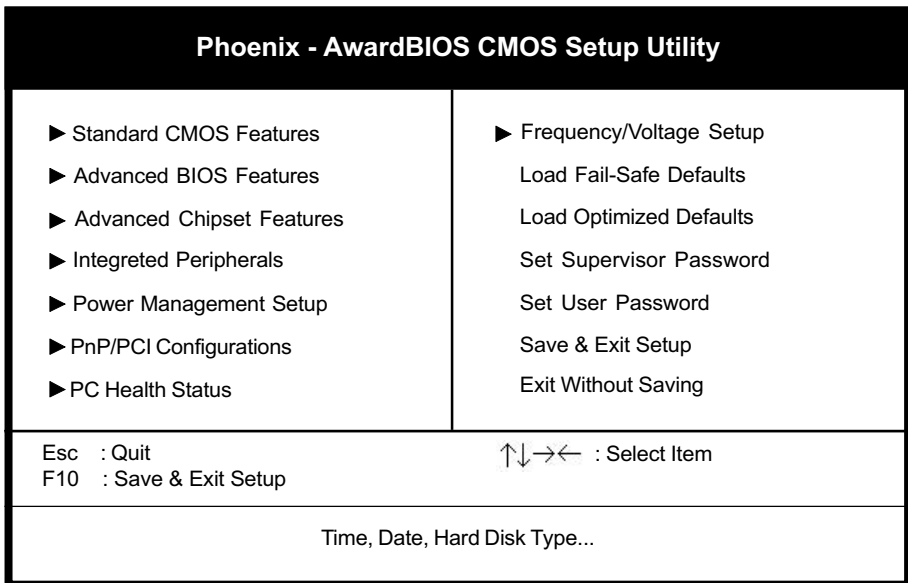


## Chapter 3


### Phoenix-AwardBIOS Setup Program

Phoenix-AwardBIOS ROM has a built-in setup program that allows users to modify the basic system configuration. This information is stored in CMOS RAM so that it can retain the setup information, even when the power is turned off.

When you turn on or reboot the system, press the Delete key to enter the Phoenix-AwardBIOS setup program. The primary screen as shown in Figure 3-1 is a list of the menus and functions available in the setup program. Select the desired item and press enter to make changes. Operating commands are located at the bottom of this and all other BIOS screens. When a field is highlighted, on-line help information is displayed on the right side of the screen.



**Figure 3-1 Setup Program Initial Screen**

 This mainboard is configured to manufacturer's default values.

### 3-1 Standard CMOS Setup

The Standard CMOS Setup allows users to configure system components such as hard disk drive, floppy disk drive and video display as well as date, time and boot-up error signaling. This configuration menu should be changed when installing a mainboard for the first time, changing hardware in your system such as the HDD, FDD, video display, or when the CMOS data has been lost or contaminated. Choose the Standard CMOS Setup option from the CMOS Setup Utility menu (Figure 3-1) to display the following screen.

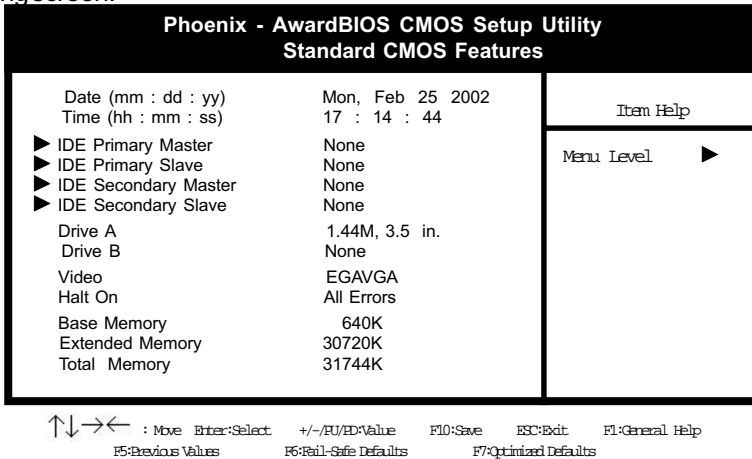


Figure 3-2 Standard CMOS Features Screen

#### Date/Time

Set the date and time. Do not skip this function as all of your timed events such as power management, saving files, etc. are based on this timer.

#### Hard Disk Setup (Primary/Secondary; Master/Slave)

This category identifies up to four IDE hard disk drives that have been installed in the computer. This section does not show information on other IDE devices such as CD-ROM drives or other hard drive types such as SCSI drives.

#### Floppy Disk Drives

Choose the memory capacity and disk size that corresponds with that of your floppy disk drive(s).

#### Video

Select the type of video adapter present in your system. You can ignore this setting if you are using a VGA monitor since VGABIOS automatically configures this setting.

#### Halt

When the system is powered on, BIOS performs a series of diagnostic tests called POST (Power On Self Test). This function stops the computer if BIOS detects a hardware error. You can tell BIOS to halt on all errors, no errors, or not to halt on specific errors.

### 3-2 Advanced BIOS Features

By choosing the Advanced BIOS Features option from the Standard CMOS Features menu (Figure 3-1), the screen below is displayed. This sample screen is for reference use only.

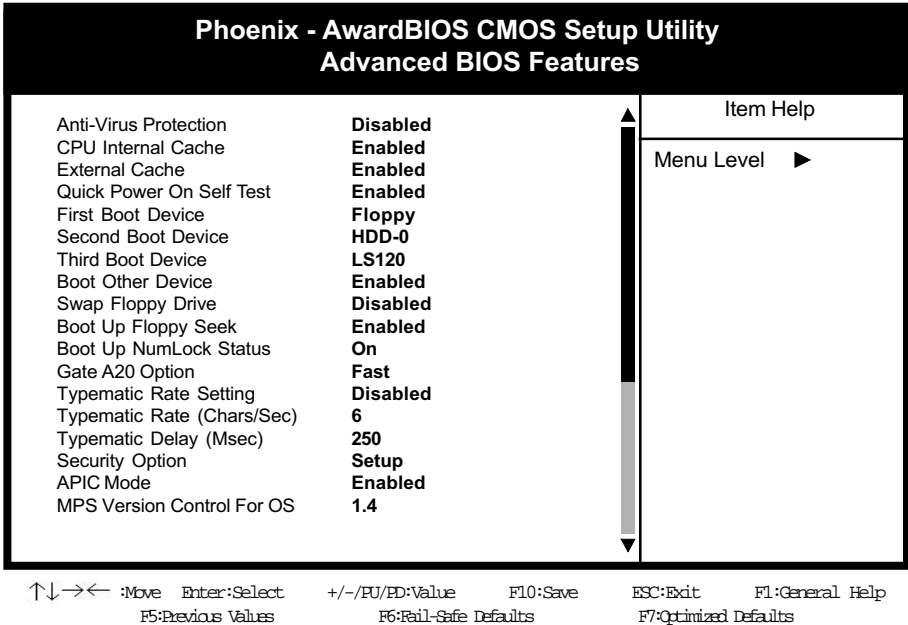


Figure 3-3 Advanced BIOS Features Screen

#### A. Anti-Virus Protection

Anti-Virus Protection is a code incorporated in the mainboard's BIOS firmware. During the boot-up sequence, BIOS loads before loading of the partition table or boot sector. Anti-Virus Protection loads with BIOS and is able to detect boot-up viruses before they have a chance to infect the hard drive. Anti-Virus Protection employs rule-based logic that doesn't look for specific viruses but rather detects patterns found in every virus, eliminating the need to perform periodical version updates after new viruses have been found.

## B. CPU Internal and External Cache

Cache memory is much faster than conventional DRAM system memory. These fields allow you to enable or disable the CPUs Level 1 built-in cache and Level 2 external cache. Both settings are left enabled to significantly increase the performance of your computer.

## C. Boot Up Features

After turning on the system, BIOS will perform a series of device initializations and diagnostic tests discussed below.

### **Quick Power On Self Test (POST)**

Enable this function to reduce the amount of time required to run the POST (Power On Self Test). BIOS saves time by skipping some items during POST. It is recommended that you disable this setting. Discovering a problem during bootup is better than losing data during your work.

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

This option sets the sequence of drives BIOS attempts to boot from after POST completes. BIOS will search these drives for an operating system.

### **Swap Floppy Drive**

Enabling this function will swap the floppy drive assignment so that drive A will function as drive B, and drive B will function as drive A. Note that the boot sequence assignment mentioned directly above does not include booting from floppy drive B. This function is useful if floppy drives B and A are of a different format and you want to boot from floppy drive B.

### **Boot up Floppy Seek**

During POST, BIOS will determine if the installed floppy disk drive has 40 or 80 tracks. A 360K drive has 40 tracks and 720K, 1.2M and 1.44M drives have 80 tracks. All modern floppy disk drives have 80 tracks.

### **Boot Up NumLock Status**

This function defines the keyboard's numberpad as number keys or arrow keys.

## D. Gate A 20 Option

Gate A20 refers to the way the system addresses memory above 1 MB (extended memory). When set to Fast, the system chipset controls Gate A20. When set to Normal, a pin in the keyboard controller controls Gate A20. Setting Gate A20 to Fast improves system speed, particularly with OS/2 and Windows.

## **E. Keyboard Interface**

### **Typematic Rate Setting**

When enabled, you can set the following two typematic control items. When disabled, keystrokes are determined arbitrarily by the keyboard controller in your system.

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

The typematic rate sets the rate at which characters on the screen repeat when a key is pressed and held down.

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

The typematic delay sets how long after you press a key that a character begins repeating.

## **F. Security Option**

The Supervisor and/or User Password functions shown in Figure 3-1 must be set to take advantage of this function. See Section 3-11 for password setting information. When the Security Option is set to System, a password must be entered to boot the system or enter the BIOS setup program. When the Security Option is set to Setup, a password is required to enter the BIOS setup program.

## **G. OS Select (For DRAM > 64MB)**

If your system's DRAM is larger than 64MB and you are running OS/2, select OS/2 as the item value. Otherwise, set the item value to Non-OS/2 for all other operating systems.

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

S.M.A.R.T. or Self-Monitoring, Analysis, and Reporting Technology enables a drive's internal status to be monitored through diagnostic commands. Both your hard drive must support this capability and this function must be enabled in order to take advantage of this function. See your hard drive literature for more information.

### 3-3 Advance Chipset Features

By choosing the Advanced Chipset Features option from the Standard CMOS Features menu(Figure 3-1), the screen below is displayed. This sample screen is for reference use only.

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
Advanced Chipset Features		Menu Level ▶
▶ Advanced DRAM Control 1	Press Enter	
▶ Advanced DRAM Control 2	Press Enter	
System BIOS Cacheable	Enabled	
Video RAM Cacheable	Enabled	
AGP Aperture Size	64MB	
AGP Fast Wr. Capability	Enabled	
CPU-AGP B.to B. Transfer	Fast	
Flash BIOS Protection	Disabled	

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

**Figure 3-4 Advanced Chipset Features Screen**



All of the above settings have been determined by the mainboard manufacturer and should not be changed unless you are absolutely sure of what you are doing. Explanation of the DRAM timing and chipset features setup is lengthy, highly technical and beyond the scope of this manual. Below are abbreviated descriptions of the functions in this setup menu. You can look on the world wide web for helpful chipset and RAM configuration information including AWARD's web site at <http://www.award.com>.

#### A. AGP Aperture Size

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

### 3-4 Integrated Peripherals

This section provides information on setting peripheral devices. By choosing the Integrated Peripherals option from the Standard CMOS Features menu (Figure 3-1), the screen below is displayed. This sample screen is for reference use only.

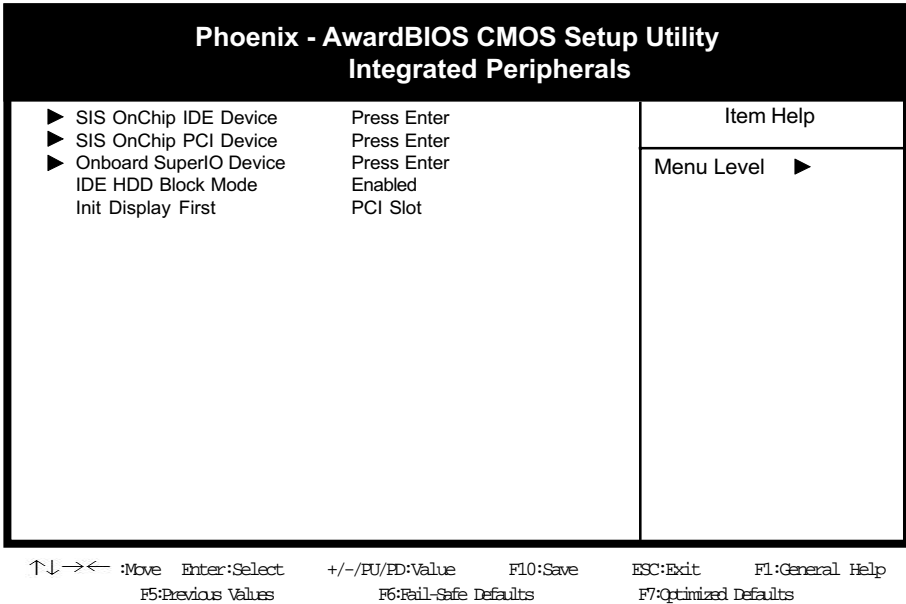


Figure 3-5 Integrated Peripherals Screen

#### A. SIS OnChip IDE Device

##### On-chip Primary/Secondary PCI IDE

You can set this to disable the On-chip IDE controller if you are going to add a higher performance IDE board.

##### IDE Primary/Secondary Master/Slave PIO

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

#### B. SIS OnChip PCI Device

##### SIS-7012/7018 AC97 AUDIO

Select **Enable** if you install the audio riser card.

##### SIS-7013 S/W Modem

Select **Enable** if you install the soft modem riser card.

**USB Controller**

Enable the on-board Universal Serial Bus (USB) controller if you want to connect a USB keyboard to your system. Note that if this setting is disabled, you can still temporarily use a USB keyboard during bootup so that you can enter BIOS and enable this setting. If you pass the bootup stage without enabling this function, your PS/2 keyboard will no longer work.

**USB Keyboard Support**

If your current operating system doesn't support USB drivers (i.e., DOS) this function must be enabled for USB keyboard operation in these operating systems.

**Onboard CMedia Audio**

This feature allows user to select 6 channels function, if they installed an optional 6ch Expansion kit on this mainboard.

**C. Super IO Device****Onboard FDC Controller**

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

**COM2 Mode Select**

This function allows you to select an operating mode for the second serial port. (Standard RS-232C serial port/IrDA/ASKIR infrared port)

**Onboard Parallel Port**

Select a logical LPT port address and corresponding interrupt for the physical parallel port.

**F. 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.

**G. Init Display First**

This function allows user to choose between AGP slot or PCI slot to initialise Display first .



### 3-5 Power Management Setup

This section provides information on the Green PC power management functions. By choosing the Power Management Setup option from the Standard CMOS Features menu (Figure 3-1), the screen below is displayed. This sample screen is for reference use only.

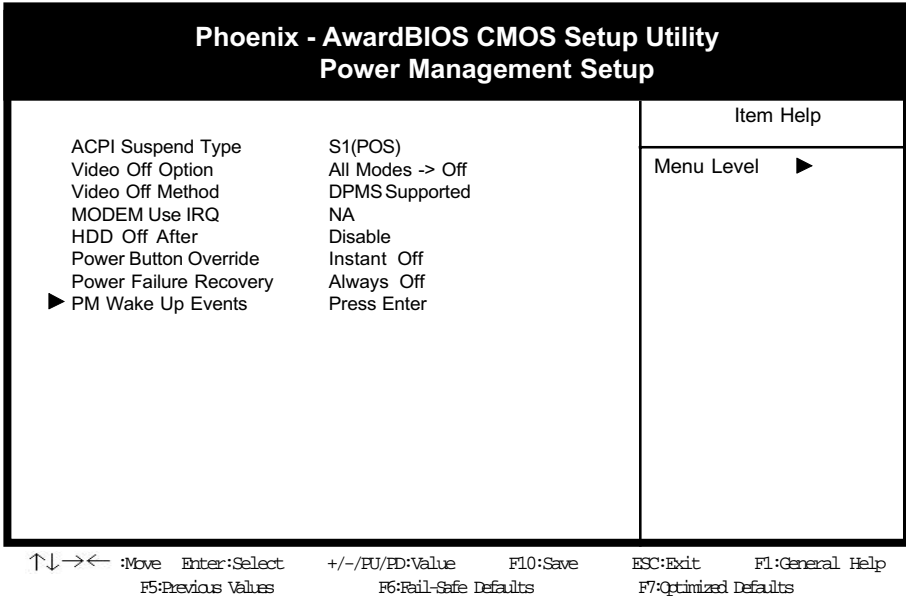


Figure 3-6 Power Management Setup Screen

#### A. ACPI Suspend Type

This feature allows user to select a suspend type for the operating system to turn off peripherals devices, such as CD-ROM players, when they are not in use.

#### B. Video Off Option

This setting allow you to selects the power-saving modes during which the monitor goes blank.

#### C. Video Off Method

This function serves as both a screen saver and power saver for monitors. See the next function, Video Off After, for setting the video timer.

**Blank** - BIOS will only blank the monitor's screen. The electricity saved in this mode is negligible and this function is only used as a screen saver to prevent screen damage while the screen is on but not in use.

**V/HSYNC+Blank** - The system turns off the vertical and horizontal synchronization ports, writes blanks to the VGA buffer and the monitor's electron gun turns off. This function requires a monitor with Green features in order to take advantage of the power saving function. If you enable this function and do not have a Green monitor, the result will be the same as if you had selected Blank. This function serves as both a screen saver and an electricity saver.

**DPMS Supported** - Select this option if your video card supports the Display Power Management Signaling (DPMS) standard (i.e., you have a monitor that supports Green features). Use software supplied by your video subsystem to set video power management options.

#### **D. Modem Use IRQ**

If your computer has a modem, use this function to tell BIOS which IRQ is being occupied by the modem card. When the system is in Green mode, the modem requires an IRQ assignment to wake up the system and perform tasks. This assignment is compliant with the APM 1.2 specification and is to be used in coordination with APM 1.2 compliant operating systems.

#### **E. Power Button Override**

When set to Delay 4 Sec., this function allows the power button to put the system in Suspend, a power saving mode. See Section 2-4 for operation instructions of the over-ride power button operation which puts the system in Suspend mode. When set to Instant-Off the Power Button Override function is disabled and the computer turns completely off when the power button is pressed.

#### **F. Wake Up Events**

##### **IRQ8 Break Suspend**

You can Enable or Disable monitoring of IRQ8 (the Real Time Clock) so it does not awaken the system from Suspend mode.

##### **Power On By Modem**

When enabled, a modem that receives a signal will wake up the system from soft off and green mode. You should connect the modem to the COM port and turn on the resume event in green mode.

##### **Power On By PCI Card/WOL**

When enabled, a PCI/WOL interface that receives a signal will wake up the system from soft off and green mode.

##### **Power On By USB KB/Mouse**

When enabled, the system is able to resume from suspend mode by a USB keyboard hot key or mouse click.

### **Power On Keyboard**

Set this function to Keyboard 98 to turn on the computer by touching a key on the keyboard 98. If you set this function to Password you must designate the keystrokes that will turn on the computer. Note that the power button is always able to turn on the computer regardless of how this function is set.

### **Power On By Alarm**

When enabled, this setting allows the system to turn back on at a designated time of the month. User must designate date of month and time of day. This function is only available when using an ATX power supply and the Software Power-Off function to turn off the computer. See the Software Power-Off feature in Section 2-4 of this manual for instructions.

### 3-6 PNP/PCI Configuration

This section provides IRQ and DMA setting information. By choosing the PNP/PCI Configuration option from the Standard CMOS Features menu (Figure 3-1), the screen below is displayed. This sample screen is for reference use only.

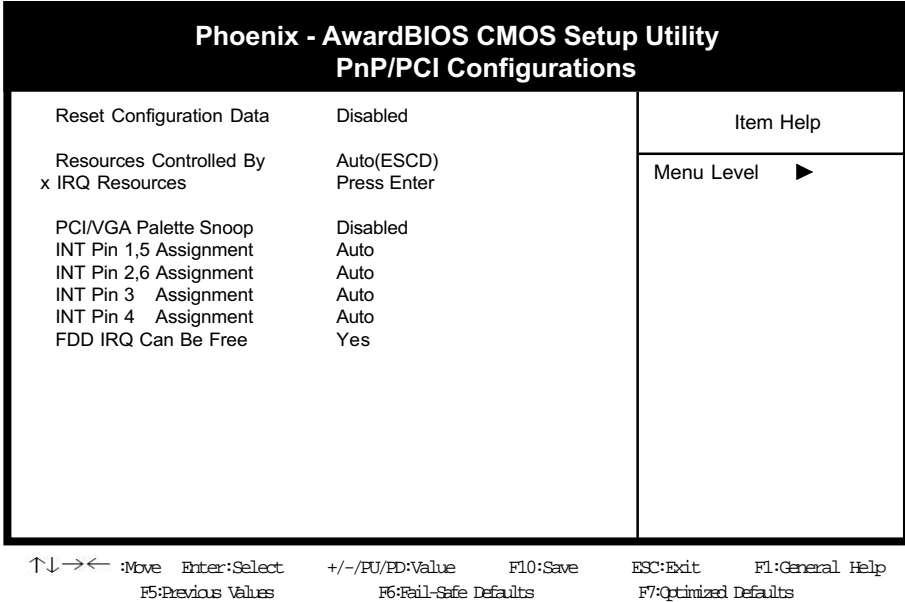


Figure 3-7 PnP/PCI Configurations Screen

#### A. Resources Controlled By

When set to Manual the system BIOS will not refer to the ESCD for IRQ & DMA information. Instead, it will refer to the items in the setup menu for assigning IRQ & DMA. When set to Auto the system BIOS will refer to the ESCD for all legacy information.



ESCD(Extended System Configuration Data) provides a detailed format of the configuration data structures stored in flash memory. Each data structure defines the resources used by a device or a card in the system. This includes legacy and PCI/ISA PnP devices.

#### B. PCI/VGA Palette Snoop

Some non-standard VGA cards or MPEG video cards may not show colors properly. Setting this function to Enabled can correct this problem.

#### C. FDD IRQ Can Be Free

This function allows user to choose if the FDD IRQ is able to be freed up. The default setting is Yes and this does not allow the IRQ to be free.

### 3-7 PC Health Status

By choosing the PC Health Status option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This field shows you the current system temperature/external voltages input and the current CPU FAN and System FAN operating speed.

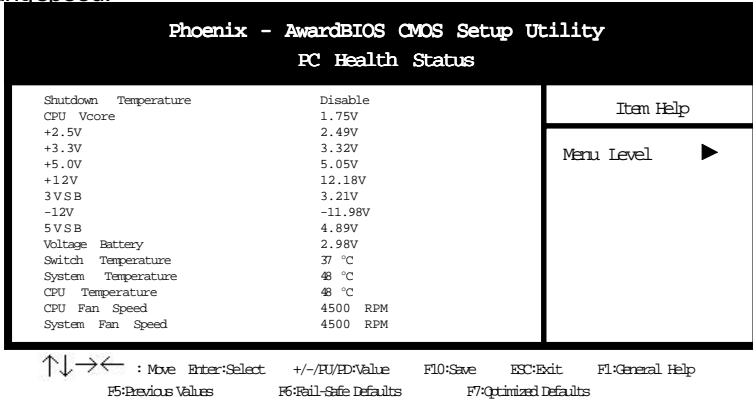


Figure 3-8 PC Health Status Screen

### 3-8 Frequency/Voltage Control

By choosing the Frequency/Voltage Control option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen is for reference use only.

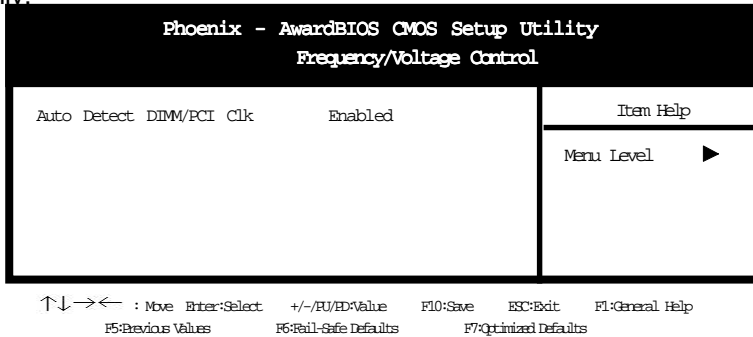


Figure 3-9 Frequency/Voltage Control Screen

#### A. Auto Detect DIMM/PCI CLK

When Enabled this function will automatically detect your DIMM/pci clock speed.

### 3-9 Load Fail-Safe Defaults

Load Fail-Safe Defaults loads the default BIOS values directly from the CMOS Setup Utility menu (Figure3-1). If the stored record created by the setup program becomes corrupted and therefore unusable, these defaults will be loaded automatically when you turn on the computer.

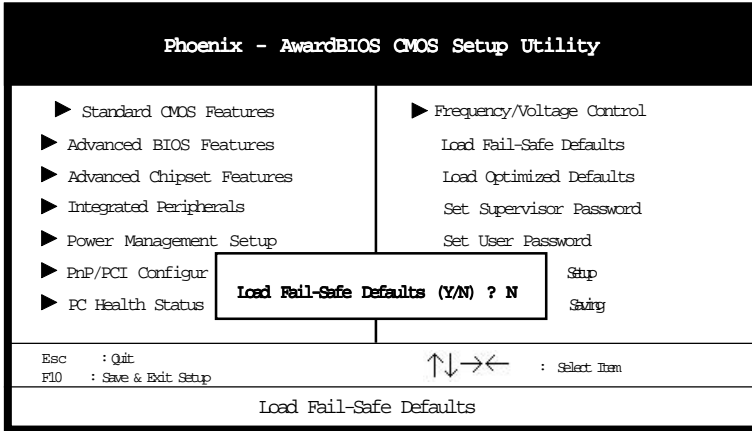


Figure 3-10 Load Fail-Safe Defaults Screen

### 3-10 Load Optimized Defaults

Load Optimized Defaults loads the default system values directly from the CMOS Setup Utility menu (Figure3-1). If the stored record created by the setup program becomes corrupted and therefore unusable, these defaults will be loaded automatically when you turn on the computer.

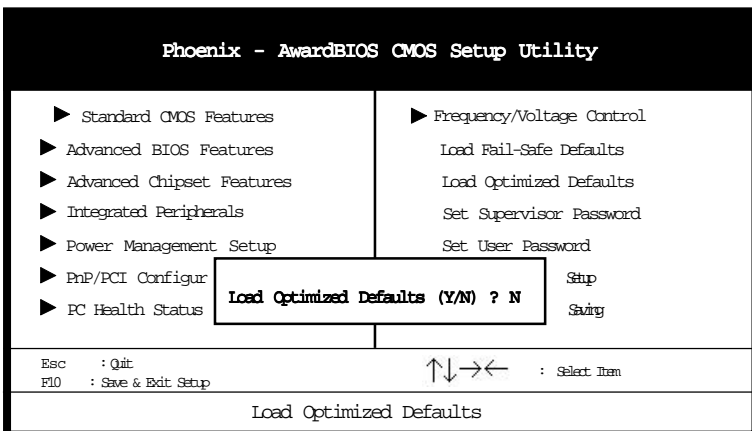


Figure 3-11 Load Optimized Defaults Screen

### **3-11 Supervisor Password & User Password Setting**

There are four different variables that control password settings. The first two are located under the Security Option function in BIOS Features Setup Menu (Figure 3-1). When the Security Option function is set to Setup, a password is required to enter BIOS and change BIOS settings. When the Security Option function is set to System, a password is required to enter both BIOS and the computer's operating system (for example Windows 98) found on the boot drive.

The third and fourth variables are user password and supervisor password selected in BIOS (Figure 3-1). The main purpose of separating user and supervisor is to allow only the supervisor to have control over the settings in BIOS. The user, on the other hand, is only allowed to access the computer's operating system and change the user password in BIOS. Note that when there is no supervisor password set, the user password controls access to all BIOS settings.

### **3-12 Save and Exit Setup**

If you select this and type Y (for yes) followed by the [Enter] key, the values entered in the setup utilities will be recorded in the CMOS memory of the BIOS chip.

### **3-13 Exit Without Saving**

Selecting this option and pressing Y followed by the [Enter] key lets you exit the Setup program without recording any new values or changing old ones.