User's Manual

NAB-7500

Version 1.01
December 17, 2007

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FCC-B Radio Frequency Interference Statement

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

Notice 1

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

Notice 2

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

CE

FC

Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE

SAFETY INSTRUCTIONS

- ☐ Always read the safety instructions carefully.
- ☐ Keep this User's Manual for future reference.
- ☐ Keep this equipment away from humidity.
- ☐ Lay this equipment on a reliable flat surface before setting it up.
- ☐ The openings on the enclosure are for air convection hence protects the equipment from overheating. Do not cover the openings.
- ☐ Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
- ☐ Place the power cord in such a way that people cannot step on it. Do not place anything over the power cord.
- ☐ Always unplug the power cord before inserting any add-on card or module.
- ☐ All cautions and warnings on the equipment should be noted.
- ☐ Never pour any liquid into the opening. Liquid can cause damage or electrical shock.
- ☐ If any of the following situations arises, get the equipment checked by a service personnel:
    - ☐ The power cord or plug is damaged.
    - ☐ Liquid has penetrated into the equipment.
    - ☐ The equipment has been exposed to moisture.
    - ☐ The equipment has not worked well or you cannot get it work according to User's Manual.
    - ☐ The equipment has dropped and damaged.
    - ☐ If the equipment has obvious sign of breakage.
- ☐ Do not leave this equipment in an environment unconditioned or in a storage temperature above 60°C (140°F). The equipment may be damaged.

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

TABLE OF CONTENTS

CHAPTER 1

SPECIFICATIONS

The compact and highly integrated VIA NAB-7500 mainboard comes with an integrated VIA C7® NanoBGA2 processor, boasting of ultra-low power consumption and cool operation.

Mainboard Specifications

CPU

- VIA C7® 1.5GHz NanoBGA2 processor
  (2.0GHz and 1.0GHz options are also available)

Chipset

- VIA CN896 North Bridge
- VIA VT8251 South Bridge

Graphics

- Integrated VIA Chrome9™ HC Integrated Graphics with 2D/3D and Video Acceleration

Memory

- Two DDR2 667/533 DIMM slots (up to 3.5 GB)

Expansion Slot

- One 32-bit Mini-PCI Type III socket
  (available for NAB-7500-15TLG)
- One 33MHz 32-bit PCI Golden Finger

IDE

- One UltraDMA 133/100/66 connector (44 pin)

LAN

- Four VIA VT6130 PCI Express Gigabit Ethernet Controller
- One VIA VT6122 Gigabit Ethernet Controller
  (available for NAB-7500-15TLG)

Note:
System resources (such as BIOS, PCI, etc.) require physical memory address locations that reduce available memory addresses above 3 GB. This may result in less than 4 GB of memory being available to the operating system and applications.

Back Panel I/O Ports

- One DB-9 serial port
- Five (NAB-7500-15TLG) or four (NAB-7500-15LG) RJ-45 LAN ports
- Two USB 2.0 ports

Onboard I/O Connectors

- One VGA pin connector
- One Digital I/O pin connector
- One PS/2 keyboard/mouse pin connector
- One Front Panel pin connector
- One Front Panel LAN LED pin connector for monitoring LAN activity
- Two fan connectors for CPU and System fans
- Four S-ATA II connectors
- One Type II Compact Flash slot
- Two USB pin connectors for four additional USB 2.0 ports
- One serial port pin connector (5V/12V selectable)
- One HDD power pin connector (+5V, +12V)
- One ATX power connector
- One 12V DC jack (optional)
- One 1x4 pin 12V DC connector (optional)

Onboard TPM (Trust Platform Module)

- Infineon SLB9635TT 1.2 (available for NAB-7500-15TLG)

Super IO

- Winbond W83697HG

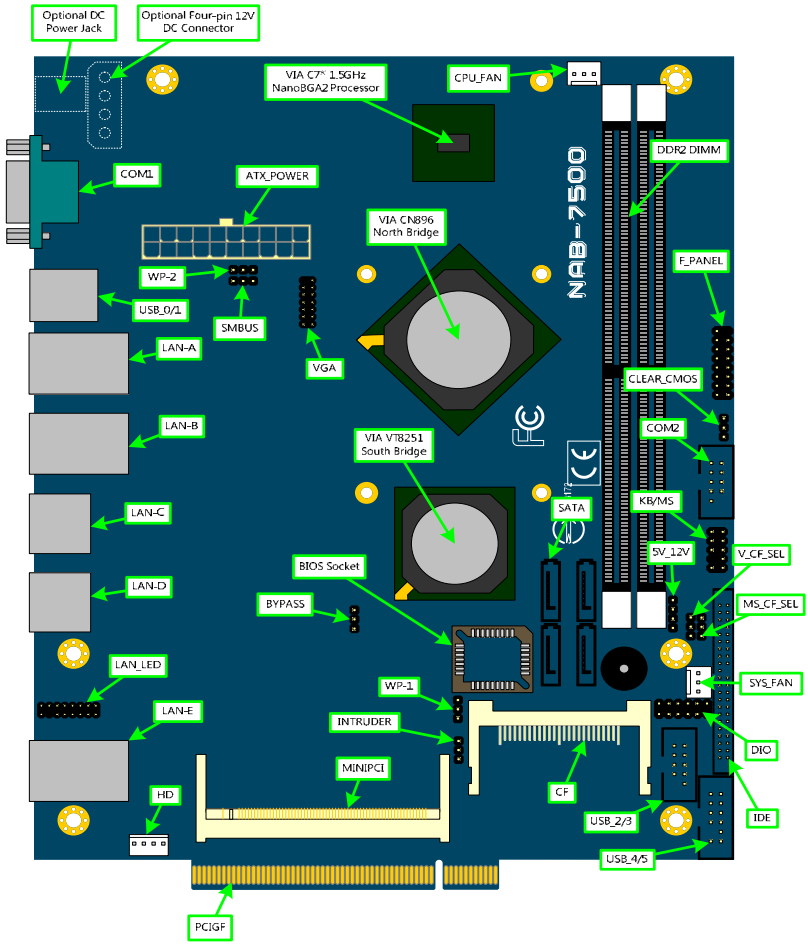
BIOS

- Award BIOS with LPC 4/8Mbit flash memory capacity

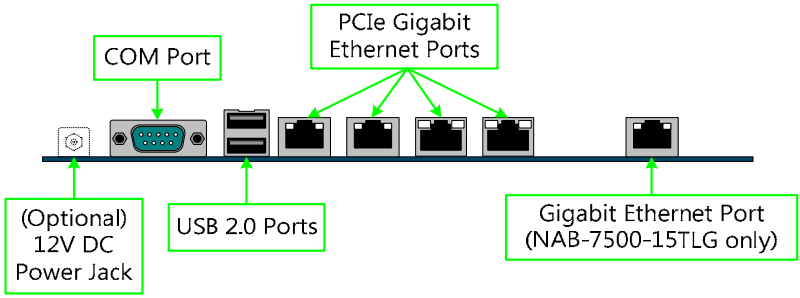
Form Factor

- 228.6mm X 180mm (six layer)

Mainboard Layout



Back Panel Layout

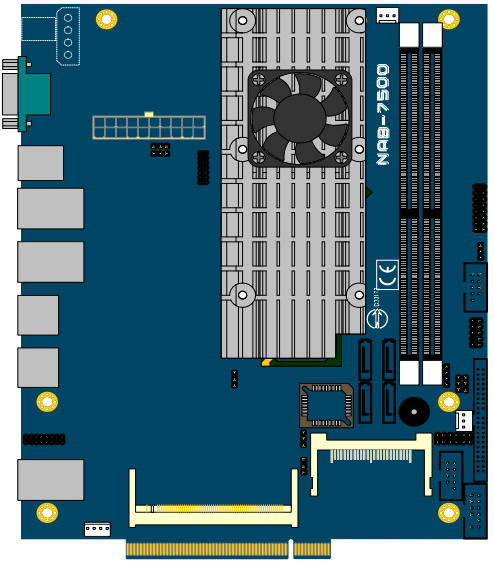


CHAPTER 2
INSTALLATION

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

CPU

The VIA NAB-7500 mainboard is packaged with a standard VIA C7® 1.5GHz NanoBGA2 processor. Other processor speeds (i.e., 2.0GHz and 1.0GHz) are also available as manufacturing options. The VIA C7® 1.5GHz processor requires a heatsink with fan to provide sufficient cooling.



CPU Fan and System Fan: CPUFAN and SYSFAN

The CPU_FAN (CPU fan) and SYS_FAN (system fan) run on +12V and maintain system cooling. When connecting the wire to the connectors, always be aware that the red wire (positive wire) should be connected to the +12V. The black wire is Ground and should always be connected to GND.

Pin	Signal
1	FANIO
2	+12V
3	GND

CPU_FAN

SYS_FAN

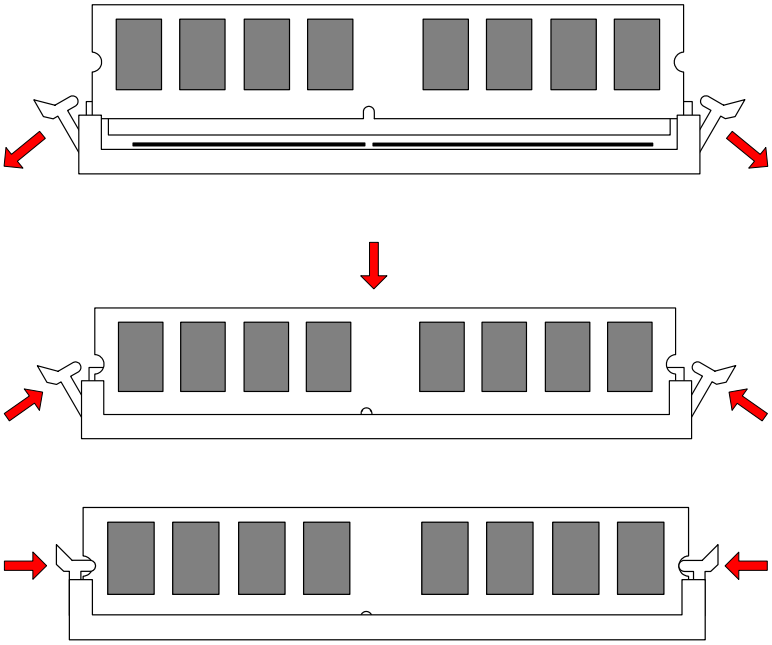
Memory Module Installation

Memory Slot: DDR2 DIMM

The VIA NAB-7500 mainboard provides two 240-DIMM slots for DDR2 667/533 SDRAM memory modules and supports memory sizes up to 3.5GB.

DDR2 SDRAM Module Installation Procedures

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



Available DDR2 SDRAM Configurations

Refer to the table below for available DDR2 SDRAM configurations on the mainboard.

Slot	Module Size	Total
DIMM1	64MB, 128MB, 256MB, 512MB, 1GB, 2GB	64MB-2GB
DIMM2	64MB, 128MB, 256MB, 512MB, 1GB, 2GB	64MB-2GB
Maximum supported system memory		64MB-4GB

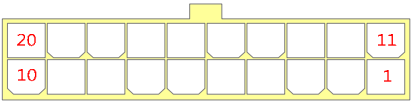
Connecting the Power Supply

The VIA NAB-7500 mainboard supports a conventional ATX power supply for the power system. Before inserting the power supply connector, always make sure that all components are installed correctly to ensure that no damage will be caused.

ATX 20-Pin Power Connector

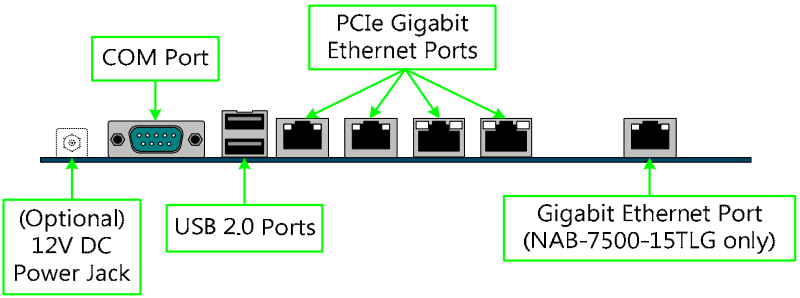
To connect the power supply, make sure the power plug is inserted in the proper orientation and the pins are aligned. Then push down the plug firmly into the connector.

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



Back Panel Ports

The back panel has the following ports:



12V DC Power Jack (manufacturing option)

The DC power jack is used to connect an external AC adapter as the power source instead of using an ATX power supply.

Serial port: COM

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

USB Ports

Two standard USB 2.0 ports are provided on the back panel.

Gigabit LAN Ports

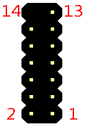
The mainboard provides four PCIe Gigabit Ethernet ports controlled with separate VIA VT6130 PCIe Gigabit Ethernet controllers and one Gigabit Ethernet port (available on NAB-7500-15TLG) controlled by a VIA VT6122 Gigabit Ethernet controller.

Connectors

VGA Connector: VGA

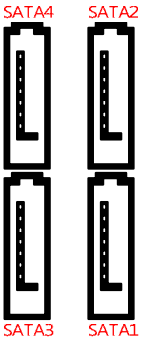
This is an interface for connecting the included VGA pin connector cable.

Pin	Signal	Pin	Signal
1	GND	2	+5V
3	R	4	VGA_SPD2
5	G	6	VGA_SPCLK2
7	B	8	VGA_HS
9	GND	10	VGA_VS
11	GND	12	GND
13	GND	14	KEY



Serial ATA II Connectors: SATA1 to SATA4

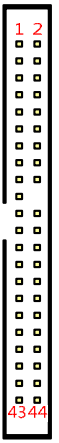
These next generation connectors support the right angle Serial ATA cables for primary internal storage devices. The current Serial ATA interface allows up to 300MB/s data transfer rate, faster than the standard parallel ATA with 133 MB/s (Ultra DMA).



IDE Connector: IDE

The mainboard has an Ultra DMA 133/100/66 controller. You can connect up to two IDE devices in any combination.

Pin	Signal	Pin	Signal
1	#IDE_RST	2	GND
3	PD_7	4	PD_8
5	PD_6	6	PD_9
7	PD_5	8	PD_10
9	PD_4	10	PD_11
11	PD_3	12	PD_12
13	PD_2	14	PD_13
15	PD_1	16	PD_14
17	PD_0	18	PD_15
19	GND	20	KEY
21	#PD_REQ	22	GND
23	#PD_IOW	24	GND
25	#PD_IOR	26	GND
27	#PD_RDY	28	PRIMARY_28
29	#PD_ACK	30	GND
31	PD_IRQ14	32	NC
33	PD_A1	34	IDE_DMADET
35	PD_A0	36	PD_A2
37	#PD_CS1	38	#PD_CS3
39	#HD_LED1	40	GND
41	+5V	42	+5V
43	GND	44	#TYPE



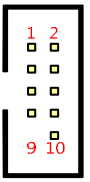
If two drives are connected to a single cable, the jumper on the second drive must be set to slave mode. Refer to the drive documentation supplied by the vendor for the jumper settings.

USB Pin Connector: USB_2/3 and USB_4/5

The mainboard provides one 10-pin USB pin connectorand one 12-pin USB pin connector (allowing up to four additional USB 2.0 ports). Therefore mainboard can support up to six USB 2.0 ports. These ports can be used to connect high-speed USB interface peripherals such as USB HDD, digital cameras, MP3 players, printers, modem and the like.

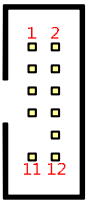
10-Pin USB Pin connector

Pin	Signal	Pin	Signal
1	USB_Vcc	2	USB_VCC
3	USBD_T0-	4	USBD_T1-
5	USBD_T0+	6	USBD_T1+
7	GND	8	GND
9	KEY	10	GND



12-Pin USB Pin connector

Pin	Signal	Pin	Signal
1	USB_Vcc	2	USB_VCC
3	USBD_T4-	4	USBD_T5-
5	USBD_T4+	6	USBD_T5+
7	GND	8	GND
9	KEY	10	WLAN_LED
11	GND	12	GPO_9



LAN Activity Led Connector: LAN_LED

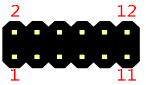
This pin connector is for LPC devices.

Pin	Signal	Pin	Signal
1	BY_LED	2	+5V
3	LAN1_LNK_ACT	4	VDD33-1
5	LAN2_LNK_ACT	6	VDD33-2
7	LAN3_LNK_ACT	8	VDD33-3
9	LAN4_LNK_ACT	10	VDD33-4
11	LAN5_LNK_ACT	12	VDDIO
13	NC	14	KEY
15	WLAN_LED	16	+3.3VSUS

Digital I/O Connector: DIO

General purpose digital input and output.

Pin	Signal	Pin	Signal
1	5V_DIO	2	12V_DIO
3	GPO_1	4	GPI_32
5	GPO_4	6	GPI_33
7	GPO_6	8	GPI_34
9	GPO_7	10	GPI_22
11	GND	12	GND



System Management Bus Connector: SMBUS

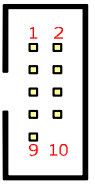
This pin header allows you to connect SMBus (System Management Bus) devices. Devices communicate with a SMBus host and/or other SMBus devices using the SMBus interface.

Pin	Signal
1	SMBCK
2	SMBDT
3	GND

Serial Port Connector: COM2

COM2 pin header can be used to attach an additional port for serial devices.

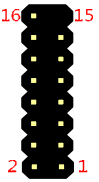
Pin	Signal	Pin	Signal
1	COM_DCD	2	COM_RXD
3	COM_TXD	4	COM_DTR
5	GND	6	COM_DSR
7	COM_RTS	8	COM_CTS
9	COM_RI	10	KEY



Case Connector: F_PANEL

The F_PANEL pin header allows you to connect the power switch, reset switch, power LED, sleep LED, HDD LED and the case speaker.

Pin	Signal	Pin	Signal
1	+PWR_LED	2	+HD_LED
3	+PWR_LED	4	-HD_LED
5	-PWR_LED	6	PW_BN
7	SPEAK+	8	GND
9	NC	10	RST_SW
11	NC	12	GND
13	SPEAK-	14	+SLEEP_LED
15	KEY	16	-SLEEP_LED



Power LED (PWR_LED)

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

HDD LED (HD_LED)

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

Power Switch (PW_BN)

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

Speaker (SPEAK)

The speaker from the system case is connected to this pin.

Reset Switch (RST_SW)

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

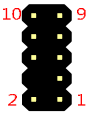
Sleep LED (SLEEP_LED)

The SLEEP LED is lit when the system is in the S1 (POW-Power On Suspend)

KBMS Connector: KB/MS

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

Pin	Signal	Pin	Signal
1	+5V	2	GND
3	NC	4	KEY
5	GND	6	GND
7	KB_DT	8	MS_DT
9	KB_CK	10	MS_CK



INTRUDER

This pin connector is for chassis intrusion switch connector. This is not a default function supported by BIOS.

Pin	Signal
1	NC
2	INTRUDER
3	GND

12V DC Connector (manufacturing option)

This connector is for providing an interface for external power source designs.

Pin	Signal
1	+12V
2	GND
3	GND
4	NC

Jumpers

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

Clear CMOS Connector: CLEAR_CMOS

The onboard CMOS RAM stores system configuration data and has an onboard battery power supply. To reset the CMOS settings, set the jumper on pins 1 and 2 while the system is off. Return the jumper to pins 2 and 3 afterwards. Setting the jumper while the system is on will damage the mainboard.

Setting	1	2	3
Normal Operation	ON	ON	OFF
Clear CMOS setting	OFF	ON	ON

Warning:
Except when clearing the RTC RAM, never remove the cap on CLEAR_CMOS jumper default position. Removing the cap will cause system boot failure. Avoid clearing the CMOS while the system is on; it will damage the mainboard.

Master/Slave Setting for CF Connector: MS_CF_SEL

This jumper determines the working state of the CF connector. The default value is Master.

Setting	1	2	3
Slave	ON	ON	OFF
Master	OFF	ON	ON

Voltage Selector for CF Connector: V_CF_SEL

This VCC selector jumper is to determine the input voltage of the CF connector. The default value is +3.3V.

Setting	1	2	3
+3.3V	ON	ON	OFF
+5V	OFF	ON	ON

Voltage Selector for COM2 Connector: 5V-12V

This VCC selector is to determine the input voltage of each COM connector.

Setting	1	2	3	4
+5V	ON	ON	OFF	OFF
+12V	OFF	OFF	ON	ON
Normal (default)	OFF	ON	ON	OFF

BIOS Write Protect: WP-1

This jumper enables or disables the Write Protect function for the BIOS.

Setting	1	2	3
Normal (default)	ON	ON	OFF
Write Protect	OFF	ON	ON

EEPROM Write Protect: WP-2

This jumper enables or disables the Write Protect function for the EEPROM.

Setting	1	2	3
Normal (default)	ON	ON	OFF
Write Protect	OFF	ON	ON

LAN Bypass: BYPASS

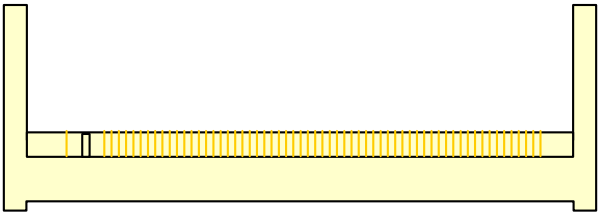
This jumper enables or disables the LAN bypassing function.

Setting	1	2	3
Enable (default)	ON	ON	OFF
Disable	OFF	ON	ON

Slots

Mini Peripheral Component Interconnect: MiniPCI

The MiniPCI slot allows you to insert a MiniPCI expansion card. First unplug the power supply before adding or removing expansion cards. Read the documentation for the expansion card to see if any changes to the system are necessary.



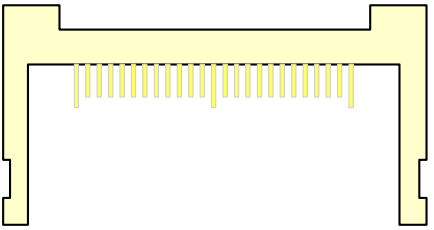
PCI Interrupt Request Routing

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

	Order 1	Order 2	Order 3	Order 4
MiniPCI Slot	INT B#	INT C#	INT D#	INT A#

Compact Flash Type II Connector: CF

This CF connector allows you to connect to a passive 50-pin Type II adapter.



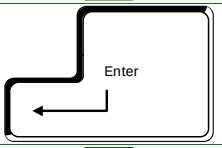
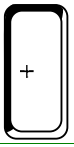
CHAPTER 3
BIOS SETUP

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

Entering the BIOS Setup Menu

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

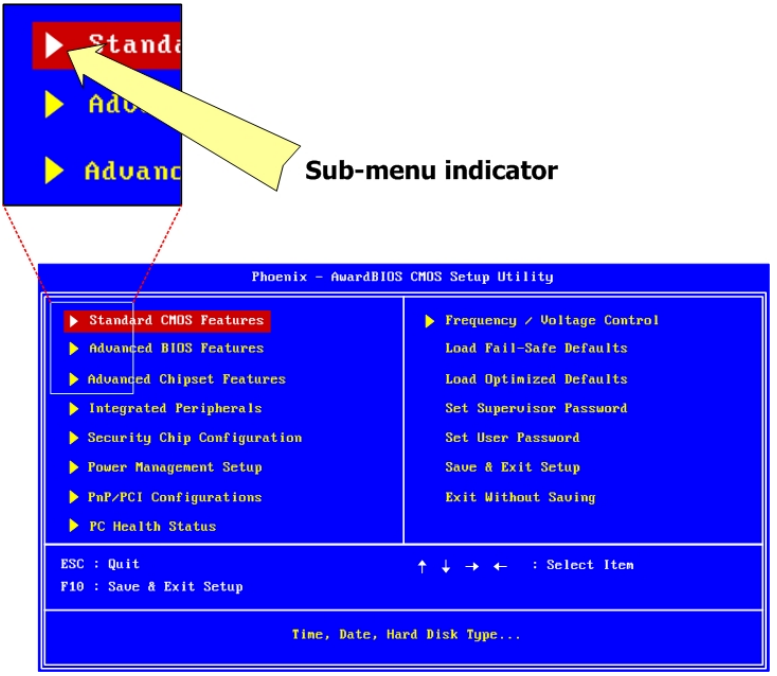
Control Keys

Keys	Description
	Move to the previous item
	Move to the next item
	Move to the item in the left side
	Move to the item in the right side
	Select the item
	Jumps to the Exit menu or returns to the main menu from a submenu
	Increase the numeric value or make changes
	Decrease the numeric value or make changes
	Increase the numeric value or make changes
	Decrease the numeric value or make changes
	General help, only for Status Page Setup Menu and Option Page Setup Menu
	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
	Load the default CMOS value from Fail-Safe default table, only for Option Page Setup Menu
	Load Optimized defaults
	Save all the CMOS changes and exit

Navigating the BIOS Menus

The main menu displays all the BIOS setup categories. Use the <**Left**>/<**Right**> and <**Up**>/<**Down**> arrow keys to select any item or sub-menu. Descriptions of the selected/highlighted category are displayed at the bottom of the screen.

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

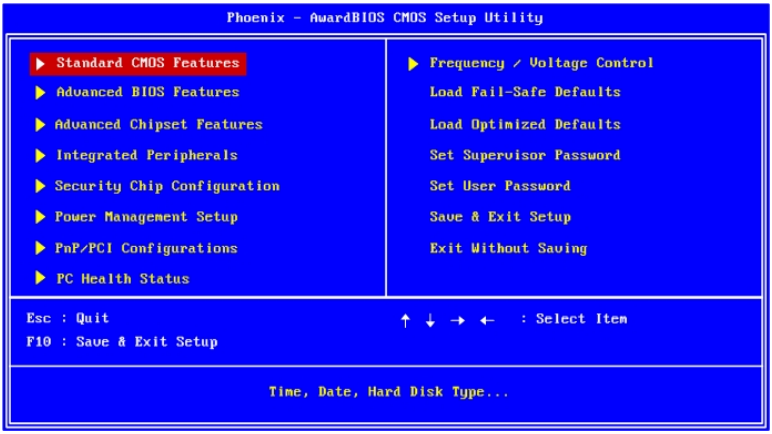


Getting Help

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

Main Menu

The Main Menu contains thirteen setup functions and two exit choices. Use arrow keys to select the items and press <**Enter**> to accept or enter Sub-menu.



Standard CMOS Features

Use this menu to set basic system configurations.

Advanced BIOS Features

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

Advanced Chipset Features

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

Integrated Peripherals

Use this menu to set onboard peripherals features.

Security Chip Configuration

Use this menu to configure the security features.

Power Management Setup

Use this menu to set onboard power management functions.

PnP/PCI Configurations

Use this menu to set the PnP and PCI configurations.

PC Health Status

This menu shows the PC health status.

Frequency/Voltage Control

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

Load Fail-Safe Defaults

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

Load Optimized Defaults

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

Set Supervisor Password

Use this menu option to set the BIOS supervisor password.

Set User Password

Use this menu option to set the BIOS user password.

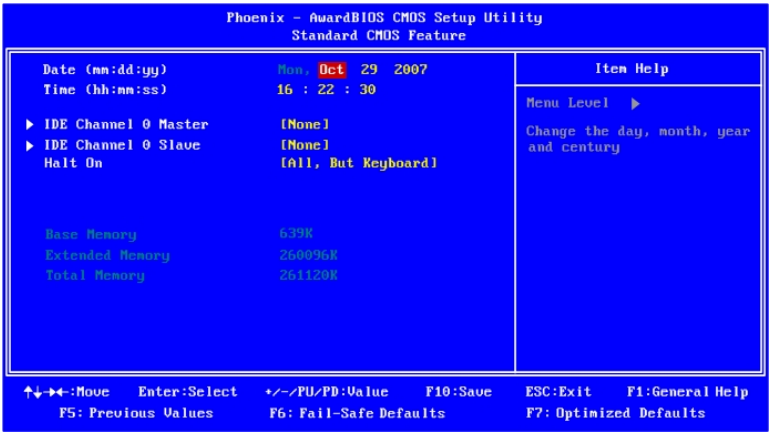
Save & Exit Setup

Save BIOS setting changes and exit setup.

Exit Without Saving

Discard all BIOS setting changes and exit setup.

Standard CMOS Features



Date

The date format is [Day, Month Date, Year]

Time

The time format is [Hour : Minute : Second]

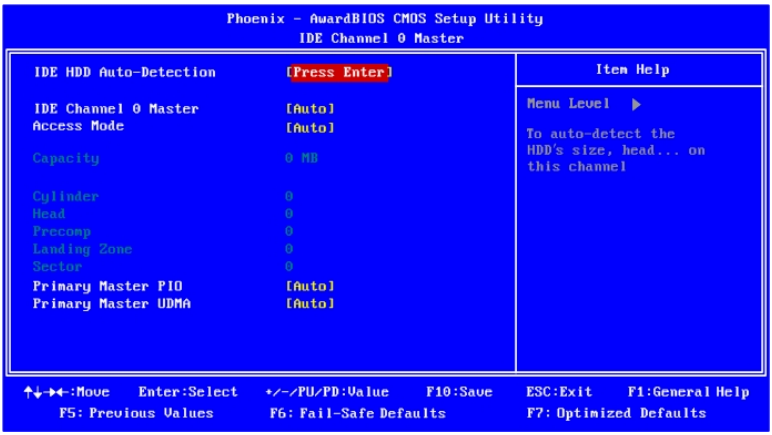
Halt On

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

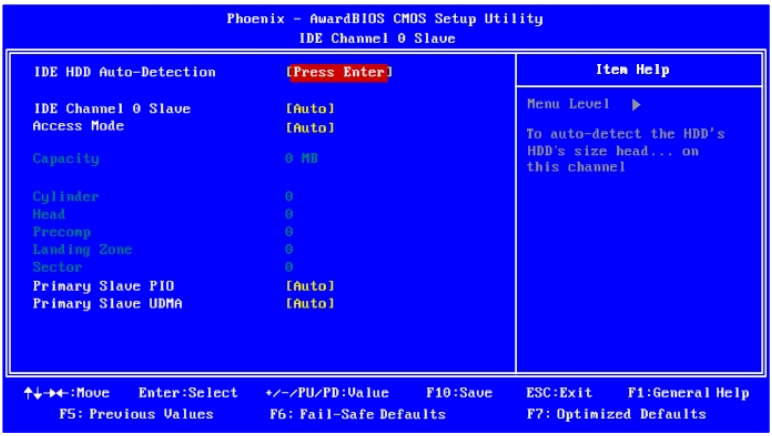
Settings	Description
All Errors	System halts when any error is detected
No Errors	System does not halt for any error
All, But Keyboard	System halts for all non-key errors

IDE Drives

IDE Channel 0 Master



IDE Channel 0 Slave

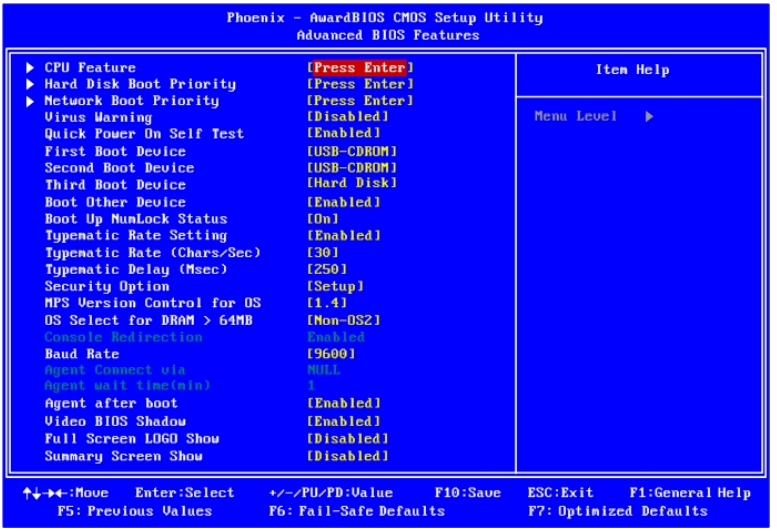


The specifications of your drive must match with the drive table. The hard disk will not work properly if you enter incorrect information in this category. Select "**Auto**" whenever possible. If you select "**Manual**", make sure the information is from your hard disk vendor or system manufacturer.

Below is a table that details required hard drive information when using the "**Manual**" mode.

Settings	Description
IDE Channel	The name of this match the name of the menu. Settings: [None, Auto, Manual]
Access Mode	Settings: [CHS, LBA, Large, Auto]
Capacity	Formatted size of the storage device
Cylinder	Number of cylinders
Head	Number of heads
Precomp	Write precompensation
Landing Zone	Cylinder location of the landing zone
Sector	Number of sectors
Primary PIO	Settings: [Auto, Mode 1, Mode 2, Mode 3, Mode 4]
Primary UDMA	Settings: [Disabled, Auto]

Advanced BIOS Features



Virus Warning

Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection.

Settings	Description
Enabled	Turns on hard disk boot sector virus protection
Disabled	Turns off hard disk boot sector virus protection

> **Note:**
> If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on the screen and alarm beep.

Quick Power On Self-Test

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

Settings	Description
Disabled	Standard Power On Self Test (POST)
Enabled	Shorten Power On Self Test (POST) cycle and boot up time

First Boot Device

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

Settings	Description
Removable	Boot from external drive
Hard Disk	Boot from the HDD
CDROM	Boot from CDROM
USB-CDROM	Boot from USB CDROM
Network	Boot from network drive
Disabled	Disable the boot device sequence

Second Boot Device

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

Settings	Description
Removable	Boot from external drive
Hard Disk	Boot from the HDD
CDROM	Boot from CDROM
USB-CDROM	Boot from USB CDROM
Network	Boot from network drive
Disabled	Disable the boot device sequence

Third Boot Device

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

Settings	Description
Removable	Boot from external drive
Hard Disk	Boot from the HDD
CDROM	Boot from CDROM
USB-CDROM	Boot from USB CDROM
Network	Boot from network drive
Disabled	Disable the boot device sequence

Boot Other Device

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

Settings	Description
Disabled	No alternate boot device allowed
Enabled	Enable alternate boot device

Boot Up NumLock Status

Set the NumLock status when the system is powered on.

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

Typematic Rate Setting

Enable "Typematic Rate" function.

Settings: [Disabled, Enabled]

Typematic Rate (Chars/Sec)

This item sets the rate (characters/second) at which the system retrieves a signal from a depressed key.

Settings: [6, 8, 10, 12, 15, 20, 24, 30]

Typematic Delay (Msec)

This item sets the delay between, when the key was first pressed and when the system begins to repeat the signal from the depressed key.

Settings: [250, 500, 750, 1000]

Security Option

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

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

MPS Version Control for OS

Settings: [1.1, 1.4]

OS Select for DRAM > 64MB

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

Settings: [Non-OS2, OS2]

Baud Rate

Settings: [9600, 19200, 38400, 57600, 115200]

Agent after Boot

Settings: [Disabled, Enabled]

Video BIOS Shadow

Enabled copies Video BIOS to shadow RAM Improves performance.

Settings: [Disabled, Enabled]

Full Screen Logo Show

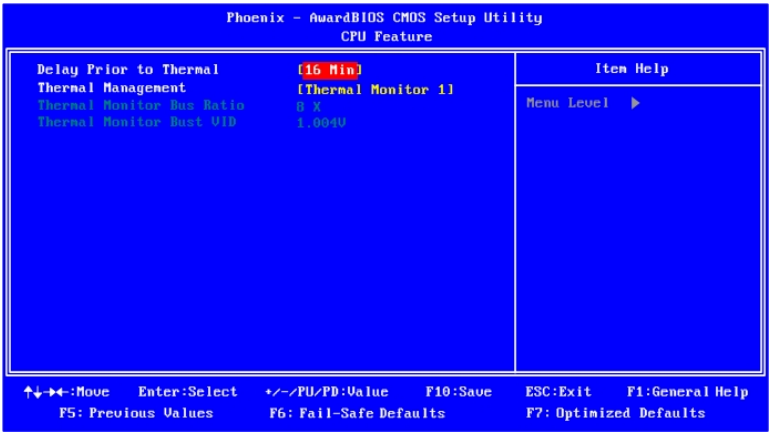
Show full screen logo during BIOS boot up process.
Settings: [Disabled, Enabled]

Summary Screen Show

Show summary screen.

Settings: [Disabled, Enabled]

CPU Features



Delay Prior to Thermal

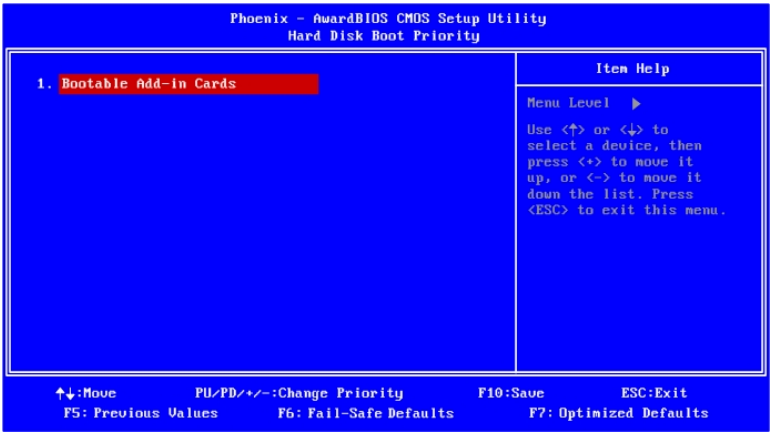
Settings: [4 Min, 8 Min, 16 Min, 32 Min]

Thermal Management

This item sets CPU's thermal control rule to protect CPU from overheat.

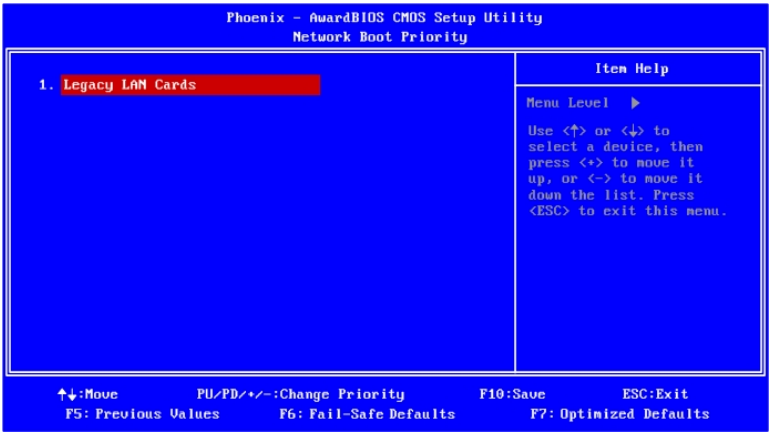
Settings	Description
Thermal Monitor 1	On-die throtting
Thermal Monitor 2	Ratio & VID transition

Hard Disk Boot Priority



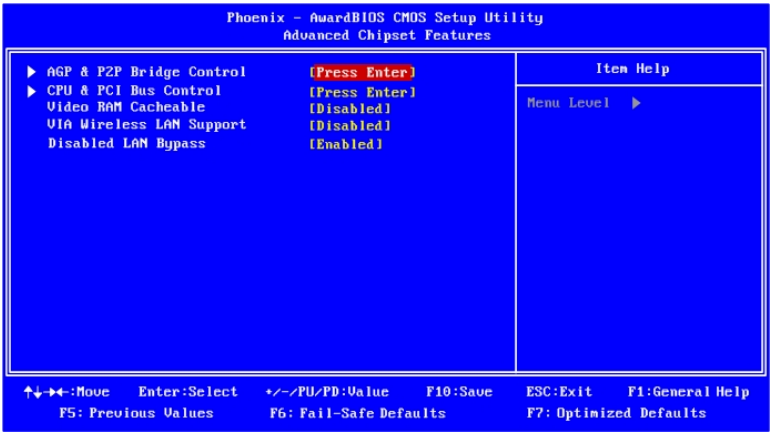
This is for setting the priority of the hard disk boot order when the "Hard Disk" option is selected in the "[First/Second/Third] Boot Device" menu item.

Network Boot Priority



This is for setting the boot order of the connected networks.

Advanced Chipset Features



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

Video RAM Cacheable

Settings: [Disabled, Enabled]

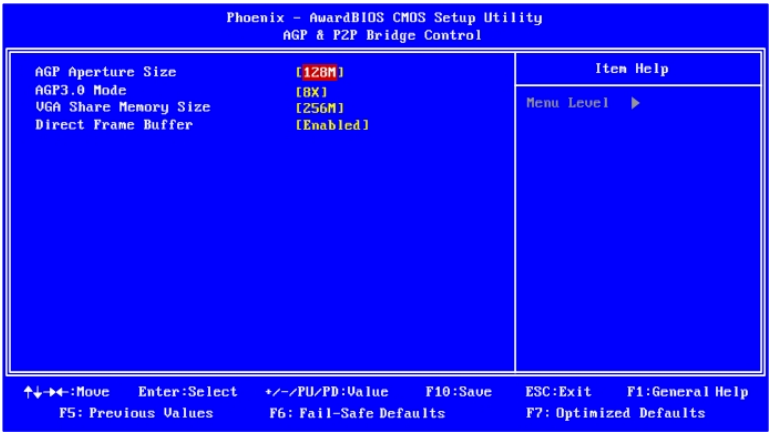
VIA Wireless LAN Support

Settings: [Enabled, Disabled]

Disabled LAN Bypass

Settings: [Disabled, Enabled]

AGP & P2P Bridge Control



AGP Aperture Size

This setting controls how much memory space can be allocated to AGP for video purposes. The aperture is a portion of the PCI memory address range dedicated to graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

Settings: [32MB, 64MB, 128MB, 256MB, 512MB, 1GB]

AGP3.0 Mode

This mainboard supports the AGP 8x interface. When the AGP 8x video card is used, it can transfer video data at 2133MB/s. AGP 8x is backward compatible, leave the default 4x mode on. AGP 4x mode can be detected automatically once you plug in the AGP 4x card.
Settings: [8x, 4x]

VGA Share Memory Size

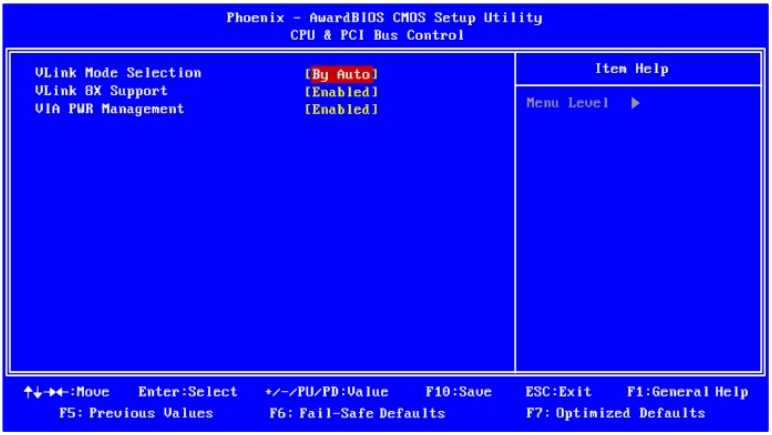
This setting allows you to select the amount of system memory that is allocated to the integrated graphics processor.

Settings: [Disabled, 64M, 128M, 256M]

Direct Frame Buffer

Settings: [Disabled, Enabled]

CPU & PCI Bus Control



VLink Mode Selection

Settings: [By Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4]

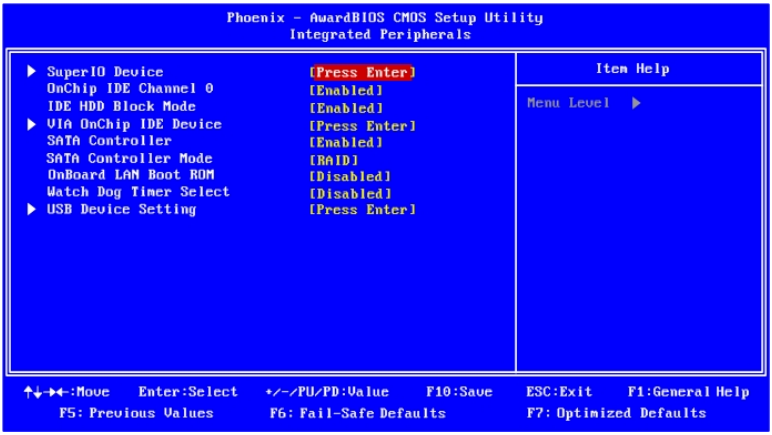
VLink 8X Support

Settings: [Disabled, Enabled]

VIA PWR Management

Settings: [Disabled, Enabled]

Integrated Peripherals



Onboard IDE Channel 0

Settings: [Disabled, Enabled]

IDE HDD Block Mode

Automatic detection of the optimal number of block read/writes per sector the drive can support.

Settings: [Disabled, Enabled]

SATA Controller

Settings: [Disabled, Enabled]

SATA Controller Mode

Controls the features of the Serial ATA controller within the South Bridge. Serial ATA is the latest generation of the ATA interface. Serial ATA hard drives deliver transfer speeds of up to 300MB/sec.

Settings	Description
IDE	Supports two PATA hard disk drives. Disables RAID and AHCI function.
RAID	Only SATA supports RAID and AHCI function
AHCI	Enable the AHCI function such as Native Command Queuing and Hot Plug function

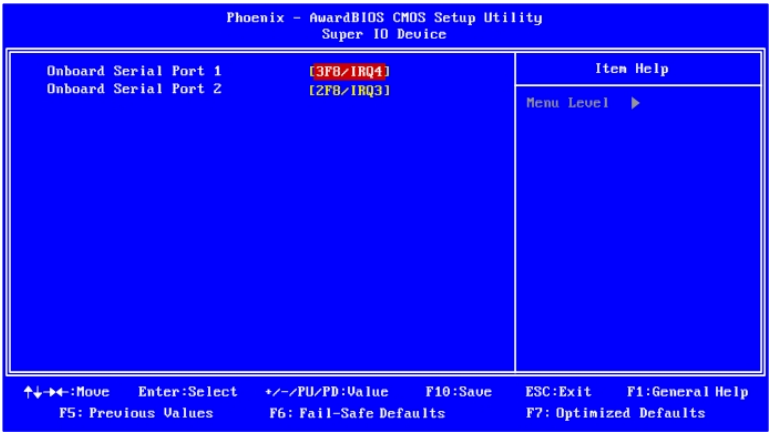
OnBoard LAN Boot ROM

Decide whether to invoke the boot ROM of the onboard LAN chip.
Settings: [Enabled, Disabled]

Watch Dog Timer Select

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

SuperIO Device



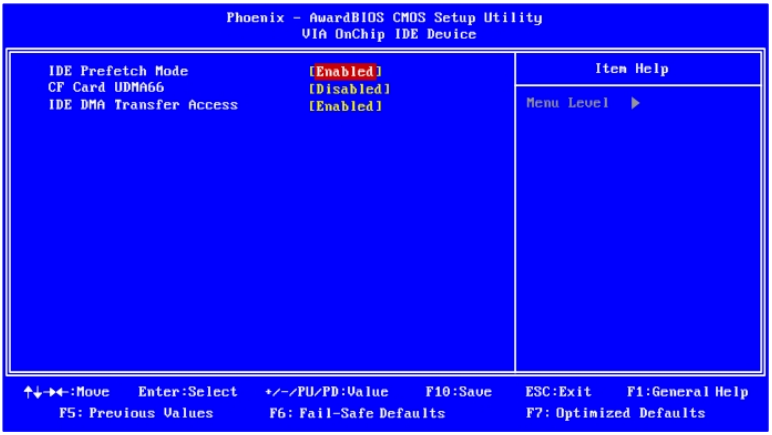
Onboard Serial Port 1

Settings: [Disabled, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Auto]

Onboard Serial Port 2

Settings: [Disabled, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Auto]

VIA OnChip IDE Device



IDE Prefetch Mode

Settings: [Disabled, Enabled]

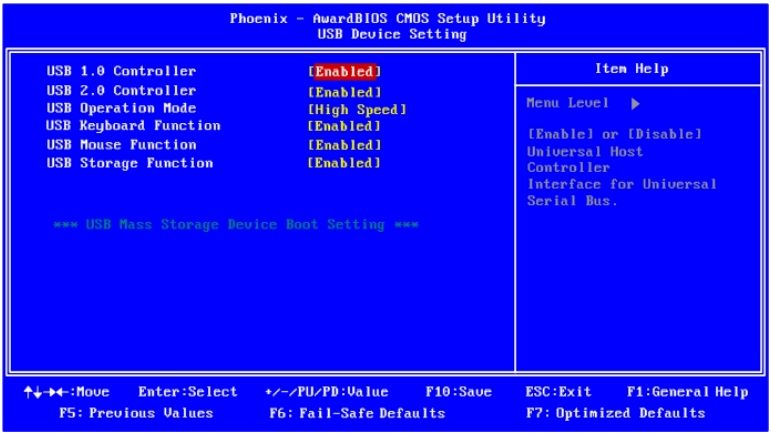
CF Card UDMA66

To support only UDMA66 CF Card
Settings: [Disabled, Enabled]

IDE DMA Transfer Access

Settings: [Disabled, Enabled]

USB Device Setting



USB 1.0 Controller

Enable or disable Universal Host Controller Interface for Universal Serial Bus.

Settings: [Disabled, Enabled]

USB 2.0 Controller

Enable or disable Enhanced Host Controller Interface for Universal Serial Bus.

Settings: [Disabled, Enabled]

USB Operation Mode

Auto decide USB device operation mode.

Settings	Description
Full/Low Speed	All of USB Device operated on full/low speed mode
High Speed	If USB device was high speed device, then it operated on high speed mode.

USB Keyboard Function

Enable or disable Legacy support of USB Keyboard.

Settings: [Disabled, Enabled]

USB Mouse Function

Enable or disable Legacy support of USB Mouse.

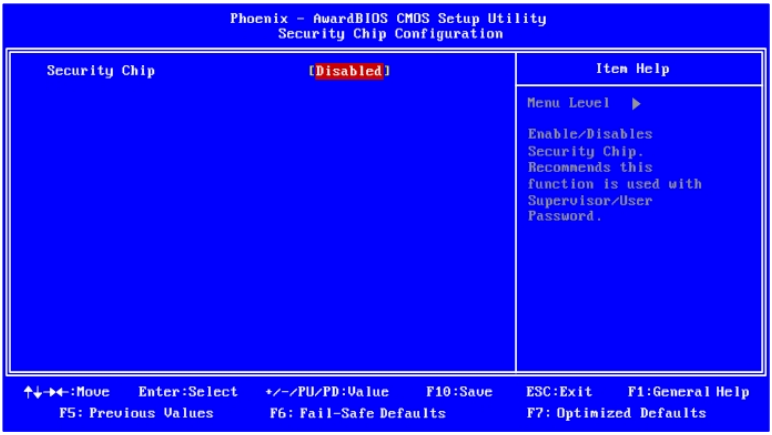
Settings: [Disabled, Enabled]

USB Storage Function

Enable or disable Legacy support of USB Mass Storage.

Settings: [Disabled, Enabled]

Security Chip Configuration

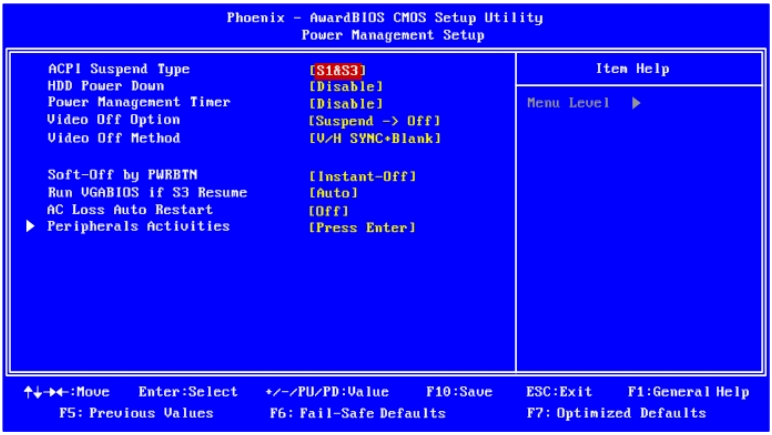


Security Chip

Enable or disable security chip.

Settings: [Disabled, Enabled]

Power Management Setup



ACPI Suspend Type

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

HDD Power Down

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

Settings: [Disable, 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, 15 Min]

Power Management Timer

Settings: [Disable, 1 Min, 2 Min, 4 Min, 6 Min, 8 Min, 10 Min, 20 Min, 30 Min, 40 Min, 1 Hour]

Video Off Option

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

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

Video Off Method

Settings: [Blank Screen, V/H SYNC+Blank, DPMS Support]

Soft-Off by PWRBTN

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

Run VGABIOS if S3 Resume

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

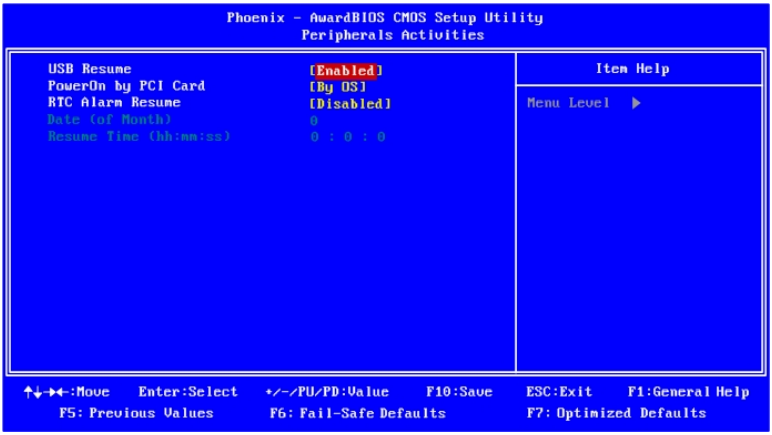
Settings: [Auto, Yes, No]

AC Loss Auto Restart

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

Settings	Description
Off	Keeps the system in an off state until the power button is pressed
On	Restarts the system when the power is back
Former-Sts	Former-Sts

Peripherals Activities



USB Resume

Settings: [Disabled, Enabled]

PowerOn by PCI Card

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

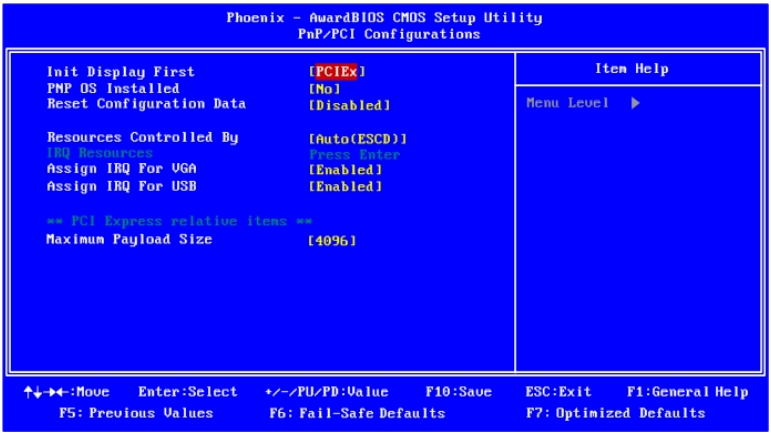
Settings: [By OS, Enabled]

RTC Alarm Resume

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

Settings: [Disabled, Enabled]

PnP/PCI Configurations



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

Init Display First

Settings: [PCI Slot, Onboard, PCIEx]

PNP OS Installed

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

Reset Configuration Data

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

Resources Controlled By

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

Settings	Description
Auto(ESCD)	BIOS will automatically assign IRQ, DMA and memory base address fields
Manual	Unlocks “IRQ Resources” for manual configuration

Assign IRQ for VGA

Assign IRQ for VGA devices.

Settings: [Disabled, Enabled]

Assign IRQ for USB

Assign IRQ for USB devices.

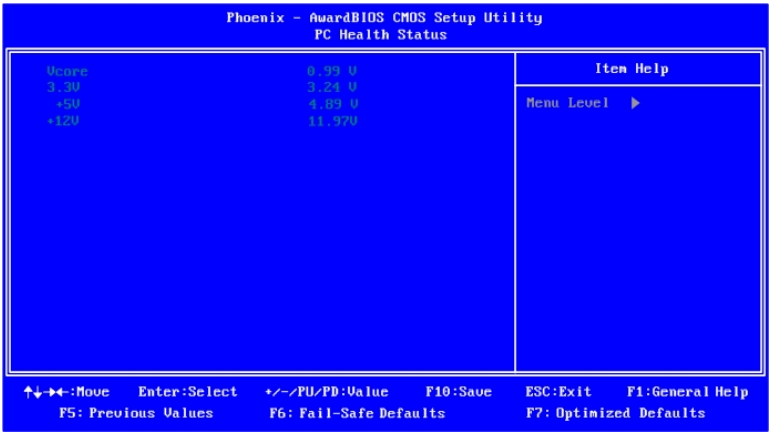
Settings: [Disabled, Enabled]

Maximum Payload Size

Set maximum TLP payload size for the PCI Express devices. The unit is byte.

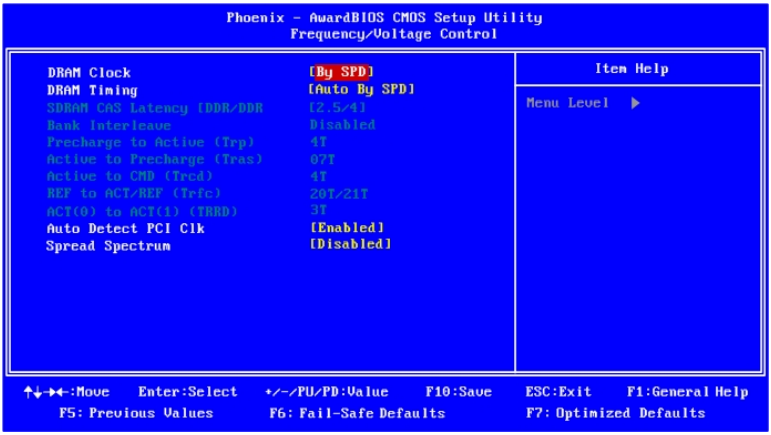
Settings: [128, 256, 512, 1024, 2048, 4096]

PC Health Status



The PC Health Status displays the current status of all of the monitored hardware devices/components such as CPU voltages, temperatures and fan speeds.

Frequency/Voltage Control



DRAM Clock

The chipset supports synchronous and asynchronous mode between host clock and DRAM clock frequency.

Settings: [By SPD, 200MHz, 266MHz, 333MHz]

DRAM Timing

The value in this field depends on the memory modules installed in your system. Changing the value from the factory setting is not recommended unless you install new memory that has a different performance rating than the original modules.

Settings: [Manual, Auto By SPD]

Auto Detect PCI Clk

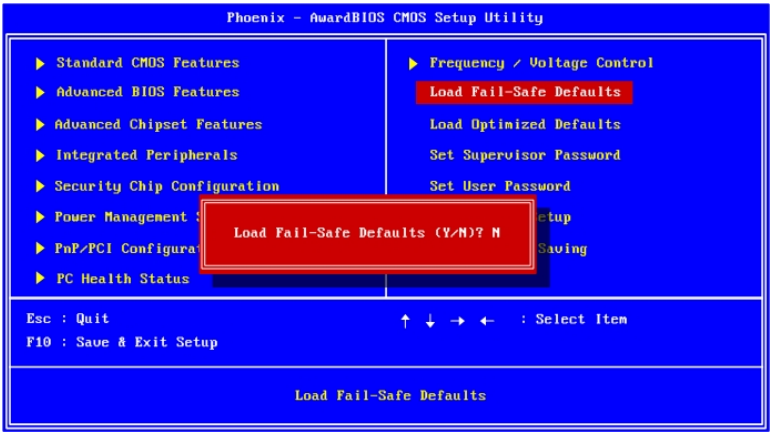
Settings: [Enabled, Disabled]

Spread Spectrum

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

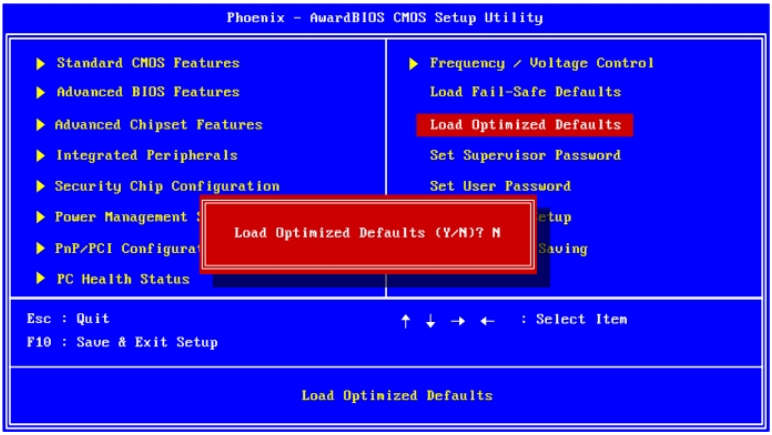
Settings: [Disabled, Enabled]

Load Fail-Safe Defaults



This option is for restoring all the default fail-safe BIOS settings. These values are set by the mainboard manufacturer to provide a stable system with basic performance. Entering "**Y"** and press <**Enter**> to load the default fail-safe BIOS values. Entering "**N**" and press <**Enter**> will cancel the load fail-safe defaults request.

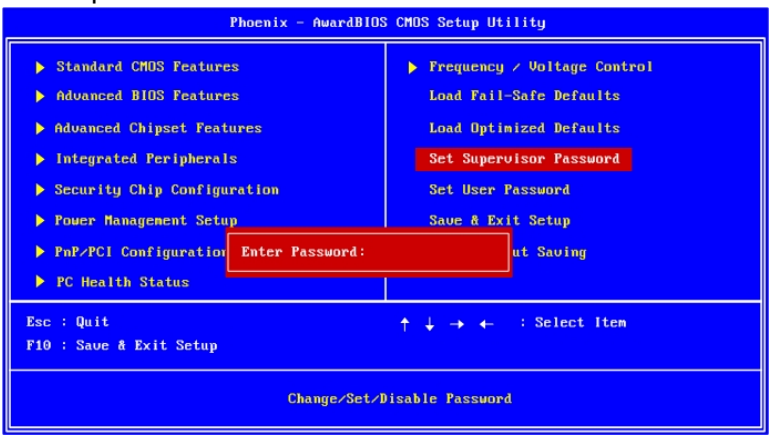
Load Optimized Defaults



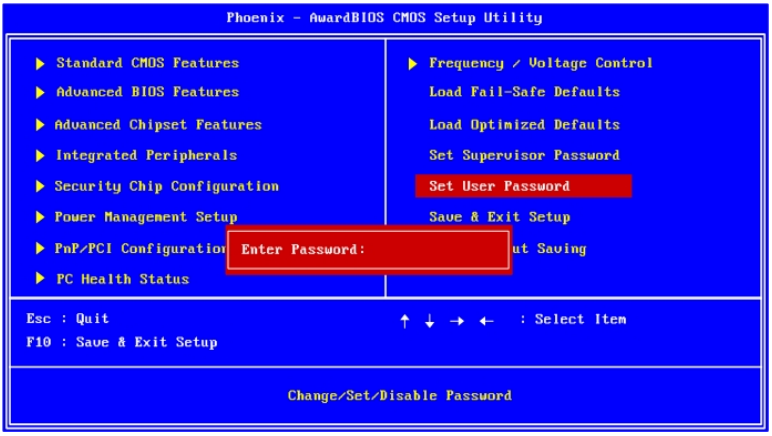
This option is for restoring all the default optimized BIOS settings. The default optimized values are set by the mainboard manufacturer to provide a stable system with optimized performance. Entering "**Y**" and press <**Enter**> to load the default optimized BIOS values. Entering "**N**" will cancel the load optimized defaults request.

Set Supervisor/User Password

Set Supervisor



User Password



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

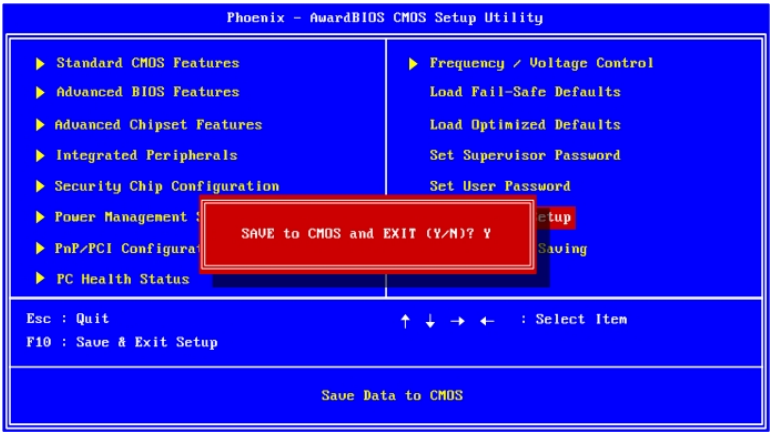
There are two types of passwords you can set. A supervisor password and a user password. When a supervisor password is used, the BIOS Setup program can be accessed and the BIOS settings can be changed. When a user password is used, the BIOS Setup program can be accessed but the BIOS settings cannot be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

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

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

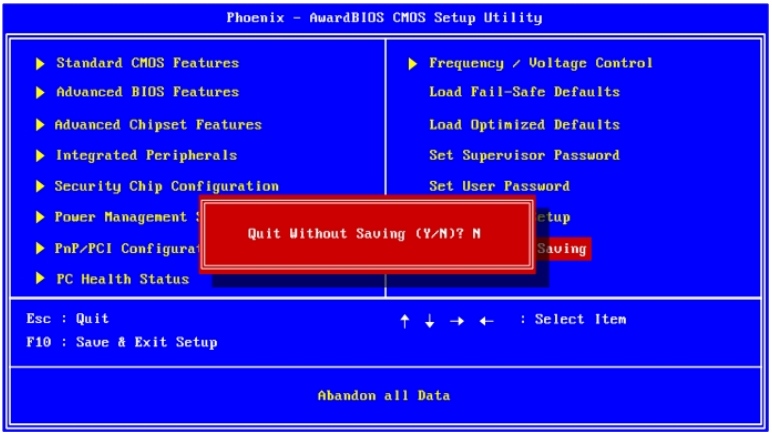
Additionally, when a password is enabled, the BIOS can be set to request the password each time the system is booted. This would prevent unauthorized use of the system. See "**Security Option**" in the "**Advanced BIOS Features**" section for more details.

Save & Exit Setup



Entering "**Y**" saves any changes made, and exits the program.
Entering "**N**" will cancel the exit request.

Exit Without Saving



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

Entering "**N**" will cancel the exit request.

CHAPTER 4
DRIVER INSTALLATION

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

Driver Utilities

Getting Started

VIA NAB-7500 Developer kits include a Driver CD that contains the drivers and software for enhancing the performance of the mainboard. Regular kits do not include a Driver CD. However, the latest drivers can be downloaded from http://www.via.com.tw.

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

Running the Driver Utilities CD

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

For Linux drivers, click the right button on mouse and click open. Linux drivers are located in the "Driver" folder.

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

CD Content

☐ **VIA 4in1 Drivers:**

- Contains VIA ATAPI Vendor Support Driver (enables the performance enhancing bus mastering functions on ATA-capable Hard Disk Drives and ensures IDE device compatibility), AGP VxD Driver (provides service routines to your VGA driver and interface directly to hardware, providing fast graphical access), IRQ Routing Miniport Driver (sets the system's PCI IRQ routing sequence) and VIA INF Driver (enables the VIA Power Management function).
- Includes V-RAID and RAID tools.

☐ **VIA Graphics Driver:**

- Enhances the onboard VIA graphic chip.
- WinXP and Linux Fedora Core 4 drivers are provided.

☐ **VIA USB 2.0 Driver:**

- Enhances VIA USB 2.0 ports.

☐ **VIA GigaLAN Driver:**

- Enhances the onboard VIA VT6130 10/100/1000M PCIe Gigabit LAN chips and the VIA VT6122 Gigabit LAN chip (NAB-7500-15TLG).
- WinXP and Linux Fedora Core 4 drivers are provided.

☐ **VIA Linux RAID Driver:**

- Support for RAID devices.
- For Linux Fedora Core 4 and patch guide to enable PATA/IDE DMA mode for VIA South Bridges.