AWARD® BIOS Setup 3

The mainboard uses AWARD® BIOS ROM that provides a Setup utility for users to modify the basic system configuration. The information is stored in a battery-backed CMOS RAM so it retains the Setup information when the power is turned off.

This chapter provides you with the overview of the BIOS Setup program. It contains the following topics:

Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <DEL> key to enter Setup.

```
Hit DEL if you want to run SETUP
```

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

Control Keys

<↑>	Move to the previous item
<↓>	Move to the next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Enter>	Select the item
<Esc>	Jumps to the Exit menu or returns to the main menu from a submen
<+/PU>	Increase the numeric value or make changes
<-/PD>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F5>	Restore the previous CMOS value from CMOS, only for Option Pag Setup Menu
<F6>	Load the default CMOS value from Fail-Safe default table, only for Option Page Setup Menu
<F7>	Load Optimized defaults
<F10>	Save all the CMOS changes and exit

Getting Help

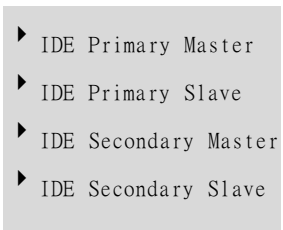
After entering the Setup utility, the first screen you see is the Main Menu.

Main Menu

The main menu displays the setup categories the BIOS supplies. You can use the arrow keys (↑↓) to select the item. The on-line description for the selected setup category is displayed on the bottom of the screen.

Sub-Menu

If you find a right pointer symbol appears to the left of certain fields (as shown in the right view), that means a sub-menu containing additional options for the field can be launched from this field. To enter the sub-menu, highlight the field and press <Enter>. Then you can use control keys to move between and change the settings of the sub-menu. To return to the main menu, press <Esc>.

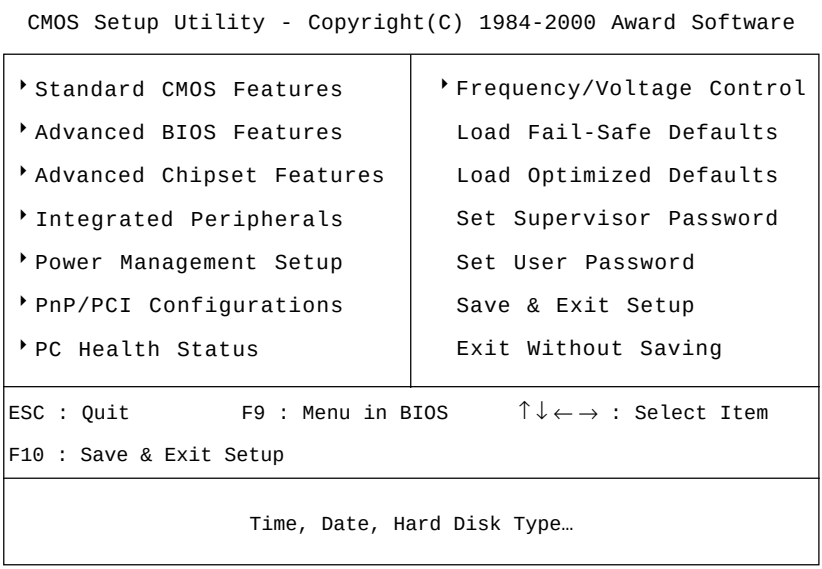


General Help <F1>

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.

The Main Menu

Once you enter AWARD® BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu displays eleven configurable functions and two exit choices. Use arrow keys to move among the items and press <Enter> to enter the sub-menu.



Standard CMOS Features
Use this menu for basic system configurations, such as time, date etc.

Advanced BIOS Features
Use this menu to setup the items of Award® special enhanced features.

Advanced Chipset Features
Use this menu to change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals
Use this menu to specify your settings for integrated peripherals.

Power Management Setup
Use this menu to specify your settings for power management.

PnP/PCI Configurations
This entry appears if your system supports PnP/PCI.

PC Health Status
This entry displays the current status of your PC.

Frequency/Voltage Control
Use this menu to specify your settings for frequency/voltage control.

Load Fail-Safe Defaults
Use this menu to load the BIOS default values for the minimal/stable performance of your PC.

Load Optimized Defaults
Use this menu to load the default factory settings for BIOS for optimal system performance.

Supervisor Password
Use this menu to set Supervisor Password.

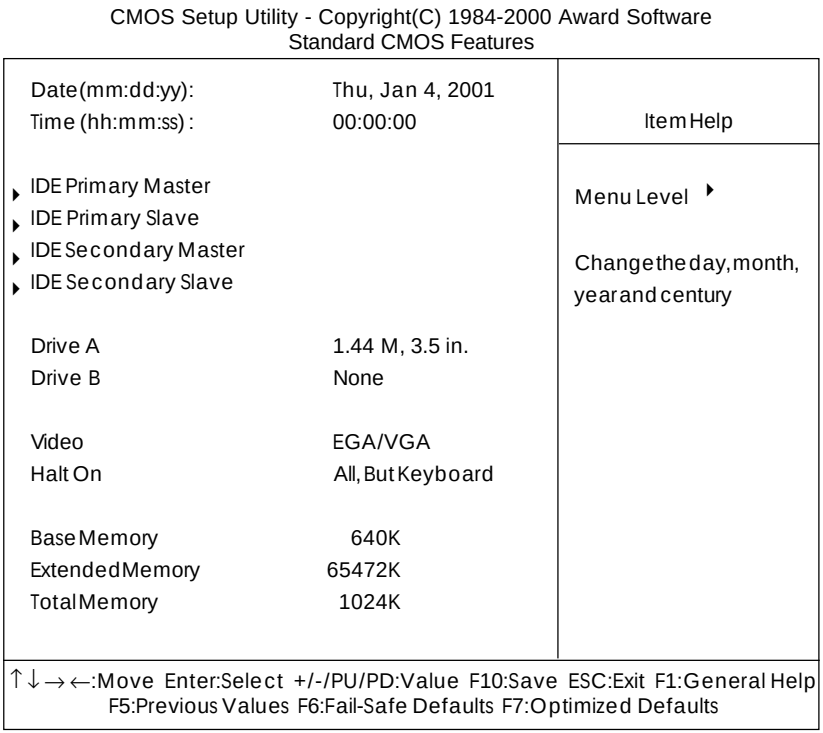
User Password
Use this menu to set User Password.

Save & Exit Setup
Save changes to CMOS and exit setup.

Exit Without Saving
Abandon all changes and exit setup.

Standard CMOS Features

The items inside Standard CMOS Features menu are divided into 13 categories. Each category includes none, one or more setup items. Use the arrow keys to highlight the item you want to modify and use the <PgUp> or <PgDn> keys to switch to the value you prefer.



Date

This allows you to set the system to the date that you want (usually the current date). The format is <day><month> <date> <year>.

day	Day of the week, from Sun to Sat, determined by BIOS. Read-only.
month	The month from Jan. through Dec.
date	The date from 1 to 31 can be keyed by numeric

function keys.

year The year depends on the year of the BIOS.

Time

This allows you to set the system time that you want (usually the current time). The time format is <hour> <minute> <second>.

IDE Primary Master/Primary Slave/Secondary Master/Secondary Slave

Press PgUp/<+> or PgDn/<-> to select the hard disk drive type. The specification of hard disk drive will show up on the right hand according to your selection.

IDE Primary Master

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master	Auto	
Access Mode	Auto	Menu Level ▸ ▸
Capacity	15021MB	To auto-detect the HDD's size, head...on this channel
Cylinder	291024	
Head	16	
Precomp	0	
Landing Zone	29103	
Sector	63	

Access Mode	The settings are Auto, CHS, LBA and Large.
Capacity	The 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.

Drive A/B

This item allows you to set the type of floppy drives installed. Available

options are *None*, *360K, 5.25 in.*, *1.2M, 5.25 in.*, *720K*, 3.5 in., *1.44M, 3.5 in.*, *2.88M, 3.5 in.*. The default value for Floppy Drive A is *1.44M, 3.5 in*, and for Floppy Drive B is *None*.

Video

The item sets the type of video adapter used for the primary monitor of the system . Available options are *EGA/VGA* , *CGA 40*, *CGA 80* and *Mono*. Default value is *EGA/VGA*.

Halt On

The item determines whether the system will stop if an error is detected at boot. Available options are:

All Errors	The system stops when any error is detected.
No Errors	The system doesn't stop for any detected error.
All, But Keyboard	The system doesn't stop for a keyboard error.
All, But Diskette	The system doesn't stop for a disk error.
All, But Disk/Key	The system doesn't stop for either a disk or a keyboard error.

Advanced BIOS Features

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Advanced BIOS Features

	Anti-Virus Protection	Disabled	Item Help
	CPU Internal Cache	Enabled	
	External Cache	Enabled	Menu Level ▸
	CPU L2 Cache ECC Checking	Enabled	
	Processor Number Feature	Enabled	Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.
	Quick Power On Self Test	Disabled	
	First Boot Device	Floppy	
	Second Boot Device	HDD-0	
	Third Boot Device	LS120	
	Boot Other Device	Enabled	
	Swap Floppy Drive	Disabled	
	Boot Up Floppy Seek	Enabled	
	Boot Up NumLock Status	On	
	Gate A20 Option	Normal	
	Typematic Rate Setting	Disabled	
x	Typematic Rate (Chars/Sec)	6	
x	Typematic Delay (Msec)	250	
	Security Option	Setup	
	OS Select for DRAM > 64MB	Non-OS2	
	Video BIOS Shadow	Enabled	
	C8000-CBFFF Shadow	Disabled	
	CC000-CFFFF Shadow	Disabled	
	D0000-D3FFF Shadow	Disabled	
	D4000-D7FFF Shadow	Disabled	
	D8000-DBFFF Shadow	Disabled	
	DC000-DFFFF Shadow	Disabled	

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

Anti-Virus Protection

The item is to set the Virus Warning feature for IDE Hard Disk boot sector protection. If the function is enabled and any attempt to write data into this area is made, BIOS will display a warning message on screen and beep. Settings are *Disabled* and *Enabled*. Default value is *Disabled*.

CPU Internal Cache
The item allows you to turn on or off CPU's internal (L1) cache. Settings are *Enabled* (default) and *Disabled*.

External Cache
This allows you to turn on or off L2 (Level 2) cache memory for CPU. Settings are *Enabled* (default) and *Disabled*.

CPU L2 Cache ECC Checking
This allows you to enable or disable the ECC (Error-Correcting Code) feature for error detection and correction when data passes through L2 cache memory. Settings are *Enabled* and *Disabled*. Default value is *Enabled*.

Processor Number Feature
This feature is for Pentium® !!! only. When set to *Enabled*, the system will check CPU Serial Number. Set to *Disabled* if you don't want the system to know the CPU Serial Number. Default value is *Enabled*.

Quick Power On Self Test
Setting the item to *Enabled* allows the system to shorten boot time since it will skip some check items. Settings are *Enabled* and *Disabled*. Default value is *Disabled*.

First/Second/Third Boot Device
The items allow you to set the sequence of boot devices where BIOS attempts to load the disk operating system. The settings are:

HDD-0	The system will boot from the first HDD.
HDD-1	The system will boot from the second HDD.
HDD-2	The system will boot from the third HDD.
HDD-3	The system will boot from the fourth HDD.
Floppy	The system will boot from floppy drive.
ZIP100	The system will boot from ATAPI ZIP drive.
LS-120	The system will boot from LS-120 drive.
SCSI	The system will boot from the SCSI.
LAN	The system will boot from the Network drive.
CD-ROM	The system will boot from the CD-ROM.

Disabled Disable this sequence.

Boot Other Device
Setting the option to *Enabled* allows the system to try to boot from other device if the system fails to boot from the 1st/2nd/3rd boot device.

Swap Floppy Drive
Setting to *Enabled* will swap floppy drives A: and B:. Default is *Disabled.*

Boot Up Floppy Seek
Setting to *Enabled* will make BIOS seek floppy drive A: before booting the system. Setting options are *Disabled* and *Enabled*. Default is *Enabled*.

Boot Up NumLock Status
This item is to set the Num Lock status when the system is powered on. Setting to *On* will turn on the Num Lock key when the system is powered on. Setting to *Off* will allow end users to use the arrow keys on the numeric keypad. Settings are *On* and *Off*. Default is *On.*

Gate A20 Option
This item is to set the Gate A20 status. A20 refers to the first 64KB of extended memory. When the default value *Fast* is selected, the Gate A20 is controlled by Port92 or chipset specific method resulting in faster system performance. When *Normal* is selected, A20 is controlled by a keyboard controller or chipset hardware.

Typematic Rate Setting
This item is used to enable or disable the typematic rate setting including Typematic Rate & Typematic Delay.

Typematic Rate (Chars/Sec)
After Typematic Rate Setting is enabled, this item allows you to set the rate (characters/second) at which the keys are accelerated. Setting options are *6*, *8*, *10*, *12*, *15*, *20*, *24* and *30*.

Typematic Delay (Msec)
This item allows you to select the delay between when the key was first pressed and when the acceleration begins. Setting options are *250*, *500*, *750* and *1000*.

Security Option
This specifies the type of BIOS password protection that is implemented. Setting options are described below:

Option	Description
Setup (default)	The password prompt appears only when end users try to run Setup.
System	A password prompt appears every time when the computer is powered on or when end users try to run Setup.

OS Select for DRAM > 64MB
This allows you to run the OS/2® operating system with DRAM larger than 64MB. When you choose the default value *Non-OS2*, you cannot run the OS/2® operating system with DRAM larger than 64MB. But it is possible if you choose *OS2*. Default value is *Non-OS2*.

Video BIOS Shadow
This items sets if the Video BIOS will be copied to RAM and increase video speed accordingly. Settings are *Enabled* (default) and *Disabled*.

C8000-CBFFF/CC000-CFFFF/D0000-D3FFF/D4000-D7FFF/D8000-DBFFF/DC000-DFFFF Shadow
These items specify whether the contents of the adapter ROM named in the items will be copied into RAM to improve the performance of ROM firmware for adapters. You need to know the address of each adapter ROM occupies to shadow (copy) it into the correct area of RAM. Settings are *Enabled* and *Disabled* (default).

Advanced Chipset Features

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Advanced Chipset Features

DRAM Timing by SPD	Yes	Item Help
x SDRAM Cycle Length	3	
x DRAM Clock	Host CLK	
MemoryHole	Disabled	Menu Level ▸
P2C/C2PConcurrency	Enabled	
Fast R-W Turn Around	Enabled	
System BIOS Cacheable	Disabled	
VideoRAM Cacheable	Disabled	
Frame Buffer Size	8M	
AGP Aperture Size	64M	
OnChip USB	Enabled	
USB Keyboard Support	Disabled	
OnChip Sound	Auto	
OnChipModem	Auto	
CPU to PCI Write Buffer	Enabled	
PCI Dynamic Bursting	Enabled	
PCI Master 0 WS Write	Enabled	
PCI Delay Transaction	Enabled	
PCI#2 Access #1 Retry	Enabled	
AGP Master 1 WS Write	Disabled	
AGP Master 1 WS Read	Disabled	
MemoryParity/ECC Check	Disabled	

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

Note: *Change these settings only if you are familiar with the chipset.*

DRAM Timing by SPD

Selects whether DRAM timing is configured by reading the contents of the SPD (Serial Presence Detect) device on the DRAM module. Setting to *Enabled* makes both DRAM Cycle Length and DRAM Clock automatically

determined by BIOS according to the configurations on the SPD.

SDRAM Cycle Length
The option controls the CAS latency, which determines the timing delay before SDRAM starts a read command after receiving it. Settings are *2* and *3* (clock cycles). *2* increases system performance while *3* provides more stable system performance.

DRAM Clock
The chipset supports synchronous and asynchronous mode between host clock and DRAM clock frequency. The settings are:

Host CLK	The DRAM clock will be equal to the Host Clock.
HCLK-33M	The DRAM clock will be equal to the Host Clock minus 33MHz. For example, if the Host Clock is 133MHz, the DRAM clock will be 100MHz.
HCLK+33M	The DRAM clock will be equal to the Host Clock plus 33MHz. For example, if the Host Clock is 100MHz, the DRAM clock will be 133MHz.

Memory Hole
In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16MB. When this area is reserved, it cannot be cached. The settings are *Enabled* and *Disabled* (default).

P2C/C2P Concurrency
This field enables or disables the PCI to CPU and CPU to PCI concurrency feature, which allows synchronous data transmission from PCI to CPU and vice versa. Selecting the default *Enabled* will increase system performance.

Fast R-W Turn Around
This is used to control the fast read/write turn around feature for DRAM timing. Settings are *Enabled* and *Disabled* (default). *Enabled* improves system performance while *Disabled* provides stability.

System BIOS Cacheable
System BIOS ROM at F000h-F0000h is always copied to RAM for faster execution. Selecting *Enabled* allows the contents of F0000h RAM memory segment to be written to and read from cache memory, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The settings are *Enabled* and *Disabled* (default).

Video RAM Cacheable
The field allows the caching of video memory, resulting in increased system performance. Settings are *Enabled* and *Disabled* (default).

Frame Buffer Size
Frame Buffer is the video memory that stores data for video display (frame). This field is used to determine the memory size for Frame Buffer. Larger frame buffer size increases video performance. Settings are *2M*, *4M* and *8M* (default).

AGP Aperture Size
Selects the size of the Accelerated Graphics Port (AGP) aperture. 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. Options are *4M*, *8M*, *16M*, *32M*, *64M* and *128M*.

OnChip USB
This is used to enable or disable the USB ports. Settings are *Enabled* and *Disabled*. The default is *Enabled*.

USB Keyboard Support
Set to *Enabled* if your system installs and uses an USB keyboard. Default is *Disabled*.

OnChip Sound
Auto allows the mainboard to detect whether an audio device is used. If the device is detected, the onboard audio controller will be enabled; if not, the

controller is disabled. Disable the controller if you want to use other controller cards to connect an audio device. Settings are *Auto* (default) and *Disabled*.

OnChipModem
Auto allows the mainboard to detect whether a modem is used. If a modem is detected, the onboard modem controller will be enabled; if not, the controller is disabled. Disable the controller if you want to use other controller cards to connect modems. Settings are *Auto* (default) and *Disabled*.

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

PCI Dynamic Bursting
When *Enabled*, every write transaction goes to the write buffer. Then burstable transactions burst on the PCI bus and nonburstable transactions do not.

PCI Master 0 WS Write
When *Enabled*, writes to the PCI bus are executed with zero wait state. Default is *Enabled*.

PCI Delay Transaction
The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select *Enabled* to support compliance with PCI specification version 2.1. Default is *Enabled*.

PCI #2 Access #1 Retry
When *Disabled*, PCI#2 will not be disconnected until access finishes (default). When *Enabled*, PCI#2 will be disconnected if max retries are attempted without success. Default is *Enabled*.

AGP Master 1 WS Write
When *Enabled*, writes to the AGP bus are executed with one wait state inserted. Default is *Disabled*.

AGP Master 1 WS Read
When *Enabled*, one wait state is inserted in the AGP read cycle. Default is *Disabled*.

Memory Parity/ECC Check
User can set the field to *Enabled* for memory checking if the type of DRAM installed in your system is Parity or ECC (Error-Correcting Code) DRAM. Default is *Disabled*.

AGP Master 1 WS Write
When *Enabled*, writes to the AGP bus are executed with one wait state inserted. Default is *Disabled*.

Integrated Peripherals

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Integrated Peripherals

	OnChip IDE Channel0		Enabled
	OnChip IDE Channel1		Enabled
	IDE Prefetch Mode		Enabled
	Primary Master	PIO	Auto
	Primary Slave	PIO	Auto
	Secondary Master	PIO	Auto
	Secondary Slave	PIO	Auto
	Primary Master	UDMA	Auto
	Primary Slave	UDMA	Auto
	Secondary Master	UDMA	Auto
	Secondary Slave	UDMA	Auto
	Init Display First		AGP
	Onboard Lan Device		Enabled
	IDE HDD Block Mode		Enabled
	Onboard FDD Controller		Enabled
	Onboard Serial Port 1		Auto
	Onboard Serial Port 2		Auto
	UART 2 Mode		Standard
x	IR Function Duplex		Half
x	TX, RX inverting enable		No, Yes
	Onboard Parallel Port		378/IRQ7
	Onboard Parallel Mode		Normal
x	ECP Mode Use DMA		3
x	Parallel Port EPP Type		EPP1.9
	Onboard Legacy Audio		Enabled
	Sound Blaster		Disabled
	SB I/O Base Address		220H
	SB IRQ Select		IRQ5
	SB DMA Select		DMA1
	MPU-401		Disabled
	MPU-401 I/O Address		330-333H
	Game Port (200-207H)		Enabled

Item Help

Menu Level ▸

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

OnChip IDE Channel0/1
The integrated peripheral controller contains an IDE interface with support for two IDE channels. Choose the default value *Enabled* to activate each channel separately.

IDE Prefetch Mode
The onboard IDE drive interfaces supports prefetching, for faster drive accesses. Set to *Disabled* if your primary and/or secondary add-in IDE interface does not support prefetching.

Primary/Secondary Master/Slave PIO
The four fields allow you to set a PIO (Programmed Input/Output) mode for each of the four IDE devices that the onboard IDE interface supports. Modes 0~4 provide increased performance. In Auto mode, BIOS automatically determines the best mode for each IDE device.

Primary/Secondary Master/Slave UDMA
Ultra DMA implementation is possible only if your IDE device supports it and your operating environment contains a DMA driver. If both your hard drive and software support Ultra DMA, select *Auto* (default) to enable BIOS support.

Init Display First
This item specifies which VGA card is your primary graphics adapter. Available options are *PCI Slot* and *AGP*. Default value is *AGP*.

Onboard Lan Device
This is used to enable or disable the onboard LAN controller. Settings are *Enabled* (default) and *Disabled*.

IDE HDD Block Mode
This allows your hard disk controller to use the fast block mode to transfer data to and from the hard disk drive. Block mode is also called block transfer, multiple commands or multiple sector read/write. *Enabled* enables IDE controller to use block mode; *Disabled* allows the controller to use standard mode. Default is *Enabled*.

Onboard FDD Controller

This is to enable or disable the onboard Floppy controller. Set to *Enabled* if you have a floppy disk drive installed on the mainboard and want to use it.

Onboard Serial Port 1/2

These items specify the base I/O port address and IRQ for the onboard Serial Port 1 (COM 1)/Serial Port 2 (COM 2). Selecting to *Auto* allows BIOS to automatically determine the correct base I/O port address. Available options are *Auto, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3* and *Disabled*. Default is *Auto*. If you have ISA add-on card, the suggested configuration is as the following:

If the ISA add-on card has				Onboard Serial port to be set at			
COM1 (I/O:3F8H)	COM2 (I/O:3F8H)	COM3 (I/O:3E8H)	COM4 (I/O:2E8H)	PORT1	IRQ ASSIGNED	PORT2	IRQ ASSIGNED
✓	✓	✓	✓	DISABLED	X	DISABLED	X
✓	✓	X	X	COM3	4	COM4	3
X	X	✓	✓	COM1	4	COM2	3
✓	X	X	✓	COM2	3	COM3	4
X	✓	✓	X	COM1	4	COM4	3
✓	✓	✓	X	COM4	3	DISABLED	X
✓	✓	X	✓	COM3	4	DISABLED	X
✓	X	✓	✓	COM2	3	DISABLED	X
X	✓	✓	✓	COM1	4	DISABLED	X
X	X	X	X	COM1	4	COM2	3
✓	X	X	X	COM2	3	COM3	4
X	✓	X	X	COM1	4	COM3	4
X	X	✓	X	COM1	4	COM2	3
X	X	X	✓	COM1	4	COM2	3

UART 2 Mode

The item allows you to specify the operation mode for serial port "COM 2". Settings are:

Standard	RS-232C Serial Port
HPSIR	IrDA-compliant Serial Infrared Port

ASKIR Amplitude Shift Keyed Infrared Port

IR Function Duplex
This field specifies a duplex value for the IR device connected to COM 2. Full-Duplex mode permits simultaneous two-direction transmission. Half-Duplex mode permits transmission in one direction only at a time. Settings are *Half* and *Full*. The default is *Half* .

TX, RX inverting enable
This item allows you to enable the TX, RX inverting which depends on different H/W requirement. This field is not recommended to change its default setting for avoiding any error in your system. Settings are "*No, Yes*" (default), "*Yes, No*", "*Yes, Yes*" and "*No, No*."

Onboard Parallel Port
This specifies the base I/O port address and IRQ of the onboard Parallel Port. Settings are *378/IRQ7*, *278/IRQ5*, *3BC/IRQ7* and *Disabled*. Default is *378/IRQ7*. If you have an ISA add-on card, the suggested configuration is as below:

If the ISA add-on card has			Onboard parallel port to be set as	
LPT1 I/O:378H	LPT2 I/O:278H	LPT3 I/O:3BCH	PORT ASSIGNED	IRQ ASSIGNED
✓	✓	✓	Disabled	X
✓	✓	X	LPT3	5
✓	X	✓	LPT2	5
X	✓	✓	LPT1	7
✓	X	X	LPT2	5
X	✓	X	LPT1	7
X	X	✓	LPT1	7
X	X	X	LPT1	7

***Note**: If the onboard parallel port interrupt and ISA add-on card interrupt are in conflict, the parallel port will not work properly. Please disable one of the devices.*

Onboard Parallel Mode
This item selects the operating mode for the parallel port: *Normal*, *EPP*, *ECP* or *ECP+EPP*. Default is *Normal.*

ECP Mode Use DMA
This item specifies an DMA channel 1 or 3 for the Parallel Port when it is set to *ECP* or *ECP+EPP*mode.

Parallel Port EPP Type
The item selects the EPP version used by the parallel port if the port is set to *EPP* or *ECP+EPP* mode. Settings are *EPP1.7* and *EPP1.9*.

Onboard Legacy Audio
The item enables or disables the onboard audio features of the mainbaord and the following audio options in the BIOS.

Sound Blaster
The item turns on/off the Sound Blaster feature of the board. If you want to play the Sound Blaster compatible games, you need to set the field to *Enabled*.

SB I/O Base Address
This item specifies the I/O Base Address for the Sound Blaster. Settings are 220H, 240H, 260H and 280H.

SB IRQ Select
This item specifies the IRQ for the Sound Blaster. Settings are IRQ 5, IRQ 7, IRQ 9 and IRQ 10.

SB DMA Select
This item specifies the DMA channel for the Sound Blaster. Settings are DMA 1, DMA 2, DMA 3 and DMA 0.

MPU-401
The field enables or disables the MPU-401 interface (the Yamaha Sound Blaster mode).

MPU-401 I/O Address
This item selects the base I/O port address for the MPU-401 interface. Settings are *330-333H*, *300-303* and *310-313*.

Game Port (200-207H)
The item enables or disables the Joystick/Game port.

Power Management Setup

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Power Management Setup

ACPI function	Enabled	Item Help
▸ Power Management	Press Enter	
ACPI Suspend Type	S1 (POS)	Menu Level ▸
PM Control by APM	Yes	
Video Off Option	Suspend --> Off	
Video Off Mehtod	V/H SYNC + Blank	
MODEM Use IRQ	3	
Soft-Off by PWRBTN	Instant-Off	
State After Power Failure	Auto	
LED In Suspend	Blink	
▸ Wake Up Events	Press Enter	

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

ACPI Function

This item is to activate the ACPI (Advanced Configuration and Power Management Interface) Function. If your operating system is ACPI-aware, such as Windows 98SE/2000/ME, select *Enabled*. Settings are *Enabled* and *Disabled*. Default is *Enabled*.

Power Management

Press <Enter> to enter the sub-menu for power management options.

Power Management

PowerManagement	User Define	Item Help
HDD Power Down	Disable	
Doze Mode	Disable	Menu Level ▸ ▸
Suspend Mode	Disable	

Power Management

This item is used to select the degree (or type) or power saving and is related to these modes: Doze Mode, Suspend Mode and HDD Power Down. There are three options for power management:

Min Saving	Minimum Power Management. Doze Mode = 1 hour, Suspend Mode = 1 hour, and HDD Power Down = Disable.
Max Saving	Maximum Power Management. Doze Mode = 10 sec, Suspend Mode = 10 sec, and HDD Power Down = Disable.
User Define	Allows end users to configure each mode separately. Each of the ranges are from *1 min.* to *1 hour* except for HDD Power Down which ranges from *1 min.* to *15 min.*

Default value is *User Define*.

HDD Power Down

If HDD activity is not detected for the length of time specified in this field, the hard disk drive will be powered down while all other devices remain active. Settings are *Disable* and *1* through *15* Min.

Doze Mode

If system activity is not detected for the length of time specified in this field, the CPU clock will run at slower speed while other devices still run at full

speed. Settings are *Disable*, *1 Min*, *2 Min*, *4 Min*, *6 Min*, *8 Min*, *10 Min*, *20 Min*, *30 Min*, *40 Min* and *1 Hour*.

Suspend Mode
If system activity is not detected for the length of time specified in this field, all devices except CPU will be shut off. Settings are *Disable*, *1 Min*, *2 Min*, *4 Min*, *6 Min*, *8 Min*, *10 Min*, *20 Min*, *30 Min*, *40 Min* and *1 Hour*.

ACPI Suspend Type
This item specifies the power saving modes for ACPI function. Options are:

S1 (POS)	The S1 sleep mode is a low power state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system context.
S3 (STR)	The S3 sleep mode is a lower power state where the information of system cofiguration and open applications/files is saved to main memory that remains powered while most other hardware components turn off to save energy. The information stored in memory will be used to restore the system when an "wake up" event occurs.

Default value is *S1 (POS)*.

PM Control by APM
Setting to *Yes* will activate an Advanced Power Management (APM) device to enhance Max Saving mode and stop CPU internal clock. Settings are *Yes* and *No*. Default is *Yes*.

Video Off Option
The settings are Always On, Suspend and All Modes. This option is for choosing the setting in which the monitor will turn off.

Always On	Always turn on.
Suspend --> Off	During Suspend mode, the monitor will be turned off.

All Modes --> Off The monitor is turned off during Doze, Standby or Suspend mode.

Video Off Method

This determines the manner in which the monitor is blanked.

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

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

DPMS Support Initial display power management signaling.

MODEM Use IRQ

Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system. Settings are *3, 4, 5, 7, 9, 10, 11* and *NA.*

Soft-Off by PWRBTN

This feature allows users to configure the power button as a normal power-on/-off button or a soft-off button. Settings are:

Instant-Off The power button functions as a normal power-on/-off button.

Delay 4 Sec. Pressing the power button for more than 4 seconds will place the system in a very low-power-usage state (Soft-Off state), with only enough circuitry receiving power to detect power button activity or Wake Up On LAN/Ring activity.

Default is *Instant-Off*.

State After Power Failure

This item specifies whether your system will reboot after a power failure or interrupts occurs. Available settings are:

Off	Leaves the computer in the power off state.
On	Reboots the computer.
Auto	BIOS automatically determines the best mode.

LED In Suspend

This item sets how the system uses Power LED on the case to indicate the suspend state. Settings are:

Blink	The Power LED blinks to indicate the suspend state.
Single	The Power LED remains the same color.
Dual	The Power LED changes its color to indicate the suspend state.

Wake Up Events

Press <Enter> to enter the sub-menu and the following screen appears:

Wake Up Events

VGA	OFF	Item Help
LPT & COM	LPT/COM	
HDD & FDD	ON	
PCI Master	OFF	Menu Level ▸ ▸
Wake Up On LAN	Disabled	
PowerOn by PCI Card	Disabled	
Modem Ring Resume	Disabled	
RTC Alarm Resume	Disabled	
x Date (of Month)	0	
x Resume Time (hh:mm:ss)	16 0 0	
▸ IRQs Activity Monitoring	Press Enter	

VGA, LPT & COM, HDD & FDD, PCI Master, Wake Up On LAN, PowerOn by PCI Card, Modem Ring Resume

These items specify whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or component is detected.

***Note**: To use the function of Wake Up On LAN and Modem Ring Resume,*

you need to install a LAN card/modem supporting power on function.

RTC Alarm Resume
This is to enable or disable the feature of booting up the system on a scheduled time/date. Settings are *Enabled* and *Disabled* (default)

Date (of Month)
Specifies the date for **RTC Alarm Resume**. Settings are *0~31*.

Resume Time (hh:mm:ss)
Specifies the time for **RTC Alarm Resume**. Format is <hour><minute> <second>.

IRQs Activity Monitoring
Press <Enter> to enter the sub-menu and the following screen appears:

IRQs Activity Monitoring

Primary INTR	On	Item Help
IRQ3 (COM 2)	Enabled	
IRQ4 (COM 1)	Enabled	
IRQ5 (LPT 2)	Enabled	Menu Level ▸ ▸ ▸
IRQ6 (Floppy Disk)	Enabled	
IRQ7 (LPT 1)	Enabled	
IRQ8 (RTC Alarm)	Disabled	
IRQ9 (IRQ2 Redir)	Disabled	
IRQ10 (Reserved)	Disabled	
IRQ11 (Reserved)	Disabled	
IRQ12 (PS/2 Mouse)	Enabled	
IRQ13 (Coprocessor)	Enabled	
IRQ14 (Hard Disk)	Enabled	
IRQ15 (Reserved)	Disabled	

Primary INTR
When this is set to *On*, any event occurring will wake up the system which has been powered down.

IRQ3~IRQ15
Enables or disables the monitoring of the specified IRQ line. If set to *Enabled*, the activity of the specified IRQ line will prevent the system from entering power saving modes or awaken it from power saving modes.

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

PnP/PCI Configurations

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PnP/PCI Configurations

	PNP OS Installed	No	Item Help
	Reset Configuration Data	Disabled	
	Resources Controlled By	Auto (ESCD)	Menu Level ▸
x	IRQ Resources	Press Enter	
x	DMA Resources	Press Enter	Select Yes if you are using a Plug and Play capableoperation system Select No if you need the BIOS to configurenon-boot devices
	PCI/VGA Palette Snoop	Disabled	
	Assign IRQ For VGA	Enabled	
	Assign IRQ For USB	Enabled	

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

PNP OS Installed

When set to *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 like Windows® 95 or 98. When set to *NO*, BIOS will initialize all the PnP cards. So, select *Yes* if the operating system is Plug & Play aware.

Reset Configuration Data

The ESCD (Extended System Configuration Data) is a method that the BIOS uses to store resource information for both PNP and non PNP devices in a bit string format. When *Enabled*, the system will rebuild ESCD and you will see the message “ESCD Update Successfully” on boot up.

Resources Controlled By

If select *Auto(ESCD)*, BIOS will automatically configure all the boot and PnP (Plug & Play) compatible devices and assigns system resources like IRQ to these devices. However, this feature means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95/98. If you want to configure by yourself, select *Manaul*. Default is *Auto(ESCD)*.

IRQ/DMA Resources

The items are adjustable only when **Resources Controlled By** is set to *Manual*. Press <Enter> and you will enter the sub-menu of the items. **IRQ Resources** & **DMA Resources** list IRQ 3/4/5/7/9/10/11/12/14/15 and DMA 0/1/3/5/6/7 for users to set each IRQ/DMA a type depending on the type of device using the IRQ/DMA. Settings are:

PCI/ISA PnP	For Plug & Play compatible devices designed for PCI or ISA bus architecture.
Legacy ISA	For devices compliant with the PC AT bus specification, requiring a specific interrupt.

PCI/VGA Palette Snoop

When set to *Enabled*, multiple VGA devices operating on different buses can handle data from the CPU on each set of palette registers on every video device. Bit 5 of the command register in the PCI device configuration space is the VGA Palette Snoop bit (0 is disabled). For example, if there are two VGA devices in the computer (one PCI and one ISA) and the:

VGA Palette Snoop Bit Setting	Action
Disabled	Data read or written by the CPU is only directed to the PCI VGA device's palette registers.
Enabled	Data read or written by the CPU is directed to both the PCI VGA device's palette registers and the ISA VGA device's palette registers, permitting the palette registers of both VGA devices to be identical.

The setting must be set to *Enabled* if any ISA adapter card installed in the system requires VGA palette snooping. The Setup and BIOS default values are *Disabled*.

Assign IRQ For VGA/USB

Set to *Enabled* allows BIOS to assign an IRQ to VGA card/USB device. Choose *Disabled* if you want to release the IRQ. Default is *Enabled*.

PC Health Status

This section is to monitor the current hardware status including CPU temperature, CPU Fan speed, Vcore etc. This is available only if there is hardware monitoring onboard.

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PC Health Status

Current CPU Temp. Current System Temp. Current CPUFAN1 Speed Current CPUFAN2 Speed Vcore 2.5V 3.3V 5V 12V	Item Help Menu Level ▸

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

Current CPU Temp., Current System Temp., Current CPUFAN1/2 Speed, Vcore, 2.5/3.3/5/12V

These items display the current status of all of the monitored hardware devices/components such as CPU voltages, temperatures and all fans's speed.

Frequency/Voltage Control

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Frequency/Voltage Control

Auto Detect DIMM/PCI Clk	Enabled	Item Help
Spread Spectrum	Disabled	
CPU Host/PCI Clock	Default	Menu Level ▸

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

Auto Detect DIMM/PCI Clk

Use this item to enable or disable the feature of auto detecting the clock frequency of the installed DRAM DIMMs and PCI cards. Settings are *Enabled* (default) and *Disabled*.

Spread Spectrum

This item is used to enable or disable the clock generator's Spread Spectrum feature. When overclocking the processor, always set it to *Disabled*. Settings are *Enabled* and *Disabled* (default).

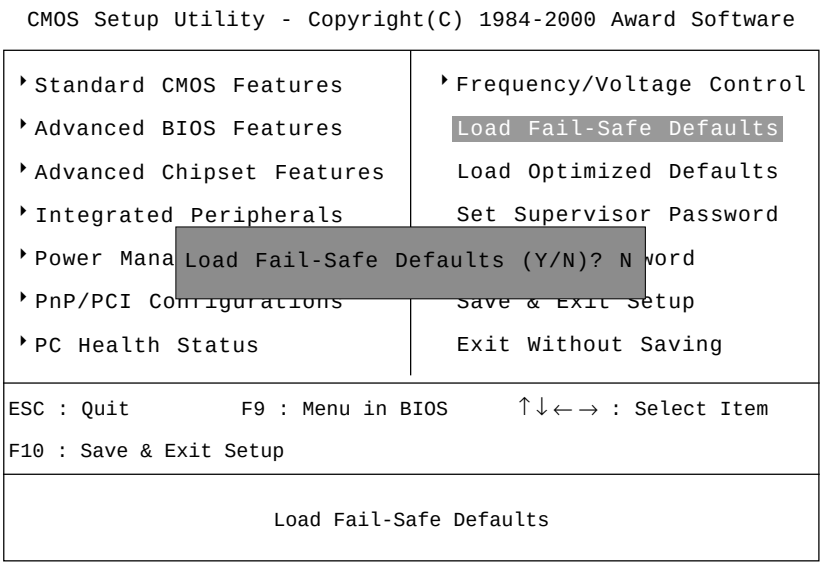
CPU Host/PCI Clock

This item specifies the clock frequency of CPU host bus (FSB) and PCI bus and provides a method for end users to overclock the processor accordingly. If the item shows *Default*, the clock frequency will use the default value for both the CPU host bus and PCI bus.

Load Fail-Safe/Optimized Defaults

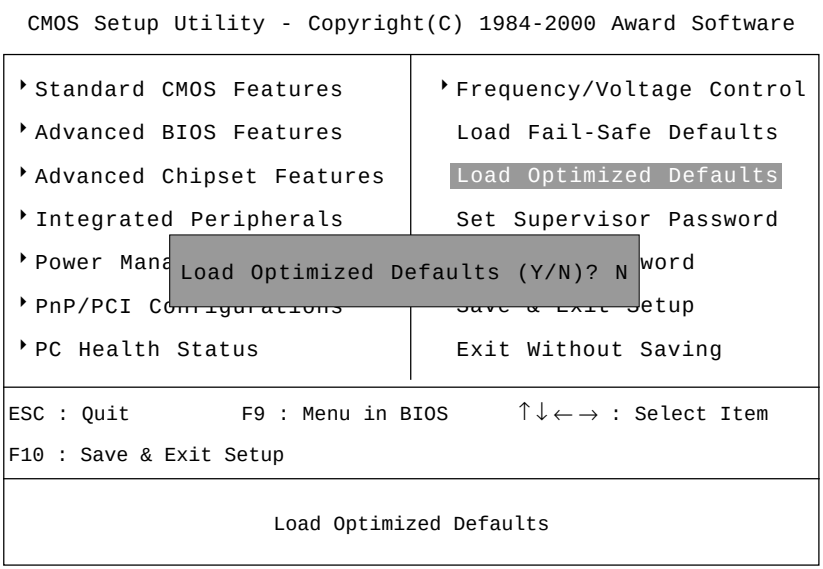
The two options on the main menu allow users to restore all of the BIOS settings to the default Fail-Safe or Optimized values. The Optimized Defaults are the default values set by the mainboard manufacturer specifically for the optimal performance of the mainboard. The Fail-Safe Defaults are the default values set by the BIOS vendor for the stable system performance.

When you select Load Fail-Safe Defaults, a message as below appears:



Pressing *Y* loads the BIOS default values for the most stable, minimal system performance.

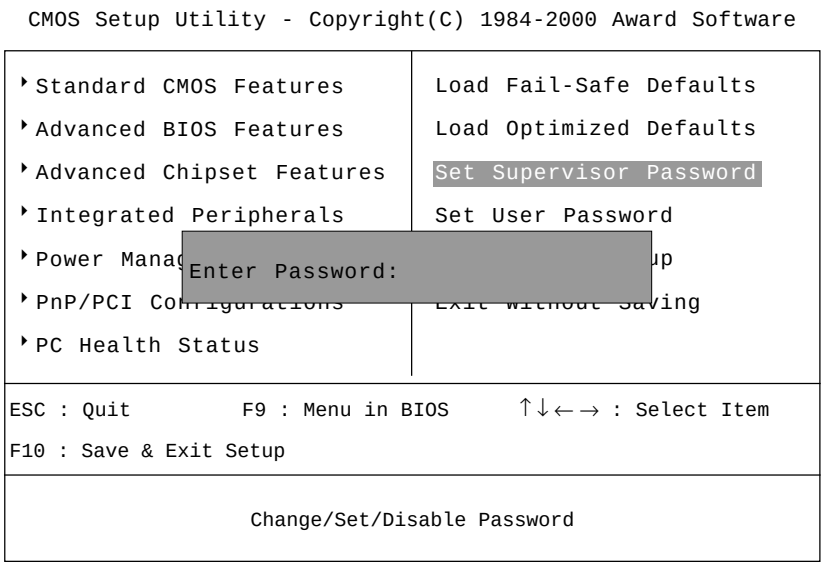
When you select Load Optimized Defaults, a message as below appears:



Pressing *Y* loads the default factory settings for optimal system performance.

Set Supervisor/User Password

When you select this function, a message as below will appear on the screen:



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. You will be prompted to confirm the password. Re-type the password and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To clear a set password, just press <Enter> when you are prompted to enter the password. A message will show up confirming the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup without entering any password.

When a password has been set, you will be prompted to enter it every time you

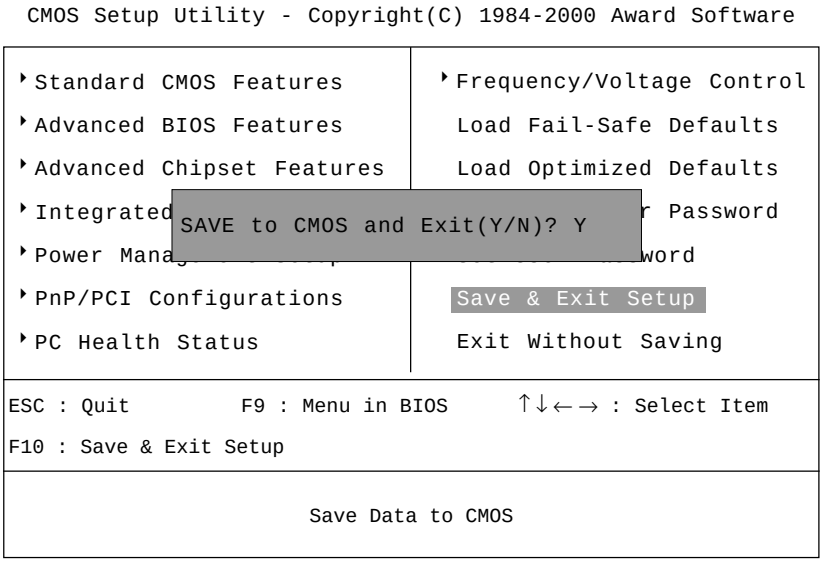
try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also have BIOS to request a password each time the system is booted. This would prevent unauthorized use of your computer. The setting to determine when the password prompt is required is the Security Option of the Advanced BIOS Features menu. If the Security Option is set to *System*, the password is required both at boot and at entry to Setup. If set to *Setup*, password prompt only occurs when trying to enter Setup.

About Supervisor Password & User Password:	
Supervisor password :	*Can enter and change the settings of the setup menus.*
User password:	*Can only enter but do not have the right to change the settings of the setup menus*

Save & Exit Setup

When you want to quit the Setup menu, you can select this option to save the changes and quit. A message as below will appear on the screen:

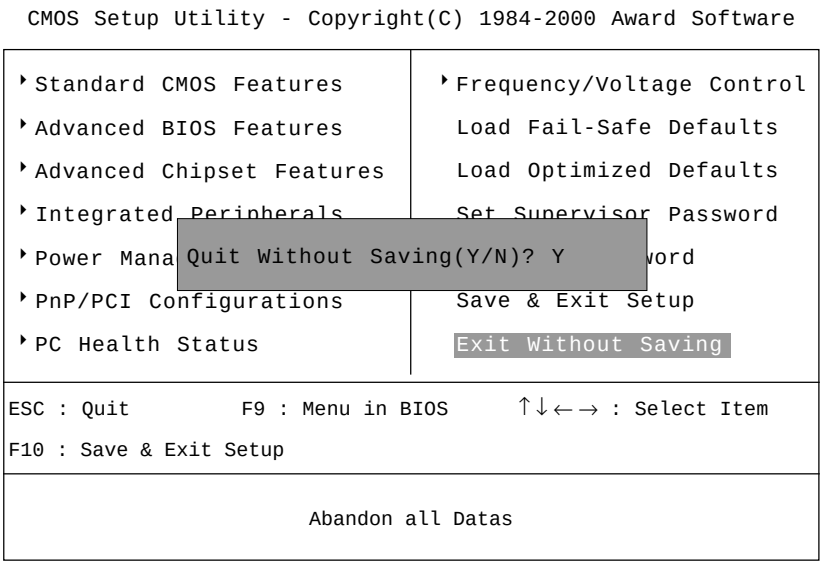


Typing *Y* will allow you to quit the Setup Utility and save the user setup changes to RTC CMOS.

Typing *N* will return to the Setup Utility.

Exit Without Saving

When you want to quit the Setup menu, you can select this option to abandon the changes. A message as below will appear on the screen:



Typing *Y* will allow you to quit the Setup Utility without saving any changes to RTC CMOS.

Typing *N* will return to the Setup Utility.