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: August 1998
Version: 1.0
SL-62B SERIALS

SOLTEK®

Contents

Chapter 1
Introduction

Features

CPU

1. Supports Intel Pentium II, Deschutes, Celeron (Mendocino), and other Pentium II style CPUs using SLOT1 at 233 ~ 533 MHz
2. Supports CPU voltage autodetect circuit
3. **Supports 66/100/112 MHz Bus Clock.**

Chipset

1. Intel 82440BX chipset
2. PCI Rev 2.1, 5V, 33MHz interface compliant
3. Supports 66 (1X)/133 (2X) MHz, 3.3V AGP (Accelerated Graphics Port) slot

L2 Cache

1. PII/Mendocino supports 512K/128K write back cache with Pipelined Burst SRAMs (Celeron doesn't provide L2 cache)

Main Memory

1. Memory range from 8MB (minimum) to 768MB (SDRAM) (maximum) with DRAM Table Free configurations
2. Supports SDRAM with 10ns
3. **Supports 3 pcs 168pin DIMM sockets (3.3V Unbuffered, 4 clock 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
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)

Other Functions

1. AT size 22cm x 24cm
2. 4 PCI Master slots, 2 ISA slots, and 1 AGP slot
3. Supports SCSI/CD-ROM Boot function
4. **Supports 66/100/112 MHz Bus Clock***
5. **Supports Wake On Lan (WOL) function (optional)****
6. **Supports hardware monitor function (optional).**

*: **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) 233MHz or Deschutes 350MHz and the Jumperless function is Enabled. Keyboard Power On function is Disabled.
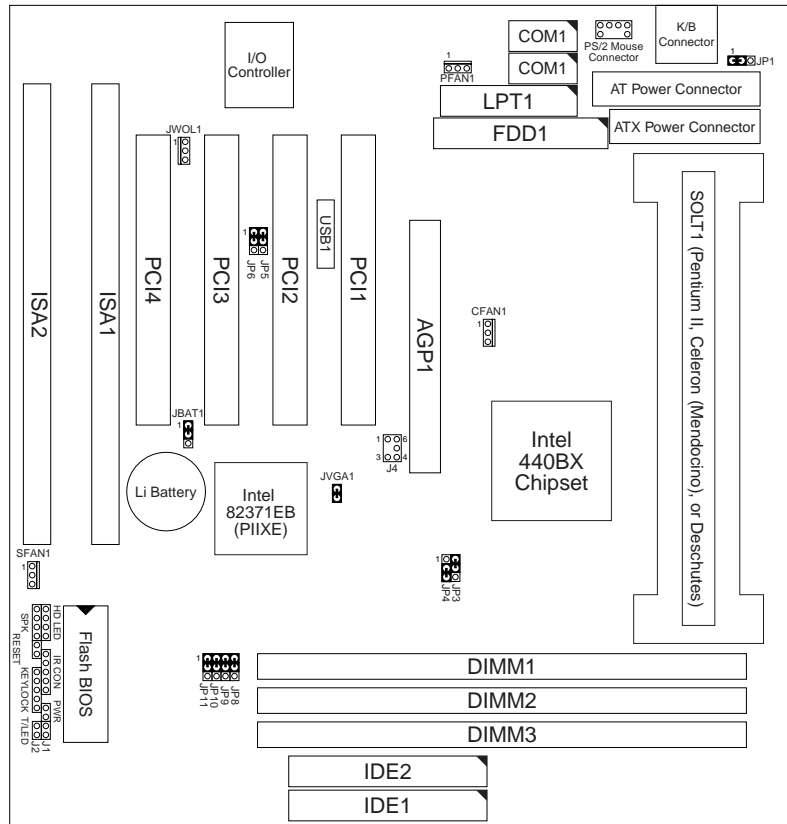
Figure 1–1. Motherboard Layout

Chapter 2
Hardware Setup

There are two ways to set the CPU type and both ways are controlled by JP8, JP9, JP10, and JP11:

1. Use jumpers (hardware): JP8 ~ JP11 must be set. Refer to the following pages (page 4~6).
2. Use BIOS (jumperless): JP8 ~ JP11 must be all closed at pin 1–2 (default). Refer to BIOS "CPU Speed Setup" section for detail description.

CPU Type Jumper Configuration

CPU 3.5X Clock Setting

Pentium II/Celeron (Mendocino) – 233/66MHz

Deschutes – 350/100MHz
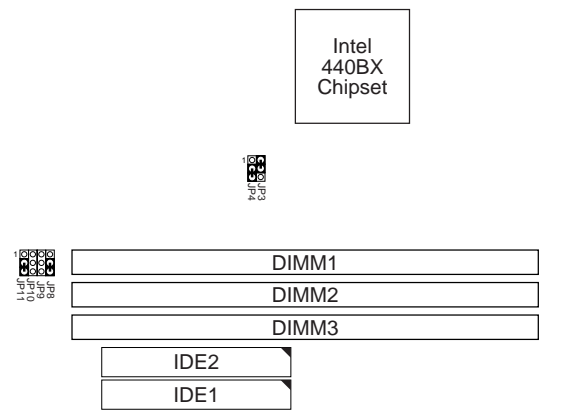
Figure 2–1. CPU Type Configuration

CPU 4.0X Clock Setting

Pentium II/Celeron (Mendocino) – 266/66 MHz

Deschutes – 400/100MHz

Intel
440BX
Chipset

JP3
JP4

JP8
JP9
JP10
JP11

DIMM1

DIMM2

DIMM3

IDE2

IDE1
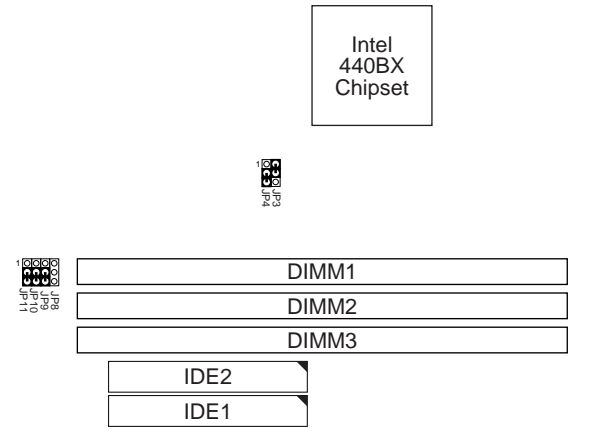
Figure 2–2. CPU Type Configuration

CPU 4.5X Clock Setting

Pentium II/Celeron (Mendocino) – 300/66 MHz

Deschutes – 450/100MHz

Intel
440BX
Chipset

JP3
JP4

JP8
JP9
JP10
JP11

DIMM1

DIMM2

DIMM3

IDE2

IDE1
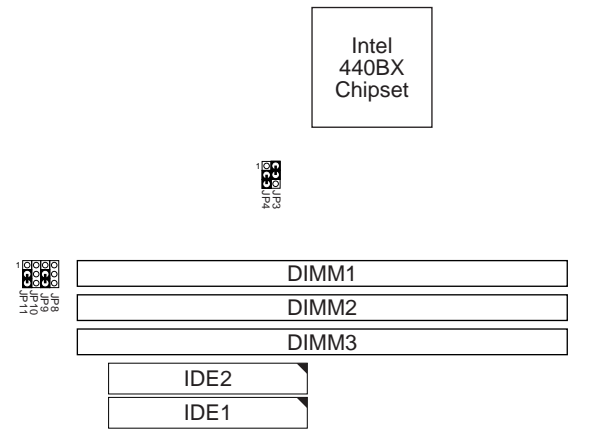
Figure 2–3. CPU Type Configuration

CPU 5.0X Clock Setting

Pentium II/Celeron (Mendocino)– 333/66 MHz

Deschutes – 500/100MHz
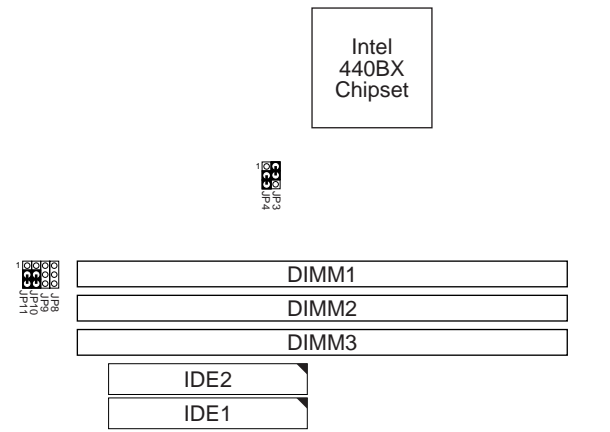
Figure 2–4. CPU Type Configuration

System Memory Configuration

This 82440BX motherboard supports 168 pin DIMM of 4MB, 8MB, 16MB, 32MB, or 64MB to form a memory size between 8MB to 768MB (SDRAM). 82440BX 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 Unbuffered and 4 clock type**. **For 100MHz CPU environment, the SDRAM specification must be compliant with PC-100 spec.**

CPU Installation

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

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

Latch   → Heat Sink

Intel Pentium II/Celeron →

CPU Side View

Heat Sink →

Latch

Intel Pentium II/Celeron (Mendocino)/Deschutes

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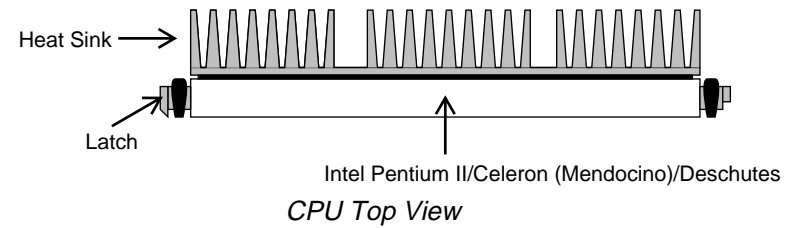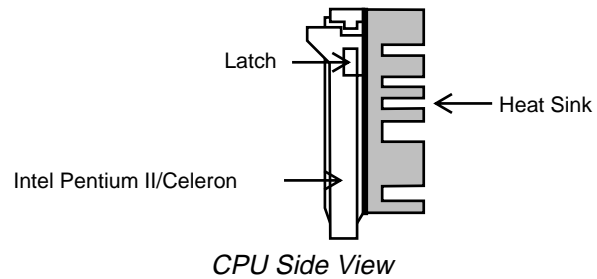
Notice that the heat sink may be different from the drawings shown here.

Step 2:
Install the 2 pairs of screws, which are shown in the following drawing, onto the mainboard under Slot1.

Two of the screws are right around Slot1 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.
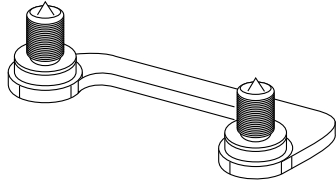
Step 3:
Retention clip is shown in the following figure:
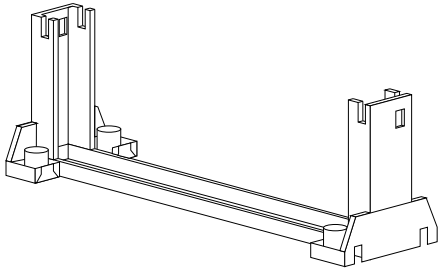
Set the board according to the following diagram before installing the retention clip.

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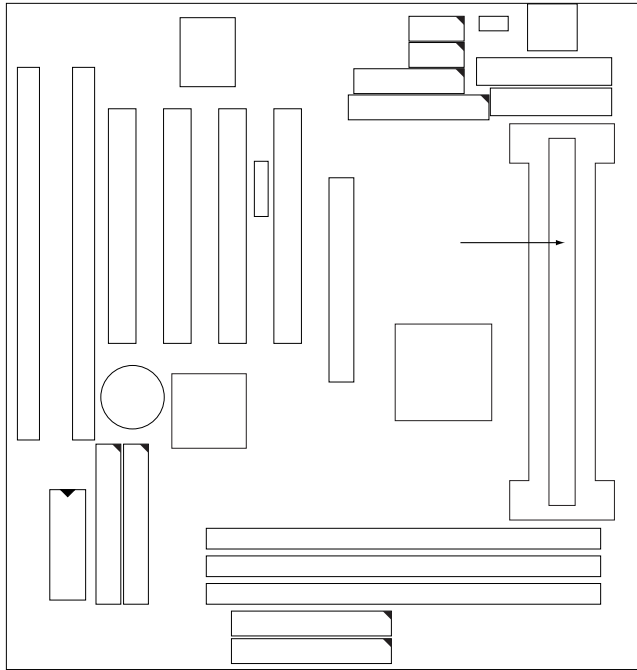
Step 4:
Pull the latches up on the base of the CPU supporter and
insert it into the two holes directly to the left of the retention
clip so that the larger hole is on the bottom.

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

Latch   Latch
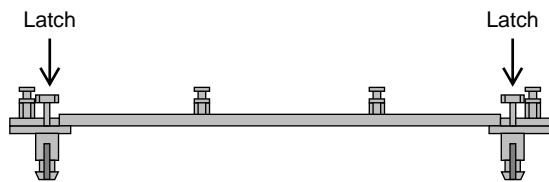
Side View of CPU Supporter Base

Step 5:
Flatten the two latches on the side of CPU. Insert the CPU into the retention clip. Lock the two latches to secure the CPU.
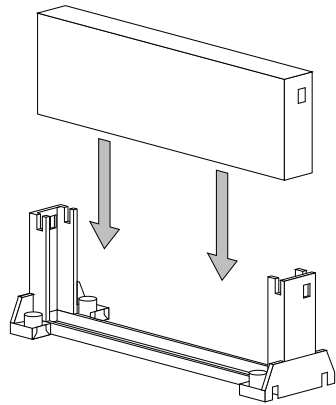
Step 6:
Insert the clip portion of the CPU supporter so that the heat sink can sit on the top of the whole CPU supporter.
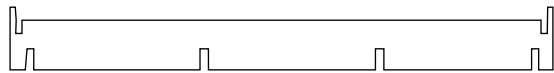
Top View of CPU Support Clip

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

Jumper Settings

JP1: Keyboard Power Selection
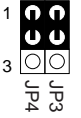
Keyboard Power On	JP1
Disabled (default)	1 3
Enabled	1 3

Note: 1. *If the JP1 is fixed by jumperwire then the board does not support keyboard power on function.*

2. *When the keyboard power on function shows any compatible problem, choose Disabled and report the keyboard model to the vendor/maker.*

3. *Keyboard power on function must be set from the BIOS. Refer to the "Integrated Peripherals" section in the Chapter 3.*
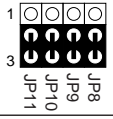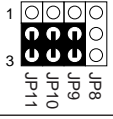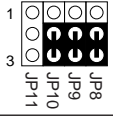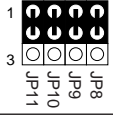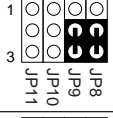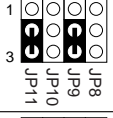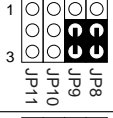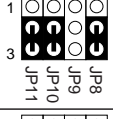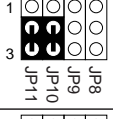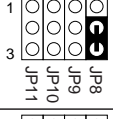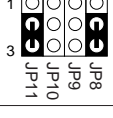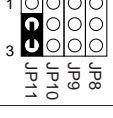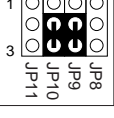
XFAN 1: Onboard FAN (12V) Connector

XFAN1	Function
CFAN1	CPU FAN
PFAN1	Power FAN
SFAN1	Chasis FAN
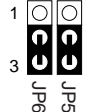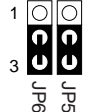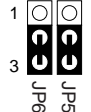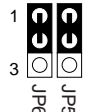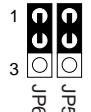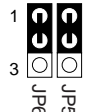
JP3, JP4: Bus Clock Select

Bus Clock	JP3, JP4
66MHz	(jumper diagram)
100MHz	(jumper diagram)
Auto detect 66/100MHz (default)	(jumper diagram)

JP8 ~ JP11: Bus Ratio Select

Bus Ratio	JP8~JP11	Bus Ratio	JP8~JP11	Bus Ratio	JP8~JP11	Bus Ratio	JP8~JP11
2.0X	(jumper)	4.0X	(jumper)	6.0X	(jumper)	by BIOS (default)	(jumper)
2.5X	(jumper)	4.5X	(jumper)	6.5X	(jumper)		
3.0X	(jumper)	5.0X	(jumper)	7.0X	(jumper)		
3.5X	(jumper)	5.5X	(jumper)	7.5X	(jumper)		

JP5, JP6: USB Port Select

USB Port	JP5, JP6
Redirect all USB ports to AGP connector	1 ○ ○ 3 ▮ ▮ JP6 JP5
Redirect all USB ports to USB connector (default)	1 ▮ ▮ 3 ○ ○ JP6 JP5

JVGA1: VGA Card

	JVGA1
For Special VGA Card*	○ ○
Normal (default)	▮ ▮

Note: This jumper is set for the special VGA card. Open this jumper when the systme isn't able to boot

JBAT1: Clear CMOS Data

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

CMOS Data	JBAT1
Clear Data	1 ○ 3 ▮
Retain Data (default)	1 ▮ 3 ○

IDE LED Activity Light: (J1 pin1–4)

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

Infrared Port Module Connector (J1 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.**

J1 pin12, 13: PWR Switch

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

SLEEP Switch (J1 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 (J2 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 (J2 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.

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.

J4: SB Link

This socket is designed for using the SoundBlast PCI Sound card.

Power LED and Keylock Switch (J2 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.)

USB1: USB Connector

Turbo LED (J2 pin14, 15)

Connect the case's turbo LED to this connector.
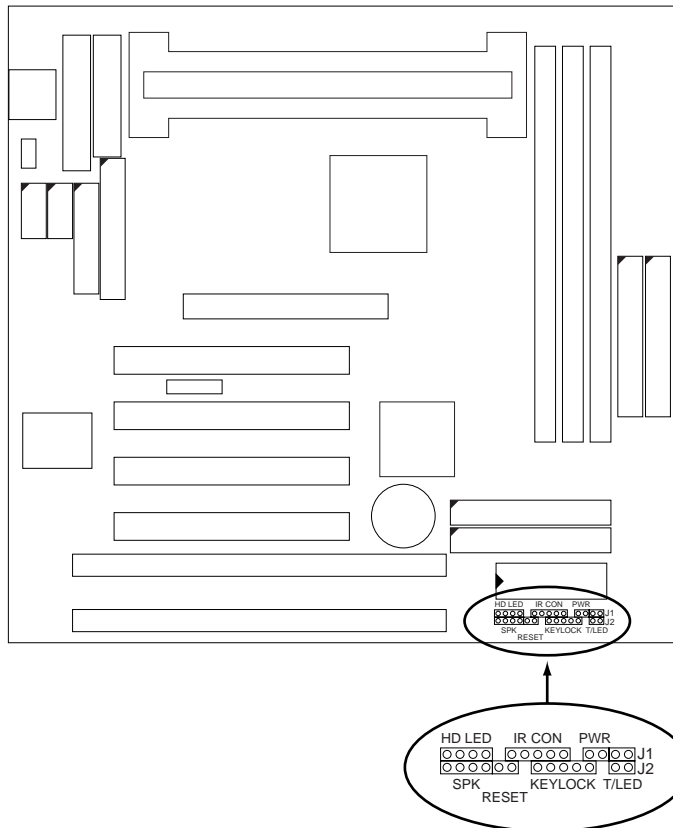
J1 Switch Signal Summary

J1	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)
SLEEP	14	GND
	15	Sleep Signal

J2 Switch Signal Summary

J2	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
Turbo LED Connector	14	Turbo LED Connector
	15	Ground

Chapter 3
Award BIOS Setup

This 82440BX 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.

```
                         ROM PCI/ISA BIOS
                        CMOS SETUP UTILITY
                       AWARD SOFTWARE, INC.
 ┌─────────────────────────────────┬─────────────────────────────────┐
 │                                 │                                 │
 │   STANDARD CMOS SETUP           │   CPU SPEED SETTING             │
 │                                 │                                 │
 │   BIOS FEATURES SETUP           │   INTEGRATED PERIPHERALS        │
 │                                 │                                 │
 │   CHIPSET FEATURES SETUP        │   SUPERVISOR PASSWORD           │
 │                                 │                                 │
 │   POWER MANAGEMENT SETUP        │   USER PASSWORD                 │
 │                                 │                                 │
 │   PNP/PCI CONFIGURATION         │   IDE HDD AUTO DETECTION        │
 │                                 │                                 │
 │   LOAD SETUP DEFAULTS           │   SAVE & EXIT SETUP             │
 │                                 │                                 │
 │                                 │   EXIT WITHOUT SAVING           │
 │                                 │                                 │
 ├─────────────────────────────────┴─────────────────────────────────┤
 │ Esc : Quit                      ↑ ↓ → ←  : Select Item            │
 │ F10 : Save & Exit Setup         (Shift) F2 : Change Color         │
 ├───────────────────────────────────────────────────────────────────┤
 │              Time, Date, Hard Disk Type...                        │
 └───────────────────────────────────────────────────────────────────┘
```

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)   Set the current date and time.
Time (hh:mm:ss)

Primary   This field records the specifications
(Secondary)   for all non-SCSI hard disk drives
Master/Slave   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.

```
                    ROM PCI/ISA BIOS
                  BIOS FEATURES SETUP
                  AWARD SOFTWARE, INC.
┌──────────────────────────────────┬──────────────────────────────────────┐
│Virus Warning            : Disabeld│ Video  BIOS Shadow  : Enabled        │
│CPU Internal Cache       : Enabled │ C8000-CBFFF Shadow  : Disabled       │
│External Cache           : Enabled │ CC000-CFFFF Shadow  : Disabled       │
│CPU L2 Cache ECC Checking : Enabled│ D0000-D3FFF Shadow  : Disabled       │
│Quick Power on Self Test : Enalbed │ D4000-D7FFF Shadow  : Disabled       │
│Boot Sequence            : A,C, SCSI│ D8000-DBFFF Shadow  : Disabled      │
│Swap Floppy Drive        : Disabled│ DC000-DFFFF Shadow  : Disabled       │
│Boot Up Floppy Seek      : Enabled │                                      │
│Boot Up NumLock Status   : On      │                                      │
│Gate A20 Option          : Fast    │                                      │
│Typematic Rate Setting   : Disabled│                                      │
│Typematic Rate (Chars/Sec): 6      │                                      │
│Typematic Delay (Msec)   : 250     │                                      │
│Security Option          : Setup   │ ESC : Quit        ↑ ↓ → ←: Select Item│
│PCI/VGA Palette Snoop    : Disabled│ F1  : Help        PU/PD/+/- : Modify  │
│Assign IRQ For VGA       : Enabled │ F5  : Old Values (Shift)F2 : Color    │
│OS Select for DRAMs>64MB : Non-OS/2│ F6  : Load BIOS Defaults              │
│Report No FDD For WIN 95 : No      │ F7  : Load Setup Defaults             │
└──────────────────────────────────┴──────────────────────────────────────┘
```

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.

**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 (default): 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.
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.)
OS Select for DRAM > 64MB	Non-OS2 (default): For Non-OS/2 system. OS: For OS/2 system.
Report No FDD For WIN95	Yes: BIOS reports "NO FDD" to Win95. No (default): BIOS will not report "NO FDD" to Win95.
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.

```
                         ROM PCI/ISA BIOS
                      CHIPSET FEATURES SETUP
                       AWARD SOFTWARE, INC.
┌───────────────────────────────────┬──────────────────────────────────┐
│ Auto Configuration     : Enabled  │ Auto Detect DIMM/PCI Clk : Enabled│
│ EDO DRAM Speed Selection : 60ns   │ Spread Spectrum          : Disabled│
│ EDO CASx# MA Wait State  : 2      │                                   │
│ EDO RASx# To CAS# Delay  : 1      │                                   │
│ SDRAM CAS latency Time   : 3      │                                   │
│ DRAM Data Integrity Mode : Non-ECC│                                   │
│ System BIOS Cacheable    : Disabled│                                  │
│ Video BIOS Cacheable     : Disabled│                                  │
│ Video RAM Cacheable      : Disabled│                                  │
│ 8 Bit I/O Recovery Time  : 1      │                                   │
│ 16 Bit I/O Recovery Time : 1      ├──────────────────────────────────┤
│ Memory hole At 15M-16M   : Disabled│ ESC : Quit      ↑ ↓ → ←: Select Item│
│ Passive Release          : Enabled │ F1  : Help      PU/PD/+/− : Modify │
│ Delay Transaction        : Enabled │ F5  : Old Values (Shift)F2 : Color │
│ AGP Aperture Size (MB)   : 64     │ F6  : Load BIOS Defaults          │
│                                   │ F7  : Load Setup Defaults         │
└───────────────────────────────────┴──────────────────────────────────┘
```

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:

Auto Configuration	Choose Enabled (default) or Disabled. The system sets all options on the left side of the screen automatically when choose Enabled.
EDO DRAM Speed Selection	Choose 50ns or 60ns (default). Do not change this setting unless you know the DRAM access time spec.
EDO CASX# MA Wait State	Use the default setting.

EDO RASX# Wait State — Use the default setting.

SDRAM CAS Latency Time — Use the default setting.

DRAM Data Integrity Mode — Choose Non-ECC (default) or ECC depending on the DRAM type. ECC stands for Error Check and Correct.
Non-ECC: Disabled ECC check function.
ECC: Enabled ECC check function.

System BIOS Cacheable — Choose Enabled or Disabled (default). When Enabled, the access to the system BIOS ROM addressed at F0000H-FFFFFH is cached.

Video BIOS Cacheable — Choose Enabled or Disabled (default). When Enabled, the access to the VGA BIOS ROM addressed at C0000H-C7FFFH is cached.

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

8 Bit I/O Recovery Time

16 Bit I/O Recovery Time — This delay happens when the CPU is running so much faster than the I/O bus that the CPU must be delayed to allow for the completion of the I/O.
The choices for 8 bit I/O are NA, 1 to 8 CPU clock. Default is 3.
The choices for 16 bit I/O are NA, 1 to 4 CPU clock. Default is 2.

Memory Hole At   Choose Enabled or Disabled (default).
15M-16M   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.

Passive Release   Use the default setting.

Delayed   Use the default setting.
Transaction

AGP Aperture Size Choose 4 , 8, 16, 32, 64 (default), 128,
(MB)   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.

Spread Spectrum   Choose Disabled (default) or
Modulated   Enabled. **This function is designed
                       only for EMI test.**

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.

```
                          ROM PCI/ISA BIOS
                       POWER MANAGEMENT SETUP
                        AWARD SOFTWARE, INC.
┌──────────────────────────────────────┬──────────────────────────────────────┐
│ Power Management    : User Define     │ ** Reload Global Timer Events **     │
│ PM Control by APM   : No              │ IRQ[3-7,9-15], NMI   : Enabled       │
│ Video Off Method    : V/H SYNC+Blank  │ Primary IDE 0        : Enabled       │
│ Video Off After     : Standby         │ Primary IDE 1        : Enabled       │
│ Modem Use IRQ       : 3               │ Secondary IDE 0      : Enabled       │
│                                       │ Secondary IDE 1      : Enabled       │
│ Doze Mode           : Disabled        │ Floppy Disk          : Enabled       │
│ Standby Mode        : Disabled        │ Serial Port          : Enabled       │
│ Suspend Mode        : Disabled        │ Parallel Port        : Enabled       │
│ HDD Power Down      : Disabled        │                                      │
│ Throttle Duty Cycle : 62.5%           │                                      │
│ ZZ Active in Suspend : Disabled       │                                      │
│ VGA Active Monitor  : Enabled         │                                      │
│ Soft-Off by PWR-BTTN : Instant-Off    │                                      │
│ Resume by Ring      : Disabled        │ ESC : Quit      ↑ ↓ → ←: Select Item │
│ Wake Up On LAN      : Disabled        │ F1  : Help      PU/PD/+/- : Modify   │
│ IRQ 8 Break Suspend : Disabled        │ F5  : Old Values (Shift)F2 : Color   │
│                                       │ F6  : Load BIOS Defaults             │
│                                       │ F7  : Load Setup Defaults            │
└──────────────────────────────────────┴──────────────────────────────────────┘
```

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:

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 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.

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

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).

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

Standby 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.

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.

Throttle Duty Cycle   Choose the duty cycle time: 12.5%, 25%, 37.5%, 50%, 62.5% (default), 75%, or 87.5%. The bigger of the percentage, the more saving power it gets.

ZZ Active in Suspend	Enabled:	PB SRAM (cache) still consumes power when entering the power management mode.
	Disabled:	(default) PB SRAM (cache) will not consume power when entering the power management mode.
VGA Active Monitor	Enabled:	the system can not enter the power saving mode when monitor is on.
	Disabled:	the system can enter the power saving mode when monitor is on.
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.)
Resume by Ring	Enabled:	Wake up the system from ring signal.
	Disabled:	(default) Ring signal can not wake up the system.
IRQ8 Break Suspend	Use the default setting.	

IRQ (#), NMI;	Enabled:	(default) The system can not enter the power saving mode when I/O ports or IRQ# is activated.
Primary IDE 0 **Primary IDE 1;**		
Secondary IDE 0 **Secondary IDE 1;**	Disabled:	The system still can enter the power saving mode when I/O ports or IRQ# is activated.
Floppy Disk;		
Serial Port;		
Parallel Port	*Note:*	*These functions can only be activated when the power management option is Enabled.*

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.

```
                    ROM PCI/ISA BIOS
                  PNP/PCI CONFIGURATION
                  AWARD SOFTWARE, INC.

PNP OS Installed      : No       PCI IDE IRQ Map to      : PCI-AUTO
Resources Controlled By  : Manual    Primary   IDE INT#     : A
Reset Configuration Data : Disabled   Secondary IDE INT#     : B

IRQ-3  assigned to : Legacy ISA   Used MEM base adr       : N/A
IRQ-4  assigned to : Legacy ISA   Used MEM Length*        : 8K
IRQ-5  assigned to : PCI/ISA PnP  Assign IRQ For USB      : Enabled
IRQ-7  assigned to : PCI/ISA PnP
IRQ-9  assigned to : PCI/ISA PnP
IRQ-10 assigned to : PCI/ISA PnP
IRQ-11 assigned to : PCI/ISA PnP
IRQ-12 assigned to : PCI/ISA PnP
IRQ-14 assigned to : PCI/ISA PnP
IRQ-15 assigned to : PCI/ISA PnP
DMA-0  assigned to : PCI/ISA PnP
DMA-1  assigned to : PCI/ISA PnP  ESC : Quit       ↑ ↓ → ←: Select Item
DMA-3  assigned to : PCI/ISA PnP  F1  : Help       PU/PD/+/- : Modify
DMA-5  assigned to : PCI/ISA PnP  F5  : Old Values (Shift)F2 : Color
DMA-6  assigned to : PCI/ISA PnP  F6  : Load BIOS Defaults
DMA-7  assigned to : PCI/ISA PnP  F7  : Load Setup Defaults
```

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 (default) or Auto. 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. |

| **PCI IDE IRQ Map To** | Select PCI-AUTO (default), ISA, or assign a PCI SLOT number (depending on which slot the PCI IDE is inserted). If PCI-AUTO does not work, then assign an individual PCI SLOT number. |

| **Primary/ IDE INT#** | Choose A (default), B, C, or D. |

| **Secondary IDE INT#** | Choose A, B (default), C, or D. |

| **Used MEM Base Addr** | Choose N/A (default) or ISA legacy card requests to have memory start address. |

Used MEM Length*	Choose 8K, 16K, 32K, or 64K.

With the above two functions, users can define where the used memory address is located and its corresponding length of the legacy area. BIOS will skip the UMB area which is used by the legacy device to avoid memory space conflict.

* This function actives only when the "Used MEM Base Addr" is chosen.

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.)

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>.

CPU Speed Setup

CPU Speed Setup changes the values of the CPU speed. These registers control the system options.

Run the CPU Speed Setup as follows:

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

```
                        ROM PCI/ISA BIOS
                       CPU FEATURES SETUP
                      AWARD SOFTWARE, INC.
┌─────────────────────────────────────┬──────────────────────────────┐
│CPU Frequency       : 5-233 MHz       │                              │
│CPU Clock Ratio*    : X 2             │                              │
│CPU Host Clock*     : 66 MHz          │                              │
│                                      │                              │
│                                      │                              │
│                                      │                              │
│                                      │                              │
│                                      │ ESC : Quit      ↑↓→←: Select Item│
│                                      │ F1  : Help      PU/PD/+/- : Modify│
│                                      │ F5  : Old Values (Shift)F2 : Color│
│                                      │ F6  : Load BIOS Defaults     │
│                                      │ F7  : Load Setup Defaults    │
└─────────────────────────────────────┴──────────────────────────────┘
```
*: These options are available only when "CPU Frequency" is set to Manual.

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:

CPU Frequency   Choose Manual, 2.0-133MHz, 2.5-166MHz, 3.0-200MHz, 3.5-233MHz (default), 4.0-266MHz, 4.5-300MHz, 5.0-333MHz, 5.5-366MHz, 6.0-400MHz, 6.5-433MHz, 7.0-466MHz, 7.0-500MHz, or 8.0-533MHz. **This value is based on the CPU clock at 66.6MHz and should be the same as the user's CPU spec.**

CPU Clock Ratio*   Choose 2.0X, 2.5X, 3.0X, 3.5X (default), 4.0X, 4.5X, 5.0X, 5.5X, 6.0X, 6.5X, 7.0X, 7.5X, or 8.0X.

CPU Host Clock*   Choose 50MHz, 60MHz, 66MHz, 68MHz, 75MHz, or 83MHz.

*: These two options only valid when the CPU Frequency setting is set to Manual.

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

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.

```
                    ROM PCI/ISA BIOS
                 INTEGRATED PERIPHERALS
                  AWARD SOFTWARE, INC.

IDE HDD Block Mode       : Enabled   UART Mode Select         : IrDA
IDE Primary Master PIO   : Auto      RxD, TxD Active          : Lo, Lo
IDE Primary Slave  PIO   : Auto      IR Transmittion Delay    : Disabled
IDE Secondary Master PIO : Auto      Onboard Parallel Port    : 378/IRQ7
IDE Secondary Slave  PIO : Auto      Parallel Port Mode       : ECP+EPP
IDE Primary Master UDMA  : Auto      ECP Mode Use DMA         : 3
IDE Primary Slave  UDMA  : Auto      EPP Mode Select          : EPP1.7
IDE Secondary Master UDMA : Auto     Power On Function        : BUTTON ONLY
IDE Secondary Slave  UDMA : Auto
On-Chip Primary PCI IDE  : Enalbed
On-Chip Secondary PCI IDE : Enalbed
USB Keyboard Support     : Disabled

KBC Input Clock          : 8 MHz
Onboard FDC Controller   : Enabled
Onboard Serial Port 1    : Auto     ESC : Quit        ↑ ↓ → ←: Select Item
Onboard Serial Port 2    : Auto     F1  : Help        PU/PD/+/- : Modify
                                    F5  : Old Values (Shift)F2 : Color
                                    F6  : Load BIOS Defaults
                                    F7  : Load Setup Defaults
```

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:

IDE HDD Block Mode Choose Enabled (default) or Disabled. If your hard disk size is larger than 540MB, choose Enabled, and, if you are using the IDE HDD Auto Detection option, the BIOS will choose this option automatically.
Note: Some HDDs of old models don't provide this feature.)

IDE Primary Master/Slave PIO IDE 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.

On-Chip Primary/ Secondary PCI IDE
Enabled: (default)Turn on the onboard IDE function.
Disabled: Turn off the onboard IDE function.

Onboard PCI SCSI Chip Choose Enabled or Disabled (default).
Enabled: Turn on onboard SCSI controller (Adaptec 7880 Ultra Wide SCSI.)
Disabled: (default) Turn off onboard SCSI controller.

USB Keyboard Support
Enabled: Enables function when the USB keyboard is being used.
Disabled: (default) When the AT keyboard be used.

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.
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.*
Power On Function	Choose BUTTON ONLY (default), Password, Mouse Left, or Mouse Right. Mouse Left: Use the PS/2 Mouse Left to boot the system. Mouse Right: Use the PS/2 Mouse Right to boot the system. Password: Choose a special password which is defined by the user or use one of the HOT keys (from CTRL-F1 to CTRL-F12) to boot the system.

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.