ADE-2100

VIA V4 Bus Eden
CX700M 3.5” ESB

User’s Manual

Rev. 1.0
2007/01/03

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Technical Support

We hope you to get the maximum performance from your products and be willing to help if running into technical difficulties. For the most frequently asked questions, it's easily found answers from the product documentation and usually a lot more detailed, so please take reference to this manual first. If the answer still can not be found, gather all the information or questions applying to the problem, and with the product on hand, contact your distributor, sales representative, or customer service center for technical support. Most problems reported are minor and able to be easily solved over the phone. In addition, free technical support is available and always ready to give advices on application requirements or specific information on the installation and operation of any of our products.
Please have the following information ready before you call:

1. Product name and serial number
2. Description of your peripheral attachments
3. Description of your software (operating system, version, application software, etc.)
4. A complete description of the problem
5. The exact wording of any error messages

How to Use This Manual

This manual is written for the system integrator, PC technician and knowledgeable PC end user. It describes how to configure your ADE-2100 to meet various operating requirements. The user's manual is divided into four chapters, with each chapter addressing a basic concept and operation of the server board.

Chapter 1: Introduction - presents what you have inside the box and gives you an overview of the product specifications and basic system architecture for the ADE-2100 server board.

Chapter 2: Hardware Configuration Setting - shows the definitions and locations of Jumpers and Connectors so that you can easily configure your system.

Chapter 3: System Installation - describes how to properly mount the CPU, main memory, and M-System Flash disk for a safe installation. It will also introduce and show you the driver installation procedure for the Graphics Controller and Ethernet Controller.

Chapter 4: BIOS Setup Information - specifies the meaning of each setup parameter, how to get advanced BIOS performance and update to a new BIOS.

Table of Content

Revision History

Revision	Date	Comment
Rev.1.0	Jan. 2007	Initial released

CHAPTER 1

1. Introduction

1.1 Description

The ADE-2100 is designed in a 3.5" embedded form factor to fit the low power VIA V4 Bus Eden processor onboard, to meet today's demanding pace, and to keep complete compatibility with hardware and software function supported. The on-board devices support VIA Eden 1.0 GHz processor, integrated graphics and dual Ethernet controllers. It's beneficial to build up a fanless system integrator.

This board hosts VIA V4 Eden processor with FSB 400 MHz in combination with the VIA CX700M chipset with an integrated graphic memory controller up to 128 MB and supports dual view function with VGA/LVDS & VGA/DVI with one SODIMM up to 1 GB DDR2 400/533 MHz, enhanced on-board one PCI-IDE interface supporting 2 drives of Ultra ATA33 synchronous mode feature, an onboard Super I/O chipset for two serial ports: one RS-232 serial port interface and one RS-232/422/485 pin header. Besides, integrated Realtek ALC883 AC97 codec, Hi-speed USB 2.0 x 6 ports offering greater bandwidth over USB 1.1, one 6-pin Mini-DIN connector for PS/2 mouse and keyboard, and one +12 V 4-pin DC-in power connector designed to support ATX power function.

Targeted for key embedded applications such as Point of Sales (POS), car media centers, industrial PCs (IPC) and ultra compact, low power desktop systems such as thin clients that require flat panels support, the digital display using LVDS/DVI interface. All of these features make ADE-2100 excellent in all-in-one applications.

1.2 Packing Check List

The ADE-2100 package includes the following basic items accompany with this manual.

- One 3.5" ADE-2100 ESB
- One Quick Installation Guide for ADE-2100
- One 44-pin IDE cable
- One Serial ATA cable
- One Serial port cable for COM2
- One +12 V Power cable
- One Y cable for PS/2 keyboard & mouse
- One Supporting CD-ROM contains User's Manual and internal VGA display driver and VIA VT6106S Ethernet network controller driver and on board devices drivers

If any of these items is damaged or missed, please contact your vendor and save all packing materials for future replacement and maintenance.

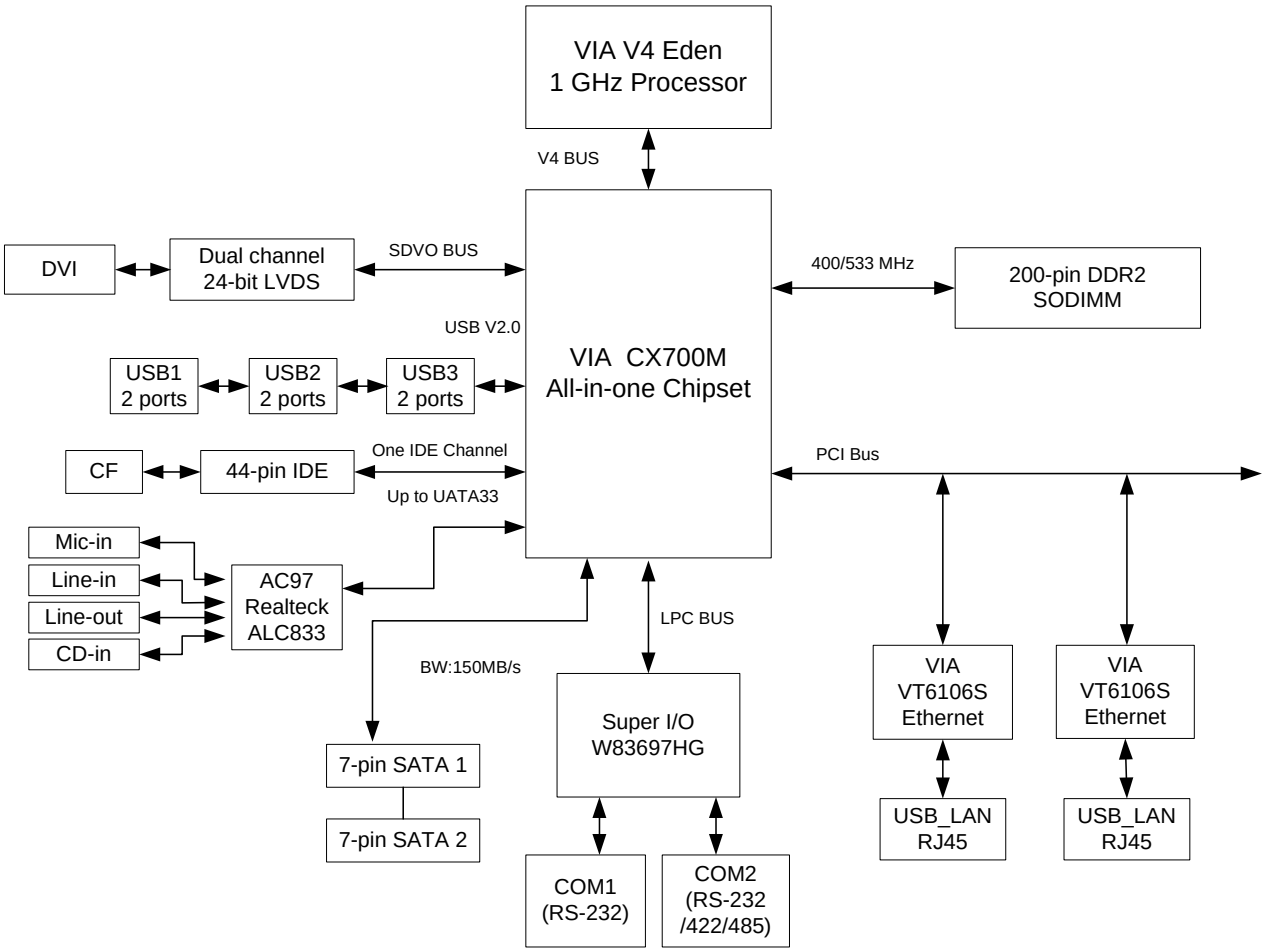
1.3 Specifications

System	
CPU	VIA V4 Bus Eden 1 GHz processor
FSB	400 MHz
BIOS	Award BIOS with 4 Mb Flash ROM
System Chipset	VIA CX700M
I/O Chip	Winbond W83697HG I/O controller
System Memory	1 x 200-pin SO-DIMM socket support DDR2 400/533 SDRAM Max. up to 1 GB memory
Storage	1 x Parallel ATA IDE port with UDMA 33 support by 44-pin IDE connector 2 x Serial ATA 150 ports
SSD	1 x CompactFlash socket with ejector at I/O side (shared Master IDE)
Watchdog Timer	Reset: 1 sec.~255 min. and 1 sec. or 1 min./step
H/W Status Monitor	Monitoring system temperature, voltage, and cooling fan status.
MIO	
Internal	1 x RS-232/422/485, 2 x USB 2.0
External	1 x VGA, 1 x Audio jack, 2 x RJ-45, 1 x RS-232, 4 x USB 2.0, 1 x KB & Mouse
Display	
Chipset	VIA CX700M
Display Memory	Up to 128 MB shared memory
Resolution	CRT: 2048 x 1536 ；Panel: 1600 x 1200 ；DVI: 1600 x 1200
VGA/LCD Interface	DSUB-15 connector for VGA output
LVDS	1 x dual channel or 2 x single channel with 24-bit LVDS
DVI	1 x 30-pin DVI shared with LVDS interface
Audio	
HDAC	Realtek ALC883 7.1 + 2CH audio codec
Audio Interface	Mic in, Line in, Line out, CD-in pin-header

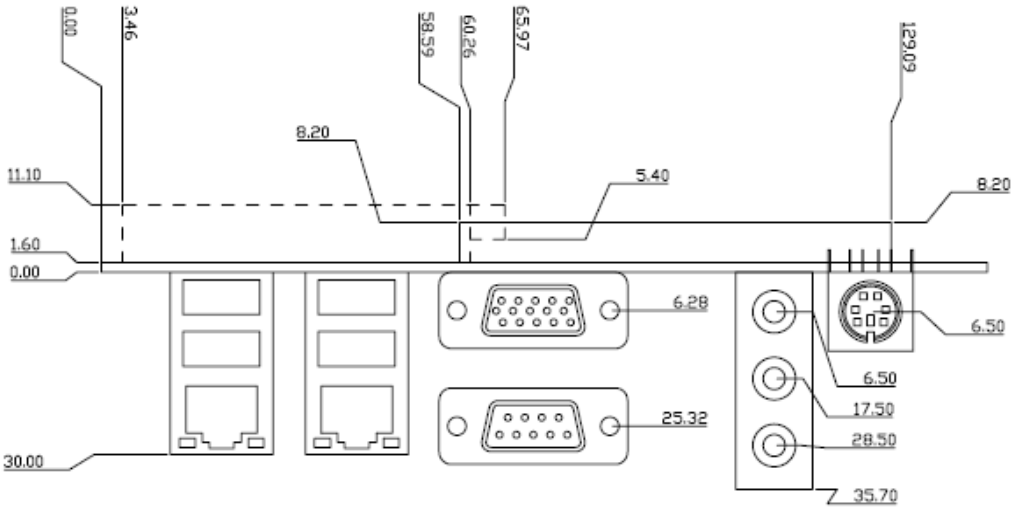
Ethernet	
Chipset	Dual VIA VT6106S Ethernet controllers
Ethernet Interface	IEEE 802.3 10BASE-T/100BASE-TX
Mechanical & Environmental	
Power Requirement	+12 V @ 0.78 A (with onboard VIA V4 Bus 1 GHz & 1 GB DDR2 SDRAM)
Power Type	DC-in 12 V 4-pin power connector / ATX function
Operating Temperature	0~60°C (32~140°F)
Operating Humidity	0%~90% relative humidity, non-condensing
Size (L x W)	5.7" x 4" (144.78 mm x 101.6 mm)
Weight	0.44 lbs (0.2 Kg)

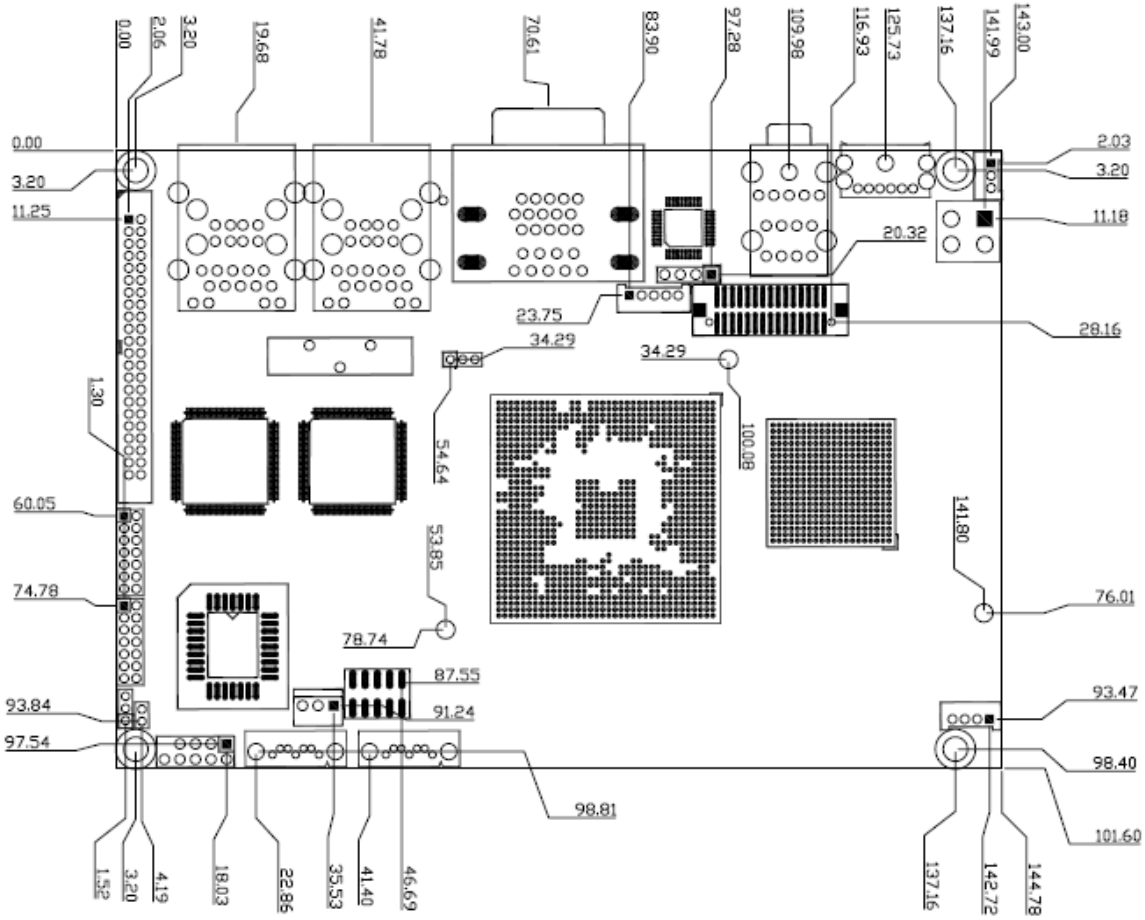
1.4 System Architecture

All of details operating relations are shown in ADE-2100 system block diagram.



1.5 Dimensions





Unit: mm

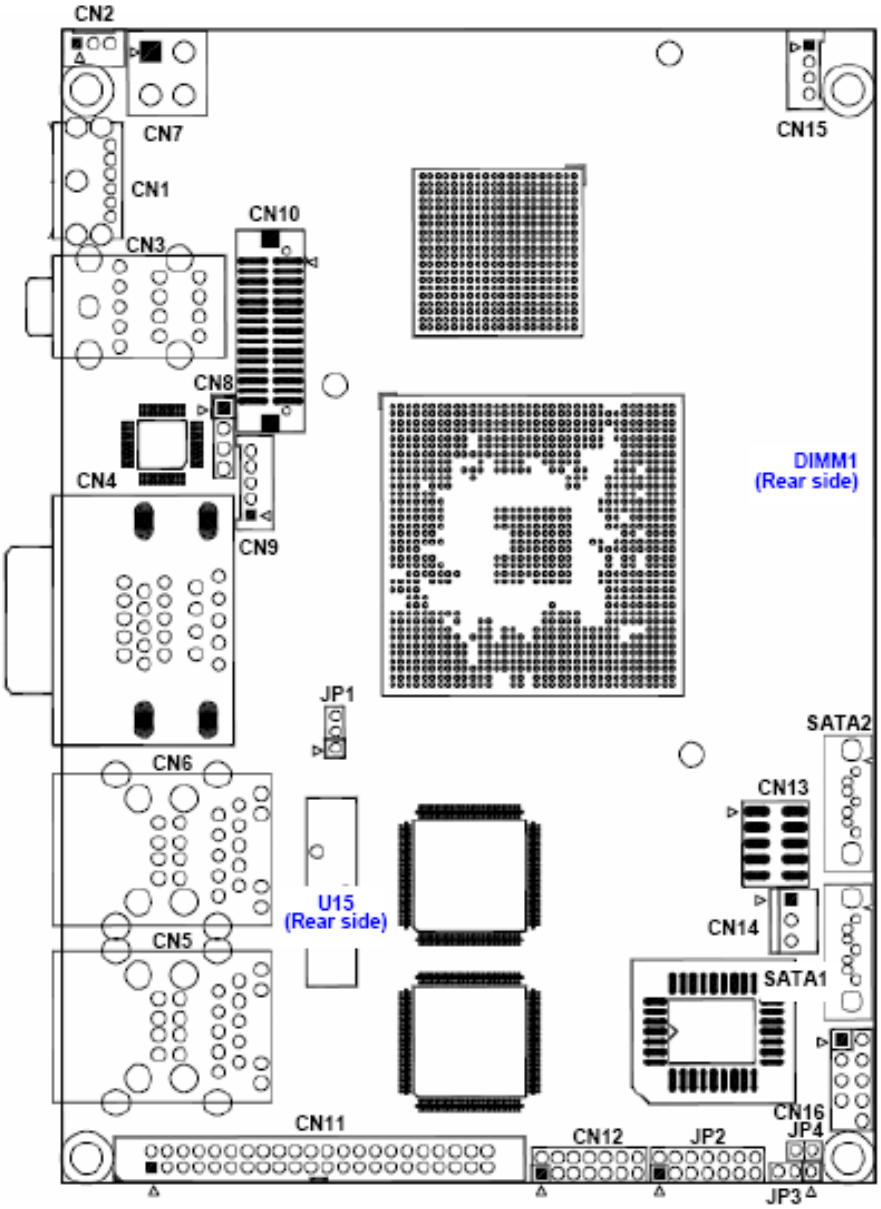
CHAPTER 2

2. Hardware Configuration Setting

This chapter gives the definitions and shows the positions of jumpers, headers and connectors. All of the configuration jumpers on ADE-2100 are in the proper position. The default settings shipped from factory are marked with an asterisk (★).

In general, jumpers on the 3.5" ESB are used to select options for certain features. Some of the jumpers are designed to be user-configurable, allowing for system enhancement. The others are for testing purpose only and should not be altered. To select any option, cover the jumper cap over (SHORT) or remove (NC) it from the jumper pins according to the following instructions. Here, NC stands for "Not Connect".

2.1 Board Layout



2.2 Jumpers & Connectors

JUMPERS	FUNCTION	REMARK
JP1	RTC CMOS clear select	1 x 3 header
JP2	COM2 RS-232/422/485 select	2 x 7 header
JP3	BIOS write protect	1 x 3 header
JP4	AT/ATX power select	1 x 2 header

CONNECTORS	FUNCTION	REMARK
CN1	PS/2 keyboard & mouse connector	
CN2	Power connector	1 x 3 wafer
CN3	Audio connector	
CN4	D-sub 15-pin VGA & D-sub 9-pin serial port 1 connectors	
CN5	USB 1, 2 & LAN 1 connectors	
CN6	USB 3, 4 & LAN 2 connectors	
CN7	ATX power connector	
CN8	CD-In from CD-ROM	1 x 4 header
CN9	LCD inverter connector	1 x 5 wafer
CN10	LVDS/DVI connector	HIROSE
CN11	Primary IDE connector	2 x 22 box header
CN12	Serial port 2 connector	2 x 7 header
CN13	Front panel connector	2 x 5 header
CN14	System fan connector	1 x 3 wafer
CN15	Auxiliary power connector	1 x 4 wafer
CN16	Internal USB connector 5 & 6	2 x 5 header
DIMM1	200-pin DDR2 SODIMM socket	
SATA1, SATA2	Serial ATA connector 1 & 2	
U15	CompactFlash card connector	

2.3 Jumpers/Connectors Setting

2.3.1 RTC CMOS Clear Select (JP1)

PIN No.	Description
1-2	Normal operation ★
2-3	Clear CMOS

2.3.2 COM2 RS-232/422/485 Select (JP2)

PIN No.	RS-232 ★	RS-422	RS-485
1-2	OFF	ON	ON
3-4	OFF	ON	ON
5-6	OFF	OFF	ON
7-8	OFF	ON	OFF
9-10	OFF	OFF	ON
11-12	OFF	ON	ON
13-14	ON	OFF	OFF

2.3.3 BIOS Write Protect (JP3)

PIN No.	Description
1-2	BIOS write unabled ★
2-3	BIOS write enabled

2.3.4 AT/ATX Power Select (JP4)

PIN No.	Description
Open	ATX Power ★
1-2	AT Power

2.3.5 PS/2 Keyboard & Mouse (CN1)

PIN No.	Description
1	Keyboard Data
2	Mouse Data
3	Ground
4	+5V
5	Keyboard Clock
6	Mouse Clock

2.3.6 Power Connector (CN2)

PIN No.	Description
1	+5VSB
2	Ground
3	Power On

2.3.7 ATX Power Connector (CN7)

PIN No.	Description
1	GND
2	GND
3	+12V
4	+12V

2.3.8 Auxiliary Power Connector 2 (CN15)

PIN No.	Description
1	+12V
2	Ground
3	Ground
4	+5V

2.3.9 Audio Connector (CN3)

PIN No.	Description
1 (Blue)	Line-in
2 (Green)	Speaker out
3 (Red)	MIC-in

2.3.10 COM1 / VGA Connector (CN4)

COM1

PIN No.	Description
1	Data Carrier Detect
2	Received Data
3	Transmit Data
4	Data Terminal Ready
5	Ground
6	Data Set Ready
7	Request To Send
8	Clear To Send
9	Ring Indicator
10	Not used

VGA

Description	PIN No.	PIN No.	Description
Green Signal	2	1	Red Signal
NC	4	3	Blue Signal
Ground	6	5	Ground
Ground	8	7	Ground
Ground	10	9	+5V
DCC_DATA	12	11	NC
VSYNC	14	13	HSYNC
		15	DCC_CLK

2.3.11 LAN 1/2 & USB 1/2/3/4 Connectors (CN5, CN6)

LAN 1/2

PIN No.	Description	PIN No.	Description
1	TX+	5	NC
2	TX-	6	RX-
3	RX+	7	NC
4	NC	8	NC

USB 1/2/3/4

PIN No.	Description	PIN No.	Description
1	+5 V (fused)	5	+5 V (fused)
2	USBP0-/2-	6	USBP1-/3-
3	USBP0+/2+	7	USBP1+/3+
4	Ground	8	Ground

2.3.12 Internal USB 5/6 Connectors (CN16)

PIN No.	Description
1	+5V
2	+5V
3	DATA_4-
4	DATA_4+
5	DATA_5-
6	DATA_5+
7	Ground
8	Ground
9	NC
10	NC

Note :

1) This mainboard provides 1 USB header on the board allowing for 2 additional USB ports. To make use of these headers, you must attach a USB bracket/cable with USB ports (some models will come packaged with a USB 4-port bracket-cable). The optionally packaged bracket will have two connectors that you can connect to the headers (CN16). The other end (bracket containing the USB ports) is attached to the computer casing.

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

2.3.13 CD-In from CD-ROM (CN8)

PIN No.	Description
1	CD-L
2	CD-Ground
3	CD-Ground
4	CD-R

2.3.14 LCD Inverter Connector (CN9)

PIN No.	Description
1	Ground
2	+3.3V
3	Backlight On/Off control
4	Backlight brightness adjustment
5	+12V

2.3.15 LVDS Connector (CN10)

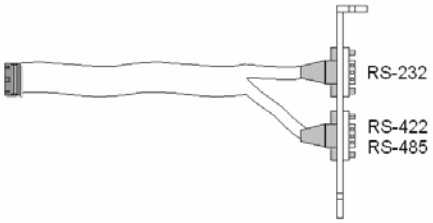
Description	PIN No.	PIN No.	Description
B_DATA0-	2	1	A_DATA0-/DVI_TLC-
B_DATA0+	4	3	A_DATA0+/DVI_TLC+
B_DATA1-	6	5	A_DATA1-/DVI_TDC0-
B_DATA1+	8	7	A_DATA1+/DVI_TDC0+
B_DATA2-	10	9	A_DATA2-/DVI_TDC1-
B_DATA2+	12	11	A_DATA2+/DVI_TDC1+
B_DATA3-	14	13	A_DATA3-
B_DATA3+	16	15	A_DATA3+
Ground	18	17	Ground
B_CLK-	20	19	A_CLK-/DVI_TDC2-
B_CLK+	22	21	A_CLK+/DVI_TDC2+
LVDS_VCC	24	23	LVDS_VCC
+5V (DVI)	26	25	+5V (DVI)
LDDC_CLKL	28	27	DVI_CLK
LDDC_DATA_L	30	29	DVI_DATA

Signal	Type	Description
LDDC_CLKL	I/O	EDID support for flat panel display
LDDC_DATAL	I/O	EDID support for flat panel display
DVI_TCL+/-	O	**DVI Clock Output:** These pins provide the differential clock outputs to the DVI interface corresponding a data on TDC(0:2) outputs
DVI_TDC0+/-	O	**DVI Data Channel 0 Output**: These pins provide the DVI differential output for data channel 0 (Blue).
DVI_TDC1+/-	O	**DVI Data Channel 1 Output**: These pins provide the DVI differential output for data channel 1 (Green).
DVI_TDC2+/-	O	**DVI Data Channel 2 Output**: These pins provide the DVI differential output for data channel 2 (Red).
DVI_CLK DVI_DATA	I/O	**Serial Port (SMBus) Clock and Data. The SPCLK signals are the clocks for serial data transfer. The SPD signals are the data signals used for serial data transfer. SPCLK1/SPD1 is typically used for DVI monitor communications.**

2.3.16 Serial Port 2 Connector (CN12)

Description	PIN No.	PIN No.	Description
DCD	1	2	DSR
RxD	3	4	RTS
TxD	5	6	CTS
DTR	7	8	RI
Ground	9	10	Ground
TxD+	11	12	TxD-
RxD+	13	14	RxD-

Note: The enclosed serial port cable for COM2 **with different functions as below.**



2.3.17 Front Panel Connector (CN13)

Buzzer

PIN No.	Signal Description
1	+5V
2	Buzzer

System Power On LED

PIN No.	Signal Description
3	+5V
5	Power On

IDE1 Active LED

PIN No.	Signal Description
4	+5V (Pull-up for HDD LED)
6	HDD active# (LED cathode terminal)

System Power On Switch

PIN No.	Signal Description
7	Power button control signal
9	Ground

System Reset

PIN No.	Signal Description
8	Reset
10	Ground

2.3.18 System Fan Connectors (CN14)

PIN No.	Description
1	Ground
2	+12V
3	Fan Speed Control

2.3.19 Serial ATA 1/2 Connectors (SATA1, SATA2)

These SATA connectors support Serial ATA 150. Each SATA connector can only support one serial ATA device.

Note: With most storage devices, there is a power cable that you need attach to a power source (power supply).

CHAPTER 3

3. System Installation

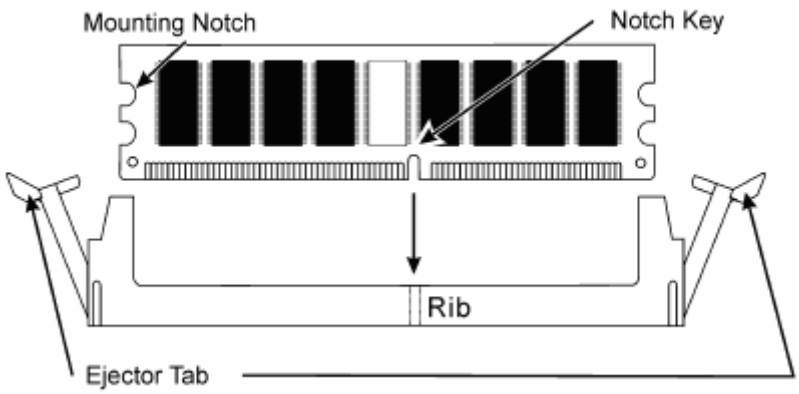
This chapter provides you with instructions on how to setup your system. The additional information shows you how to install memory.

3.1 Main Memory

ADE-2100 provides one DDR2 SODIMM (200-pin Dual In-line Memory Module) to support 1.8V DDRAM (Synchronized DRAM) as on-board main memory. The maximum memory size is 1 GB with using 256MB/512MB/1GB technology. Supports up to 2 double sided SODIMM at DDR2 400/533MHz. The memory architecture adopts 128-bit data interface to support for x8, x16, and x32 DDRAM (DDR2) device width. In addition, it only supports Non-ECC memory.

For system compatibility and stability, don't use memory module without brand. You can also use the single or double-side SODIMM.

Without out the contact and lock integrity of memory module with socket, it will impact on the system reliability. Follow normal procedure to install your DDRAM module into memory socket. Before locking, make sure that the module has been fully inserted into the SODIMM slot.



NOTE: For maintaining system stability, do not change any of DDR2 memory parameters in BIOS setup to upgrade your system performance without acquiring technical information.

3.2 Installing the 3.5" ESB

To install your ADE-2100 into standard chassis or proprietary environment, you need to perform the following steps:

1. Check all jumpers setting on proper position
2. Place ADE-2100 into the dedicated position in your system
3. Attach cables to existing peripheral devices and secure it

WARNING: Please ensure that your ESB properly inserted and fixed by mechanism. Otherwise, the system might be unstable or do not work from bad contact of golden finger.

3.2.1 Dual VIA VT6106S Ethernet Controllers

The ADE-2100 provides two LED indicators on RJ-45 connectors to show LAN interface status. These messages will give you a guide for troubleshooting.

Yellow LED indicates transmit and receive activity.

Blinking: indicates transmit/receive activity

On: indicates no activity but link is valid

Off: link is invalid

Green LED indicates Link speed

On: link speed at 100Mbps

Off: link speed at 10Mbps

3.2.2 Drivers Support

ADE-2100 provides on CD-Title to support on-board VGA and Ethernet device drivers in various operating systems. Before installing the device drivers, please see the reference files in each sub-directory.

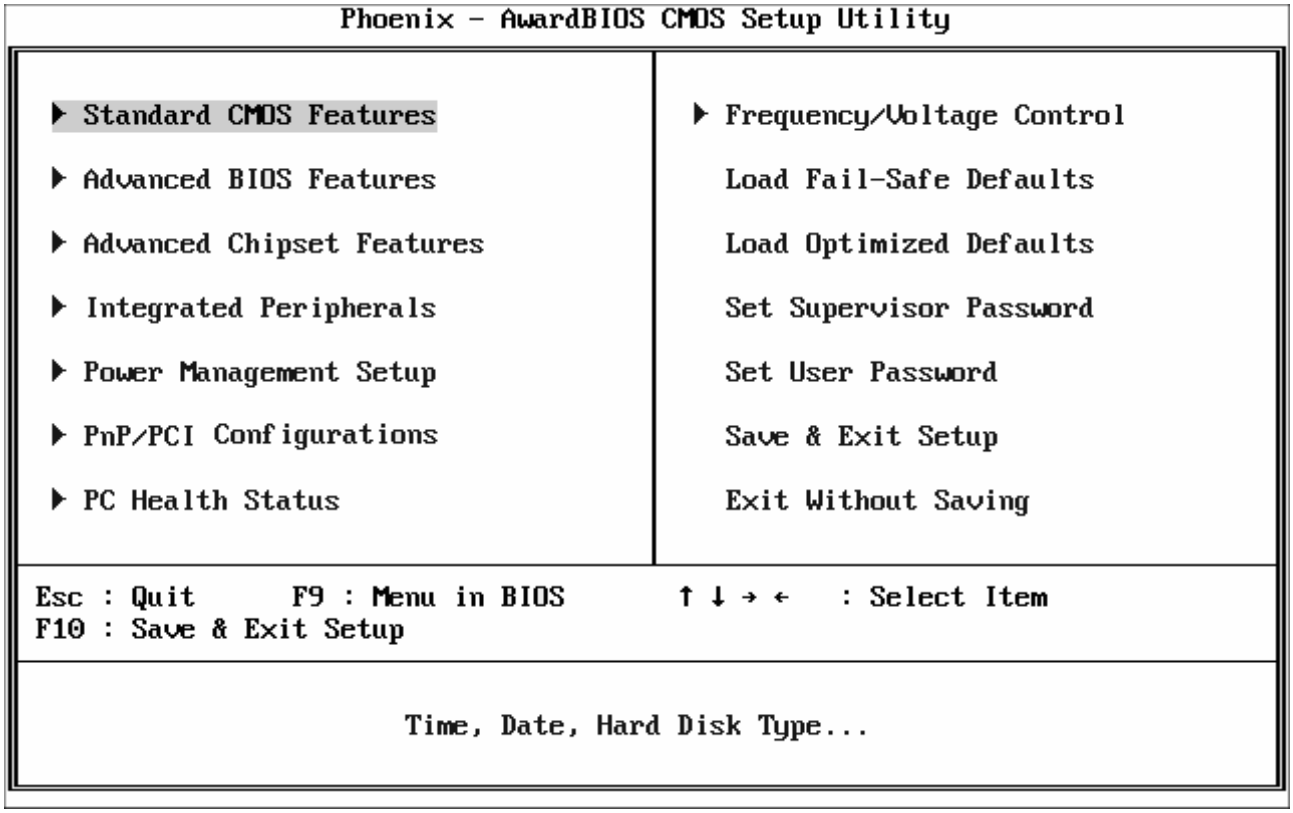
CHAPTER 4

4. BIOS Setup

4.1 Entering Setup

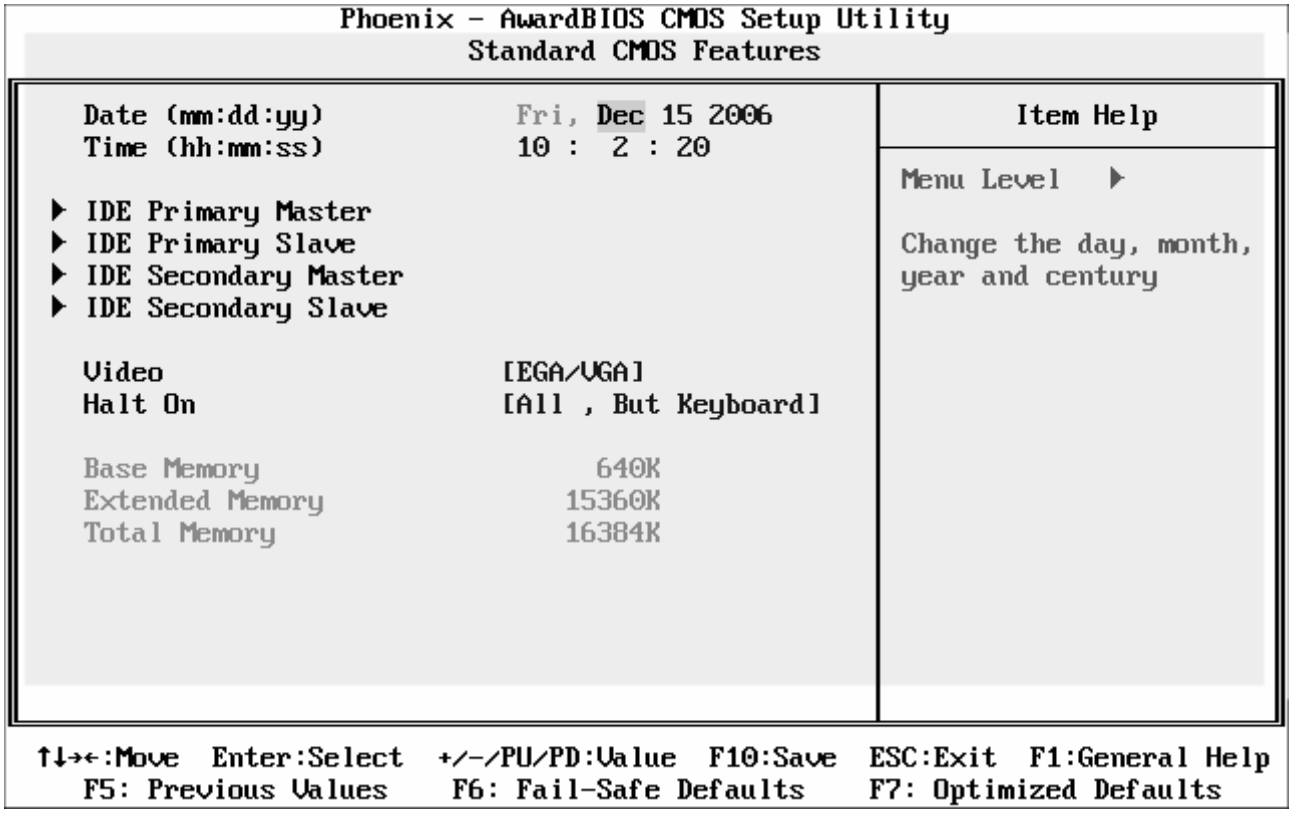
Phoenix-Award BIOS has a built-in setup program that allows users to modify the basic system configuration. This information is stored in CMOS RAM whose power is supplied by a battery so that it can retain the setup information even when the power is turned off. Press Delete when you Power on or Reboot the computer system. (i.e. After the logo appears at the center of the screen, please press Delete to enter the BIOS setup program). In the BIOS, make sure that everything is working fine before you try to optimize it for maximum performance.

4.2 Main Menu



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

4.2.1 Standard CMOS Features



4.2.1.1 Date (mm/date/year) and Time (hh/mm/ss)

Set the system date and time. Note that the 'Day' automatically changes when you set the date.

4.2.1.2 IDE Primary/Secondary Master/Slave

Press <Enter> to enter the sub menu of detailed options. (Described in IDE Adapters).

4.2.1.3 Video

Select the default video device.

The Choice: EGA/VGA/CGA 40/CGA 80/MONO EGA/VGA, CGA 40, CGA 80 and MONO.

4.2.1.4 Halt On

Select the situation in which you want the BIOS to stop the POST process and notify you.

The Choice: All Errors/No Errors/All, but Keyboard/All, but Diskette/All, but Disk/Key.

4.2.1.5 Base Memory

Displays the amount of conventional memory detected during boot up.

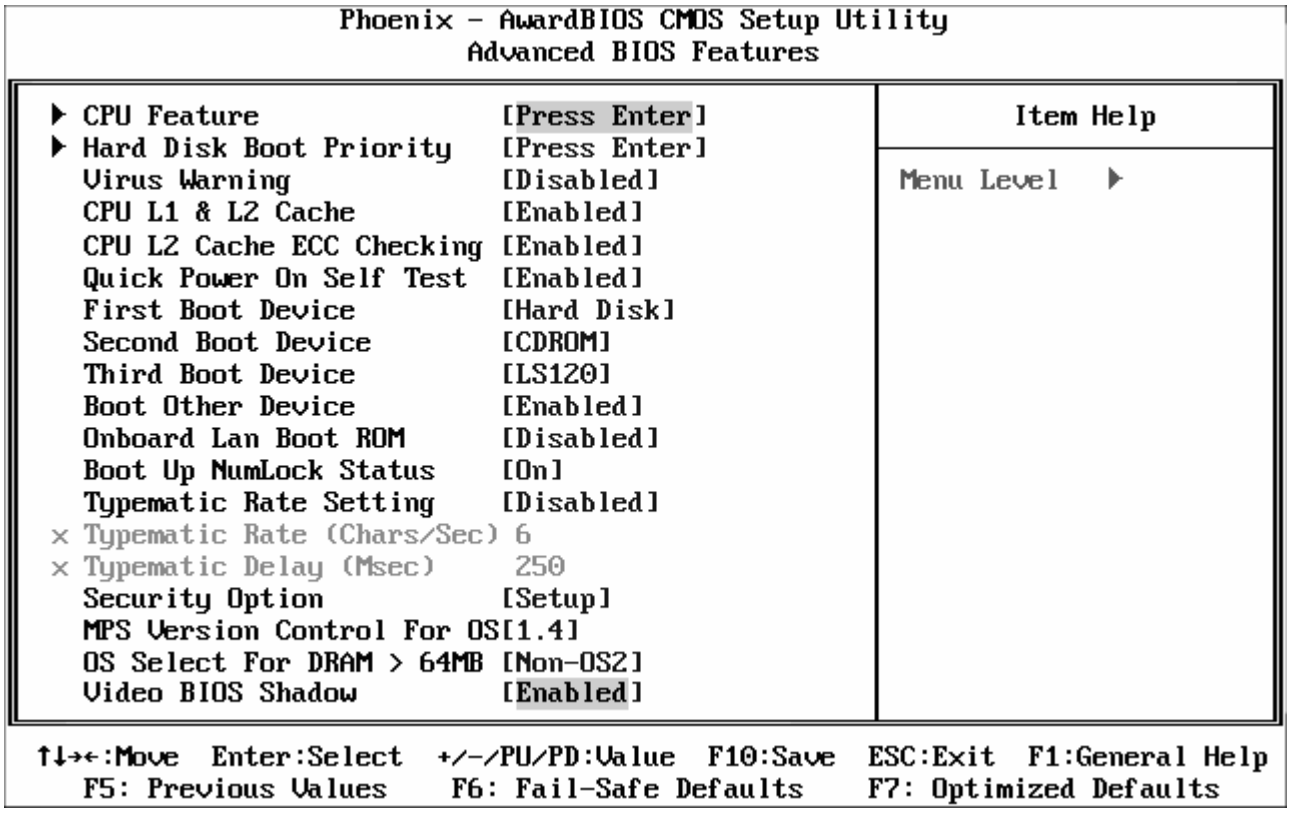
4.2.1.6 Extended Memory

Displays the amount of extended memory detected during boot up.

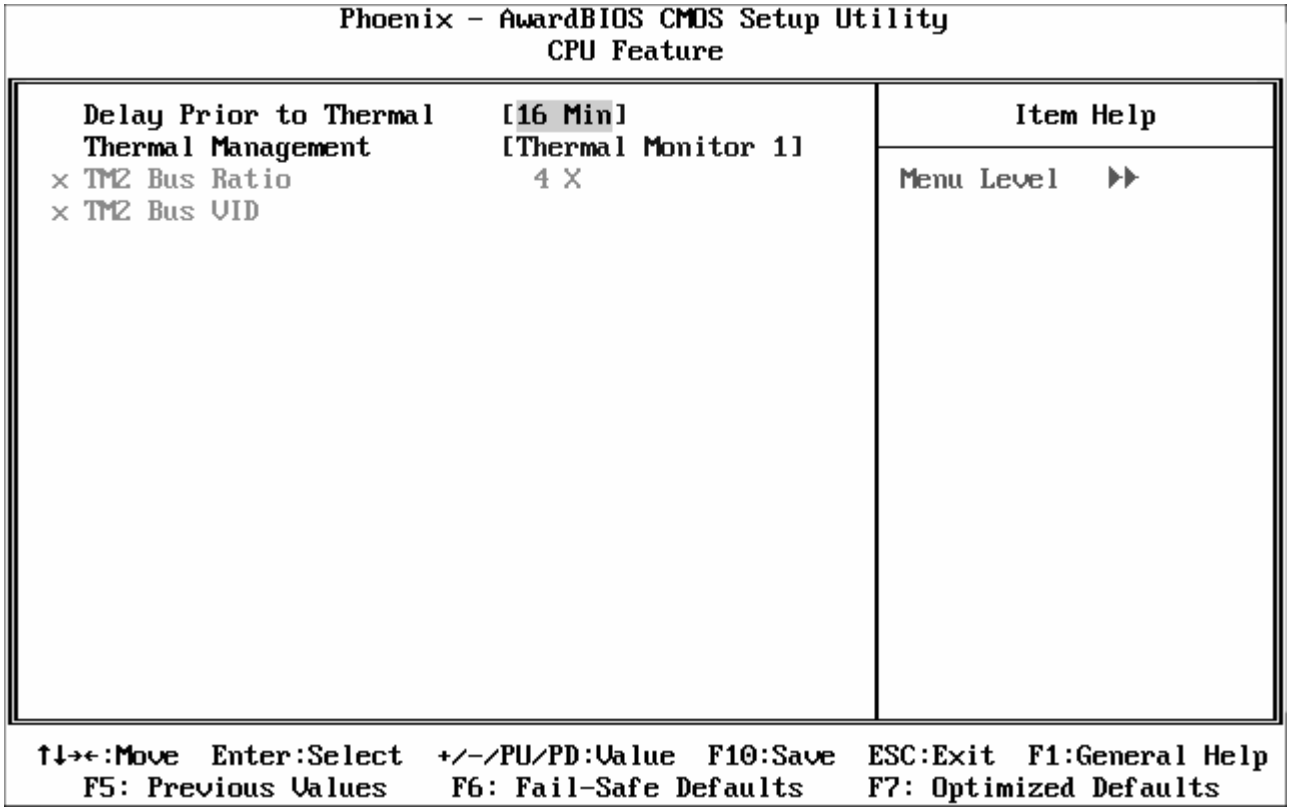
4.2.1.7 Total Memory

Displays the total memory available in the system.

4.2.2 Advanced BIOS Features



4.2.2.1 CPU Feature



4.2.2.1.1 Delay Prior to Thermal

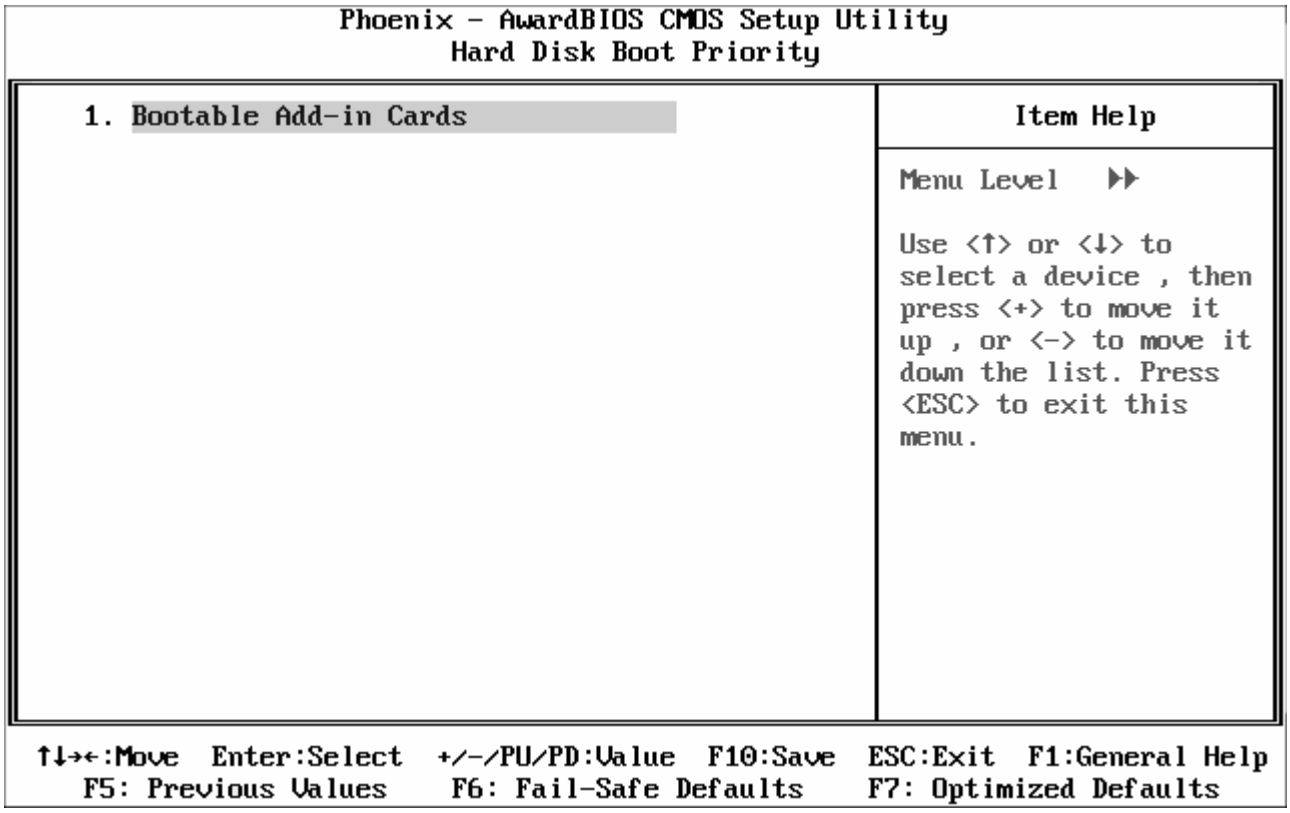
Select this item allows the delay prior to thermal time. The Choice: Auto, 4, 8, 16, 32Min.

4.2.2.1.2 Thermal Management

It allows you to select the thermal Monitor.

4.2.2.2 Hard Disk Boot Priority

Press Enter and It shows Bootable add-in Card.



4.2.2.3 Virus Warning

Allow you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempts to write data into this area, BIOS will show a warning message on screen and alarm beep.

Enabled: Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.

Disabled: No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

4.2.2.4 CPU L1 & L2 Cache

These two categories speed up memory access. However, it depends on CPU/chipset design. Enabled: Enable cache, Disabled: Disable cache.

4.2.2.5 CPU L2 Cache ECC Checking

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

The choice: Enabled, Disabled.

4.2.2.6 Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

Enabled: Enable quick POST, Disabled: Normal POST.

4.2.2.7 First/Second/Third Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

The Choice: Floppy, LS/ZIP, HDD, SCSI, CDROM, LAN and Disabled.

4.2.2.8 Onboard Lan Boot ROM

This item allows you to enable or disable the onboard LAN Boot ROM.

The choice: Enabled, Disabled.

4.2.2.9 Boot Up NumLock Status

Select power on state for NumLock. The choice: On, Off.

4.2.2.10 Typematic Rate Setting

Keystrokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.

The choice: Enabled, Disabled..

4.2.2.11 Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a keystroke when you hold the key down.

The choice: 6, 8, 10, 12, 15, 20, 24 and 30.

4.2.2.12 Typematic Delay (Msec)

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

The choice: 250, 500, 750 and 1000.

4.2.2.13 Security Option

Select whether the password is required every time the system boots or only when you enter setup.

System：The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.

Setup：The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

4.2.2.14 MPS Version Control for OS

Select the operating system that is Multi-Processors Version Control for OS.

The choice: 1.4, 1.1.

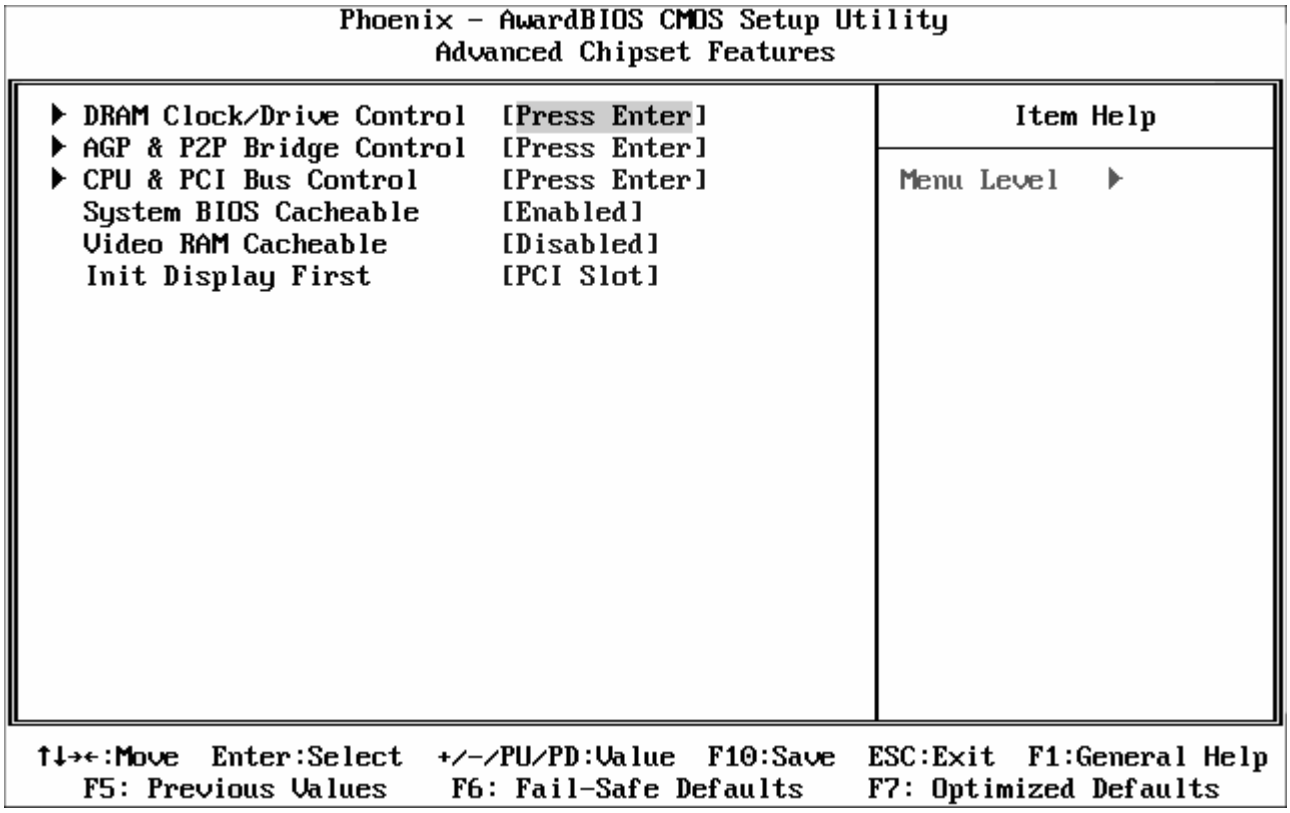
4.2.2.15 OS Select For DRAM > 64MB

Select the operating system that is running with greater than 64MB of RAM on the system. The choice: Non-OS2, OS2.

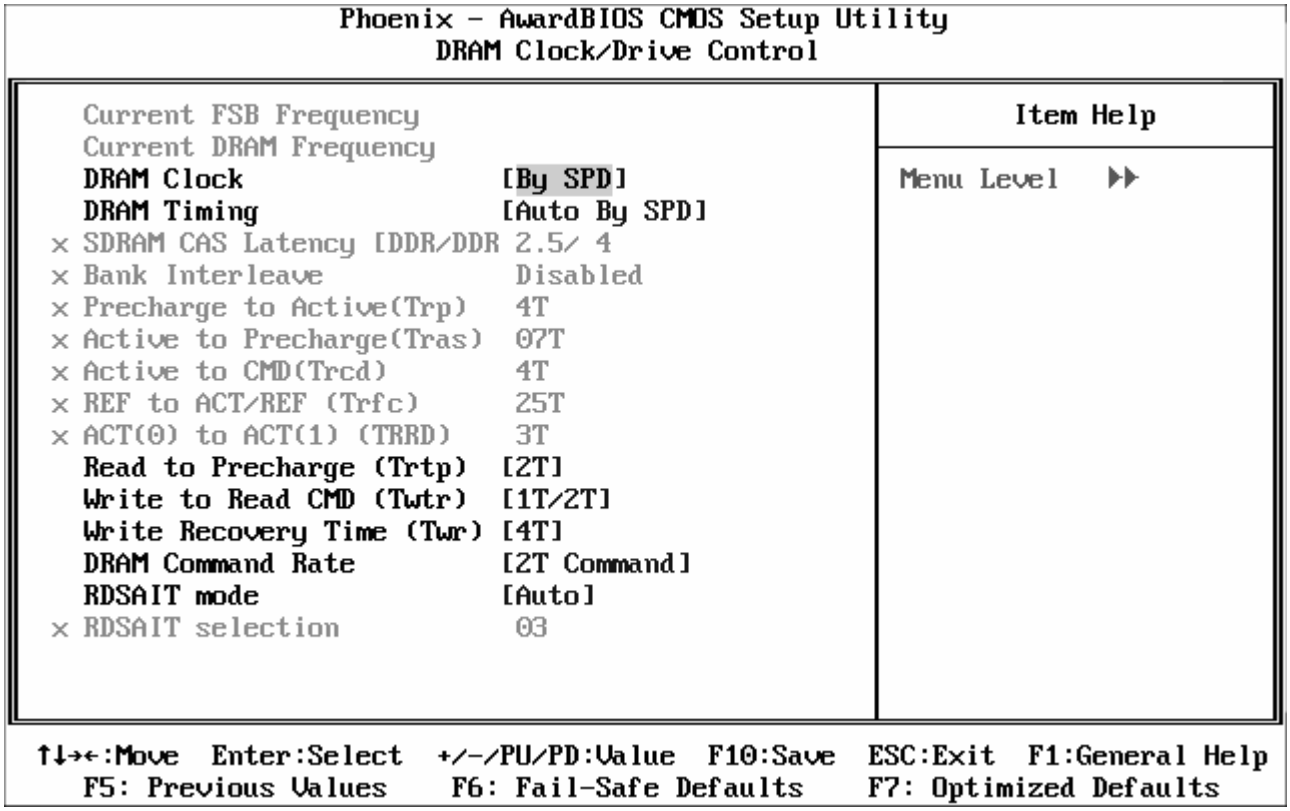
4.2.2.16 Video BIOS Shadow

Turns on BIOS ROM shadowing for the block of memory normally used for standard VGA video ROM code. In short, it speeds up your system by copying the contents of your video BIOS code from the slow ROM in which it resides into faster RAM.

4.2.3 Advanced Chipset Features



4.2.3.1 DRAM Clock/Drive Control



4.2.3.1.1 DRAM Clock

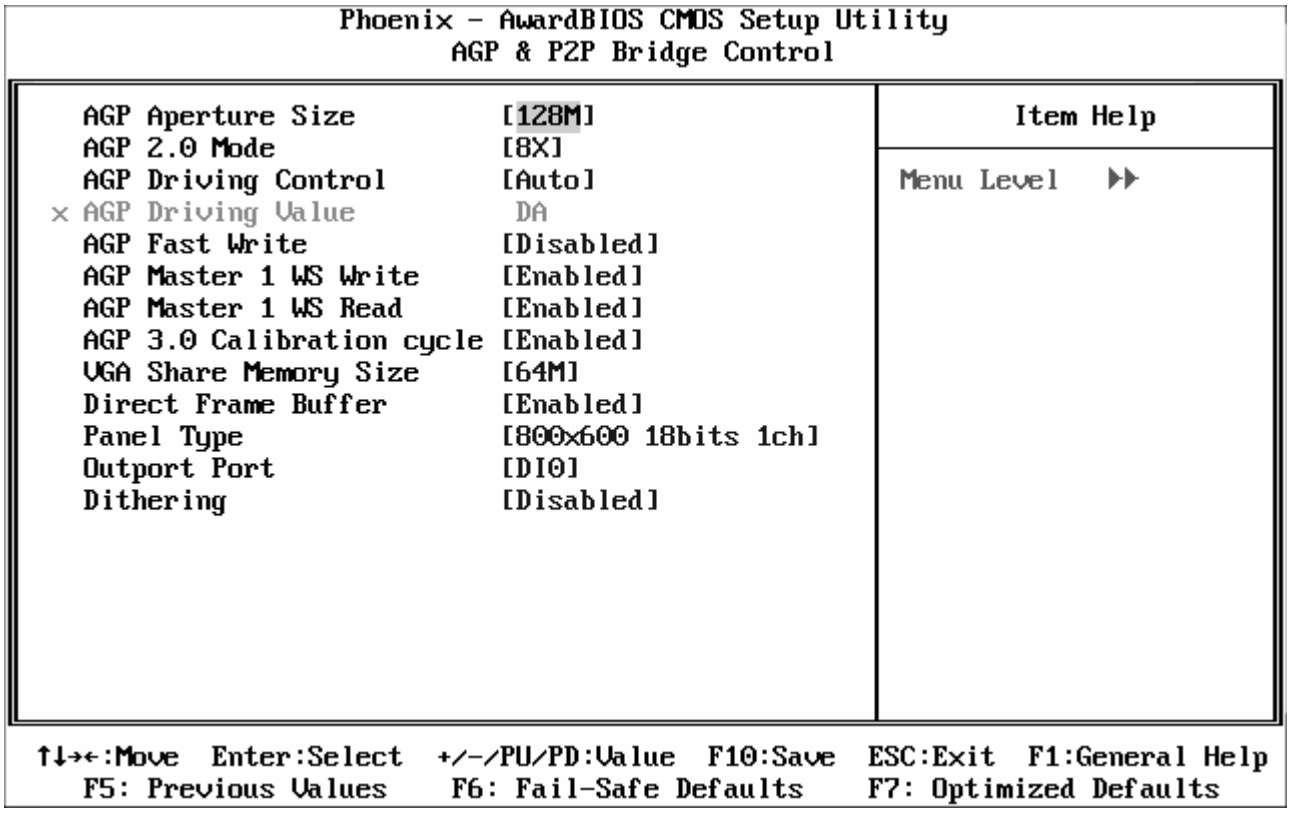
This item determines DRAM clock using SPD or manual configuration. Make sure your memory module has SPD (Serial Presence Data), if you want to select the "By SPD" option. Options: Manual、By SPD (default).

4.2.3.1.2 DRAM Timing

Select the operating system that is selecting DRAM timing, so select SPD for setting SDRAM timing by SPD.

The choice: Manual, By SPD.

4.2.3.2 AGP & P2P Bridge Control



4.2.3.2.1 AGP Aperture Size

This field determines the effective size of the Graphic Aperture used for a particular GMCH configuration. It can be updated by the GMCH-specific BIOS configuration sequence before the PCI standard bus enumeration sequence takes place. If it is not updated then a default value will select an aperture of maximum size.

4.2.3.2.2 AGP 2.0 Mode

This item allows you to select AGP bus support 8x or x4.

4.2.3.2.3 AGP Driving Control

This BIOS feature allows you to set whether the AGP controller should dynamically adjust the AGP driving strength or allow manual configuration by the BIOS.

4.2.3.2.4 AGP Driving Value

This BIOS feature will only be activated if you set the AGP Driving Control BIOS feature to Manual. It determines the overall drive strength of the AGP bus.

4.2.3.2.5 AGP Fast Write

This BIOS feature controls the AGP bus' Fast Write capability. Fast Write is a feature which accelerates memory write transactions from the chipset to the AGP device.

4.2.3.2.6 AGP Master 1 WS Write

This BIOS feature allows you to reduce the time the AGP bus-mastering device has to wait before it can initiate a read command, to only one wait state. This speeds up all reads that the AGP bus-master makes from the system memory.

4.2.3.2.7 AGP Master 1 WS Read

This BIOS feature allows you to reduce the time the AGP bus-mastering device has to wait before it can initiate a write command, to only one wait state. This speeds up all writes that the AGP bus-master makes to the system memory.

4.2.3.2.8 AGP 3.0 Calibration Cycle

This BIOS feature controls the AGP 3.0 calibration cycle feature of the motherboard chipset. It is only found in motherboards that support the AGP 3.0 standard.

4.2.3.2.9 VGA Share Memory Size

This BIOS feature controls the amount of system memory that is allocated to the integrated graphics processor when the system boots up.

4.2.3.2.10 Direct Frame Buffer

This BIOS feature controls the processor's access to the section of system memory reserved for use by the integrated graphics processor as graphics memory. Please note that we were referring to the CPU, not the graphics processor.

4.2.3.2.11 Panel Type

This item allows you to select the panel resolution.

4.2.3.2.12 Outport Port

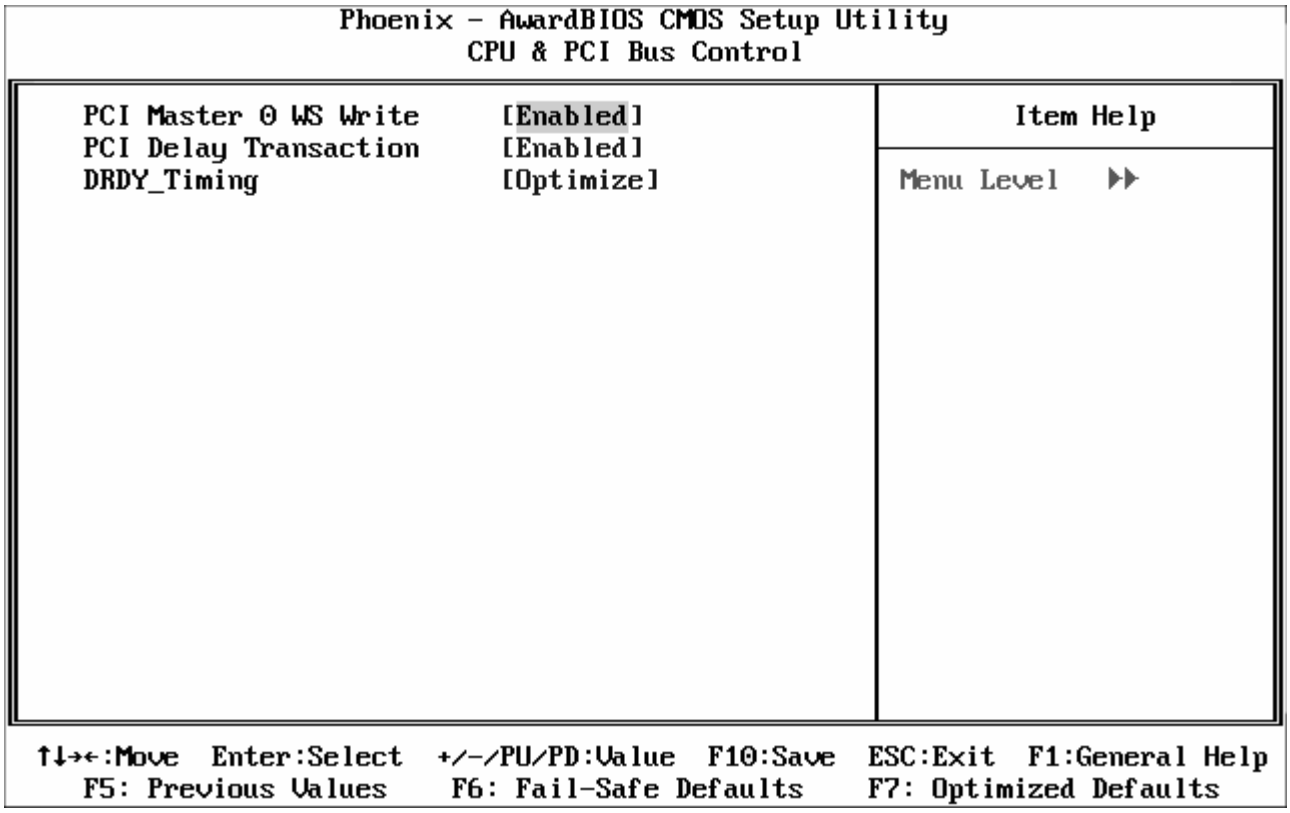
This item allows you to select LVDS signal output port.

4.2.3.2.13 Dithering

This item allows you to enable or disable Dithering function.

The choice: Enabled, Disabled

4.2.3.3 CPU & PCI Bus Control



4.2.3.3.1 PCI Master 0 WS Write

This BIOS feature determines whether the chipset inserts a delay before any writes from the PCI bus.

The choice: Enabled, Disabled.

4.2.3.3.2 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.

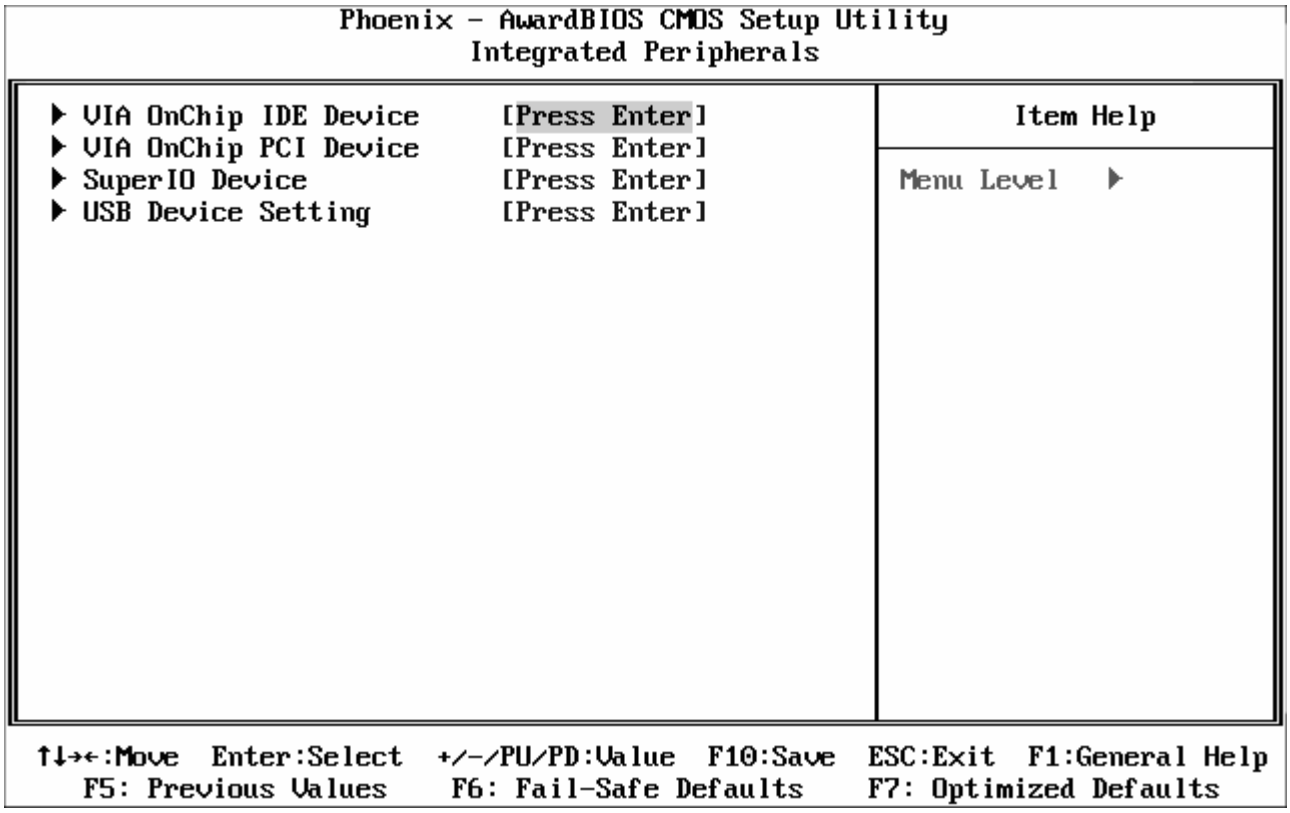
The choice: Enabled, Disabled.

4.2.3.3.3 DRDY_Timing

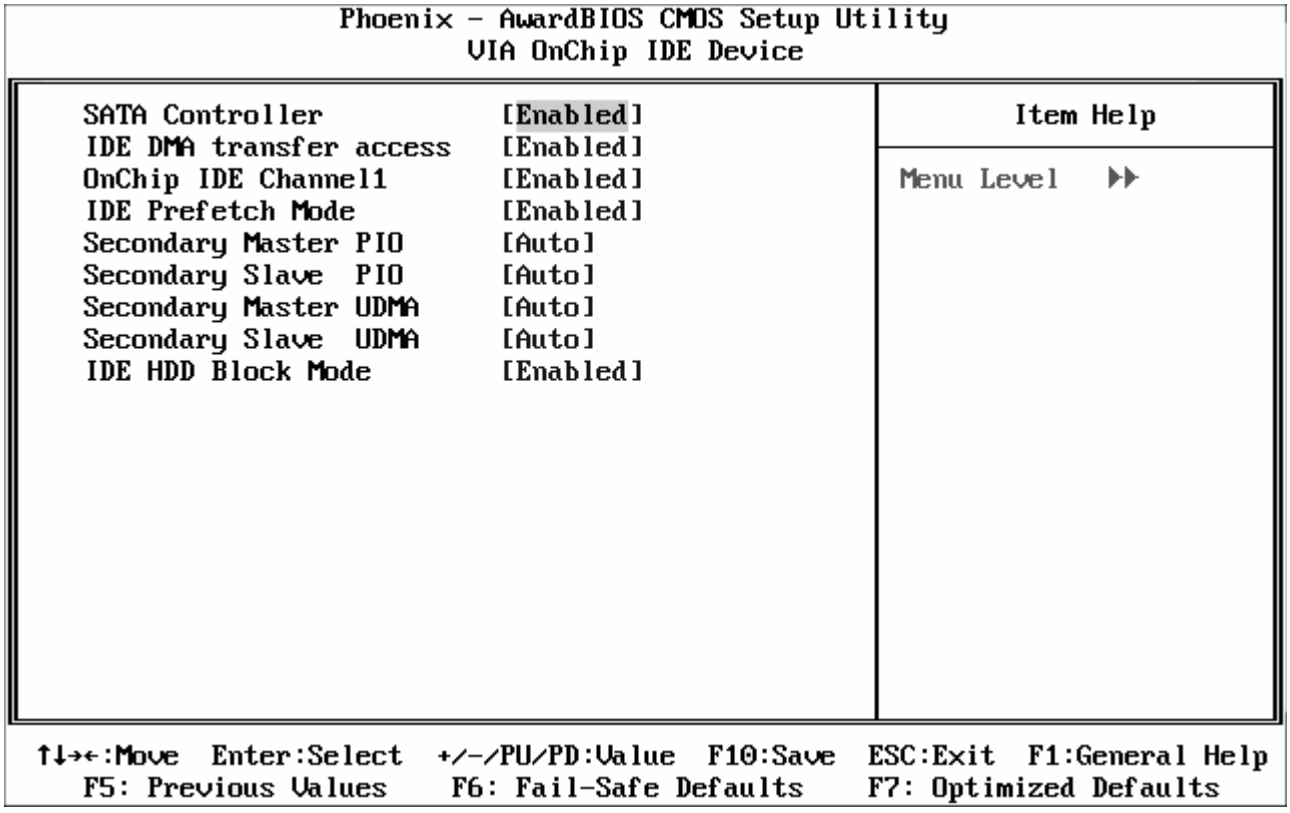
Allow you to set DRDY Timing.

The choice: Slowest, Default, Optimize.

4.2.4 Integrated Peripheral



4.2.4.1 VIA OnChip IDE Device



4.2.4.1.1 SATA Controller

Select “Enabled” if your system has a S-ATA device installed on the system board and you wish to use it.

The choice: Enabled, Disabled.

4.2.4.1.2 IDE DMA Transfer Access

This item allows you to enable or disable IDE DMA transfer access.

The choice: Enabled, Disabled.

4.2.4.1.3 OnChip IDE Channel1

Select “Enabled” to activate IDE channel separately.

The choice: Enabled, Disabled.

4.2.4.1.4 IDE Prefetch Mode

This BIOS feature controls the IDE controller's prefetch buffer. Whenever the processor requests for data from a drive, the IDE controller can prefetch the data following it. If the processor requests for the subsequent blocks of data, it can be quickly satisfied by the prefetched data.

4.2.4.1.5 Secondary Master/Slave PIO

The two IDE PIO (Programmed Input/Output) fields let you set a PIO mode for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

4.2.4.1.6 Secondary Master/Slave UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes 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/33, select “Auto” to enable BIOS support.

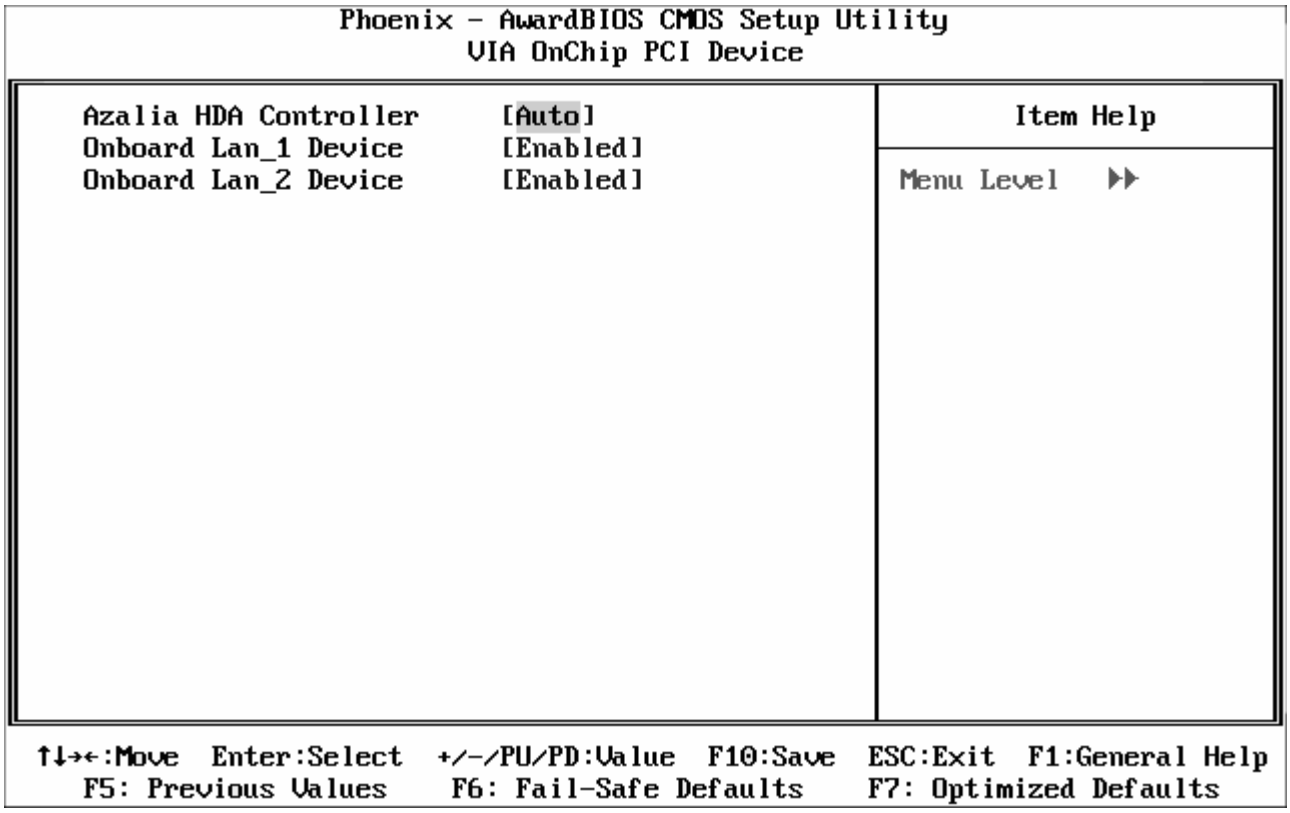
The choice: Auto, Disabled.

4.2.4.1.7 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 read/writes per sector the drive can support.

The choice: Enabled, Disabled.

4.2.4.2 VIA OnChip PCI Device



4.2.4.2.1 Azalia HDA Controller

This item allows you to select the chipset family to support AC97 Audio.

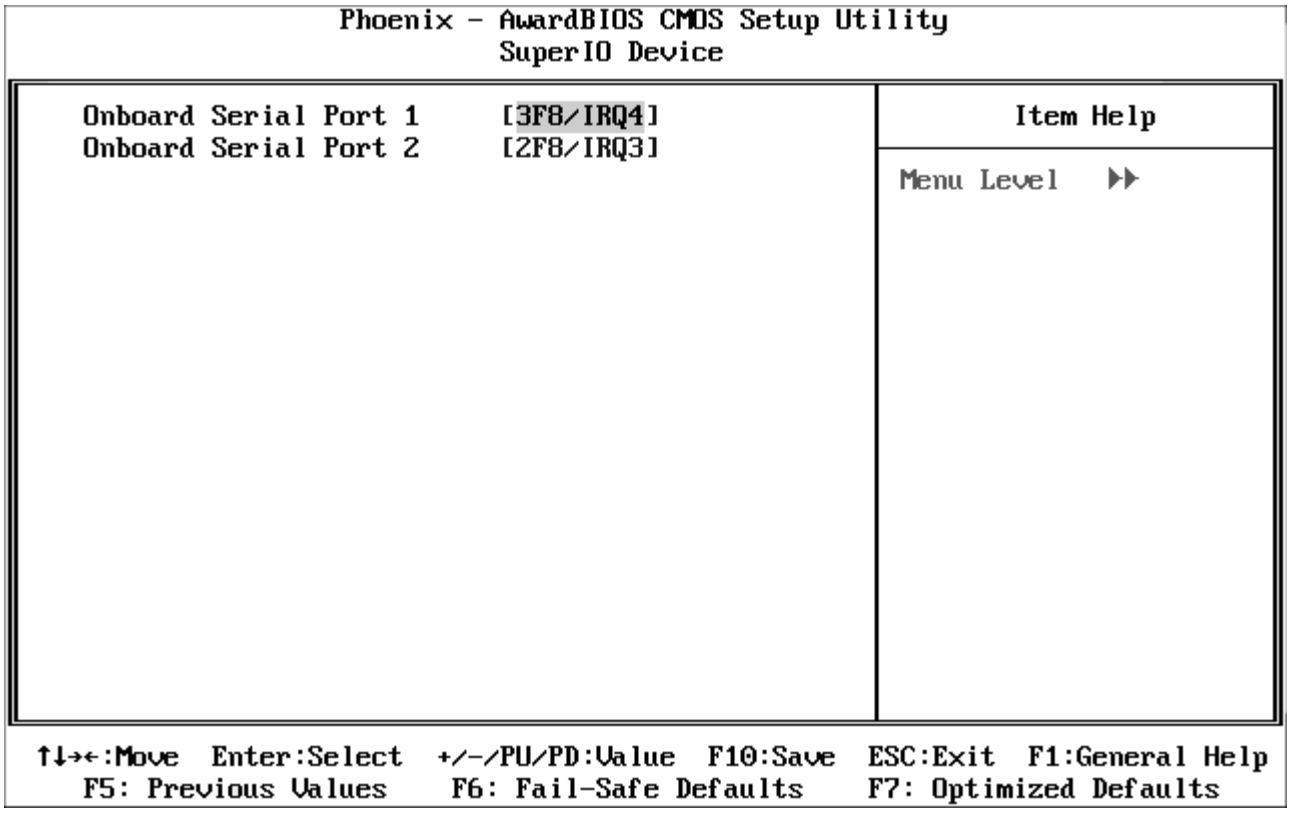
The choice: Auto, Azalia, AC97 Audio and Modem, AC97 Audio only, AC97 Modem only, All disabled.

4.2.4.2.2 Onboard Lan_1/2 Device

Select "Enabled" if your system has a LAN device installed on the system board and you wish to use it.

The choice: Enabled, Disabled.

4.2.4.3 Super IO Device

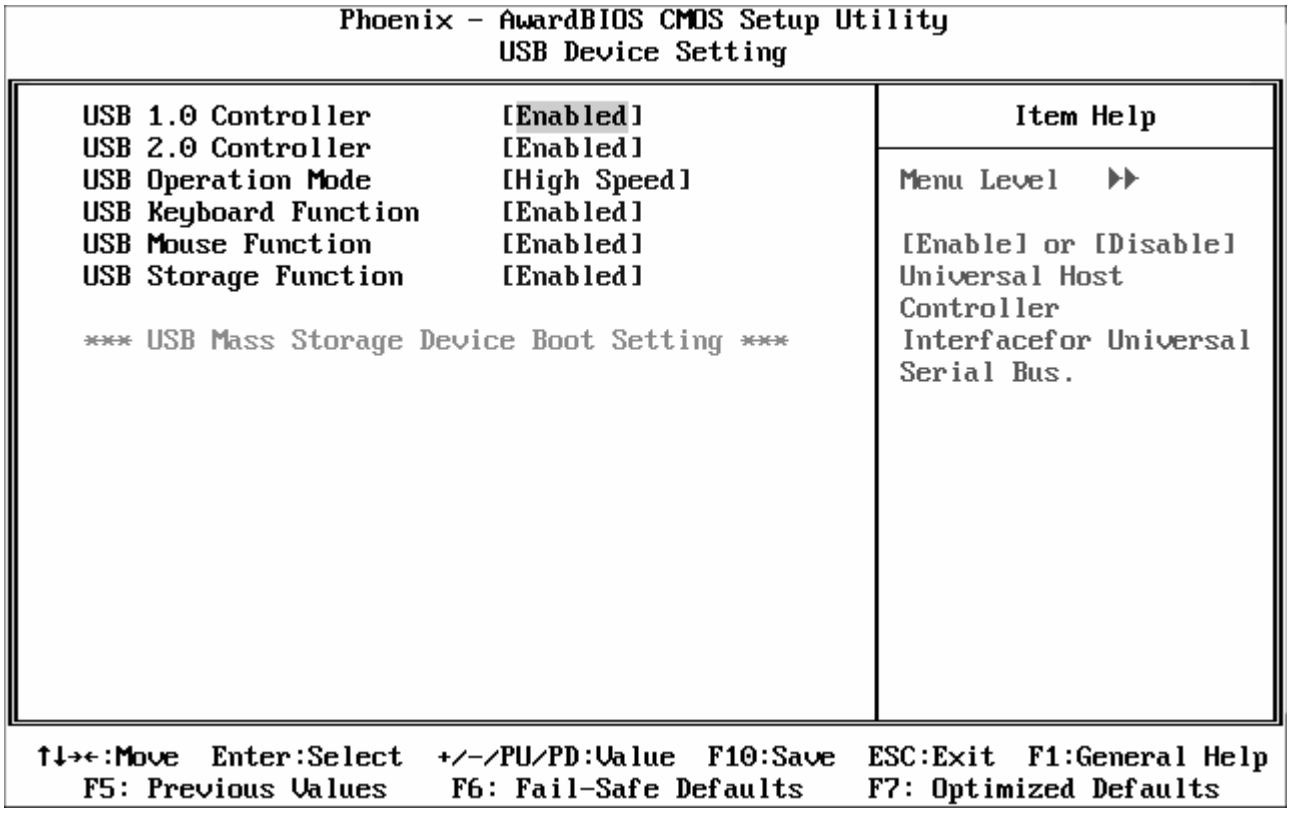


4.2.4.3.1 Onboard Serial Port 1/2

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

The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled and Auto.

4.2.4.4 USB Device Setting



4.2.4.4.1 USB 1.0 / 2.0 Controller

Select "Enabled" if your system contains a Universal Serial Bus 2.0 (USB 2.0) controller and you have USB peripherals.

The choice: Enabled, Disabled.

4.2.4.4.2 USB Operation Mode

This field allows you to set the operation mode of the USB port.

4.2.4.4.3 USB Keyboard Function

Select "Enabled" if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

The choice: Enabled, Disabled.

4.2.4.4.4 USB Mouse Function

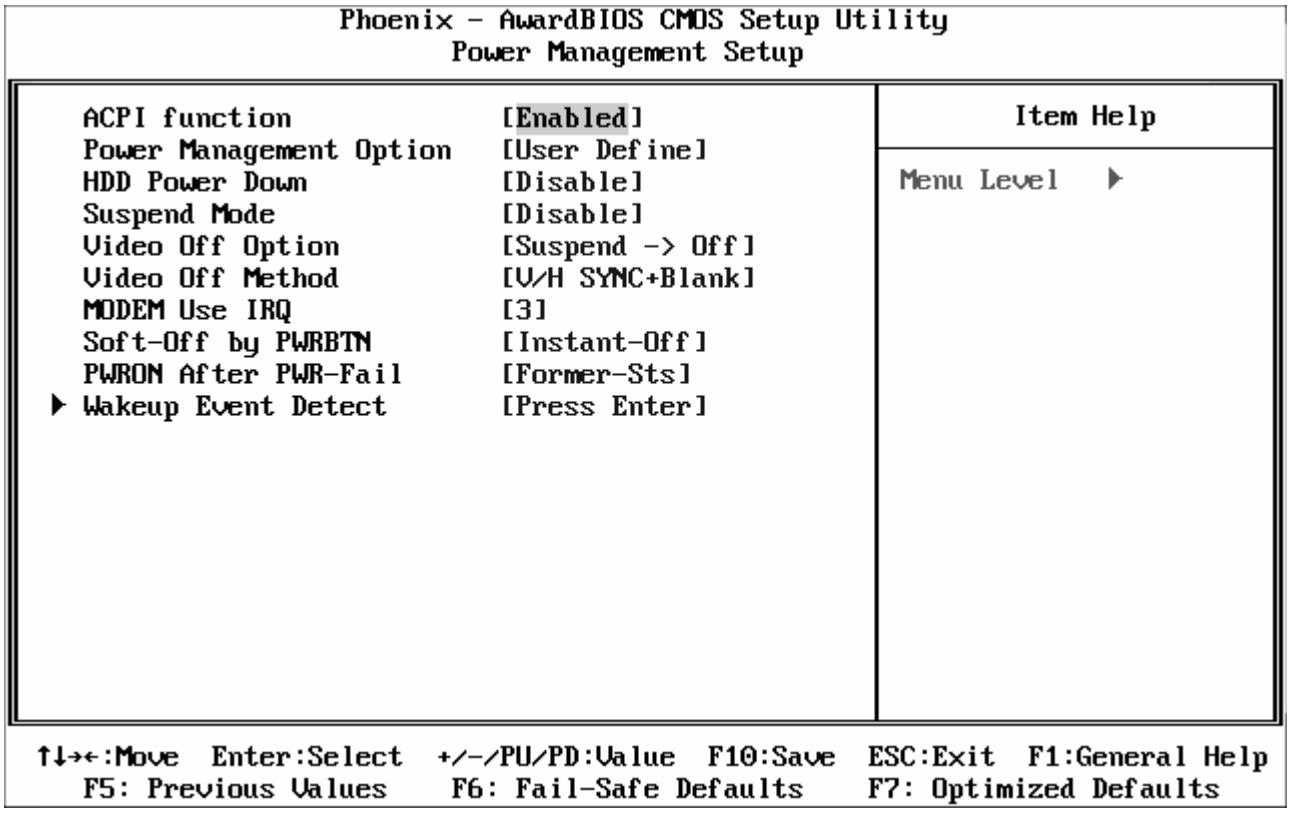
Select "Enabled" if your system contains a Universal Serial Bus (USB) controller and you have a USB mouse.

The choice: Enabled, Disabled.

4.2.4.4.5 USB Storage Function

This field allows you to support USB storage on DOS.

4.2.5 Power Management Setup



4.2.5.1 ACPI Function

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI).

The choice: Enabled, Disabled.

4.2.5.2 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.

4.2.5.3 HDD Power Down

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 choice: Disabled, 1~15Min.

4.2.5.4 Suspend Mode

When "Enabled" and after the set time of system inactivity. All devices except the CPU will be shut off.

The choice: Disabled, 1, 2, 4, 8, 12, 20, 30, 40 Min and 1Hour.

4.2.5.5 Video Off Option

This option defines the level of power-saving mode requires in to power down the video display. As a default, the video powers down both in suspend mode and standby mode.

4.2.5.6 Video Off Method

This determines the manner in which the monitor is blanked.

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

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

DPMS: Initial display power management signaling.

4.2.5.7 MODEM Use IRQ

This determines the IRQ in which the MODEM can use.

The choice: 3, 4, 5, 7, 9, 10, 11 and NA.

4.2.5.8 Sort-Off by PWRBTN

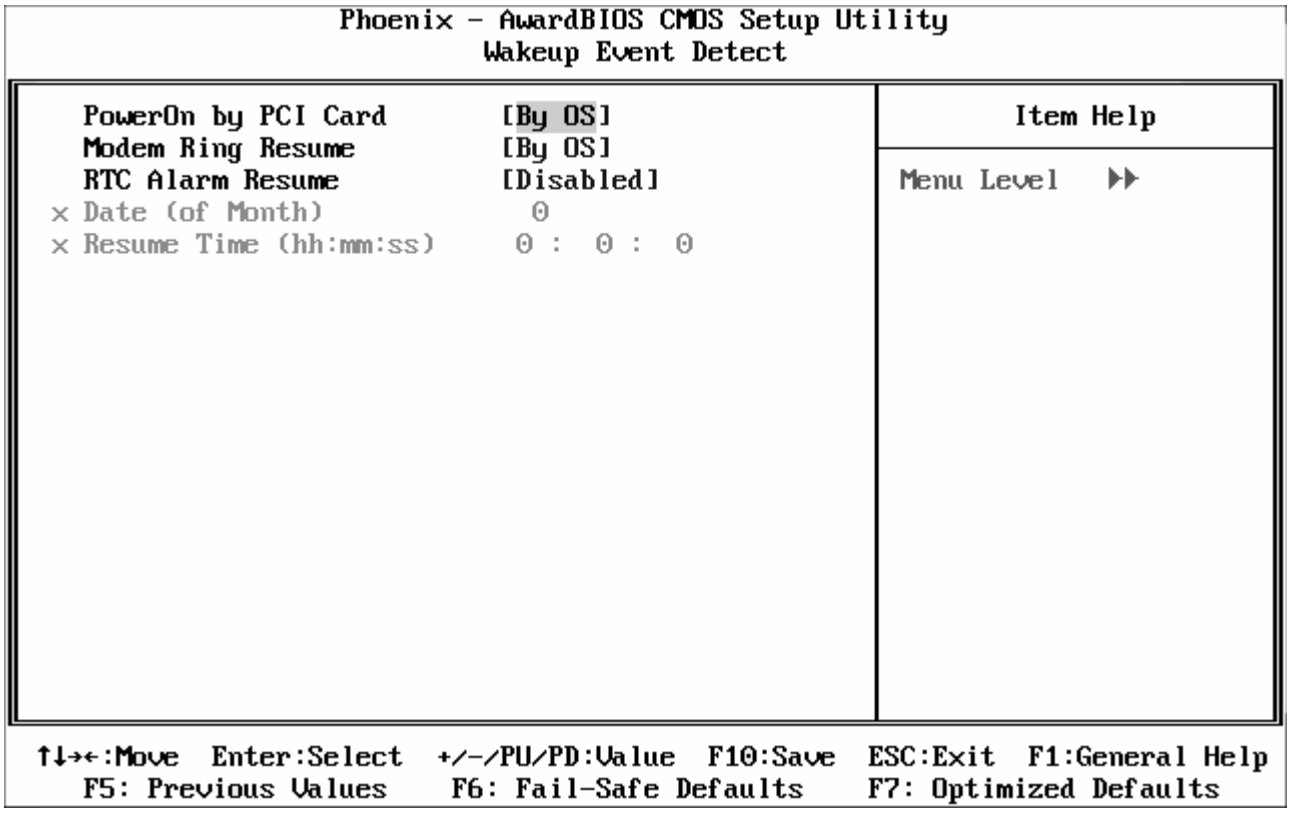
Pressing the power button for more than 4 seconds/Instant-Off forces the system to enter the Soft-Off state when the system has "hung".(Only could working on ATX Power supply).

4.2.5.9 PWRON After PWR-Fail

This item allows you to select if you want to power on the system after power failure.

The choice: Off, On and Former-Sts.

4.2.5.10 Wakeup Event Detect



4.2.5.10.1 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. The options: Disabled, Enabled.

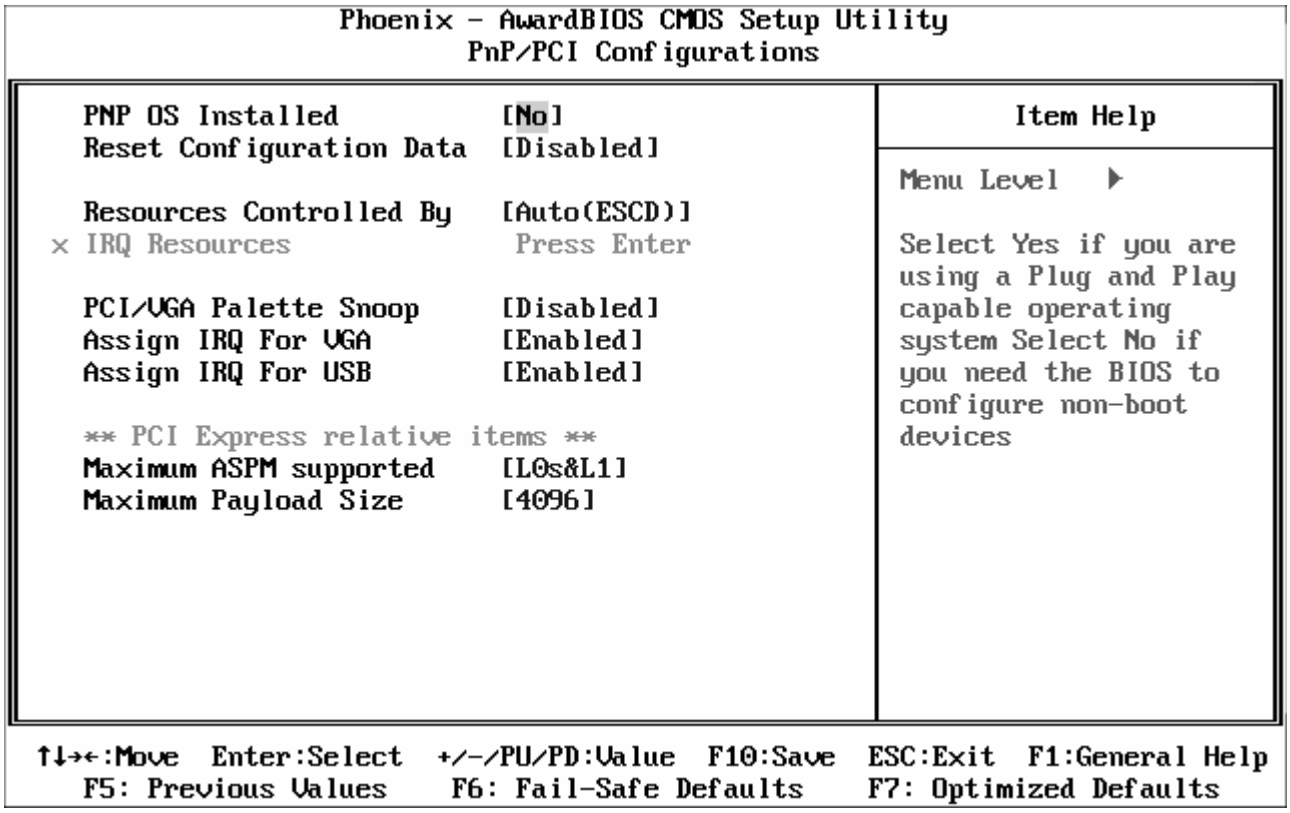
4.2.5.10.2 Modem Ring Resume

Enables any Ring-In signals from the modem to restore the system from a suspended state to an active state. The options: Disabled, Enabled.

4.2.5.10.3 RTC Alarm Resume

Sets a scheduled time and/or date to automatically power on the system. The options: Disabled, Enabled.

4.2.6 PnP/PCI Configurations



4.2.6.1 PNP OS Installed

Select Yes if you are using a Plug and Play capable operating system. Select No if you need the BIOS to configure no Boot device.

4.2.6.2 Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

4.2.6.3 Resources Controlled By

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95. If you set this field to "manual" choose specific resources by going into each of the sub menu that follows this field.

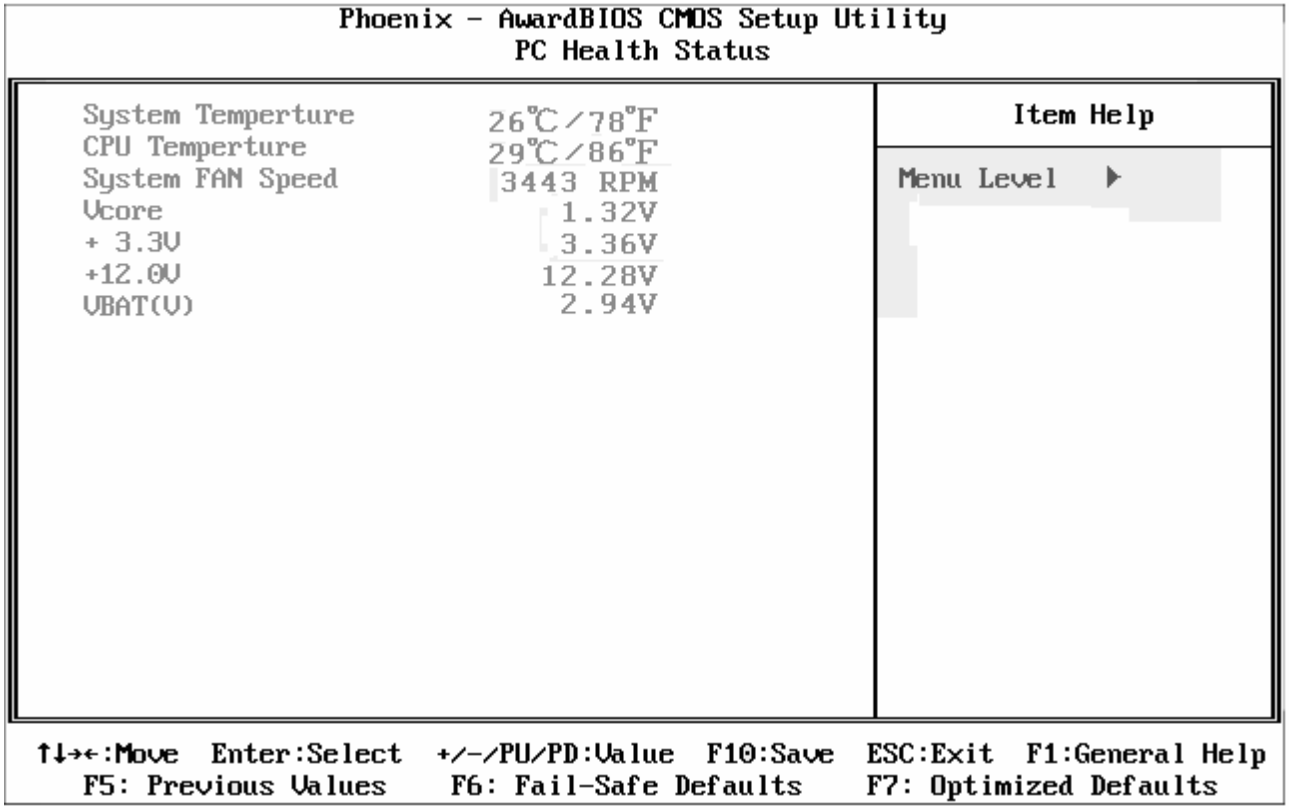
4.2.6.4 PCI/VGA Palette Snoop

This function determines if the graphics card should allow VGA palette snooping by a fixed function display card. It is only useful if a fixed-function display card using that requires a VGA-compatible graphics card to be present. Otherwise, leave the setting as default Disabled.

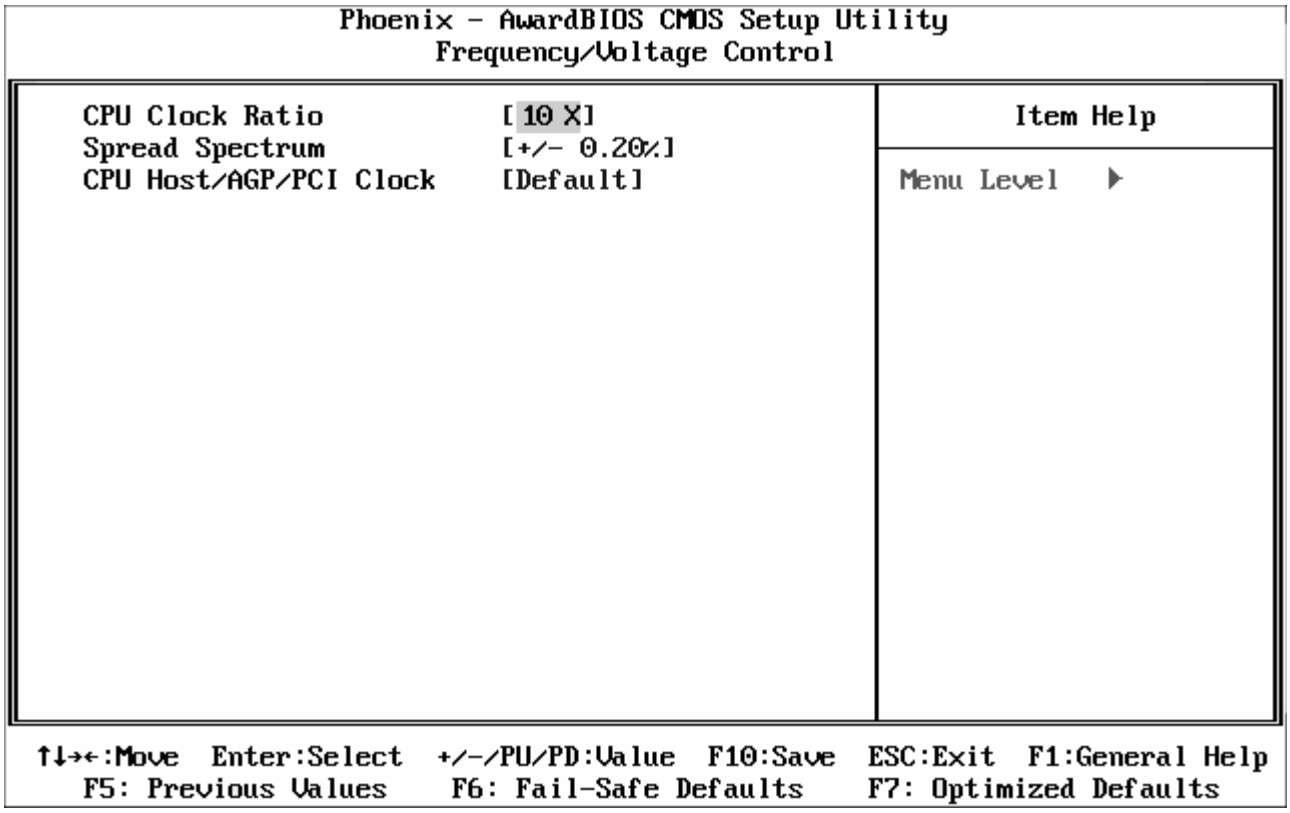
4.2.6.5 Assign IRQ For VGA/USB

Assign IRQ for VGA and USB devices. The options: Disabled, Enabled.

4.2.7 PC Health Status



4.2.8 Frequency/Voltage Control



4.2.8.1 CPU Clock Ratio

This item allows you to set up the CPU clock ratio, but this function depends on different CPU performance. It is only effective for those clock ratio haven't been locked.

4.2.8.2 Spread Spectrum

This is to adjust extreme value of the pulse for EMI test.

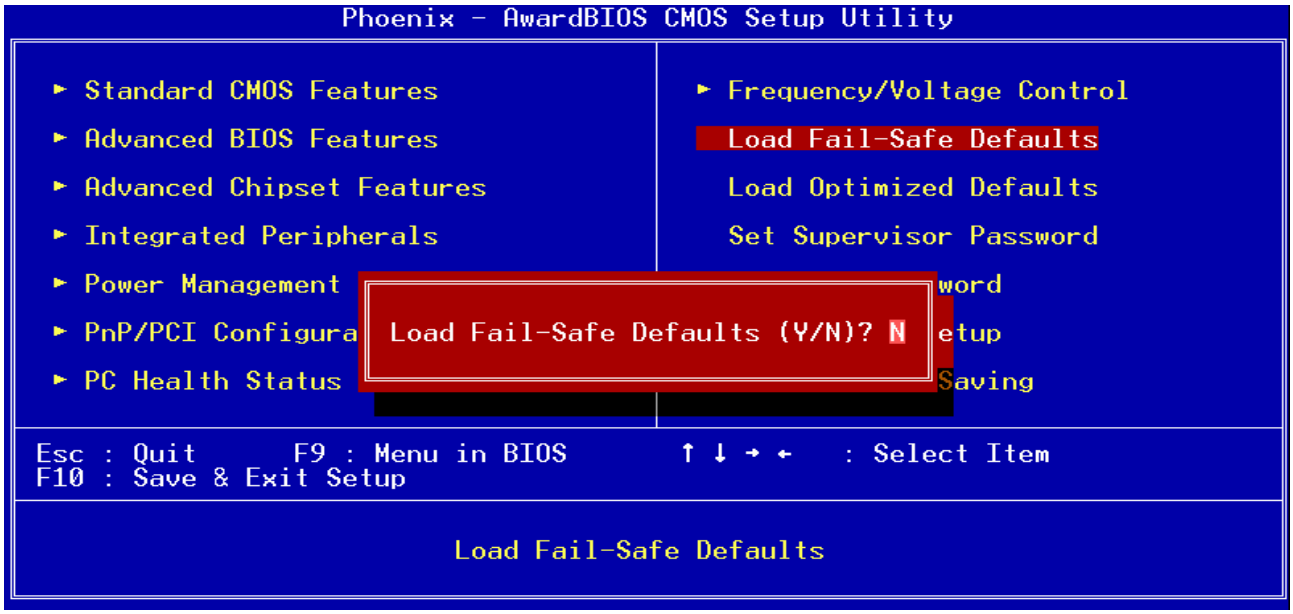
4.2.8.3 CPU Host/AGP/PCI Clock

This item allows you to select CPU Host/AGP/PCI Clock.

4.2.9 Load Fail-Safe Default

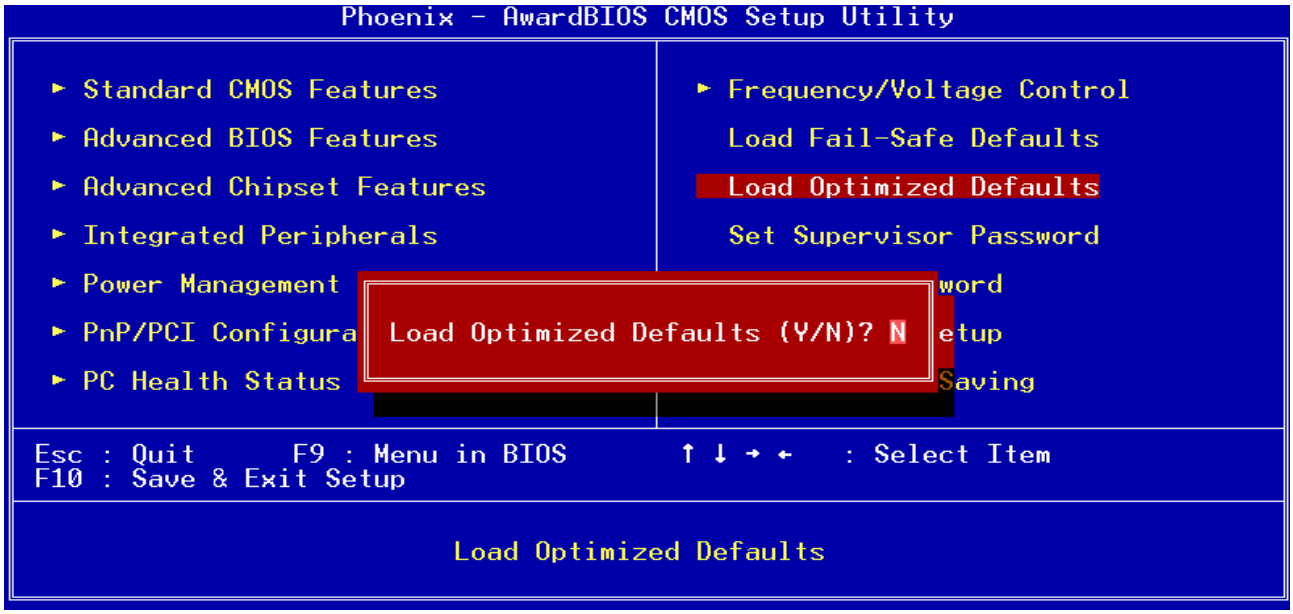
Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Press <Y> to load the BIOS default values for the most stable, minimal-performance system operations.



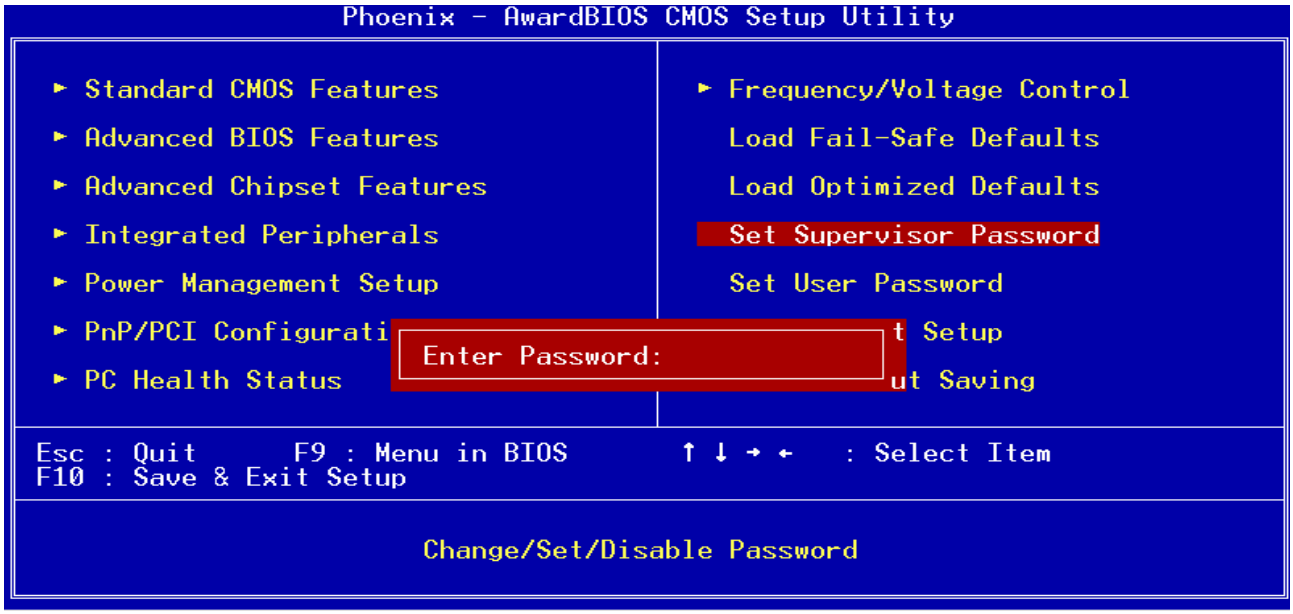
4.2.10 Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.
Press <Y> to load the default values setting for optimal performance system operations.

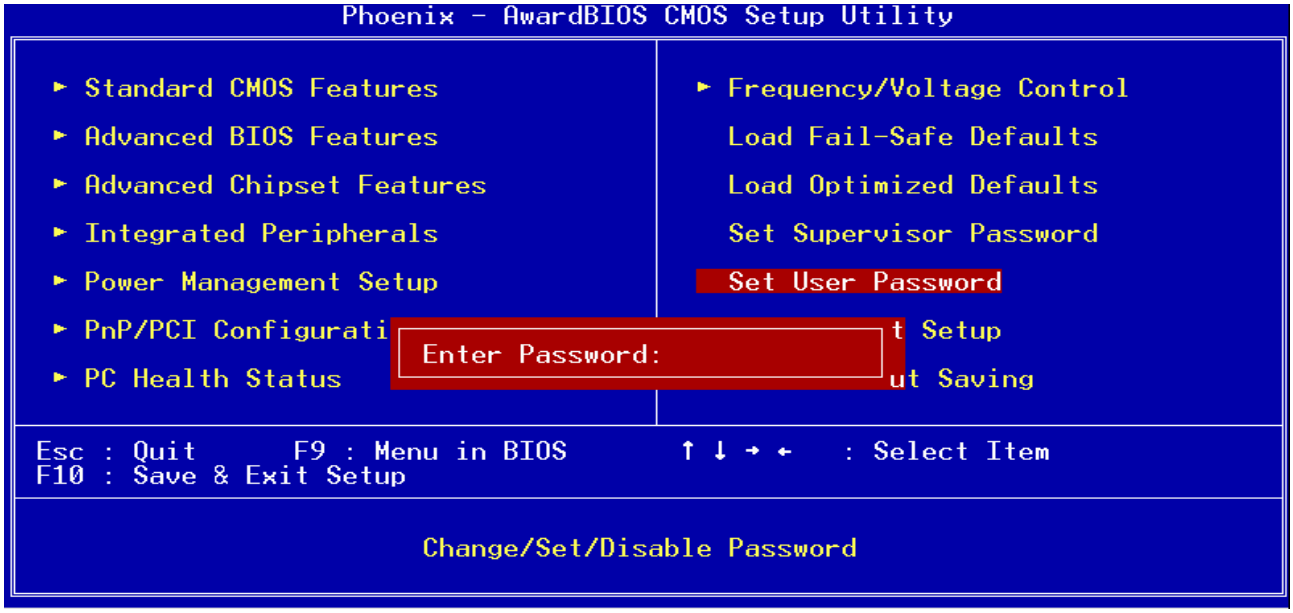


4.2.11 Supervisor/User Password Setting

You can set either supervisor or user password, or both of them.
Supervisor Password: able to enter/change the options of setup menus



User Password: able to enter but no right to change the options of setup menus.



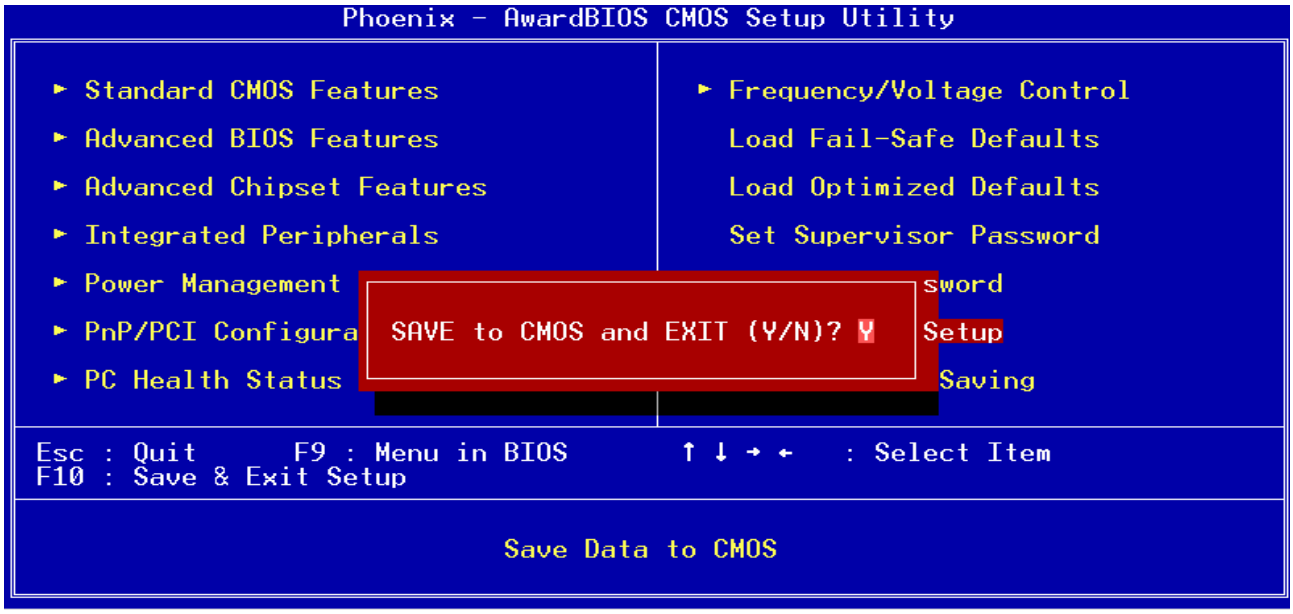
Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password. To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration. Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer. You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to "System", the password will be required both at boot and at entry to Setup. If set to "Setup", prompting only occurs when trying to enter Setup

4.2.12 Exit Selection

Save CMOS value changes to CMOS and exit setup. Enter <Y> to store the selection made in the menus in CMOS, a special section in memory that stays on after turning the system off. The BIOS configures the system according to the Setup selection stored in CMOS when boot the computer next time. The system is restarted after saving the values.



Abandon all CMOS value changes and exit setup, and the system is restarted after exiting