.

Settings: [SDTV 525I, SDTV 625I, HDTV 480P, HDTV 720P, HDTV 1080I, HDTV 1080P]

**TV Encoder Input Mode**

Settings: [RGB Input, YcbCr Input]

**TV Type**

This setting refers to the native resolution of the display being used with the system.

Settings: [NTSC, PAL]

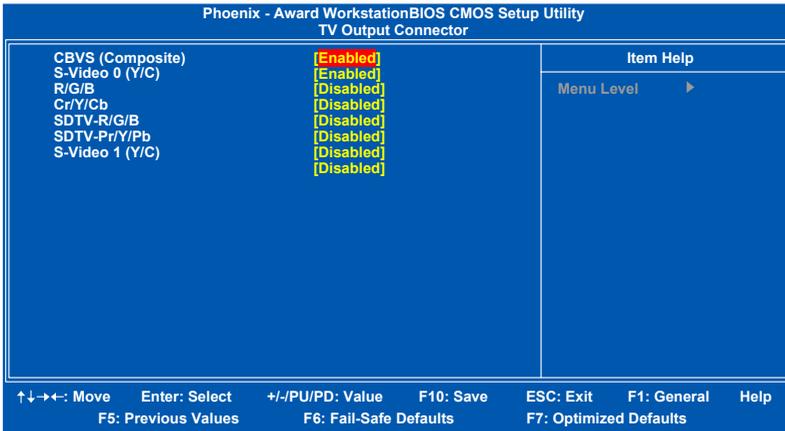
**TV Output AUTO Detect**

Settings: [Enabled, Disabled]

**Anti-DotCrawl**

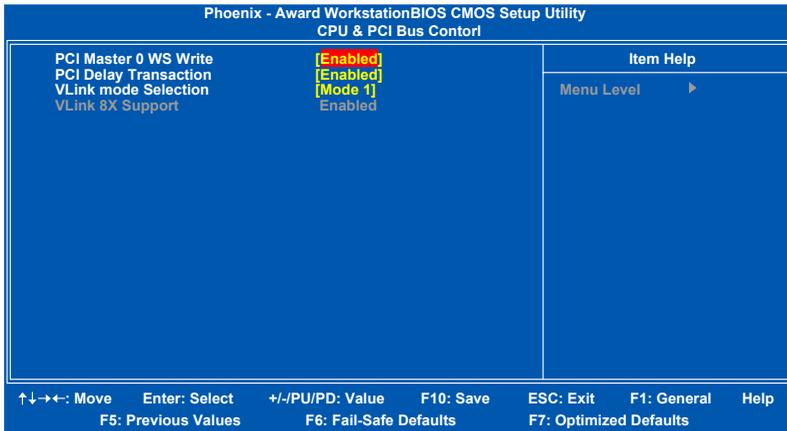
Settings: [Enabled, Disabled]

## TV OUTPUT CONNECTOR



**Warning:** When setting this menu item, be sure that the setting does not conflict with the "TV H/W Layout" menu item.

## CPU AND PCI BUS CONTROL



### PCI Master 0 WS Write

When *Enabled*, CPU can write up to four words of data to the PCI write buffer before CPU must wait for PCI bus cycle to finish. If *Disabled*, CPU must wait after each write cycle until PCI bus signals that it is ready to receive more data.

Settings: [Enabled, 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 version 2.1.

Settings: [Enabled, Disabled]

### **V-Link mode selection**

This menu item controls the data transfer speed between the north and south bridge.

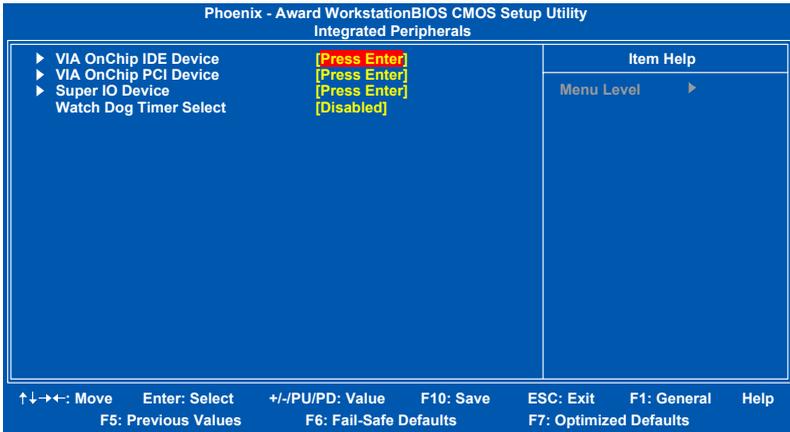
Settings: [By Auto, Mode 0~4]

### **VLINK 8X Support**

This setting controls the utilized widths of the V-link.

Settings: [Enabled, Disabled]

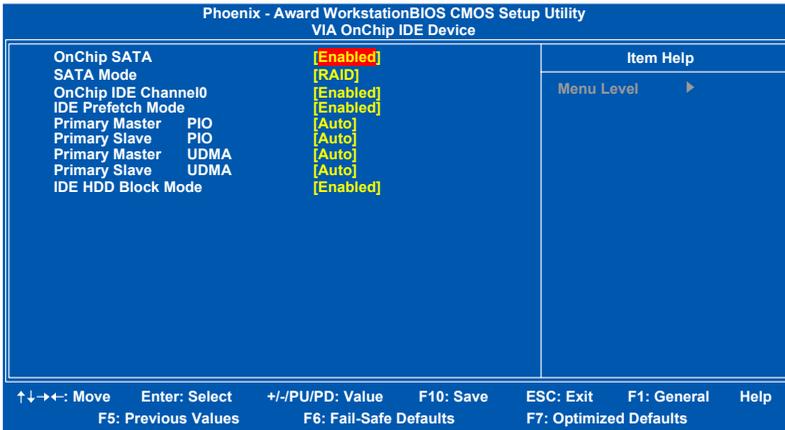
## INTEGRATED PERIPHERALS



### Watch Dog Timer Select

Settings: [Disabled, 10 Sec, 20 Sec, 30 Sec, 40 Sec, 1 Min, 2 Min, 4 Min]

## VIA ONCHIP IDE DEVICE



### OnChip SATA

Settings: [Enabled, Disabled]

### SATA Mode

Serial ATA is the latest generation of the ATA interface. Serial ATA hard drives deliver transfer speeds of up to 150MB/sec.

Settings: [IDE Controller, SCSI Controller]

### OnChip IDE Channel 0

The integrated peripheral controller contains an IDE interface with support for IDE channels.

Setting	Description
Enabled	Activates each channel separately
Disabled	Deactivates IDE channels

### IDE Prefetch Mode

This allows the hard disk controller to use the fast block mode to transfer data to and from the hard disk drive. Block mode is also called block transfer, multiple commands or multiple sector read / write.

Setting	Description
Enabled	Block mode
Disabled	Standard mode

### Primary Master / Slave PIO

Settings: [Auto, Mode 0~4]

### Primary Master / Slave UDMA

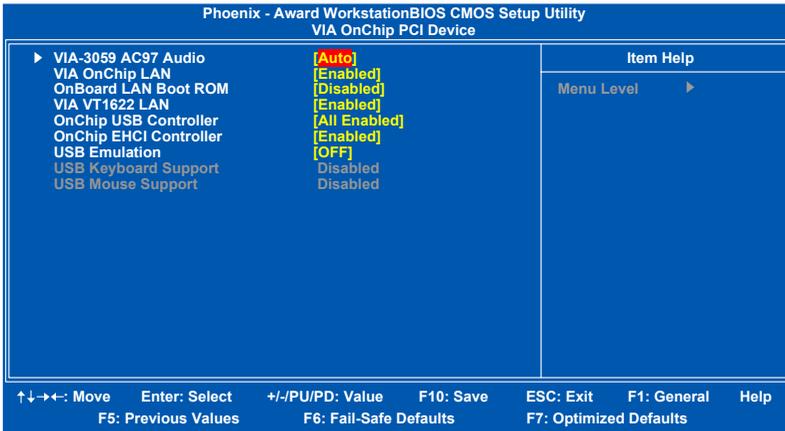
Settings: [Disabled, Auto]

### IDE HDD Block Mode

If your IDE hard drive supports block mode select *Enabled* for automatic detection of the optimal number of block read/writes per sector the drive can support

Settings: [Enabled, Disabled]

## VIA ONCHIP PCI DEVICE



### VIA-3059 AC'97 Audio

Auto allows the mainboard to detect whether an audio device is used. If the device is detected, the onboard VIA AC'97 (Audio Codec'97) controller will be enabled; otherwise, it is disabled. Disable the controller if another controller card is being used to connect to an audio device.

Setting	Description
Auto	Enables onboard controller if audio device is detected
Disabled	Turn off onboard controller to allow external controller

### VIA OnChip LAN

Settings: [Enabled, Disabled]

### Onboard LAN Boot ROM

Decide whether to invoke the boot ROM of the onboard LAN chip.

Settings: [Enabled, Disabled]

### VIA VT1622 LAN

Settings: [Enabled, Disabled]

**OnChip USB Controller**

Settings: [All Enabled, All Disabled]

**OnChip EHCI Controller**

Settings: [Enabled, Disabled]

**USB Emulation**

Set this field to choose the USB emulation. When set to "OFF ", do not support any USB device on DOS. When set to "KB/MS", support USB legacy keyboard and mouse, no support USB storage. And set to "ON", support USB legacy keyboard, mouse and storage.

Settings: [OFF, KB/MS, ON]

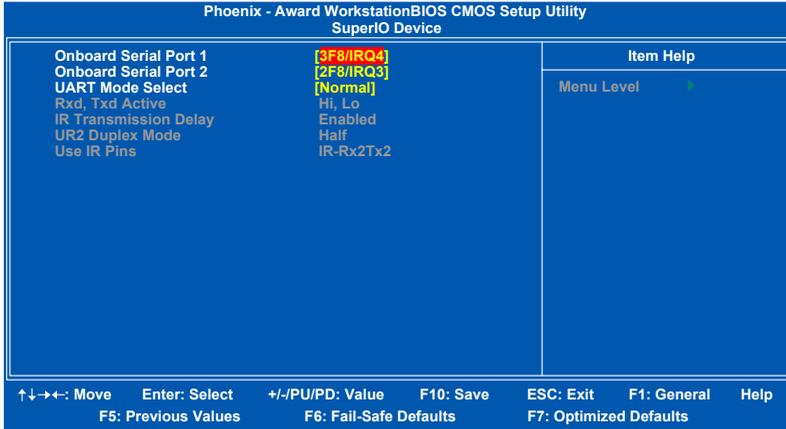
**USB Keyboard Support**

Settings: [Enabled, Disabled]

**USB Mouse Support**

Settings: [Enabled, Disabled]

## SUPER IO DEVICE



### Onboard Serial Port 1/2

Sets the base I/O port address and IRQ for the onboard serial ports A and B. Selecting "Auto" allows the BIOS to automatically determine the correct base I/O port address.

Port	Settings					
1	Disabled	3F8	2F8	3E8	2E8	Auto
		IRQ4	IRQ3	IRQ4	IRQ3	
2	Disabled	3F8	2F8	3E8	2E8	Auto
		IRQ4	IRQ3	IRQ4	IRQ3	

## UART Mode Select

Select an operating mode for the serial port.

Setting	Description
IrDA	Infrared port
ASKIR	Amplitude shift keyed infrared port
Normal	RS-232C serial port

## RxD, TxD Active

Settings: [Hi.Hi, Hi.Lo, Lo.Hi, Lo.Lo]

## IR Transmission Delay

Settings: [Disabled, Enabled]

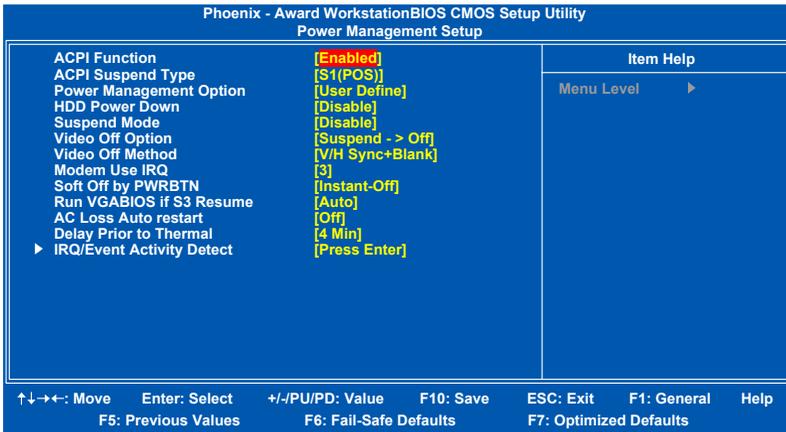
## UR2 Duplex Mode

Settings: [Full, Half]

## Use IR Pins

Settings: [RxD2.TxD2, IR-Rx2Tx2]

## POWER MANAGEMENT SETUP



### ACPI Function

Settings: [Enabled, Disabled]

### ACPI Suspend Type

Setting	Description
S1(POS)	S1/Power On Suspend (POS) is a low power state. In this state, no system context (CPU or chipset) is lost and hardware maintains all system contexts.
S3(STR)	S3/Suspend To RAM (STR) is a power-down state. In this state, power is supplied only to essential components such as main memory and wakeup-capable devices. The system context is saved to main memory, and context is restored from the memory when a "wakeup" event occurs.
S1 & S3	Depends on the OS to select S1 or S3.

### Power Management Option

This option allows you to select the type (or degree) of power saving for Doze, Standby and Suspend modes.

Setting	Description
User Define	Set each mode individually
Min Saving	Min power saving
Max Saving	Maximum power saving

## HDD Power Down

Sets the length of time for a period of inactivity before powering down the hard disk.

Settings: [Disable, 1~15(minutes)]

## Suspend Mode

Set the idle time before system enters power saving mode. ACPI OS such as Windows XP will override this option.

Settings: [Disable, 1/2/4/6/8/10/20/30/40(minutes), 1(hour)]

## Video Off Option

Select whether or not to turn off the screen when system enters power saving mode, ACPI OS such as Windows XP will override this option.

Setting	Description
Always On	Screen is always on even when system enters power saving mode
Suspend -> Off	Screen is turned off when system enters power saving mode

## Video Off Method

Determines the manner in which the monitor is blanked.

Setting	Description
Blank Screen	System only writes blanks to the video buffer.
V/H Sync + Blank	System turns off vertical and horizontal synchronization ports and writes blanks to the video buffer.
DPMS Support	Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards Association (VESA). Use the software supplied for your video subsystem to select video power management values.

## Modem Use IRQ

Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

Settings: [NA, 3, 4, 5, 7, 9, 10, 11]

### Soft Off by PWRBTN

This field configures the power button on the chassis.

<b>Setting</b>	<b>Description</b>
Delay 4 Sec	System is turned off if power button is pressed for more than four seconds
Instant-Off	Power button functions as a normal power-on/-off button

### Run VGABIOS if S3 Resume

Select whether to run VGA BIOS if resuming from S3 state. This is only necessary for older VGA drivers.

Settings: [Auto, Yes, No]

### AC Loss Auto restart

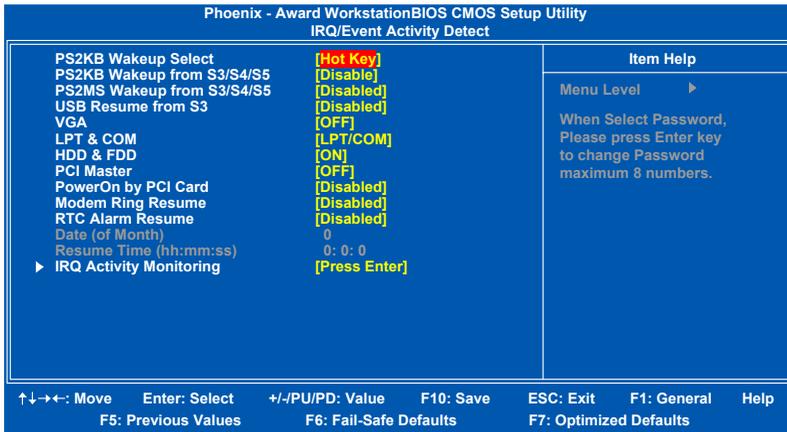
The field defines how the system will respond after an AC power loss during system operation.

<b>Setting</b>	<b>Description</b>
Off	Keeps the system in an off state until the power button is pressed
On	Restarts the system when the power is back
Former-Sts	Restores the system to its previous state

### Delay Prior to Thermal

Settings: [4, 8, 16, 32 (minutes)]

## IRQ/EVENT ACTIVITY DETECT



### PS2KB Wakeup Select

When selecting "Password", press <Enter> to change password. The maximum number of characters is eight. "PS2KB Wakeup from S3/S4/S5" and "PS2MS Wakeup from S3/S4/S5" will be disabled while changing the password.

Settings: [Hot Key, Password]

### PS2KB Wakeup from S3/S4/S5

Sets a Hot Key to restore the system from the power saving mode to an active state.

Settings: [Disabled, 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

Enables any mouse activity to restore the system from the power saving mode to an active state.

Settings: [Disabled, Enabled]

### **USB Resume**

Enables activity detected from USB devices to restore the system from a suspended state to an active state.

Settings: [Disabled, Enabled]

### **VGA Event**

Enables the power management unit to monitor VGA activities.

Settings: [Off, On]

### **LPT & COM Event**

Decide whether or not the power management unit should monitor parallel port (LPT) and serial port (COM) activities.

Settings: [None, LPT, COM, LPT / COM]

### **HDD Event**

Enables the power management unit to monitor hard disk activities.

Settings: [Off, On]

### **PCI Master Event**

Enables the power management unit to monitor PCI master activities.

Settings: [Off, On]

### **PowerOn by PCI Card**

Enables activity detected from any PCI card to power up the system or resume from a suspended state. Such PCI cards include LAN, onboard USB ports, etc.

Settings: [Disabled, Enabled]

### **Modem Ring Resume**

Settings: [Disabled, Enabled]

**RTC Alarm Resume**

Sets a scheduled time and/or date to automatically power on the system.

Settings: [Disabled, Enabled]

**Date (of Month)**

The field specifies the date for "RTC Alarm Resume".

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

The field specifies the time for "RTC Alarm Resume".

## IRQ ACTIVITY MONITORING



### Primary INTR

Restores the system to an active state if IRQ activity is detected from any of the enabled channels

Settings: [Off, On]

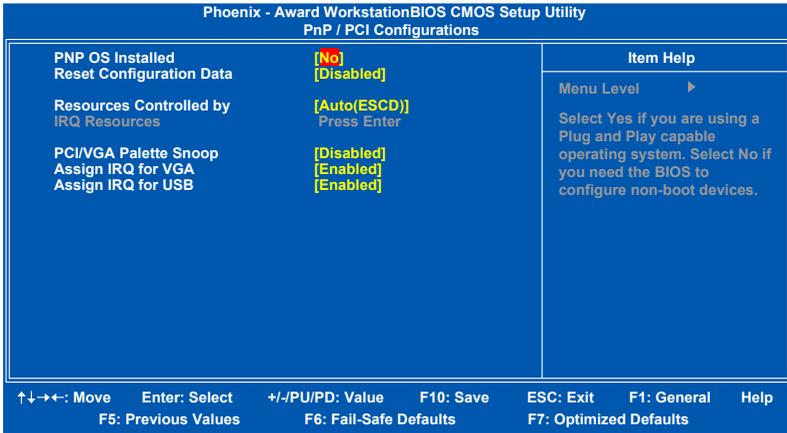
### IRQ3~IRQ15

Enables or disables the monitoring of the specified IRQ line. These fields are only available if "Primary INTR" is on.

Settings: [Enabled, Disabled]

**NOTE:** IRQ (Interrupt Request) lines are system resources allocated to I/O devices. When an I/O device needs to gain attention of the operating system, it signals this by causing an IRQ to occur. After receiving the signal, when the operating system is ready, the system will interrupt itself and perform the service required by the IO device.

## PNP/PCI CONFIGURATIONS



**NOTE:** This section covers some very technical items and it is strongly recommended to leave the default settings as is unless you are an experienced user.

### PNP OS Installed

Setting	Description
Yes	BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system
No	BIOS will initialize all the PnP cards

### Reset Configuration Data

This field should usually be left "Disabled".

Setting	Description
Enabled	Resets the ESCD (Extended System Configuration Data) after exiting BIOS Setup if a newly installed PCI card or the system configuration prevents the operating system from loading
Disabled	Default setting

### **Resource Controlled By**

Enables the BIOS to automatically configure all the Plug-and-Play compatible devices.

<b>Setting</b>	<b>Description</b>
Auto(ESCD)	BIOS will automatically assign IRQ, DMA and memory base address fields
Manual	Unlocks "IRQ Resources" for manual configuration

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

This field should usually be left "Disabled".

Settings: [Disabled, Enabled]

### **Assign IRQ For VGA/USB**

Assign IRQ for VGA and USB devices.

Settings: [Disabled, Enabled]

## IRQ RESOURCES



**NOTE:** The items are adjustable only when “Resources Controlled By” is set to “Manual.”

IRQ Resources list IRQ 3/4/5/7/9/10/11/12/14/15 for users to set each IRQ a type depending on the type of device using the IRQ.

Setting	Description
PCI Device	For Plug-and-Play compatible devices designed for PCI bus architecture
Reserved	The IRQ will be reserved for other requests

## PC HEALTH STATUS

Phoenix - Award WorkstationBIOS CMOS Setup Utility		PC Health Status	
CPU Warning Temperature	[Disabled]	Item Help	
Current CPU1 Temperature	40°C/104°F	Menu Level	
Current CPU2 Temperature	40°C/104°F		
Current CPUFAN Speed	5744 RPM		
Vcore0	1.00 V		
+3.3 V	3.31 V		
+5 V	5.00 V		
+12 V	11.68 V		
Vcore1	0.98 V		
Shutdown Temperature	[Disabled]		

↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General    Help  
 F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults

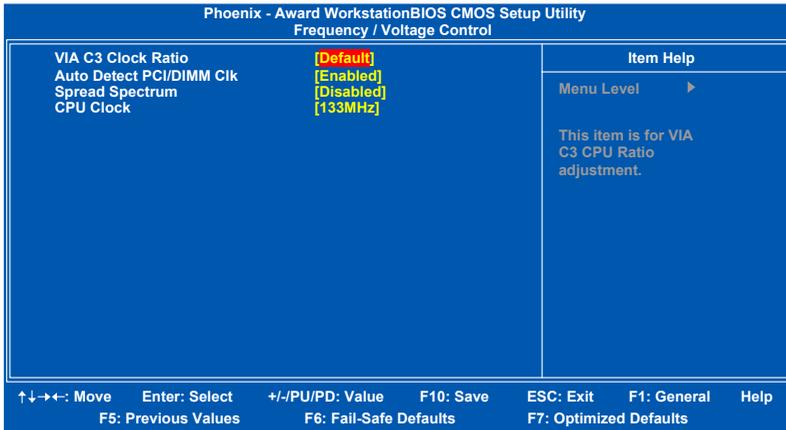
### CPU Warning Temperature

Settings: [Disabled, 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]

### Shutdown Temperature

Settings: [Disabled, 60°C/140°F, 65°C/149°F, 70°C/158°F, 75°C/167°F]

## FREQUENCY / VOLTAGE CONTROL



### VIA C3 Clock Ratio

This item is for VIA C3 CPU Ratio adjustment.

Settings: [Default, X 3, X 3.5, X 4, X 4.5, X 5, X 5.5, X 6, X 6.5, X 7, X 7.5, X 8, X 9, X 10, X 9.5, X 12, X 8.5, X 10.5, X 11.0, X 11.5, X 12.0, X 12.5, X 13.0, X 13.5, X 14.0, X 14.5, X 15.0, X 15.5, X 16.0]

### Auto Detect PCI/DIMM Clk

Settings: [Disabled, Enabled]

### Spread Spectrum

When the mainboard's clock generator pulses, the extreme values (spikes) of the pulses creates EMI (Electromagnetic Interference). The Spread Spectrum function reduces the EMI generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves.

Settings: [Disabled, Enabled]

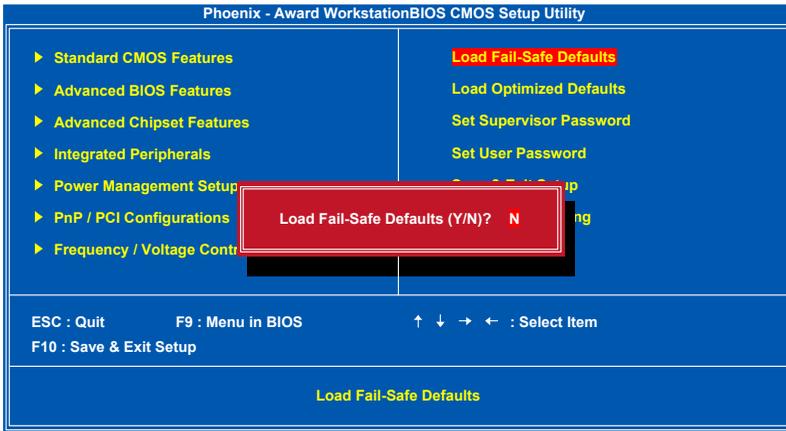
### CPU Clock

Key in a DEC number.

Settings: [Min = 133, Max = 165]

## LOAD FAIL-SAFE DEFAULTS

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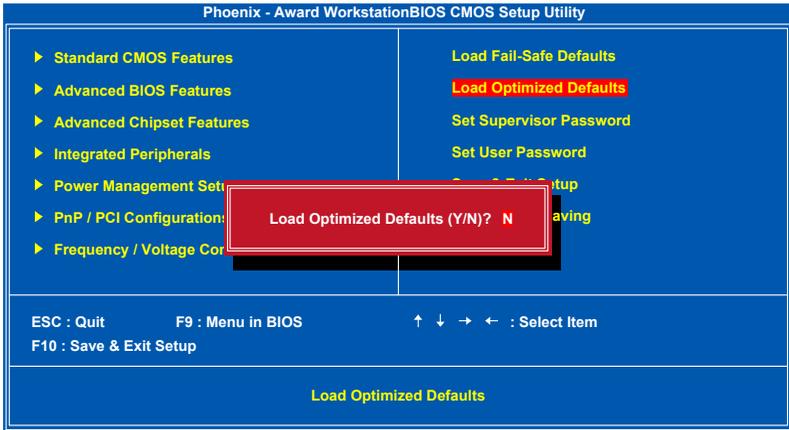
This option is for restoring all the default fail-safe BIOS settings. These values are set by the mainboard manufacturer to provide a stable system with basic performance.

Entering "Y" loads the default fail-safe BIOS values.

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## LOAD OPTIMIZED DEFAULTS

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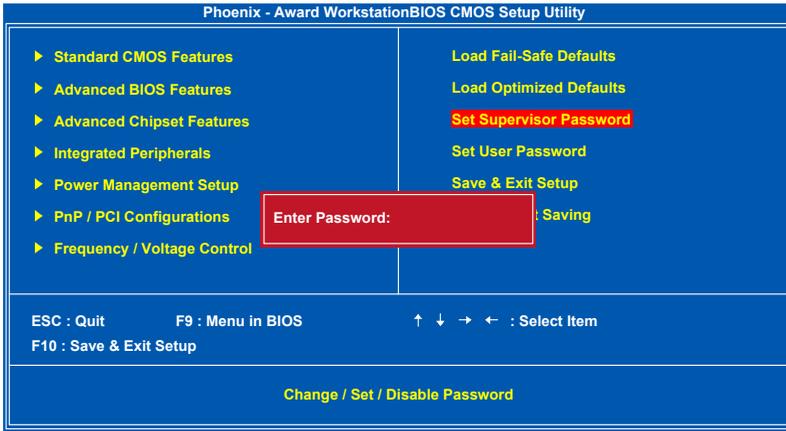


This option is for restoring all the default optimized BIOS settings. The default optimized values are set by the mainboard manufacturer to provide a stable system with optimized performance.

Entering "Y" loads the default optimized BIOS values.

## SET SUPERVISOR / USER PASSWORD

---



This option is for setting a password for entering BIOS Setup. When a password has been set, a password prompt will be displayed whenever BIOS Setup is run. This prevents an unauthorized person from changing any part of your system configuration.

There are two types of passwords you can set. A supervisor password and a user password. When a supervisor password is used, the BIOS Setup program can be accessed and the BIOS settings can be changed. When a user password is used, the BIOS Setup program can be accessed but the BIOS settings cannot be changed.

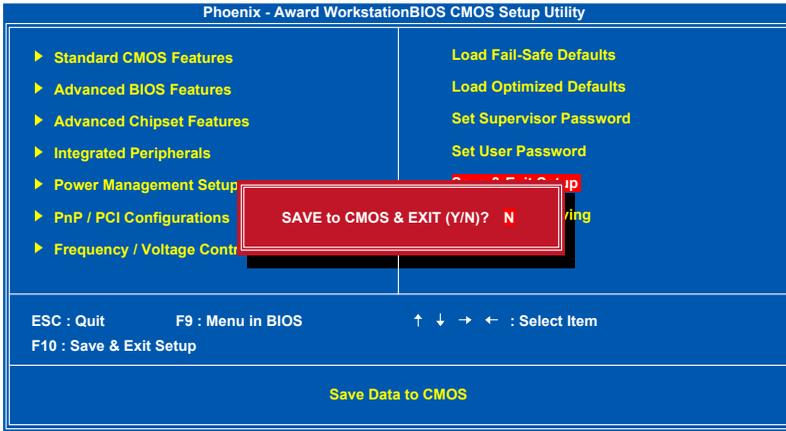
To set the password, type the password (up to eight characters in length) and press <Enter>. The password typed now will clear any previously set password from CMOS memory. The new password will need to be reentered to be confirmed. To cancel the process press <Esc>.

To disable the password, press <Enter> when prompted to enter a new password. A message will show up to confirm disabling the password. To cancel the process press <Esc>.

Additionally, when a password is enabled, the BIOS can be set to request the password each time the system is booted. This would prevent unauthorized use of the system. See "Security Option" in the "Advanced BIOS Features" section for more details.

## SAVE & EXIT SETUP

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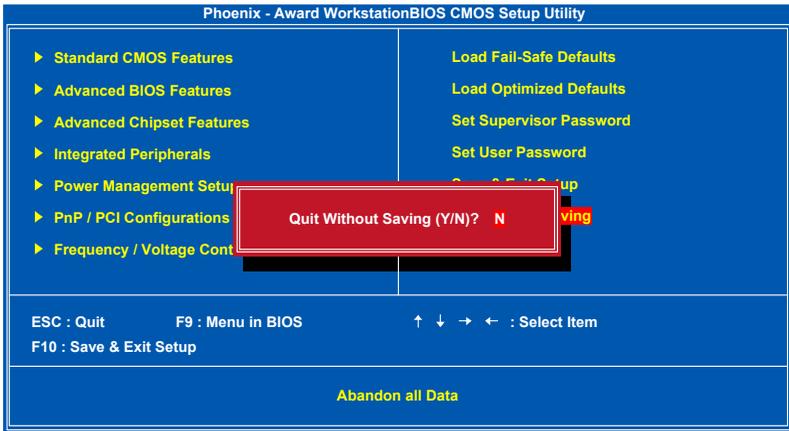
Entering "Y" saves any changes made and exits the program.

Entering "N" will cancel the exit request.

---

## EXIT WITHOUT SAVING

---



Entering "Y" discards any changes made and exits the program.

Entering "N" will cancel the exit request.

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## CHAPTER 4

# Driver Installation

This chapter gives you brief descriptions of each mainboard driver and application. You must install the VIA chipset drivers first before installing other drivers such as audio or VGA drivers. The applications will only function correctly if the necessary drivers are already installed.

## DRIVER UTILITIES

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### Getting Started

The mainboard includes a Driver Utilities CD that contains the driver utilities and software for enhancing the performance of the mainboard. If the CD is missing from the retail box, please contact the local dealer for the CD.

**Note:** The driver utilities and software are updated from time to time. The latest updated versions are available at <http://www.viaembedded.com/>

**Running the Driver Utilities CD**

To start using the CD, insert the CD into the CD-ROM or DVD-ROM drive. The CD should run automatically after closing the CD-ROM or DVD-ROM drive. The driver utilities and software menu screen should then appear on the screen. If the CD does not run automatically, click on the "Start" button and select "Run..." Then type: "D:\Setup.exe".

**NOTE:** D: might not be the drive letter of the CD-ROM/DVD-ROM in your system.

## CD CONTENT

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- ☒ **VIA 4in1 Drivers:** Contains VIA ATAPI Vendor Support Driver (enables the performance enhancing bus mastering functions on ATA-capable Hard Disk Drives and ensures IDE device compatibility), AGP VxD Driver (provides service routines to your VGA driver and interface directly to hardware, providing fast graphical access), IRQ Routing Miniport Driver (sets the system's PCI IRQ routing sequence) and VIA INF Driver (enables the VIA Power Management function).
- ☒ **VIA Graphics Driver:** Enhances the onboard VIA graphic chip.
- ☒ **VIA Audio Driver:** Enhances the onboard VIA audio chip.
- ☒ **VIA USB 2.0 Driver:** Enhances VIA USB 2.0 ports.
- ☒ **VIA LAN Driver:** Enhances the onboard VIA LAN chip.
- ☒ **VIA SATA Driver:** Support for SATA devices.

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# APPENDIX A

## Smart 5.1

This chapter gives you brief description of how Smart 5.1 is enabled if your board is equipped with the VT1617A 6-channel AC'97 codec.

## **ENABLING SMART 5.1**

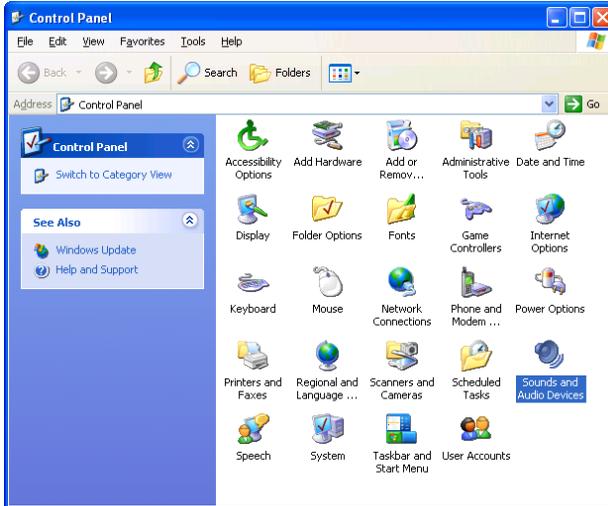
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Smart5.1 allows the system to output 6-channel audio directly from the audio jacks on the mainboard, using the traditional line-in, line-out and microphone jacks as output jacks. Windows® XP/2000 supports 6-channel. Windows® 98 only supports 4-channel. The examples in this section are based on Windows® XP.

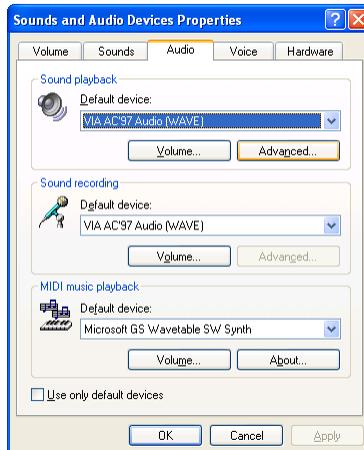
**NOTE:** Your media entertainment software needs to support 6-channels in order for you to experience Smart5.1. Consult the user manual that came with your software for more information.

## Example A

1. Double-click "Sounds and Audio Devices" icon in the control panel.



2. Select the "Audio" tab. Then press "Advanced" as shown in the picture.



3. Choose “5.1 surround sound speakers” to support the 6-channel function.

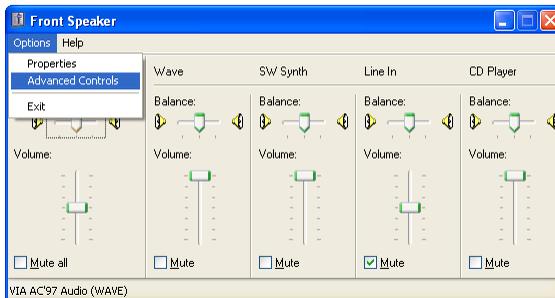


## Example B

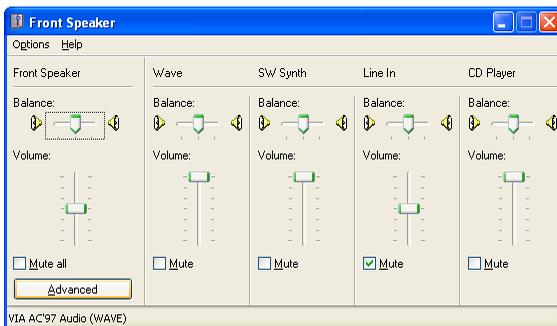
1. Double-click "Sounds and Audio Devices" icon in the control panel and then select the "Audio" tab on the panel as shown below. Press the "Volume" button in the "Sound playback" area



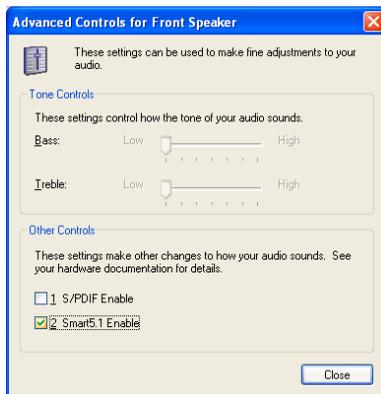
2. Select "Options" from the "Front Speaker" panel and select the item "Advanced Controls".



3. Click on the “Advanced” button.



4. Check the “Smart5.1 Enable” item as shown in the panel below.



After completing the previous settings, connect the speakers to the 3-jack connector.

Shown below are the corresponding connections to setup the 6-channel system.

<b>Jack</b>	<b>2-channel</b>	<b>6-channel</b>
Line-out	Line-out	Front (Left/Right)
Line-in	Line-in	Rear (Left/Right)
Microphone	Microphone	Center/Sub-woofer