Notice to End Users

This User's Guide & Technical Reference is for assisting system manufacturers and end users in setting up and installing the mainboard.

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Edition: September 1998
Version: 1.0
SL-67D SERIALS

Contents

Chapter 1
Introduction

Features

CPU

1. Supports Intel Pentium II, Deschutes, and Celeron (Mendocino) CPUs using SLOT1 at 233 ~ 533 MHz (PII/Celeron (Mendocino)) or 800MHz (Deschutes)
2. Supports CPU voltage autodetect circuit
3. **Supports 66/100MHz Bus Clock (BIOS provides 75/103/112/124 MHz Bus Clock without auto detect)**

Chipset

1. VIA Apollo Pro chipset
2. PCI Rev 2.1, 5V, 33MHz interface compliant
3. Supports AGP 1X/2X Mode, 3.3V AGP (Accelerated Graphics Port) slot
4. Onboard built-in OPTi 933 sound chip

L2 Cache

1. Mendocino (Celeron A), PII (Deschutes) supports 128K/512k write back cache with Pipelined Burst SRAMs

Main Memory

1. Memory range from 8MB (minimum) to 768 (SDRAM) (maximum) with DRAM Table Free configurations
2. Supports SDRAM with 12/10/8ns DRAM speed

3. **Supports 3 pcs 168pin DIMM sockets (3.3V Unbuffered type)**
4. DRAM supports ECC or Parity function

BIOS

1. AWARD Plug and Play BIOS
2. Supports Advanced Power Management Function
3. Flash Memory for easy upgrade

Super I/O Function

1. Integrated USB (Universal Serial Bus) controller with two USB ports.
2. Supports 2 IDE channels with 4IDE devices (including 120MB IDE floppy)
3. Provides PCI IDE Bus Master function and supports Ultra DMA33 function
4. One floppy port, one Game port
5. Two high speed 16550 FIFO UART ports
6. One parallel port with EPP/ECP/SPP capabilities
7. PS/2 mouse connector
8. Built-in RTC, CMOS, keyboard controller on single I/O chip
9. Peripherals boot function (with ATX power)

OPTi 933 Sound Chip Features

1. Integrated sound controller compatible with:
   — Sound Blaster Pro™
   — AdLib™
   — Microsoft® Windows™ Sound System™
   — MPU-401 MIDI interface
2. Microsoft® PC-97 compliant
3. Built-In QSound QXpander™ 3D Sound Enhancement Processor
4. Built-in high-quality 22 voice, 52 operator, OPTIFM™ music synthesizer with enhanced bass
5. Built-in 7-channel mixer: five stereo, two mono
6. Built-in 16-bit sigma delta stereo codec
7. ISA Plug and Play Specification 1.0a compatible:
   — Sound Blaster Pro, Windows Sound System, FM synthesis

8. Full duplex operation: record and playback simultaneously using two 8- or 16-bit DMA channels
9. Supports IMA ADPCM, μ-law, A-law decompression
10. 8- or 16-bit stereo sound data up to 48KHz stereo
11. Supports 16-bit Type F DMA playback, accelerates telephony-audio applications
12. Digital joystick interface support, improves responsiveness (Microsoft SideWinder™)
13. DirectSound™ interface support.

Other Functions

1. ATX size 19cm x 30.5cm
2. 4 PCI Master slots, 2 ISA slots, and 1 AGP slot
3. Supports CPU temperature warning function (optional)
4. Provides DIP switch setting
5. **Supports 66/100MHz Bus Clock***
6. **Supports Wake On LAN function****
7. **BIOS supports 75/103/112/124MHz Bus clock.**

: For 100MHz CPU environment, the SDRAM specification must be compliant with PC-100 Spec.

****: For support WOL, the ATX power supply has to have at least 5V/720mA standby current.***

Mainboard Layout with Default Settings

The default settings of the following figure is for the Pentium II (Celeron (Mendocino)) 300/66MHz.

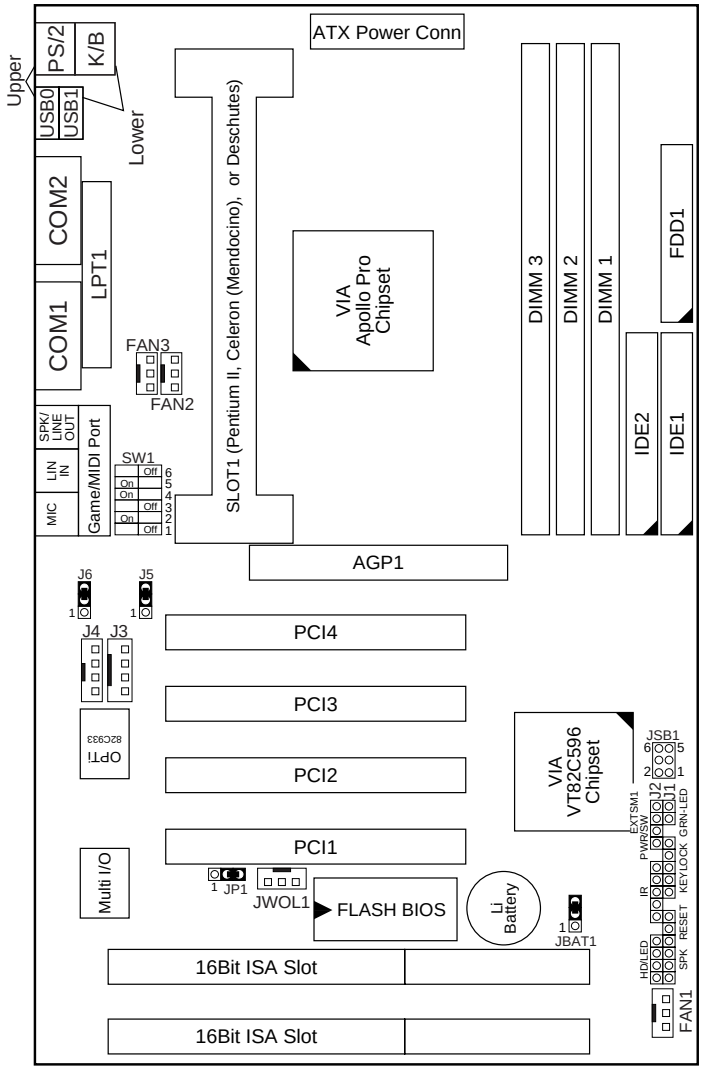


Figure 1–1. Motherboard Layout

Note: For 100MHz CPU environment, the SDRAM specification must comply with PC-100 spec.

Chapter 2
Hardware Setup

CPU Type Configuration

CPU 3.5X Clock Setting

Deschutes – 350/100MHz
Pentium II (Celeron) – 233/66MHz

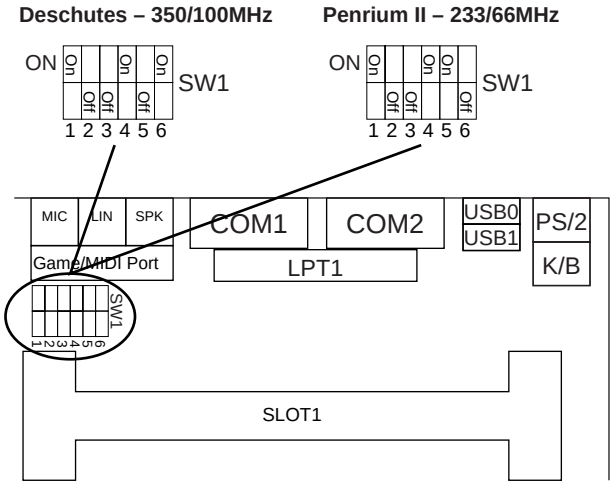


Figure 2–1. CPU Type Configuration

CPU 4.0X Clock Setting

Deschutes – 400/100MHz

Pentium II (Celeron) – 266/66 MHz

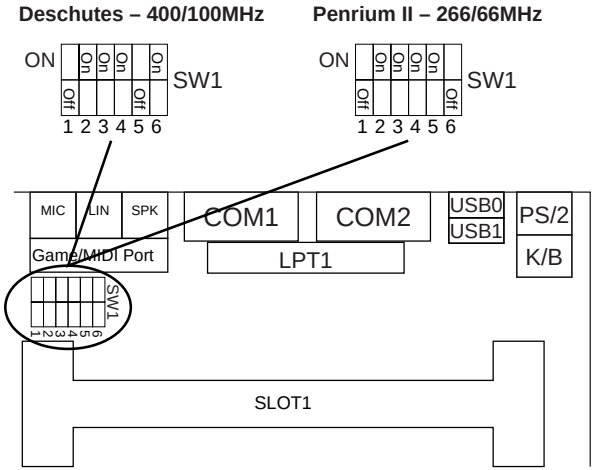


Figure 2–2. CPU Type Configuration

CPU 4.5X Clock Setting

Deschutes – 450/100MHz

Pentium II (Celeron) – 300/66 MHz

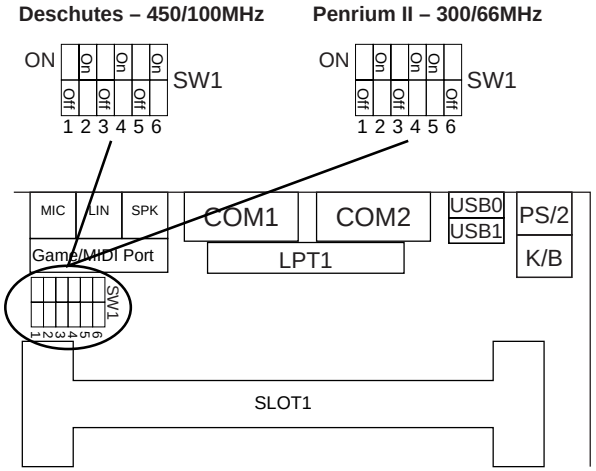


Figure 2–3. CPU Type Configuration

CPU 5.0X Clock Setting

Deschutes – 500/100MHz
Pentium II (Celeron) – 333/66 MHz

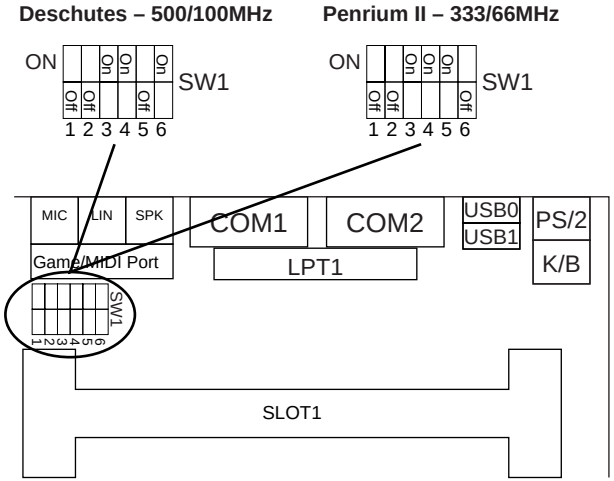


Figure 2–4. CPU Type Configuration

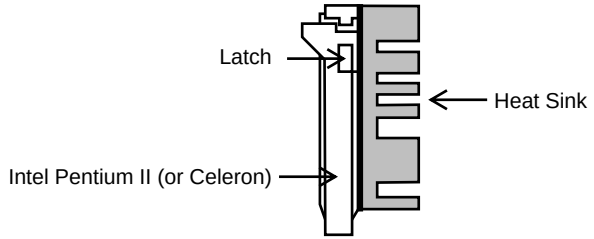
System Memory Configuration

This VIA Apollo Pro motherboard supports 168 pin DIMM of 4MB, 8MB, 16MB, 32MB or 64MB to form a memory size between 8MB to 768MB (SDRAM). Apollo Pro chipsets provide "Table-Free" function. It means that users can install DRAM with any configuration and in any bank, and that is why the DRAM table is not needed but do remember that the DRAM must be 3.3V type. **For 100MHz CPU environment, the SDRAM specification must comply with PC-100 spec.**

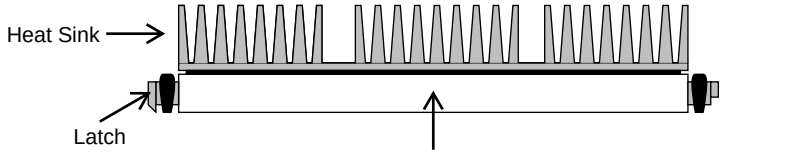
CPU Installation

Follow the following steps in order to install your Intel Pentium II , Celeron (Mendocino), and Deschutes properly.

Step 1:
Be sure you are in contact with heat sink vendors for attaching the heat sink on to the CPU.



CPU Side View

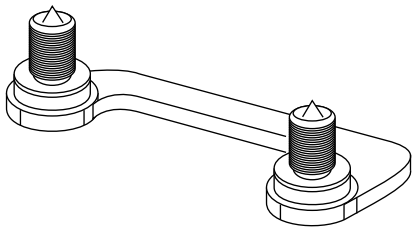


CPU Top View

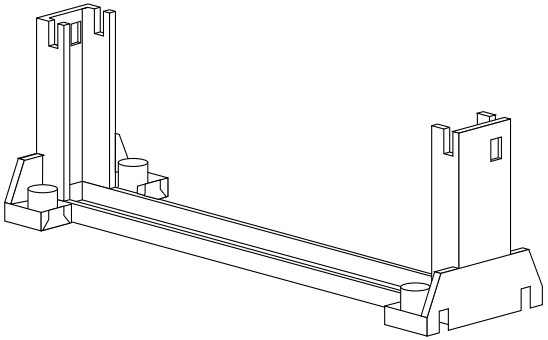
Notice that the heat sink may be different from the drawings shown here.

Step 2:
Install the 2 pairs of screws, which are shown in the following drawing, onto the mainboard under the SLOT1 Socket.

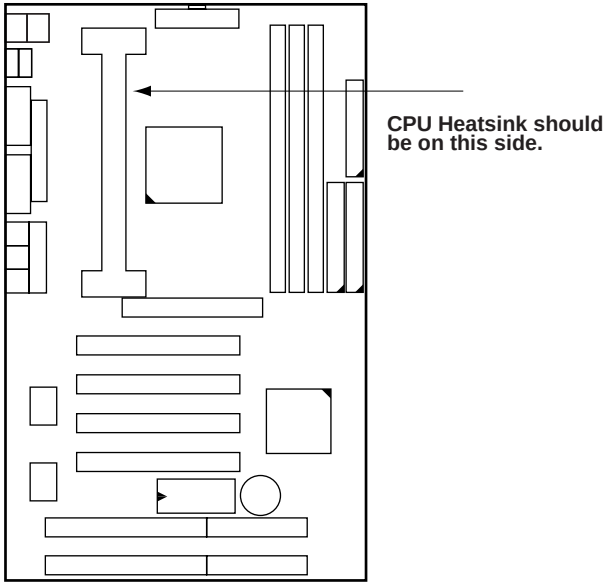
Two of the screws are right around the SLOT1 Socket and the other pair of screws should be inserted opposite the first pair. The screws should be inserted from the bottom of the motherboard upward.



Step 3:
Retention clip is shown in the following figure:



Set the board according to the following diagram before installing the retention clip.



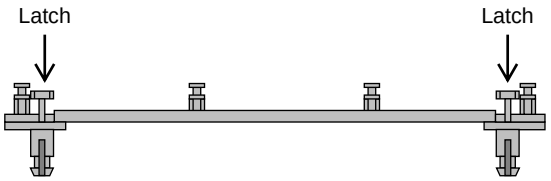
The retention clip should be inserted so that the small rectangle window is more toward to the right hand side of the board.

If installed incorrectly, you will not be able to insert the CPU into the retention clip and in this situation you might need to rotate the retention clip by 180°.

Tighten the 4 screws on the retention clip till the neck of the screws can not be seen from the bottom of the board

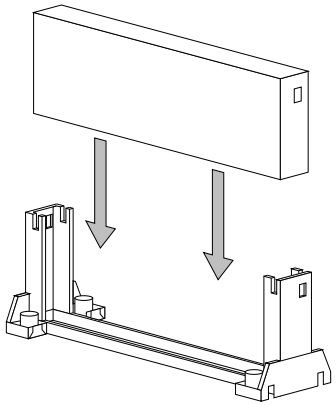
Step 4:
Pull the latches up on the base of the CPU supporter and insert it into the two holes directly to the left of the retention clip so that the larger hole is on the bottom.

Press the base of the CPU supporter down in to the holes and lock the latches.

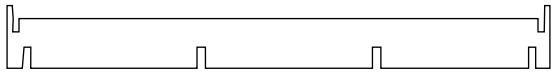


Side View of CPU Supporter Base

Step 5:
Flatten the two latches on the side of CPU. Insert the CPU into the retention clip and notice that the heat sink is on the right hand side of the board. Lock the two latches to secure the CPU.



Step 6:
Insert the clip portion of the CPU supporter so that the heat sink can sit on the top of the whole CPU supporter.



Top View of CPU Support Clip

Notice that the base and the clip of CPU Supporter may be different from the figures shown here.

Jumper Settings

FANX: Onboard FAN (12V) Connector

FAN#	Function
FAN3	System FAN
FAN2	CPU FAN
FAN1	Chasis FAN

JBAT1: Clear CMOS Data

Clear the CMOS memory by shorting this jumper momentarily; then remove the cap to retain new settings.

CMOS Data	JBAT1
Retain Data (default)	
Clear Data	

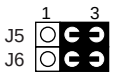
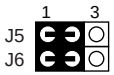
JP1: Onboard Sound Chip Enabled/Disabled

This jumper allows user to control onboard sound chip function.

	JP1
Disabled	
Enabled (default)	

This feature must work with BIOS. Please refer to the "Power On After PWR-Fail" section on page 29 for description.

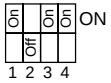
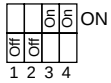
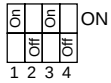
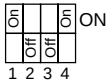
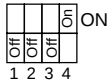
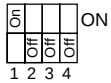
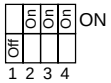
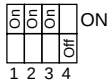
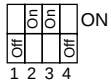
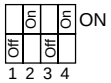
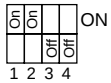
J5, J6: Sound Amplifier Control (Speaker/Line Out)

USB Port	J5/J6
Speaker Out (w/i amplifier) (default)	
Line Out (w/o amplifier)	

SW1: 5–6 Bus Clock Select

Bus Clock	SW: 5~6
66MHz	
100MHz	

SW1: 1–4: Bus Ratio Select

Bus Ratio	SW: 1~4	Bus Ratio	SW: 1~4	Bus Ratio	SW: 1~4
3.0x		5.0x		7.0x	
3.5x		5.5x		7.5x	
4.0x		6.0x		8.0x	
4.5x		6.5x			

IDE LED Activity Light: (J2 pin1–4)

This connector connects to the hard disk activity indicator light on the case.

Sound Connector:

J3/J4: CD-ROM Audio Connector

Connect J3/J4 to the CD-ROM Audio Connector.

Game/MIDI Port

Connect the joystick or MIDI to this connector.

Mic: Microphone Jack

Line In: Audio in Jack

Speaker Out/Line Out: Audio Out Jack

Use J5/J6 to control speaker out of line in.

Infrared Port Module Connector (J2 pin6–10)

The system board provides a 5-pin infrared connector—IR1 as an optional module for wireless transmitting and receiving. **Pin 6 through 10 are Transmit, GND, Receive (low speed), Receive (high speed), and Vcc, respectively.**

J2 pin12, 13: PWR Switch

Power Switch: Toggle this pin for turnning on/off of the power supply (for ATX power only).

SLEEP Switch (J2 pin14, 15)

Toggle this jumper forces the system to sleep and the system won't wake up until the hardware event is coming. (The BIOS Power Management setting muse be Enabled.)

Speaker Connector (J1 pin1–4)

The speaker connector is a 4-pin connector for connecting the system and the speaker. (See the following drawing for jumper position.)

Reset Switch (J1 pin5, 6)

The system board has a 2-pin connector for rebooting your computer without having to turn off your power switch. This prolongs the life of the system's power supply.

JSB1: Audio Socket (SB Link)

This socket is designed for using SoundBlast PCI sound card.

Power LED and Keylock Switch (J1 pin8–12)

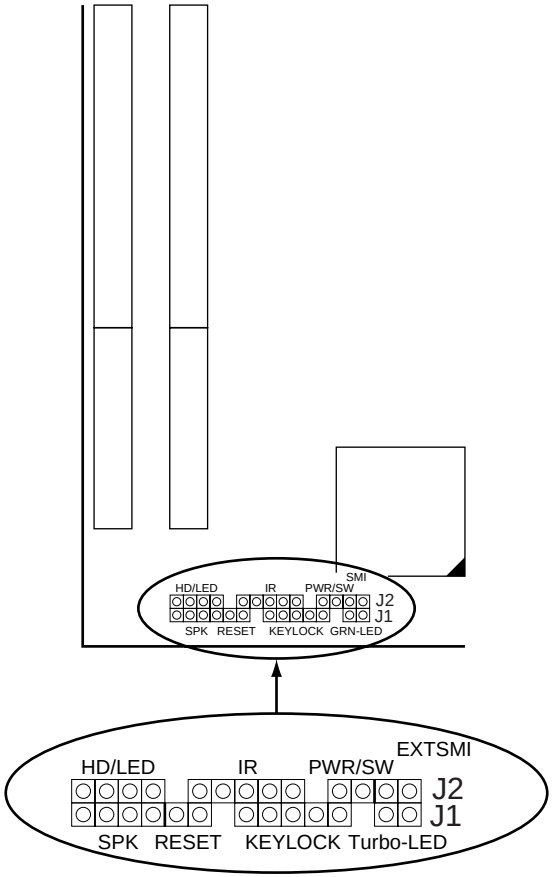
The keylock switch is a 5-pin connector for locking the keyboard for security purposes. (See the following drawing for jumper position, and pin1~3 is connected to power LED and pin 4~5 is connected to keylock switch.)

JWOL1: Wake On Lan (WOL) Connector

This connector is designed to use Lan to bootup the system.
Connect the wake on signal from Lan card to this connector.

Turbo LED (J1 pin14, 15)

Reserved.



J2 Switch Signal Summary

J2	Pin	Signal Description
HDD LED Connector	1	+5V
	2	HDD LED Signal
	3	HDD LED Signal
	4	+5V
N.C.	5	No Connection
Infrared Connector	6	Infrared Transmit Signal
	7	GND
	8	Infrared Receive Signal (low speed)
	9	Infrared Receive Signal (high speed)
	10	+5V
N.C.	11	No Connection
PWR	12	GND
	13	Power Switch (for ATX Power)
SMI	14	GND
	15	Sleep Signal

J1 Switch Signal Summary

J3	Pin	Signal Description
Speaker Connector	1	Speaker Signal
	2	No Connection
	3	Ground
	4	+5V
Reset Switch	5	Reset Signal
	6	Ground
N.C.	7	No Connection
Power LED Connector	8	+5V
	9	No Connection
	10	Ground
Keylock Connector	11	Keylock Signal
	12	GND
N.C.	13	No Connection
Power Saving Connector	14	No Connection
	15	No Connection

Chapter 3
Award BIOS Setup

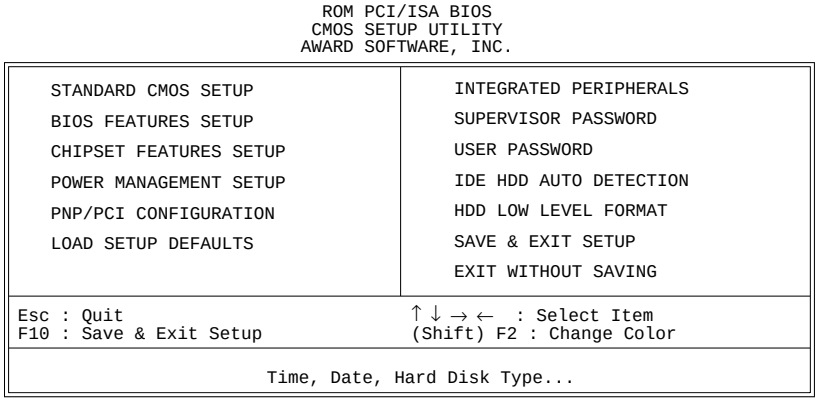
This VIA Apollo Pro motherboard comes with the AWARD BIOS from AWARD Software Inc. Enter the Award BIOS program's Main Menu as follows:

1. Turn on or reboot the system.

   After a series of diagnostic checks, the following message will appear:

   PRESS <DEL> TO ENTER SETUP

2. Press the <DEL> key and the main program screen appears as in the following page.



3. Using one of the arrows on your keyboard to select an option and press <Enter>. Modify the system parameters to reflect the options installed in the system.
4. You may return to the Main Menu anytime by press <ESC> .
5. In the Main Menu, "SAVE AND EXIT SETUP" saves your changes and reboots the system, and "EXIT WITHOUT SAVING" ignores your changes and exits the program.

Standard CMOS Setup

Standard CMOS Setup allows you to record some basic system hardware configuration and set the system clock and error handling. You only need to modify the configuration values of this option when you change your system hardware configuration or the configuration stored in the CMOS memory got lost or damaged.

Run the Standard CMOS Setup as follows:

1. Choose "STANDARD CMOS SETUP" from the Main Menu and a screen with a list of options appears.

```
                    ROM PCI/ISA BIOS
                 STANDARD CMOS SETUP
                AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Thu, May 9 1996
Time (hh:mm:ss) :  15 : 45 : 10

HARD DISKS        TYPE   SIZE    CYLS HEAD  PRECOMP  LANDZ  SECTOR  MODE
Primary Master   : Auto     0       0    0        0      0       0  Auto
Primary Slave    : Auto     0       0    0        0      0       0  Auto
Secondary Master : Auto     0       0    0        0      0       0  Auto
Secondary Slave  : Auto     0       0    0        0      0       0  Auto

Drive A : 1.44M, 3.5 in.                    Base Memory:    640K
Drive B : None                            Extended Memory:  15360K
                                             Other Memory:    384K

Video  : EGA/VGA                             Total Memory:  16384K
Halt On : All Errors

Esc : Quit            ↑ ↓ → ←    : Select Item    PU/PD/+/- : Modify
F1 : Help            (Shift) F2 : Change Color
```

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/– keys.

A short description of screen options follows:

Date (mm:dd:yy) **Time (hh:mm:ss)**	Set the current date and time.
Primary (Secondary) Master/Slave	This field records the specifications for all non-SCSI hard disk drives installed in your system. Refer to the respective documentation on how to install the drivers.
Drive A/B	Set this field to the types of floppy disk drives installed in your system. The choices are: 360KB, 5.25 in., 1.2MB, 5.25 in., 720KB, 3.5 in., 1.44M, 3.5 in. (default), 2.88MB, 3.5 in., or None
Video	Set this field to the type of video display card installed in the system. The choices are: Monochrome; Color 40x25; VGA/EGA (default); or Color 80x25
Halt On	Set this filed to the type of errors that will cause the system to halt. The choices are: All Errors (default); No Errors; All, But Keyboard; All, But Diskette; or All, But Disk/Key

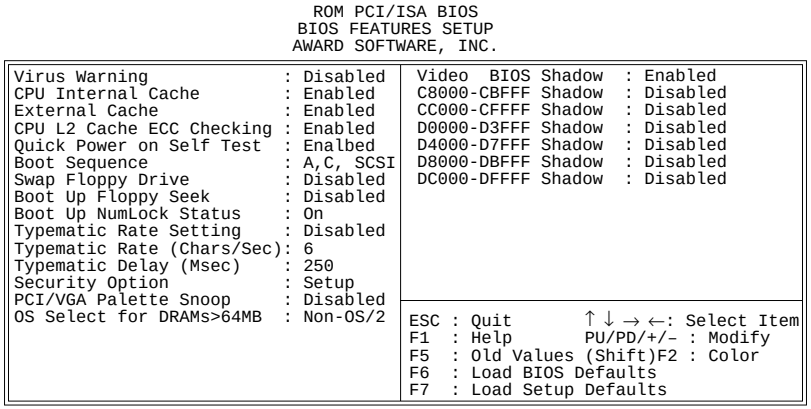
3. Press <ESC> to return to the Main Menu when you finish setting up in the “Standard CMOS Setup”.

BIOS Features Setup

BIOS Features Setup allows you to improve your system performance or set up some system features according to your preference.

Run the BIOS Features Setup as follows:

1. Choose "BIOS FEATURES SETUP" from the Main Menu and a screen with a list of options appears.



2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/– keys. An explanation of the <F> keys follows:

   <F1>: "Help" gives options available for each item.

   Shift <F2>: Change color.

   <F5> : Get the previous values. These values are the values with which the user started the current session.

   <F6>: Load all options with the BIOS default values.

   <F7>: Load all options with the Setup default values.

A short description of screen options follows:

Virus Warning

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

Disabled: No warning message will appear when there is something attempts to access the boot sector or hard disk partition table

Note: Many diagnostic (or boot manager) programs which attempt to access the boot sector table can cause the above warning message. If you will be running such a program, we recommend that you disable the virus protection first.

CPU Internal Cache

Choose Enabled (default) or Disabled. This option allows you to enable or disable the CPU's internal cache.

External Cache

Choose Enabled (default) or Disabled. This option allows you to enable or disable the external cache memory.

CPU L2 Cache ECC Checking

Use the default setting.

Quick Power On Self Test	Choose Enabled (default)or Disabled. This option allows you to speed up the Power On Self Test routine.
Boot Sequence	Default is "A, C, SCSI". This option determines which drive to look for first for an operating system.
Swap Floppy Drive	Choose Enabled or Disabled (default). This option swaps floppy drive assignments when it is enabled.
Boot Up Floppy Seek	Enabled: During POST, BIOS checks the track number of the floppy disk drive to see whether it is 40 or 80 tracks. Disabled: During POST, BIOS will not check the track number of the floppy disk drive.
Boot Up NumLock Status	Choose On (default) or Off. This option lets user to activate the NumLock function at boot-up.
Gate A20 Option	Choose Normal or Fast (default). This option allows the RAM to access the memory above 1MB by using the fast gate A20 line.
Typematic Rate Setting	Choose Enabled or Disabled (default). Enable this option to adjust the keystroke repeat rate.
Typematic Rate (Chars/Sec)	Range between 6 (default) and 30 characters per second. This option controls the speed of repeating keystrokes.

Typematic Delay (Msec)	Choose 250 (default), 500, 750, and 1000. This option sets the time interval for displaying the first and the second characters.
Security Option	Choose System or Setup (default). This option is to prevent unauthorized system boot-up or use of BIOS Setup.
PCI/VGA palette Snoop	Choose Enabled or Disabled (default). It determines whether the MPEG ISA cards can work with PCI/VGA or not.
OS Select for DRAM > 64MB	Non-OS2 (default): For Non-OS/2 system. OS: For OS/2 system.
Video BIOS Shadow	Enabled (default): Map the VGA BIOS to system RAM. Disabled: Don't map the VGA BIOS to system RAM.
C8000-CBFFF to DC000-DFFF Shadow	These options are used to shadow other expansion card ROMs.

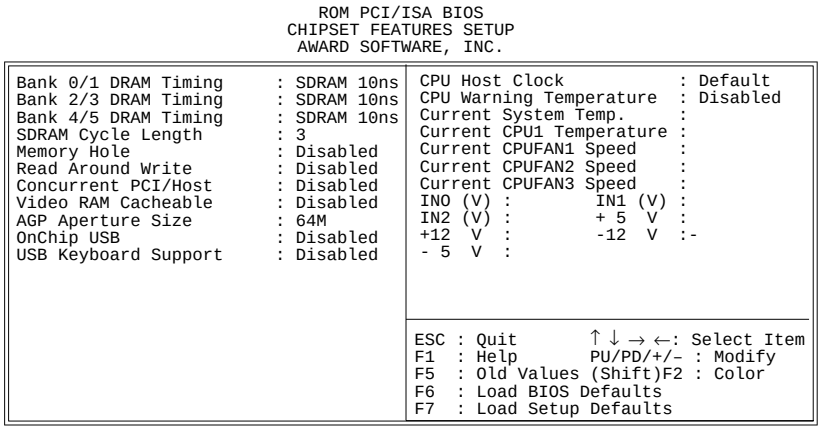
3. Press <ESC> and follow the screen instructions to save or disregard your settings.

Chipset Features Setup

Chipset Features Setup changes the values of the chipset registers. These registers control the system options.

Run the Chipset Features Setup as follows:

1. Choose "CHIPSET FEATURES SETUP" from the Main Menu and a screen with a list of options appears.



2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/– keys.

A short description of screen options follows:

Bank 0 ~ 5 DRAM Timing The DRAM timing of Bank 0/1, 2/3, 4/5 in this field is set by the system board manufacturer, depending on whether the board has fast paged DRAMs or EDO (extended data output) DRAMs.
The Choice: Normal, Medium, Fast, Turbo, FP/EDO 60ns, FP/EDO 70ns.

SDRAM Cycle Length This field sets the CAS latency timing.
The Choice: 2, 3.

Memory Hole Choose Enabled or Disabled (default). In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory's space below 16MB.

Read Around Write DRAM optimization feature: If a memory read is addressed to a location whose latest write is being held in a buffer before being written to memory, the read is satisfied through the buffer contents, and the read is not sent to the DRAM
The choice: Enabled, Disabled.

Concurrent PCI/Host When disable, CPU bus will be occupied during the entire PCI operation period.
The choice: Enabled, Disabled.

Video RAM Cacheable Choose Enabled or Disabled (default). When Enabled, the access to the VGA RAM addressed is cached.

AGP Aperture Size Choose 4 , 8, 16, 32, 64 (default), 128, or 256 MB. Memory mapped and graphics data structures can reside in a Graphics Aperture. This area is like a linear buffer. BIOS will auto report the starting address of this buffer to the O.S.

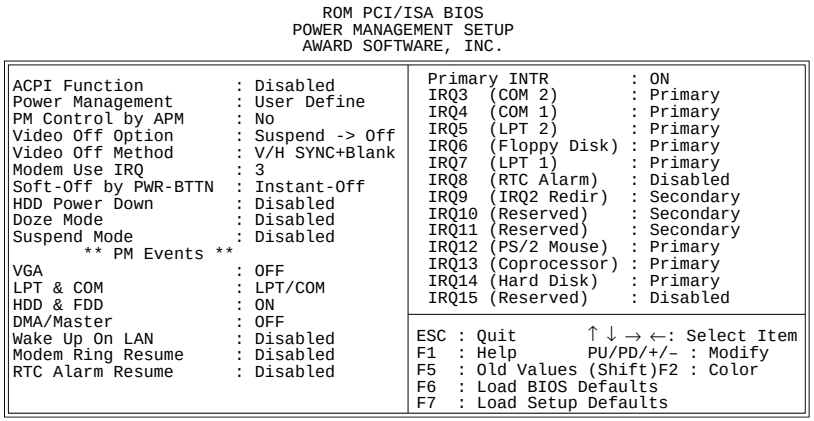
OnChip USB	Enabled: Enable USB function and will occupy one IRQ. Disabled (default): Disable USB function and will not occupy IRQ. Choose Disabled when it is not connect to an USB device.
USB Keyboard Support	Choose Disabled (default) or Enabled. Disabled: No USB keyboard is installed. Enabled: USB keyboard is connected.
CPU Host Clock	Choose CPU host clock ratio from: default, 66MHz, 75MHz, 100MHz, 103MHz, 112MHz, 124MHz, or 133MHz.
CPU Warning Temperature+	Choose Disabled (default), 50°C/122°F, 53°C/127°F, 56°C/133°F, 60°C/140°F, 63°C/145°F, 66°C/151°F, 70°C/150°F. When CPU temperature is over the setting value, the speaker will sound an alarm and the clock will drop until the temperature is within optimum the temperature range.
Current CPU+ Temp	BIOS will displays CPU's temperature, fan speed, and voltage value. *+: These two functions are dependent on the necessary hardware installation.*

3. Press <ESC> and follow the screen instructions to save or disregard your settings.

Power Management Setup

Power Management Setup sets the system's power saving functions.

1. Choose "POWER MANAGEMENT SETUP" from the Main Menu and a screen with a list of options appears.



2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/– keys.

A short description of screen options follows:

ACPI Function This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI).
The choice: Enabled, Disabled.

Power Management Choose Max. Saving, User Define (default), Disabled, or Min Saving.

PM Control by APM Choose Yes or No (default). You need to choose Yes when the operating system has the APM functions, choose No otherwise.

Video Off Option Choose NA, Suspend, Standby (default), or Doze.

Video Off Method Choose Blank , DPMS, or V/H Sync+Blank (default). You can chose either DPMS or V/H Sync+Blank when the monitor has the Green function. You need to choose Blank when the monitor has neither the Green function.

MODEM Use IRQ Assign the IRQ number to the modem which is being used so that the ring signal can wakeup the system. The default setting is 3 (COM2).

Soft-Off by PWR-BTTN

Instant-off: (default) turns off the system power at once after pushing the power button.

Delay 4 Sec: turns off the system power 4 seconds after pushing the power button (to meet PC97 spec.)

HDD Power Down Time is adjustable from 1 to 15 minutes. When the set time has elapsed, the BIOS sends a command to the HDD to power down, which turns off the motor.

Doze Mode This option sets the CPU speed down to 33MHz during this mode.

Suspend Mode These two options allow you to choose the mode for the different timers. The Standby Mode turns off the VGA monitor, and the Suspend Mode turns off the CPU and saves the energy of the system.

VGA When Enabled, your can set the VGA awakens the system.

LPT & COM When On of LPT & COM, any activity from one of the listed system peripheral devices or IRQs wakes up the system.

HDD & FDD When On of HDD & FDD, any activity from one of the listed system peripheral devices wakes up the system.

Wake On LAN

Enabled: Wake up the system from LAN card (LAN card must support Wake Up On LAN function and the power supply must provide at least 5V/750mA standby current.

Disabled: (default) Disabled Wake On LAN function.

Modem Ring Resume An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

RTC Alarm Resume	Enabled:	Wake up the system at assigned time, and also, the user needs to set both “Date Alarm” and “Time Alarm” 2 options.
	Disabled:	(default) Disable this feature.
Primary INTR	When set to On, any event occurring at will awaken a system which has been powered down.	
IRQ [3, 15]	When this function is set to “ON”, activities will neither prevent the system from going into a power management mode nor awaken it.	

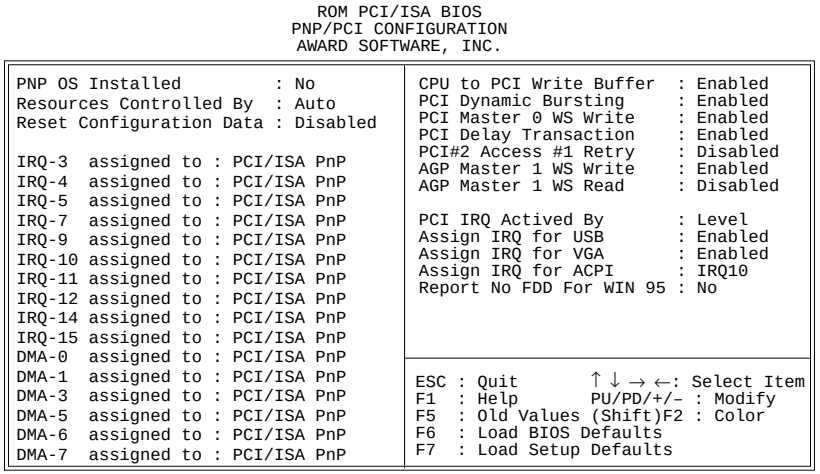
3. Press <ESC> and follow the screen instructions to save or disregard your settings.

PnP/PCI Configuration Setup

PnP/PCI Configuration Setup configures the PCI bus slots.

Run the Chipset Features Setup as follows:

1. Choose "PnP/PCI CONFIGURATION SETUP" from the Main Menu and a screen with a list of options appears.



2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/– keys.

A short description of screen options follows:

PNP OS Installed

Yes: OS supports Plug and Play function.

No (default): OS doesn't support Plug and Play function.

Note: BIOS will automaticaly disable all PnP resources except the boot device card when select Yes on Non-PnP OS.

Resources Controlled By

Choose Manual or Auto (default). The BIOS checks the IRQ/DMA channel number on the ISA and PCI card manually if chose Manual and the IRQ/DMA channel number will be checked automatically if choose Auto.

Reset Configuration Data

Choose Enabled or Disabled (default). Disabled means to retain PnP configuration data in BIOS and Enabled means to reset PnP configuration data in BIOS.

IRQ-x assigned to
DMA-x assigned to

Legacy ISA: Manually assigns IRQ/DMA to device.

PCI/ISA PnP: BIOS assigns IRQ/DMA to device automatically.

CPU to PCI Write Buffer

When this field is Enabled, writes from the CPU to the PCI bus are buffered, to compensate for the speed differences between the CPU and the PCI bus. When Disabled, the writes are not buffered and the CPU must wait until the write is complete before starting another write cycle.
The choice: Enabled, Disabled.

PCI Dynamic Bursting

When Enabled, every write transaction goes to the write buffer. Burstable transactions then burst on the PCI bus and nonburstable transactions donit.
The choice: Enabled, Disabled.

PCI Master 0 WS Write

When Enabled, writes to the PCI bus are executed with zero wait states.
The choice: Enabled, Disabled

PCI Delay Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.
The choice: Enabled, Disabled.

PCI #2 Access #1 Retry

When PCI#2 (AGP bus) access to PCI#1 (PCI bus) has a error occurred.
The choice: Enabled, Disabled.

AGP Master 1 WS Write

When Enabled, writes to the AGP(Accelerated Graphics Port) are executed with one wait states.
The choice: Enabled, Disabled.

AGP Master 1 WS Read
When Enabled, read to the AGP (Accelerated Graphics Port) are executed with one wait states. The choice: Enabled, Disabled.

PCI IRQ Actived By
Choose Level or Edge. Use the default setting.

Assign IRQ for USB
Choose Enabled (default) or Disabled.
Enabled: Add one IRQ to USB controller.
Deisabled: Remove IRQ from USB controller. The system will have extra IRQ for other devices but the USB controller will still not disabled (only IRQ was removed.)

Assign IRQ for VGA
Choose Enabled (default) or Disabled.
Enabled: Add one IRQ to VGA controller.
Deisabled: Remove IRQ from VGA controller. The system will have extra IRQ for other devices but the VGA controller will still not disabled (only IRQ was removed.)

Assign IRQ for ACPI
Choose IRQ9, 10 (default), 11. This option is valid only when "ACPI Function" is set to "Enabled". Refer to Power Management Setup section.

3. Press <ESC> and follow the screen instructions to save or disregard your settings.

Load Setup Defaults

Load Setup Defaults option loads the default system values to the system configuration fields. If the CMOS is corrupted the defaults are loaded automatically. Choose this option and the following message appears:

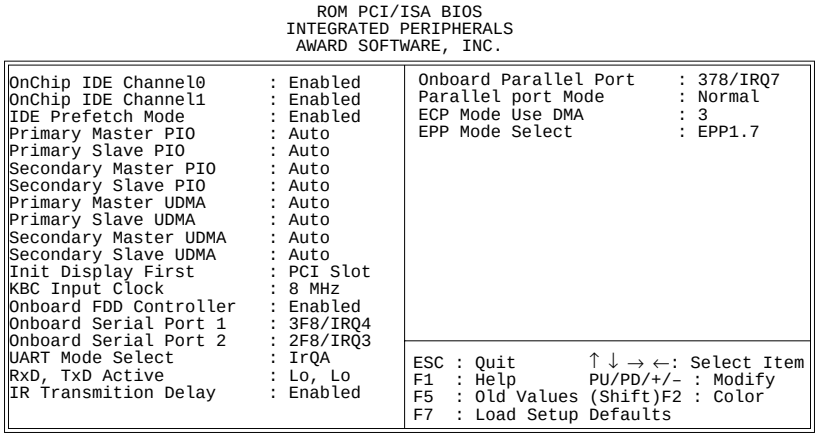
```
"Load Setup Defaults (Y/N)? N"
```

To use the Setup defaults, change the prompt to "Y" and press <Enter>.

Integrated Peripherals

Integrated Peripherals option changes the values of the chipset registers. These registers control system options in the computer.

1. Choose "INTEGRATED PERIPHERALS" from the Main Menu and a screen with a list of options appears.



2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/– keys.

A short description of screen options follows:

OnChip IDE Channel 0/1 The 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 install a primary and/or secondary add-in IDE interface.
The choice: Enabled, Disabled.

IDE Prefetch Mode Use the default setting.

Primary Master/Slave PIO
Secondary Master/Slave PIO

Choose Auto (default) or Mode 0~4. The BIOS will detect the HDD Mode type automatically when you choose Auto. You need to set to a lower mode than Auto when your hard disk becomes unstable.

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

Choose Disabled or Auto (default).
Auto: Automatically detects the HDD Ultra DMA function.
Disabled: Disabled the HDD Ultra DMA function.

Init Display First

This item allows you to decide to active PCI Slot or AGP first
The choice: PCI Slot, AGP.

KBC Input Clock

Choose 6MHz, 8MHz (default), 12MHz, or 16MHz. There might be a compatible problem when is above 8MHz.

Onboard FDC Controller

Choose Enabled (default) or Disabled. Choose Disabled when you use an ISA card with FDD function, or , choose Enabled to use the onboard FDD connector.

Onboard Serial Port 1

Choose Auto (default), 3F8/IRQ4 , 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, or Disabled. Do no set port 1 & 2 to the same value except for Disabled.

Onboard Serial Port 2

Choose Auto (default), 3F8/IRQ4 , 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, or Disabled.

UART Mode select

Choose Normal (default), IrDA, or ASKIR.

RxD, TxD Active Choose Hi/Hi, Hi/Lo, Lo/Hi, or Lo/Lo (default).

•: *The above 2 options will not work unless UART2 Mode HPSIR/ASKIR is selected.*

IR Transmition Delay Enabled: Enabled delay when transfers data.
Disabled (default) Disabled delay when transfers data.

Onboard Parallel Port Choose the printer I/O address: 378H/IRQ7 (default), 3BCH/IRQ7, 278H/IRQ5

Parallel Port Mode Choose SPP (default), ECP + EPP EPP, or ECP mode. The mode depends on your external device that connects to this port.

ECP Mode Use DMA Choose DMA3 (default) or DMA1. Most sound cards use DMA1. Check with your sound card configuration to make sure that there is no conflict with this function.

*: *This option will not be displayed unless the EPP/ECP function is selected.*

EPP Mode Select Choose EPP1.7 (default) or EPP1.9. EPP1.9 supports hardware handshake. This setting is dependent on your EPP device.

Note: The above 2 options will not be displayed unless the EPP/ECP function is selected.

3. Press <ESC> and follow the screen instructions to save or disregard your settings.

Supervisor/User Password

These two options allows you to set your system passwords. Normally, supervisor has a higher right to change the CMOS setup option than the user. The way to set up the passwords for both Supervisor and User are as follow:

1. Choose "Change Password" in the Main Menu and press <Enter>. The following message appears:

   `"Enter Password:"`

2. The first time you run this option, enter your password up to only 8 characters and press <Enter>. The screen does not display the entered characters.

3. After you enter the password, the following message appears prompting you to confirm the password:

   `"Confirm Password:"`

4. Enter exact the same password you just typed again to confirm the password and press <Enter>.

5. Move the cursor to Save & Exit Setup to save the password.

6. If you need to delete the password you entered before, choose the Supervisor Password and press <Enter>. It will delete the password that you had before.

7. Move the cursor to Save & Exit Setup to save the option you did, otherwise the old password will still be there when you turn on your machine next time.

8. Press <ESC> to exit to the Main Menu.

Note: If you forget or lose the password, the only way to access the system is to clear the CMOS RAM by setting JBAT1. All setup information will be lost and you need to run the BIOS setup program again.

IDE HDD Auto Detection

IDE HDD Auto Detection detects the parameters of an IDE hard disk drive and automatically enters them to the Standard CMOS Setup screen.

The screen will ask you to select a specific hard disk for Primary Master after you select this option. If you accept a hard disk detected by the BIOS, you can enter "Y" to confirm and then press <Enter> to check next hard disk. This function allows you to check four hard disks and you may press the <ESC> after the <Enter> to skip this function and go back to the Main Menu.

Save & Exit Setup

Save & Exit Setup allows you to save all modifications you have specified into the CMOS memory. Highlight this option on the Main Menu and the following message appears:

```
SAVE to CMOS and EXIT (Y/N)? Y
```

Press <Enter> key to save the configuration changes.

Exit Without Saving

Exit Without Saving allows you to exit the Setup utility without saving the modifications that you have specified. Highlight this option on the Main Menu and the following message appears:

```
Quit Without Saving (Y/N)? N
```

You may change the prompt to "Y" and press <Enter> key to leave this option.