NF520-A2 TE/NF520-A2 SE/NF520-A2 BIOS Setup

BIOS Setup 1

1 Main Menu 3

2 Standard CMOS Features 7

3 Advanced BIOS Features 9

4 Advanced Chipset Features 16

5 Integrated Peripherals 19

6 Power Management Setup 26

7 PnP/PCI Configurations 30

8 PC Health Status 33

9 Performance Booster Zone 35

BIOS Setup

Introduction

The purpose of this manual is to describe the settings in the Phoenix-Award™ BIOS Setup program on this motherboard. The Setup program allows users to modify the basic system configuration and save these settings to CMOS RAM. The power of CMOS RAM is supplied by a battery so that it retains the Setup information when the power is turned off.
Basic Input-Output System (BIOS) determines what a computer can do without accessing programs from a disk. This system controls most of the input and output devices such as keyboard, mouse, serial ports and disk drives. BIOS activates at the first stage of the booting process, loading and executing the operating system. Some additional features, such as virus and password protection or chipset fine-tuning options are also included in BIOS.
The rest of this manual will to guide you through the options and settings in BIOS Setup.

Plug and Play Support

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

EPA Green PC Support

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

APM Support

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

ACPI Support

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

PCI Bus Support

This PHOENIX-AWARD BIOS also supports Version 3.0 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

DRAM Support

DDR2 SDRAM (Double Data Rate Synchronous DRAM) is supported.

Supported CPUs

This PHOENIX-AWARD BIOS supports the AMD CPU.

Using Setup

Use the arrow keys to highlight items in most of the place, press <Enter> to select, use the <PgUp> and <PgDn> keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program by using the keyboard.

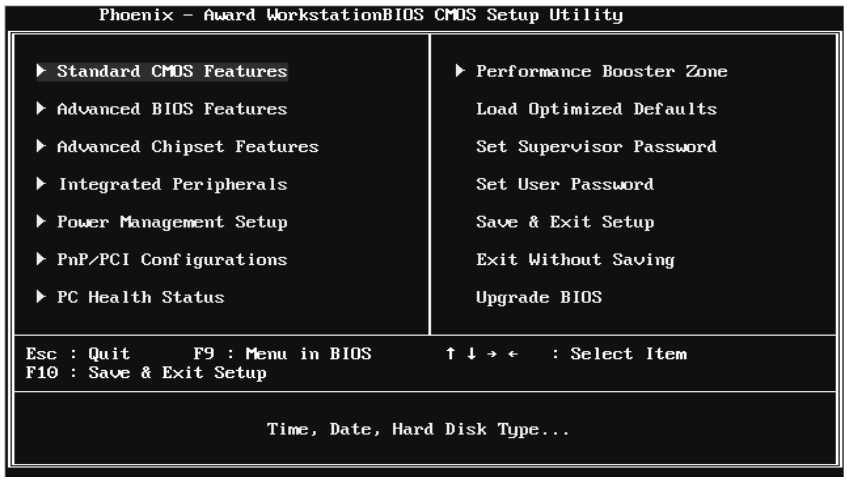
Keystroke	Function
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left (menu bar)
Right arrow	Move to the item on the right (menu bar)
Move Enter	Move to the item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric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

1 Main Menu

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

> *!! WARNING !!*
>
> For better system performance, the BIOS firmware is being continuously updated. The BIOS information described in this manual (**Figure 1, 2, 3, 4, 5, 6, 7, 8, 9**) is for your reference only. The actual BIOS information and settings on board may be slightly different from this manual.

■ **Figure 1: Main Menu**



Standard CMOS Features

This submenu contains industry standard configurable options.

Advanced BIOS Features

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

Advanced Chipset Features

This submenu allows you to configure special chipset features.

Integrated Peripherals

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

Power Management Setup

This submenu allows you to configure the power management features.

PnP/PCI Configurations

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

PC Health Status

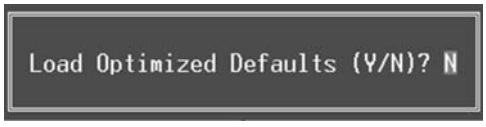
This submenu allows you to monitor the hardware of your system.

Performance Booster Zone

This submenu allows you to change CPU Vcore Voltage and CPU/PCI clock. (However, we suggest you to use the default setting. Changing the voltage and clock improperly may damage the CPU or M/B!)

Load Optimized Defaults

This selection allows you to reload the BIOS when problem occurs during system booting sequence. These configurations are factory settings optimized for this system. A confirmation message will be displayed before defaults are set.



Set Supervisor Password

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

Set User Password

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

Save & Exit Setup

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

Exit Without Saving

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

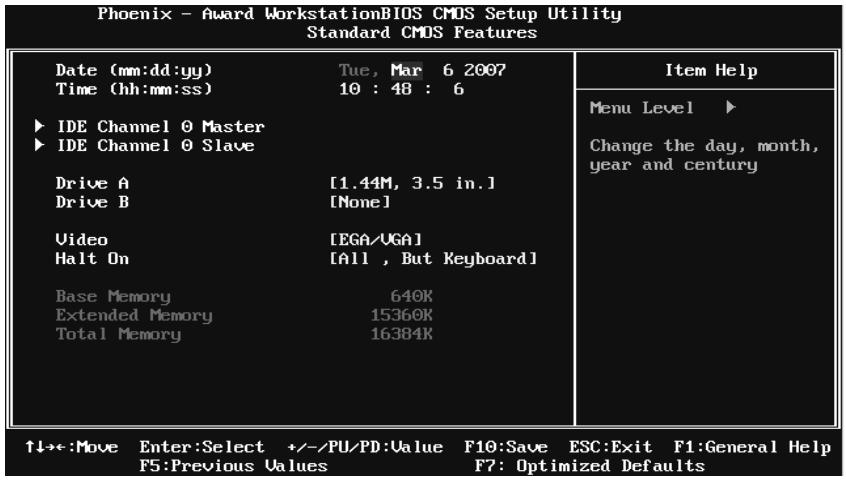
Upgrade BIOS

This submenu allows you to upgrade bios.

2 Standard CMOS Features

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

- **Figure 2: Standard CMOS Setup**



Main Menu Selections

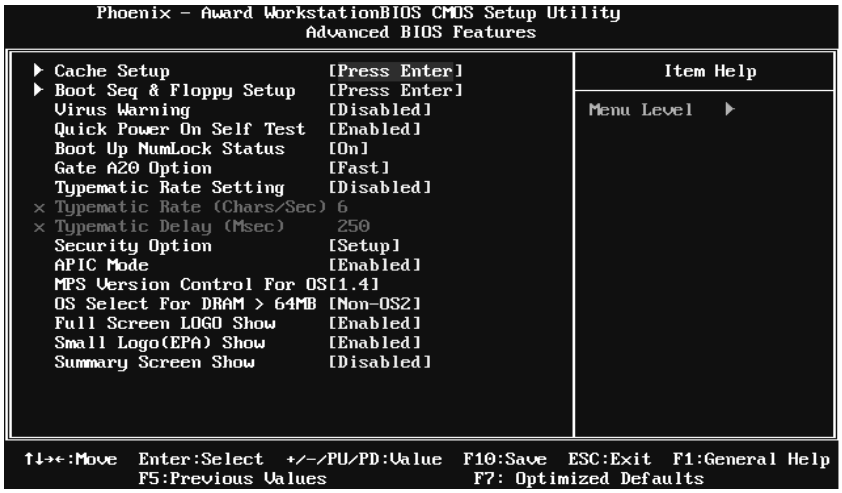
This table shows the items and the available options on the Main Menu.

Item	Options	Description
Date	mm : dd : yy	Set the system date. Note that the 'Day' automatically changes when you set the date.
Time	hh : mm : ss	Set the system internal clock.
IDE Channel 0 Master	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options
IDE Channel 0 Slave	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.

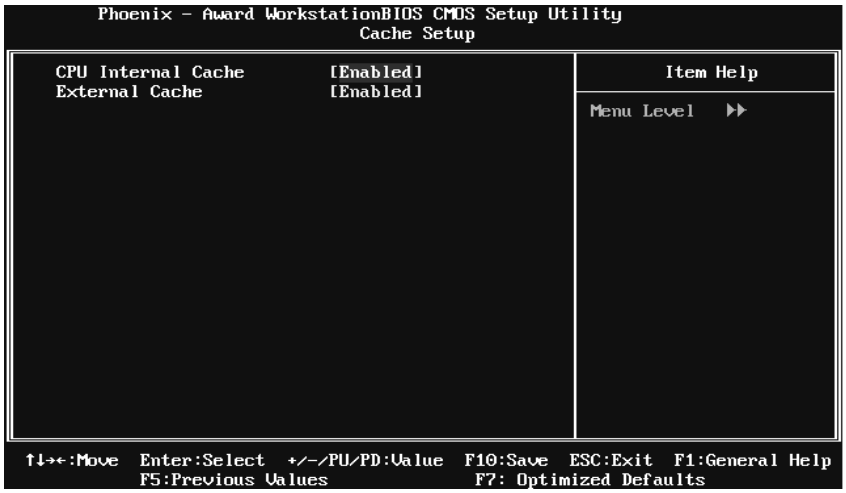
Item	Options	Description
Drive A Drive B	360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in None	Select the type of floppy disk drive installed in your system.
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device.
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/ Key	Select the situation in which you want the BIOS to stop the POST process and notify you.
Base Memory	N/A	Displays the amount of conventional memory detected during boot up.
Extended Memory	N/A	Displays the amount of extended memory detected during boot up.
Total Memory	N/A	Displays the total memory available in the system.

3 Advanced BIOS Features

■ **Figure 3: Advanced BIOS Setup**



Cache Setup



CPU Internal Cache

Depending on the CPU/chipset in use, you may be able to increase memory access time with this option.

Enabled (default) Enable cache.

Disabled Disable cache.

External Cache

This option enables or disables "Level 2" secondary cache on the CPU, which may improve performance.

Enabled (default) Enable cache.

Disabled Disable cache.

Boot Seq & Floppy Setup

This item allows you to setup boot sequence & Floppy.

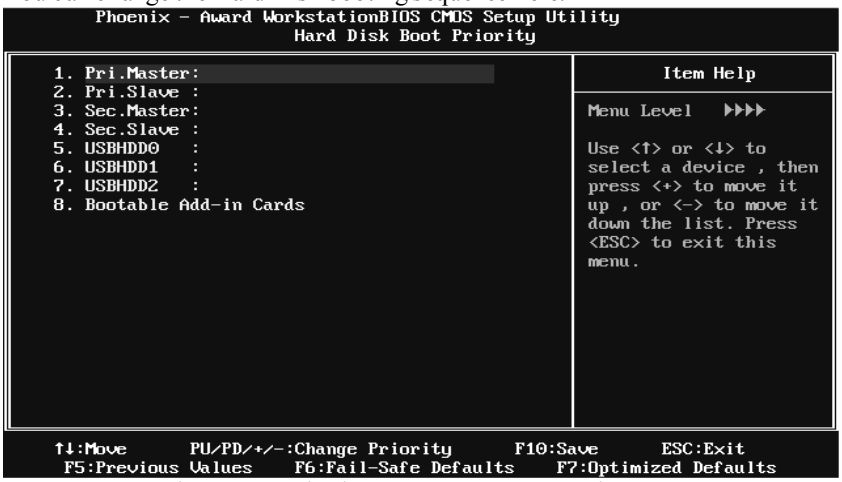
Removable Device Priority

Select Removable Boot Device Priority.

The Choices: Floppy Disks, Zip100, USB-FDD0, USB-FDD1, USB-ZIP0, USB-ZIP1, LS120.

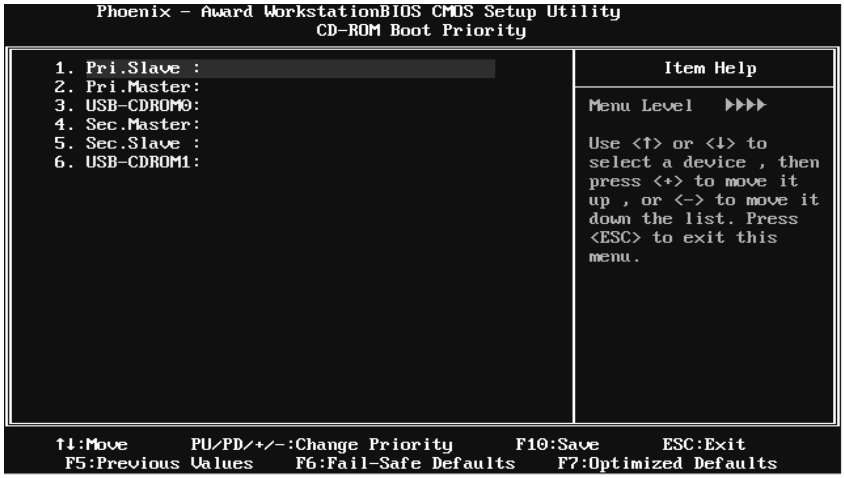
Hard Disk Boot Priority

The BIOS will attempt to arrange the Hard Disk boot sequence automatically. You can change the Hard Disk booting sequence here.



The Choices: Pri. Master, Pri. Slave, Sec. Master, Sec. Slave, USB HDD0, USB HDD1, USB HDD2, and Bootable Add-in Cards.

CD-ROM Boot Priority



The Choices: Pri. Master, Pri. Slave, Sec. Master, Sec. Slave, USB CDROM0, USB CDROM 1.

First/Second/Third Boot Device

The BIOS will attempt to load the operating system in this order.

The Choices: Removable, Hard Disk, CDROM, Legacy LAN, Disabled.

Boot Other Device

When enabled, BIOS will try to load the operating system from other device when it failed to load from the three devices above.

The Choices: Enabled (default), Disabled

Swap Floppy Drive

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

The Choices: Disabled (default), Enabled.

Boot Up Floppy Seek

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

The Choices: Enabled (default), Disabled.

Virus Warning

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

Disabled (default)	Virus protection is disabled.
Enabled	Virus protection is activated.

Quick Power On Self Test

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

Disabled	Normal POST.
Enabled (default)	Enable quick POST.

Boot Up NumLock Status

Selects the NumLock State after the system switched on.

The Choices:

On (default)	Numpad is number keys.
Off	Numpad is arrow keys.

Gate A20 Option

Select if chipset or keyboard controller should control Gate A20.

Normal	A pin in the keyboard controller controls GateA20.
Fast (default)	Lets chipset control Gate A20.

Typematic Rate Setting

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

The Choices: Disabled (default), Enabled.

Typematic Rate (Chars/Sec)

Sets the rate at which a keystroke is repeated when you hold the key down.
The Choices: 6 (default)**,** 8, 10, 12, 15, 20, 24, 30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.
The Choices: 250 (default)**,** 500, 750, 1000.

Security Option

This option will enable only individuals with passwords to bring the system online and/or to use the CMOS Setup Utility.
System: A password is required for the system to boot and is also required to access the Setup Utility.
Setup (default): A password is required to access the Setup Utility only. This will only apply if passwords are set from the Setup main menu.

APIC MODE

Selecting Enabled enables APIC device mode reporting from the BIOS to the operating system.
The Choices: Enabled (default), Disabled.

MPS Version Control For OS

The BIOS supports version 1.1 and 1.4 of the Intel multiprocessor specification. Select version supported by the operation system running on this computer.
The Choices: 1.4 (default), 1.1.

OS Select For DRAM > 64MB

A choice other than Non-OS2 is only used for OS2 systems with memory exceeding 64MB.
The Choices: Non-OS2 (default), OS2.

Full Screen Logo Show

This item allows you to select whether the "Full Screen Logo" shows. Enabled (default) "Full Screen Logo" shows when system boots up. Disabled No "Full Screen Logo" shows when system boots
The Choices: Enabled (default), Disabled.

Small Logo(EPA) Show

This item allows you to select whether the "Small Logo" shows. Enabled (default) "Small Logo" shows when system boots up. Disabled No "Small Logo" shows when system boots
The Choices: Enabled (default), Disabled.

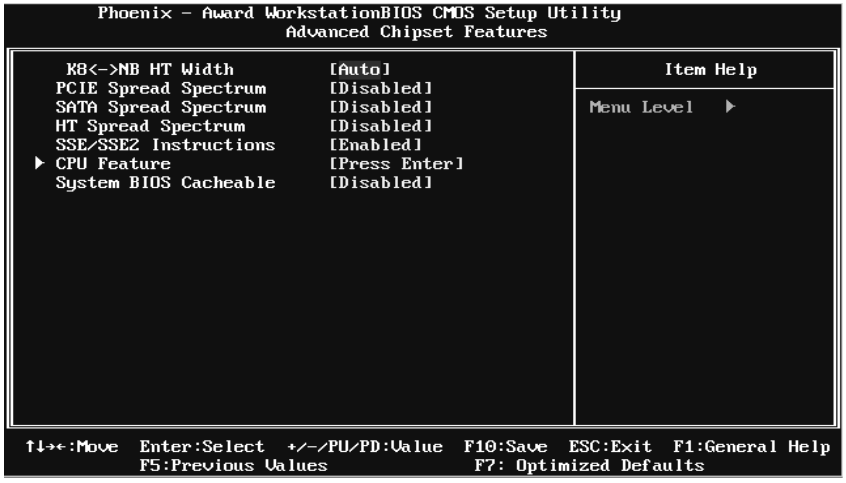
Summary Screen Show

This item allows you to enable/disable the summary screen. Summary screen means system configuration and PCI device listing.
The Choices: Disabled (default), Enabled.

4 Advanced Chipset Features

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

■ **Figure 4: Advanced Chipset Setup**



K8<->NB HT Width

This item allows you to select the K8<->NB HT Width.
The Choices: Auto(default), [↓ 16 ↑16],[↓ 8 ↑ 8].

PCIE/SATA Spread Spectrum

This item allows you to enable/disable the Spread Spectrum function.
The Choices: Disabled (default), Triangular Down.

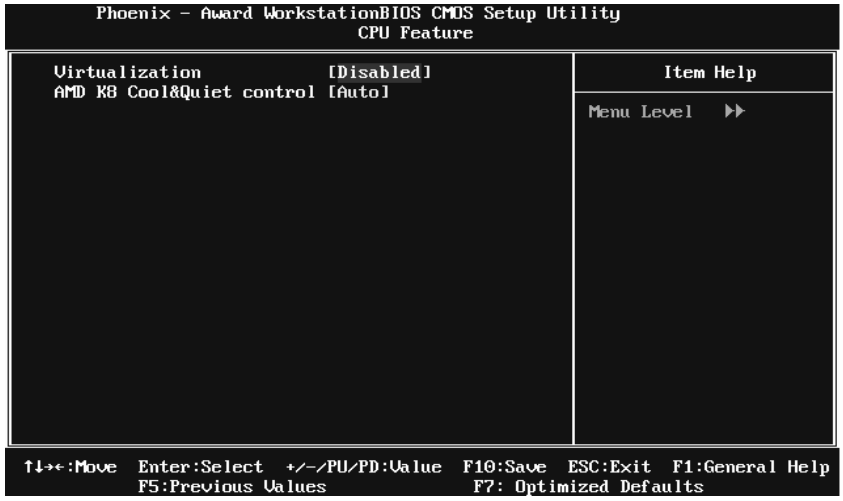
HT Spread Spectrum

This item allows you to select HT Spread Spectrum function.
The Choices: Disabled (default), 0.50% H. Kiss Cntr, 0.75% H. Kiss Cntr, 0.50% Triang. Center, 0.75% Triang. Center.

SSE/SSE2 Instructions

This item allows you to enable/disable SSE/SSE2 instruction.
The Choices: Enabled (default), Disabled.

CPU Feature



Virtualization

This option allows you to enable or disable Virtualization function.

The Choices: Disabled (default), Enabled.

AMD K8 Cool&Quiet control

The item allows you to control the K8 Cool'n'Quiet function.

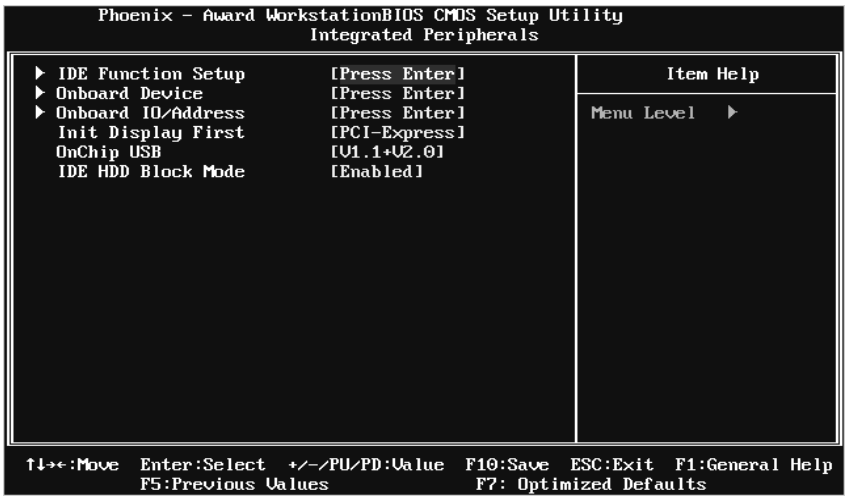
The Choices: Auto(default), Disabled.

System BIOS Cacheable

Selecting the "Enabled" option allows caching of the system BIOS ROM at F0000h-FFFFFh, which is able to improve the system performance. However, any programs that attempts to write to this memory block will cause conflicts and result in system errors.
The Choices: Disabled (default), Enabled.

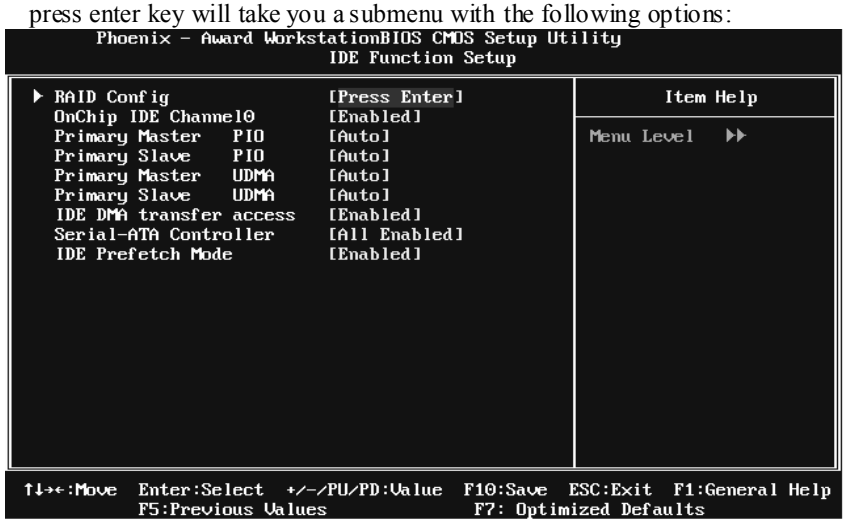
5 Integrated Peripherals

- **Figure 5. Integrated Peripherals**

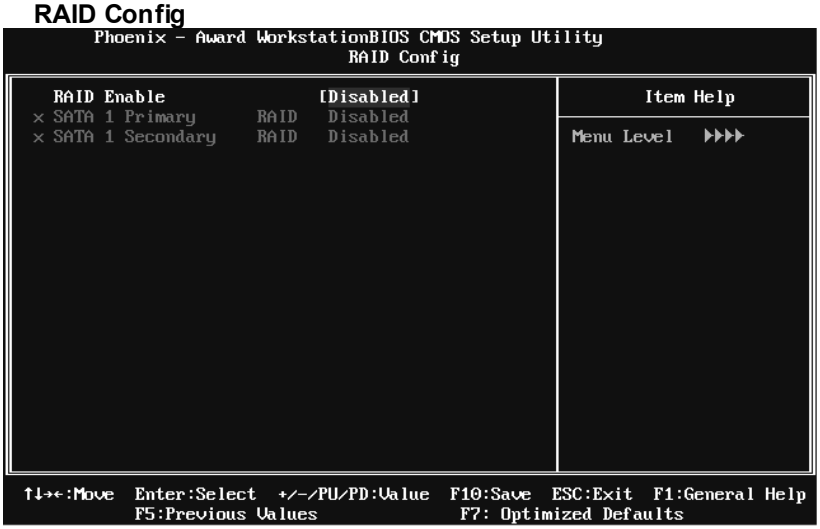


IDE Function Setup

Highlight the "Press Enter" label next to the "IDE Function Setup" label and press enter key will take you a submenu with the following options:



RAID Config



RAID Enable

This option allows you to enable or disable RAID function.

The Choices: Disabled (default), Enabled.

SATA 1 Primary/Secondary RAID

This option allows you to enable or disable SATA 1 Primary/Secondary RAID.

The Choices: Disabled (default), Enabled.

On-chip IDE Channel 0

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

The Choices: Enabled (default), Disabled.

Primary Master/Slave PIO

The IDE PIO (Programmed Input / Output) fields let you set a PIO mode (0-4) for each of the IDE devices that the onboard IDE interface supports. Modes 0 to 4 will increase performance progressively. In Auto mode, the system automatically determines the best mode for each device.

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

Primary Master/Slave UDMA

Ultra DMA function can be implemented if it is supported by the IDE hard drives in your system. As well, your operating environment requires a DMA driver (Windows 95 or OSR2may need a third party IDE bus master driver). If your hard drive and your system software both support Ultra DMA, select Auto to enable BIOS support.

The Choices: Auto (default), Disabled.

IDE DMA Transfer Access

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

The Choices: Enabled (default), Disabled.

Serial-ATA Controller

This item allows you to enable or disable the Serial ATA function.

The Choices: All Enabled (default), Disabled.

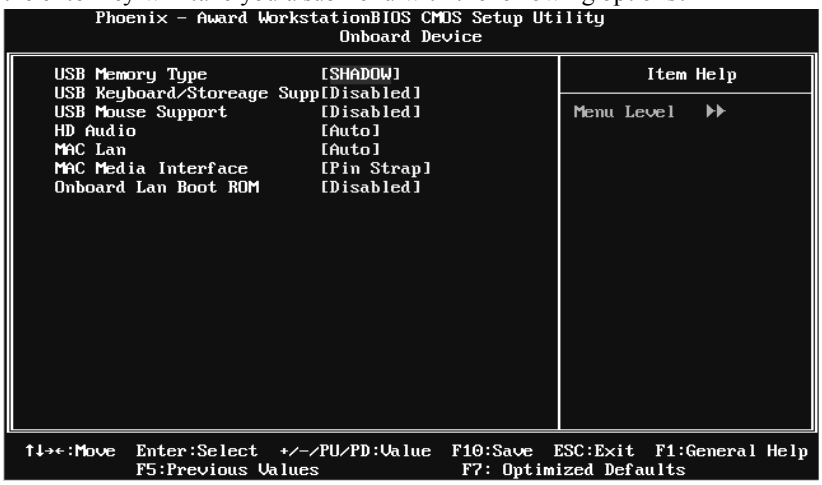
IDE Prefetch Mode

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

The Choices: Enabled (default), Disabled.

Onboard Device

Highlight the "Press Enter" label next to the "Onboard Device" label and press the enter key will take you a submenu with the following options:



USB Memory Type

The Choices: SHADOW (default), Base Memory(640K).

USB Keyboard/Storage Support

This item allows you to enable or disable the USB Keyboard / Storage Legacy Support.

Enabled Enable USB Keyboard / Storage Support.

Disabled (default) Disable USB Keyboard/ Storage Support.

USB Mouse Support

This item allows you to enable or disable the USB Mouse Legacy Support.

Enabled Enable USB Mouse Support.

Disabled (default) Disable USB Mouse Support.

HD Audio

This option allows you to control the onboard HD audio.

The Choices: Auto (default), Disabled.

MAC LAN

This option allows you to control the onboard MAC LAN.

The Choices: Auto (default), Disabled.

MAC Media Interface

This option allows you to control the onboard MAC Media Interface.

The Choices: Pin Strap (default), MII, RGMII.

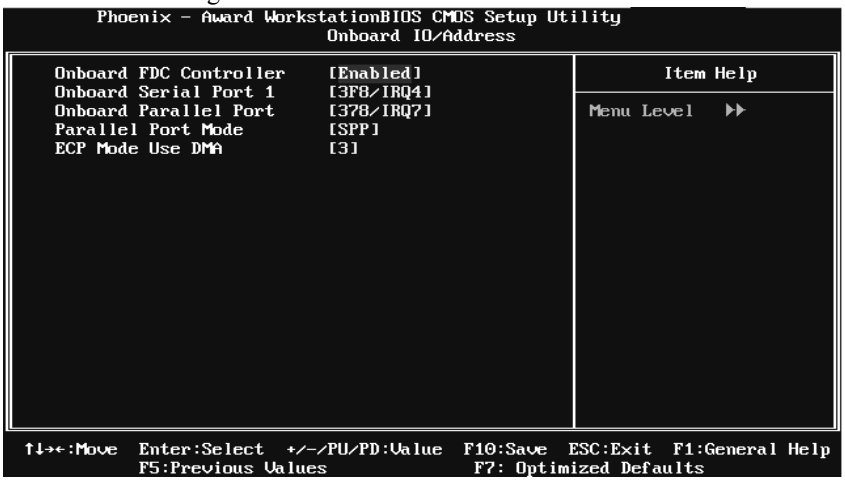
Onboard LAN Boot ROM

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

The Choices: Disabled (default), Enabled.

Onboard I/O Address

Press Enter to configure the Onboard I/O Address.



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 installed another FDC or the system uses no floppy drive, select disabled in this field.

The Choices: Enabled (default), Disabled.

Onboard Serial Port 1

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

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

Onboard Parallel Port

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

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

Parallel Port Mode

This item allows you to determine how the parallel port should function. The default value is SPP.

The Choices:

SPP (default)	Using Parallel port as Standard Printer Port.
EPP	Using Parallel Port as Enhanced Parallel Port.
ECP	Using Parallel port as Extended Capabilities Port.
ECP+EPP	Using Parallel port as ECP & EPP mode.

ECP Mode Use DMA

Select a DMA Channel for the port.

The Choices: 3 (default), 1.

Init Display First

This item allows you to decide to active whether PCI Slot or on-chip VGA first.
The Choices: PCI-Express (default), PCI Slot.

OnChip USB

This option should be enabled if your system has a USB installed on the system board. You may need to disable this feature if you add a higher performance controller.
The Choices: V1.1+V2.0 (default), Disabled, V1.1

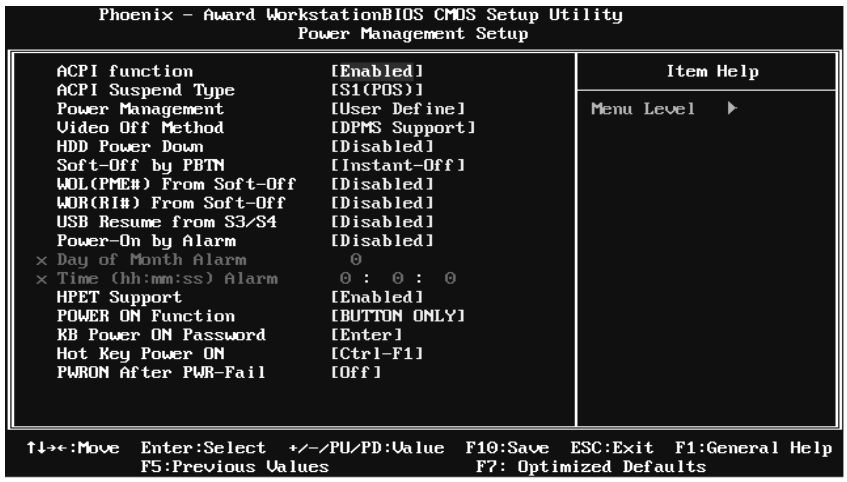
IDE HDD Block Mode

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

6 Power Management Setup

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

- **Figure 6. Power Management Setup**



ACPI Function

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

The Choices: Enabled (default), Disabled.

ACPI Suspend Type

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

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

Power Management

This category allows you to select the power saving method and is directly related to the following modes:
1. HDD Power Down.
2. Suspend Mode.
There are three options of Power Management, three of which have fixed mode settings

Min. Saving
Minimum power management.
Suspend Mode = 1 hr.
HDD Power Down = 15 min

Max. Saving
Maximum power management only available for s1 CPU's.
Suspend Mode = 1 min.
HDD Power Down = 1 min.

User Define (default)
Allow you to set each option individually.
When you choose user define, you can adjust each of the item from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min.

Video Off Method

This option determines the manner when the monitor goes blank.

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 Support (default)
Initial display power management signaling.

HDD Power Down

When enabled, the hard-disk drives will power down after a set time of system inactivity. All other devices remain active.
The Choices: Disabled (default), 1 Min, 2 Min, 3 Min, 4 Min, 5 Min, 6 Min, 7 Min, 8 Min, 9 Min, 10 Min, 11 Min, 12 Min, 13 Min, 14 Min, 15Min.

Soft-Off by PBTN

This item determines the behavior of system power button. Instant off turn off the power immediately, and Delay 4 Sec. will require you to press and hold the power button for 4 seconds to cut off the system power.
The Choices: Delay 4 Sec, **Instant-Off** (default).

WOL(PME#)/ From Soft-Off

This item allows you to enable or disable Wake On LAN from Soft-Off function.
The Choices: Disabled (default), Enabled.

WOR(RI#) From Soft-Off

This item allows you to enable or disable Wake On Ring from Soft-Off function.
The Choices: Disabled (default), Enabled.

USB Resume From S3/S4

This item allows you to enable or disabled the USB resume from S3/S4 function.
The Choices: Disabled (default), Enabled.

Power-On by Alarm

This function is for setting date and time for your computer to boot up. When enabled, you can choose the date and time to boot up the system.
The Choices: Disabled (default), Enabled.

Date (of Month) Alarm
You can choose which month the system will boot up.

Time (hh:mm:ss) Alarm
You can choose the system boot up time, input hour, minute and second to specify.
Note: If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.

HPET Support

This option allows you to disabled or enables the High Precision Event Timer.
The Choices: Enabled (default), Disabled.

POWER ON Function`

This item allows you to choose the power on method.
The Choices: Button Only(default), Password, Hot Key, Mouse Move/Click, Mouse Double Click, Any Key, Keyboard 98.

KB Power ON Password

Input password and press Enter to set the Keyboard power on password.

Hot Key Power ON

Choose the Hot Key combination to boot up the system.
The Choices: Ctrl-F1(default), Ctrl-F2, Ctrl-F3, Ctrl-F4, Ctrl-F5, Ctrl-F6, Ctrl-F7, Ctrl-F8, Ctrl-F9, Ctrl-F10, Ctrl-F11, and Ctrl-F12.

PWRON After PWR-Fail

This setting specifies how your system should behave after a power fail or interrupts occurs. By choosing off will leave the computer in the power off state. Choosing On will reboot the computer. Former-Sts will restore the system to the status before power failure or interrupt occurs.
The Choices: Off (default), On, Former-Sts.

7 PnP/PCI Configurations

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

- **Figure 7: PnP/PCI Configurations**

Reset Configuration Data

The system BIOS supports the PnP feature which requires the system to record which resources are assigned and protects resources from conflict.
Every peripheral device has a node, which is called ESCD. This node records which resources are assigned to it. The system needs to record and update ESCD to the memory locations. These locations are reserved in the system BIOS. If the Disabled (default) option is chosen, the system's ESCD will update only when the new configuration varies from the last one. If the Enabled option is chosen, the system is forced to update ESCDs and then is automatically set to the "Disabled" mode.
The above settings will be shown on the screen only if "Manual" is chosen for the resources controlled by function.
Legacy is the term, which signifies that a resource is assigned to the ISA Bus and provides non-PnP ISA add-on cards. PCI / ISA PnP signify that a resource is assigned to the PCI Bus or provides for ISA PnP add-on cards and peripherals.
The Choices: Disabled (default), Enabled.

Resources Controlled By

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

IRQ Resources

This submenu will allow you to assign each system interrupt a type, depending on the type of device using the interrupt. When you press the "Press Enter" tag, you will be directed to a submenu that will allow you to configure the system interrupts. This is only configurable when "Resources Controlled By" is set to "Manual".

IRQ-5	assigned to PCI Device
IRQ-7	assigned to PCI Device
IRQ-9	assigned to PCI Device
IRQ-10	assigned to PCI Device
IRQ-11	assigned to PCI Device
IRQ-14	assigned to PCI Device
IRQ-15	assigned to PCI Device

PCI / VGA Palette Snoop

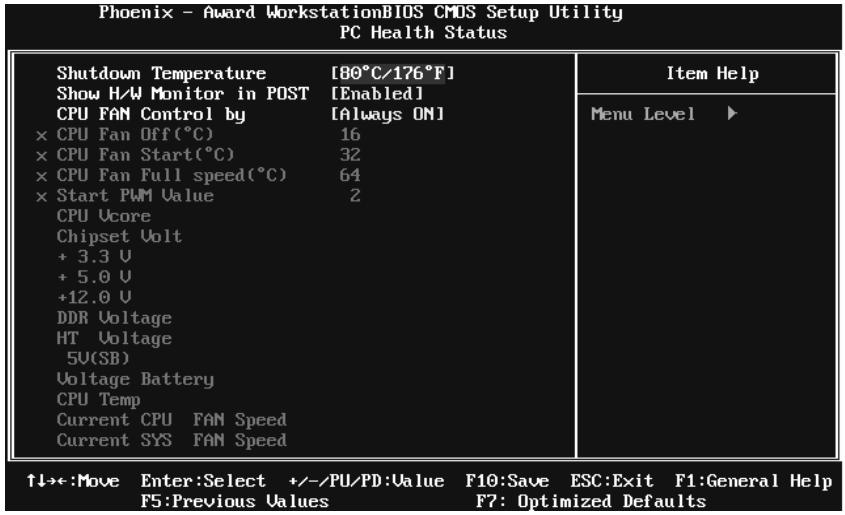
Some old graphic controllers need to "snoop" on the VGA palette and then map it to their display as a way to provide boot information and VGA compatibility. This item allows such snooping to take place.
The Choices: Disabled (default), Enabled

Maximum Payload Size

Set the maximum payload size for Transaction packets (TLP).
The Choice: 4096 (default.), 128, 256, 512, 1024, 2048.

8 PC Health Status

■ **Figure 8: PC Health Status**



Shutdown Temperature

This item allows you to set up the CPU shutdown Temperature. This item is only effective under Windows 98 ACPI mode.
The Choices: Disabled , 60℃/ 140°F, 65℃/ 149°F, 70℃/ 158°F, 75℃/ 167°F, **80℃/ 176°F** (default), 85℃/ 185°F, 90℃/ 167°F.

Show H/W Monitor in POST

If you computer contains a monitoring system, it will show PC health status during POST stage. The item offers several different delay times.
The Choices: Enabled (default), Disabled.

CPU FAN Control by

Choose "smart" to reduce the noise caused by CPU FAN.
The Choices: Smart, **Always On** (default).

CPU Fan Off<℃>

If the CPU Temperature is lower than the set value, FAN will turn off.
The Choices: Min= 0, Max= 127, key in a DEC number.

CPU Fan Start<℃>

CPU fan starts to work under smart fan function when arrive this set value.
The Choices: Min= 0, Max= 127, key in a DEC number.

CPU Fan Full speed <℃>

When CPU temperature is reach the set value, the CPU fan will work under Full Speed.
The Choices: Min= 0, Max= 127, key in a DEC number.

Start PWM Value

When CPU temperature arrives to the set value, the CPU fan will work under Smart Fan Function mode. The range is from 0~127, with an interval of 1.
The Choices: Min= 0, Max= 127, key in a DEC number.

CPU Vcore, Chipset Volt, +3.3V, +5.0V, +12.0V, DDR Voltage, HT Voltage, 5V<SB>, Voltage Battery

Detect the system's voltage status automatically.

CPU Temp

This field displays the current temperature of CPU.

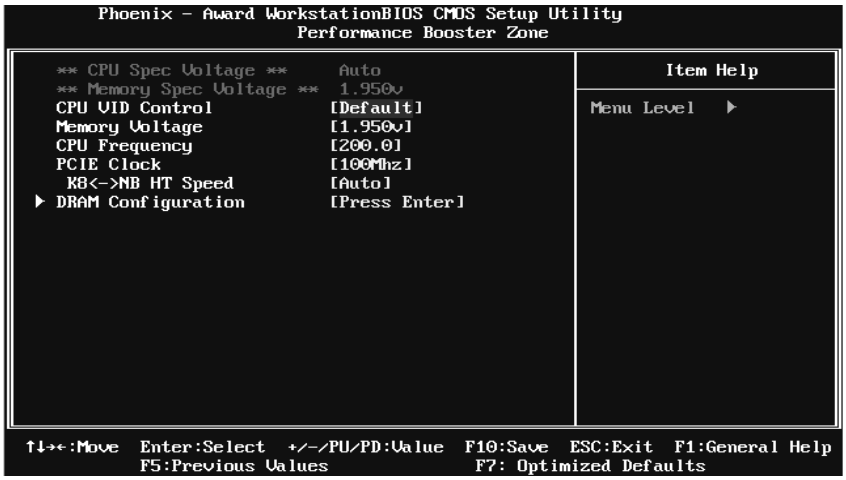
Current CPU FAN Speed

This field displays the current speed of CPU fan.

Current SYS FAN Speed

This field displays the current speed SYSTEM fan.

9 Performance Booster Zone



CPU VID Control

The Choices: Default (default), +3.3%, +6.6%, +10%.

Memory Voltage

The Choices: 1.950V (default), 2.000V, 2.050V, 2.100V.

CPU Frequency

This item allows you to select the CPU Frequency.
The Choices: 200 (default), 201~450.

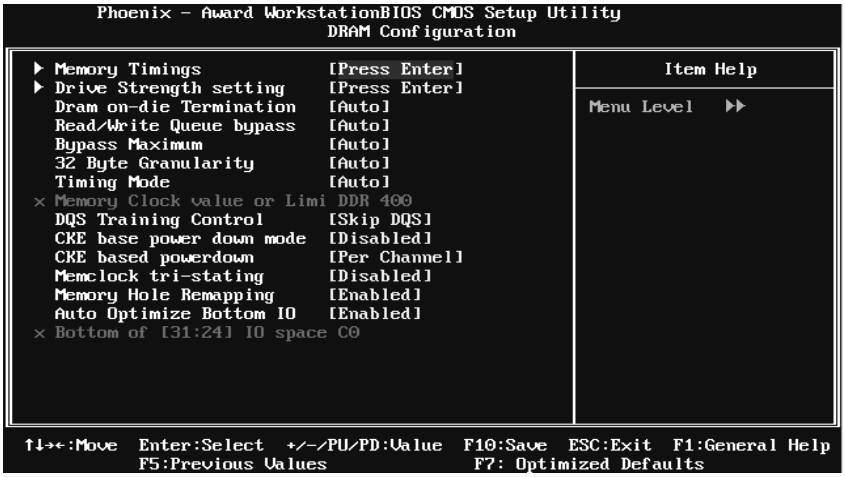
PCIE Clock

The Choices:100Mhz (default), 100Mhz-150Mhz.

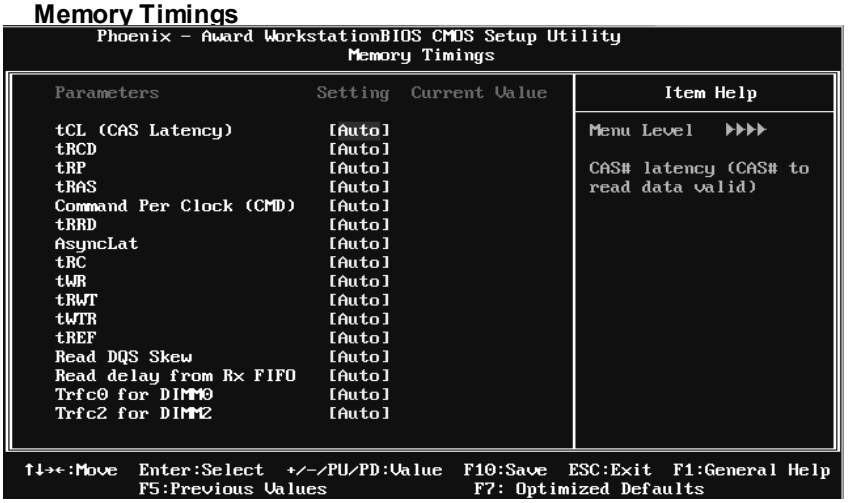
K8<->NB HT Speed

The Choices: AUTO (default), 1x, 2x, 3x, 4x, 5x.

DRAM Configuration



Memory Timings



tCL(CAS Latency)

The Choices: Auto (default), 3 clock ~ 6 clock.

tRCD

The Choices: Auto (default), 3 clock ~ 6 clock.

tRP

The Choices: Auto (default), 3 clock ~ 6 clock.

tRAS

The Choices: Auto (default), 5 clock ~ 18 clock.

Command Per Clock (CMD)

The Choices: Auto (default), 1 clock ~ 2 clock.

tRRD

The Choices: Auto (default), 2 clock ~ 5 clock.

AsyncLat

The Choices: Auto (default), 1ns ~ 15ns.

tRC

The Choices: Auto (default), 11 clock ~ 26 clock.

tWR

The Choices: Auto (default), 3 clock ~ 6 clock.

tRWT

The Choices: Auto (default), 2 clock ~ 9 clock.

tWTR

The Choices: Auto (default), 1 clock ~ 3 clock.

tREF

The Choices: Auto (default), 7.8 us, 3.9 us.

Read DQS Skew

The Choices: Auto (default), -10/96 clock ~ +10/96 clock.

Read delay from Rx FIFO

The Choices: Auto (default), 0.5 clock ~ 4.0 clock.

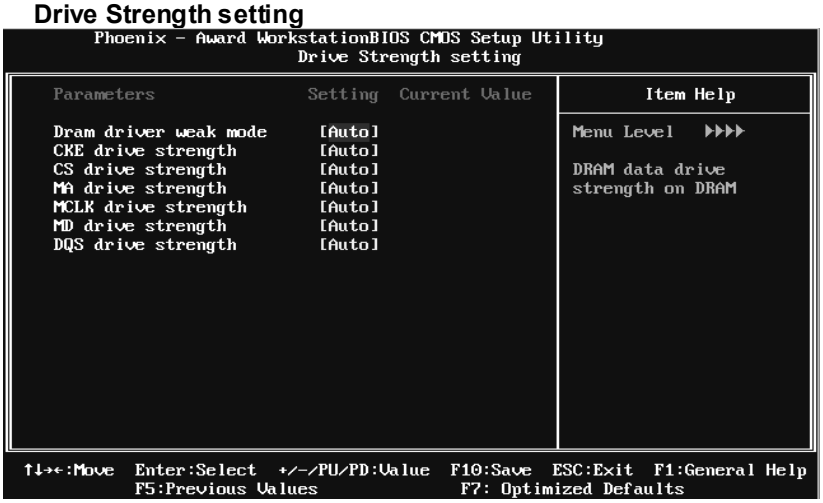
Trfc0 for DIMM0

The Choices: Auto (default), 75ns, 105ns, 127.5ns, 195ns, 327.5ns.

Trfc2 for DIMM2

The Choices: Auto (default) , 75ns, 105ns, 127.5ns, 195ns, 327.5ns.

Drive Strength setting



Dram driver weak mode

The Choices: Auto (default), Normal, Weak.

CKE drive strength

The Choices: Auto (default), 1.0x, 1.25x, 1.5x, 2.0x.

CS drive strength

The Choices: Auto (default), 1.0x, 1.25x, 1.5x, 2.0x.

MA drive strength

The Choices: Auto (default), 1.0x, 1.25x, 1.5x, 2.0x.

MCLK drive strength

The Choices: Auto (default), 0.75x, 1.0x, 1.25x, 1.50x.

MD drive strength

The Choices: Auto (default), 0.75x, 1.0x, 1.25x, 1.50x.

DQS drive strength

The Choices: Auto (default), 0.75x, 1.0x, 1.25x, 1.50x.

Dram on-die Termination

The Choices: Auto (default), Disable, 75ohm, 150ohm, 50ohm.

Read/Write Queue bypass

The Choices: Auto (default), 2 times, 4 times, 8 times, 16 times.

Bypass Maximum

The Choices: Auto (default), No bypass, 1 time ~ 15 time.

32 Byte Granularity

The Choices: Auto (default), 64-byte, 32-byte.

Timing Mode

This item allows you to choose to manually or automatically regulate the DDR Timing.

The Choices: Auto (default), MaxMemClk.

Memory Clock Value or Limi

The Choices: DDR 400 (default), DDR 533, DDR 667, DDR 800.

DQS Training Control

The Choices: Perform DQS, **Skip DQS**(default).

CKE base power down mode

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

CKE based powerdown

The Choices: Per Channel (default), Per CS.

Memclock tri-stating

The Choices: Disabled (default), Enabled.

Memory Hole Remapping

The Choices: Enabled (default), Disabled.

Auto Optimize Bottom IO

The Choices: Enabled (default), Disabled.

Bottom of [31:24] IO space

The Choices: C0 (default), Min=0000, Max=00FF, Key in a HEX number.