# P5SJ-B Mainboard
## User's Manual

# FCC & DOC Compliance

## Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and

- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.

- Increase the separation between the equipment and the receiver.

- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

**Warning!** The use of shielded cables for the connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

## Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Version 1.1

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## Package & Product Information

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## Using Your Mainboard

# Chapter3

## How to Use the CMOS Setup Utility

# P5SJ-B Package & Product Information

This manual contains all the information you'll need to use the P5SJ-B mainbaord. Please take a moment to familiarize yourself with the design and organization of the manual.

**About This Manual**

This manual is divided into four sections:

Chapter 1: Package & Product Information

A brief overview of what comes in the mainboard package, its basic features, layout and component information.

Chapter 2: Using Your Mainboard

Information on mainboard features that you may use of in operating your computer, it includes CPU Jumper setting and illustration and show you how to change or upgrade the mainboard configuration.

Chapter3:How to Use the CMOS Setup Utility

A summary of the mainboard's settings and specification, it includes how to use the CMOS Setup Utility and the related Bios Features Setup.

**Online Manual Format**

If the support disk for your mainboard is a CD-ROM disc, a copy of the printed manual may be stored on the disc in Adobe Acrobat format. If so, it requires Adobe Acrobat Reader version 3.0 or later to view it. Acrobat Reader for Microsoft Windows95 may also be supplied on the Support Disk. If not, you can obtain a free copy of the Reader software from the Abobe web site which is currently at www.adobe.com as

well as other locations.

  If you have the online manual, you may want to install Acrobat Reader on your system hard disk. You can copy the manual over as well so that the manual is readily available without having to hunt up the Support Disk when you want to view it.

  If you are unfamiliar with Acrobat Reader, please take a moment to view the Reader Online Guide which is available under the Help menu when you run Reader.

# Chapter 1: Package & Product Information

**Package Contents**

  The P5SJ-B mainboard has two models, one has a video display feature on board - SiS5598, the other -SiS5582 - does not. If you have the model with the onbord display feature, it comes with an attached cable that connects to the mainboard. Other than this feature, the two models are functionally identical. You can tell which model you have by looking at the big green heat sink in the middle of the board. The package contains the following items. Please inspect the package contents and confirm that everything is there. If anything is missing or damaged, call your vendor for instructions before proceeding. The package includes:

The standard P5SJ-B package will include:

- ■ P5SJ-B mainboard
- ■ Cable / Bracket Pack:
- √ 1 Floppy Controller Cable
- √ 1 IDE Controller Cable
- √ 1 VGA Port Bracket with attached cable
- ■ Parallel /COM port cable
- ■ PS2/COM port cable
- ■ Support Disk
- √ IDE Bus Master Drivers
- √ Display Drivers

**Mainboard features**

P5SJ-B is a new generation mainboard with complete family of Intel Pentium®Processor, Pentium® Processor with MMX Technology support. Designed based on SiS Chipset 5598, a high performance chipset competitive with PC97' specifications, P5SJ-B delivers great performance with industry standard EDO memory and Pipelined Burst SRAM cache. In addition, the integrated high performance DRAM-based Video Accelerator within performance 2D graphic function

With concurrent  PCI2.1, APM, ACPI, Plug & Play, PCI bus, mastering IDE and USB headers, P5SJ-B is the most cost-effective design product that can meet tomorrow's competitive PC market.

## CPU Socket & CPU

The Socket 7 CPU socket supports the full range of Pentium®. Installing a CPU in the socket is easy. The lever at the side of the socket latches the CPU in place when it is down and releases it when raised.

## Supported CPUs

The mainboard can use CPUs from Intel, Cyrix, IBM and AMD. The board's switching CPU design and jumper configuration options allow the use of all Pentium class processors from all three vendors, including those with MMX features. The correct jumper configuration automatically sets the required power configuration for the CPU.

**Intel CPUs Supported:**

Pentium P54C, P55C

**Cyrix & IBM CPUs Supported:**

M1/6X86, 6X86L; M2/6X86MXTM

**AMD CPUs Supported:**

K5, K6

**Supported Chipset**(SiS5598/5582 single Chip)

- Integrated VGA on Host Bus(SiS5598 only)
- Integrated Video/Graphics Accelerator(SiS5598 only)
- Integrated DRAM Controller
- Integrated L2 Cache Controller
- PCI2.1 Compliant
- Power Management Features

- Provide High Performance PCI arbiter
- Support the Universal Serial Bus(USB)
- Integrated Host-to-PCI Bridge
- PCI burst cycles
- Integrated Posted write Buffers and Read prefetch buffers to Increase System Performance
- Integrated PCI-to ISA Bridge
- Enhanced DMA Function
- Support 2MB Flash ROM interface

**Expansion Slots**
- 3 ISA slots (SL 1, SL 3, SL 5)
- 3 PCI slots (PCI 1, PCI 2, PCI 3)

**System Memory Options**
- 512KB surface-mounted Pipelined Burst SRAM L2 cache
- 2 SIMM sockets, SIMM1, SIMM2
  Use 5-Volt Fast Page or EDO SIMM modules, same size and type within a bank
- 2 DIMM sockets, DIMM1, DIMM2
  Use 3.3-Volt SDRAM DIMM modules

## Memory Configuration

**1.** It's not recommended to mix DIMMs which are 3.3V devices with 5V SIMMs. Mixing 5V and 3.3V memory is not recommenced for reliability. Not all 3.3V memory are 5V tolerant.

**2.** The DIMM Sockets only support 3.3V DIMM Module. There is 3.3V key on the socket.

**3.** When the system is under Condition 1 and Condition2(the reference information as the following illustration), it will tell you the identification of BANK.

*Condition1:BANK0/1:DIMM1/DIMM2; BANK2:SIMM1/SIMM2*
*Condition2:BANK0/1:DIMM1/DIMM2; BANK0:SIMM1/SIMM2*
*You can't use the BANK0 at the same time , just choose one of them.*

**4. Onboard VGA:** When the system run VGA Function, you have to put EDO/SDRAM RAM on the BANK0, and please check the Jmper 11, and Jumper 12( Without memory module on BANK0,V.G.A. Function will fail)

| | |
|---|---|
| DIMM2 | BANK1 |
| DIMM1 | BANK0 |

*Condition1*

| |
|---|
| SIMM2 |
| SIMM1 |

} BANK2
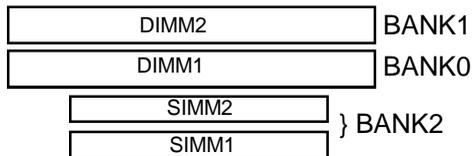
| Jumper | Pin | Setting |
|--------|-----|-----------|
| JP11   | 1-2 | On(short) |
| JP12   | 2-3 | On(short) |

### *Condition2*

| | |
|---|---|
| DIMM2 | BANK1 |
| DIMM1 | BANK0 |
| SIMM2 | } BANK0 |
| SIMM1 | |

| Jumper | Pin | Setting |
|--------|-----|-----------|
| JP11   | 2-3 | On(short) |
| JP12   | 1-2 | On(short) |
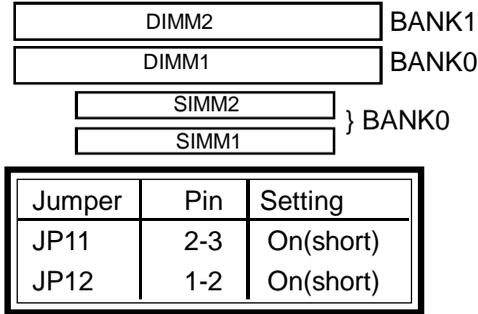
**5. DIMM Voltage:** If you got a 5V DIMM module please do the following jumper setting on Jumper4 & JP5.

| Jumper | Pin | Setting   | Status                        |
|--------|-----|-----------|-------------------------------|
| JP4-5  | 1-2 | On(short) | 3.3V DIMM module (Default)    |
| JP4-5  | 2-3 | On(short) | 5V DIMM Module                |

## Hardware Controls & Indicators

There are some control features and status indcators that connect from the mainboard to your systemcase, which is sometimes called the 'Enclosure' or 'Chassis'. These are:

•      Power Switch

•      Power Status Indicator

•      Suspend Switch

•      Suspend Status Indicator

•      Reset Switch

•      Hard Disk Drive Activity Indicator

•      Keyboard Lock

## Onboard Connectors

| Name | Function | Description |
| --- | --- | --- |
| J1 | PS/2 Mouse/KB | Standard PS/2 mouse port |
| J4 | AT Keyboard | Baby AT keyboard connector |
| J5 | Onboard VGA Port | 16-pin connector connects to external VGA port |
| J8 | AT Power switch | AT power on/off control |
| J9 | CPU Fan Connector | CPU fan's Power |
| USB | USB | Dual stacked external USB ports |
| COM1 | COM1 | On board 10-pin serial port is COM1, can be set to COM3 |
| COM2 | COM2 | On board 10-pin serial port is COM2, can be set to COM4 |
| IDE1 | First IDE Channel | 40-pin connector connects to 2-device cable;End device is Primary Master, middle is Slave |
| IDE2 | Second IDE channel | 40-pin connector connects to 2-device cable; End device is Secondary Master, middle is Slave |
| PW1 | AT Power Connector | Connects to AT power supply |
| PW2 | ATX Power Connector | Connects to ATX power supply |

| Name | Function | Description |
|------|----------|-------------|
| FDD1 | Floppy Disk drive | 34-pin connector connects to 2-device cable; End device is DriveA:, middle is Drive B: |
| LPT1 | Parallel Port | Standard parallel port |
| SIR1 | Infrared Port | 5 Pin connector connects to IR port module |
| CN1 | Case Feature | Connects to case features<br>Pin2-3:HDD LED; Pin4-5:Suspend<br>Pin9-10:Reset Switch;<br>Pin11-13: Power LED<br>Pin14-15:Keyboard Lock<br>Pin17-20:Speaker |

CN1: Case Feature Illustration

POWER LED

KB LOCK  SPEAKER

11

1  2

HDD LED  SUSPEND    RESET
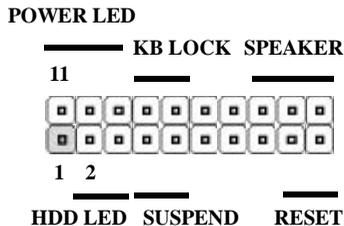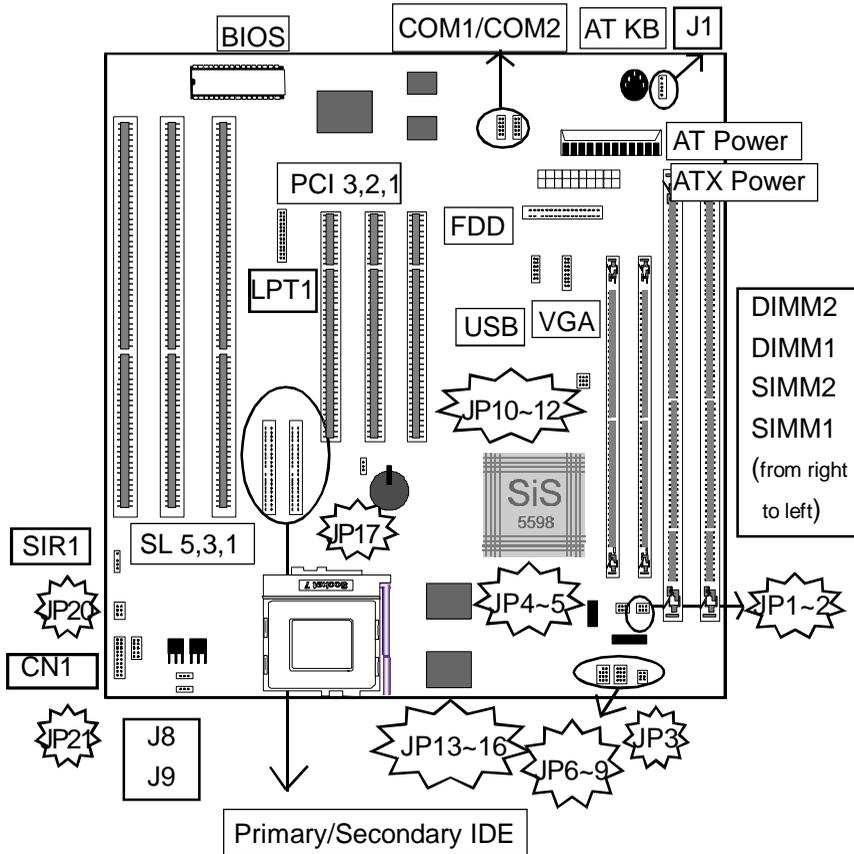
## LAYOUT



## P5SJ-B Layout

The illustration above shows the connectors, heasink, sockets and ports and the mainboard.

# Chapter 2: Using Your Mainboard

This chapter explains how to install new hardware on your mainboard. It covers installing expansion cards, adding system memory, jumper setting and etc.

**Installing Expansion Cards**

There are 6 expansion card slots on the mainboard, three ISA slots and three PCI slots. When you get an expansion card, it will come with instructions on how to install it.

**ISA Cards & Slots**

ISA expansion cards often use system resources in the form of IRQs and DMA channels. Newer cards that comply with the Plug and Play(PnP) standard are designed to allow the Operating System to automatically configure system resources. Cards that do not support PnP may require manual configuration of both the card hardware and settings in the CMOS Setup Utility.

**PCI Cards & Slots**

With very few exceptions, any PCI expansion card you are likely to get will be Plug and Play compliant. If you are using an Operating System that supports PnP, such as Windows 95, you should be able to follow the installation instructions that comes with the this mainboard must be installed under your Operating System. This drivers are located on the Support Disk.

**Installing Memory Modules**

To install a module, insert it into the socket at about a 45° angle

and then push it up into the retaining clips so that it snaps in place and is at a 90° angle to the board.

Modules are designed so that they will only insert in one orientation. If you have trouble inserting the connector edge of the module into the socket, it try again. You shouldn't need to force it.

**If All Sockets Are Occupied**

If you want to install more memory and there are no sockets available, you must remove some installed modules and replace them with the upgrade modules. If you have to so this, make sure to identify what type of memory is already installed.

In some cases, there may be a mix of module types. You can tell this by checking the configuration screen that appears while the computer is starting up. Press the pause key to temporarily interrupt the start-up process while the screen is visible so that you have more time to read it. When you're done press any key to resume.

Remove the lowest performance and smallest size modules and replace them with the upgrade. For example, if your have the following configuration and you plan to install two 16MB EDO modules:

**(EX) SIMM1 & 2:8MB Fast Page mode modules**

**SIMM2 & 3:8MB EDO modules**(P5SJ-B only support SIMM1/2)

You should remove the two 8MB FP modules because they are lower performance and replace them with the memory upgrade, resulting in the greatest performance gain.

## Installing A CPU Upgrade

If you are installing this mainboard it will not have a CPU installed unless your vendor installed one when you purchased the board. If the mainboard is installed in a system, there will already be a CPU installed. In either case the information and procedure for installing a CPU is the same. Since the more likely scenario is that you are installing an upgrade, this section assumes that is what you are doing.

## The Basic Procedure

To install a CPU on this mainboard you need to set up the board for a specific CPU by doing the following items:

• Set the External Clock Speed(Cap Color: Yellow)

• Set the Clock Multiplier Factor(Cap Color: Green)

• Set the CPU Voltage(Cap Color: Red)

You configure the CPU settings by adjusting jumper settings on the board. In order to do this, you will need to know some information about the CPU you plan to install.

This should be provided by the CPU vendor or by the vendor you buy the chip from. You'll need the following information:

• CPU Internal Clock Speed

• CPU Voltage

The internal clock speed is the speed the CPU operates at to process data and is the one used by CPU manufacturers to indicate the speed of the chip, for example, a 133MHz Intel Pentium® . The CPU also has an external clock speed which is the speed at which it interacts with external components.

CPU voltage may either be the same internally and externally or it may be split, depending on the CPU design. Some processors use one voltage for the 'core'(Vcore) and another for input/output(Vio).

**Configuring External Clock Speed & Factor**

To configure the board for a CPU's internal clock speed, you have to set the external clock speed(sometimes referred to as the bus speed) and the clock factor so that the result is the internal clock speed of the CPU you are installing. For example, the default setting for these is:

**66.6MHZ[external clock] x 2.0[clock factor] =133.2MHz**

or, an effective setting of 133MHz.

**CPU Jumper Tables & Illustrations**

This section lists the jumper setting options for this mainbaord. The settings are listed as follows:

■   The two pins shorted by a jumper cap on a three-or-more-pin jumper, e.g. 1-2

or

■   For a two-pin jumper, On, if the cap is in place, and Off, if a cap is not in place.

In the jumper illustrations, the Pin 1 position is shaded and the jumpers, shown in a "bird's eye" view, look like this:



A jumper with a cap in position looks like this:



The default settings are noted in the summary tables. Unless you

need to upgrade the CPU, disable the onboard VGA feature or upgrade the BIOS, you should not need to change them.

## LAYOUT For Jumper Setting
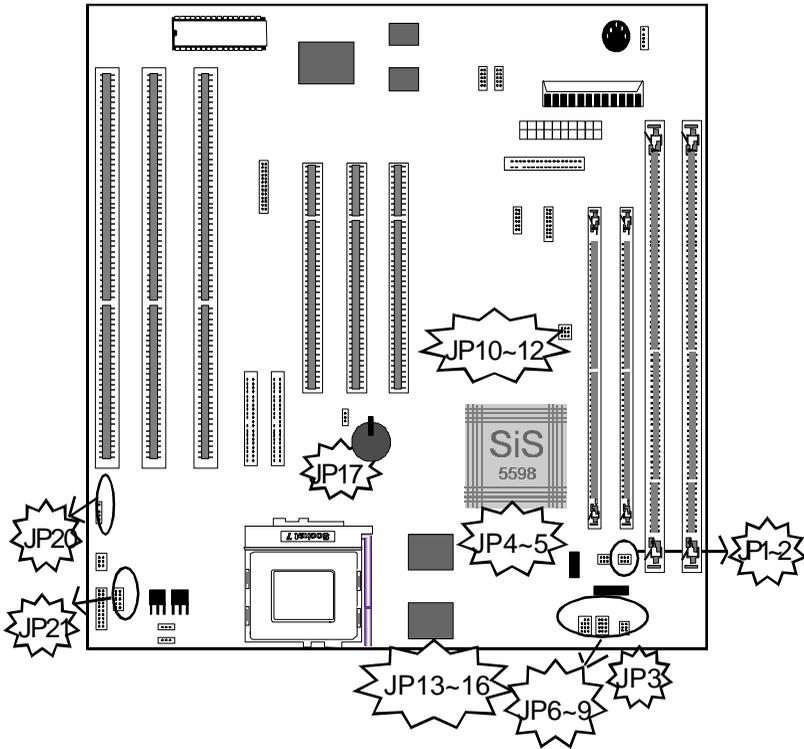
## P5SJ-B CPU Jumper Setting

| Function | Jumper | Settings | |
|---|---|---|---|
| External Speed | JP6~JP8 | 50MHz | JP6:2-3, JP7:2-3, JP8:2-3 |
| | | 55MHz | JP6:1-2, JP7:2-3, JP8:2-3 |
| | | 60MHz | JP6:2-3, JP7:2-3, JP8:1-2 |
| | [D] | 66.6MHz | JP6:2-3, JP7:1-2, JP8:2-3 |
| | | 68.4MHz | JP6:1-2, JP7:1-2, JP8:1-2 |
| | | 75MHz | JP6:1-2, JP7:2-3, JP8:1-2 |
| | | *83.3MHz | JP6:1-2, JP7:1-2, JP8:2-3 |
| Internal Clock Factor | JP14~16 [D] | 1.5X/3.5X | JP15:1-2, JP16:1-2 |
| | | 2.0X | JP15:1-2, JP16:2-3 |
| | | 2.5X | JP15:2-3, JP16:2-3 |
| | | 3.0X | JP15:2-3, JP16:1-2 |
| | | 4.0X | JP14:2-3,JP15:1-2,JP16:2-3 |
| | | 4.5X | JP14:2-3,JP15:2-3,JP16:2-3 |
| | | 5.0X | JP14:2-3,JP15:2-3,JP16:1-2 |
| | | 5.5X | JP14:2-3,JP15:1-2,JP16:1-2 |
| I/O Voltage | JP3 | 3.3V | JP3:1-2 |
| | [D] | 3.525V | JP3:3-4 |

## Others Jumper Setting

| Function | Jumper | Settings | | |
|---|---|---|---|---|
| CMOS Setup | JP17 | Normal | JP17:1-2 [D] | |
| | | Clear | JP17:2-3 | |
| SDRAM Voltage | JP4~5 | 3.3V | JP4:1-2 | JP5:1-2[D] |
| | | 5V | JP4:2-3 | JP5:2-3 |
| Onboard VGA | JP11~12 | Condition1 | JP11:1-2 | |
| | | Condition2 | JP12:2-3 | |
| VGA Selector | JP1~2, 10 | Enable | JP1~2:1-2, JP10:2-3 | |
| | | Disable | JP1~2:2~3, JP10:1-2 | |
| [D]:Default Setting | | [*] For technical testing only | | |

| Function | Jumper | Settings | 1-2 | 3-4 | 5-6 | 7-8 | 9-10 |
|---|---|---|---|---|---|---|---|
| Core Voltage | JP21 | | | | | | |
| Cap On= Short | | 1.8V | On | On | | On | |
| Cap Off= Open | | 2.0V | On | On | On | On | |
| | | 2.2V | | | | On | |
| | | 2.5V | | | On | | On |
| | | 2.8V | | On | | | |
| | | 2.9V | | On | | | On |
| | | 3.1V | | On | | On | On |
| | | 3.2V | | On | On | | |
| | | 3.3V | | On | On | | On |
| [D] | | 3.5V | | On | On | On | On |

| Function | Jumper | Settings |
|---|---|---|
| ATX Power Switch | JP20 | JP20:1-2 |
| SMI Button | JP20 | JP20:3-4 |
| ACPI LED | JP20 | JP20:5-6 |

**CPU Frequency Setting**

| JP6 | JP7 | JP8 | Host | JP9 pin1-2 | Pin2-3 |
|---|---|---|---|---|---|
| 2-3 | 2-3 | 2-3 | 50MHz | 25 | 32 |
| 1-2 | 2-3 | 2-3 | 55MHz | 27 | 32 |
| 2-3 | 2-3 | 1-2 | 60MHz | 30 | 32 |
| 2-3 | 1-2 | 2-3 | 66.6MHz | 33.3 | 32 |
| 1-2 | 1-2 | 1-2 | 68.4MHz | 34.2 | 32 |
| 1-2 | 2-3 | 1-2 | 75MHz | 37.5 | 32 |

## External Speed

| 50MHz | 55MHz | 60MHz | 66.6MHz |
|-------|-------|-------|---------|

JP6
JP7
JP8

| 68.4MHz | 75MHz | 83MHz | (for technical testing only) |
|---------|-------|-------|------------------------------|

JP6
JP7
JP8

Cap:

Cap Color: Yellow

## Internal Clock Factor

| 1.5X/3.5X | 2.0X | 2.5X | 3.0X |
|-----------|------|------|------|

JP15
JP16

| 4X | 4.5X | 5X | 5.5X |
|----|------|----|------|

JP14
JP15
JP16

Cap:

Cap Color: Green

## Core Voltage

| 1.8V | 2.0V | 2.5V | 2.8V | 2.9V |
|------|------|------|------|------|

JP21
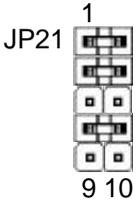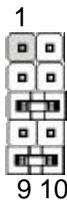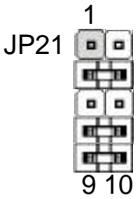
| 3.1V | 3.2V | 3.3V | 3.5V(Default) |
|------|------|------|------|

JP21
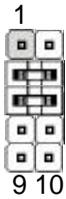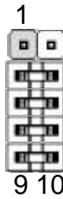
Cap:
Cap Color:Red

## CMOS Setup

Normal   Clear

JP17

Cap:
Cap Color:White

## SDRAM Voltage

3.3V                    5V

JP4 JP5            JP4 JP5
 1   1               1   1

Cap:

Cap Color:White

## Onboard VGA
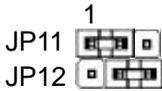
Condition 1          Condition 2
     1                    1
JP11
JP12

**Condition 1**
DIMM2:BANK1
DIMM1:BANK0
SIMM1/SIMM2:Bank2

**Condition 2**
DIMM2:BANK1
DIMM1:BANK0
SIMM1/SIMM2:BANK0

## Power Management Setting
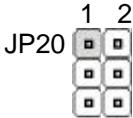


**SMI Button:Pin 1-2**
**ATX Power Switch: Pin 3-4**
**ACPI LED: Pin 5-6**

**SMI Button**

Puts the system into Suspend state under Operating Systems that support this power management feature Default sets this to dual function as power and suspend switch. Press once for Suspend or Resume, hold for >4 seconds for Off. To use the power switch feature the Power Button Over Ride item in the Integrated Peripherals section of the CMOS Setup utility must be set to the default Enabled setting. Disabling it turns off the power feature.

# Chapter3:How to Use the CMOS Setup Utility

## CMOS Setup Utility-

This is the main screen for the setup utility from which you access its various sections.
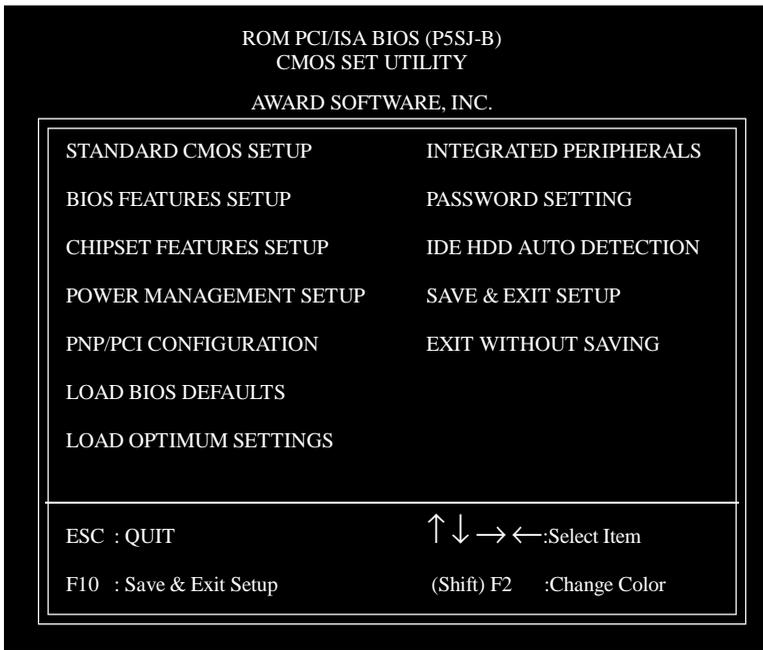
```
              ROM PCI/ISA BIOS (P5SJ-B)
                 CMOS SET UTILITY

               AWARD SOFTWARE, INC.

  STANDARD CMOS SETUP          INTEGRATED PERIPHERALS

  BIOS FEATURES SETUP          PASSWORD SETTING

  CHIPSET FEATURES SETUP       IDE HDD AUTO DETECTION

  POWER MANAGEMENT SETUP       SAVE & EXIT SETUP

  PNP/PCI CONFIGURATION        EXIT WITHOUT SAVING

  LOAD BIOS DEFAULTS

  LOAD OPTIMUM SETTINGS


  ESC  : QUIT                  ↑↓→←:Select Item

  F10  : Save & Exit Setup     (Shift) F2   :Change Color
```

**Menu Commands**

If you look at the lower portion of the screen illustration you'll see a section that lists the control commands for this level of the program. You execute a command by pressing the key for that command. The program commands are :

Quit

> This command will close the Setup program when you press the ESC key.

Save & Exit Setup

> This will save the current settings and close the Setup program when you press the F10 key.

Select Item

> You can use the arrow keys on your keyboard to move around the screen and select a menu item. An item is highlighted when it is selected.

Change Color

> Change the program color scheme by pressing Shift + F2.

The section at the bottom of the screen displays a brief explanation of a highlighted menu item's function.

There are six main sections to the Setup program:

• Standard CMOS Setup

> Date, time, disk drive, video display and error handling

• BIOS Features Setup

> System customization features and video display settings

• Chipset Features Setup

> Chipset settings, memory configuration feature for specialized add-on cards and VGA memory configuration

• Power Management Setup

> Sets up the "green" power management features

• PNP/PCI Configuration

> PCI expansion slot and system resource settings

- Load BIOS Defaults

  Loads minimum settings from the BIOS ROM.

- Load Optimum Settings

  Loads optimized settings from the BIOS ROM.

- Integrated Peripherals

  Settings for the IDE channels and onboard ports

- PC Health Monitor

  Monitoring sensor settings and readings, accessed by LANDesk Client Manager

  The other main menu items are affected by these items :

- Supervisor Password & User Password

  Sets a system password which is configured by the Security Option item in BIOS Features Setup.

- IDE HDD Auto Detection

  Automatically detects the drive parameters of any installed IDE hard disk drives and enters them automatically in the Standard CMOS Setup .

- Save & Exit Setup

  Saves the current settings and exits the program.

- Exit Without Saving

  Discards any changes made during the current session and exits the program.

To enter a section of the Setup program, highlight the menu item and press the Enter key.

## Standard CMOS Setup

To enter this section, highlight this menu item in the main menu and press the Enter key. The screen above will appear.

```
                        STANDARD CMOS SETUP
                        CMOS SETUP UTILITY
                        AWARD SOFTWARE, INC.


 Date(mm:dd:yy)  :Thu , Dec 111997
 Time(hh:mm:ss)  :9 : 36 : 22
 HARD DISKS      TYPE SIZE  CYLS  HEAD PRECOP LANDZ SECTOR      MODES
 Primary Master  : None   0    0     0    0        0      0        ——————
 Primary Slave   : None   0    0     0    0        0      0        ——————
 Secondary Master: None   0    0     0    0        0      0        ——————
 Secondary Slave : None   0    0     0    0        0      0        ——————
 Drive A         : None
 Drive B         : None
 Floppy 3 Mode support:Disabled
 Video           : EGA/VGA

 Halt On         : All Errors
                                       Base Memory        : OK
                                       Extended Memory    : OK
                                       Other Memory       : 512K
                                       Total Memory Memory : 512K


 ECS   :   Quit       ↑↓→←: Select Item   PU/PD/+/- : Modify

 F1    :   Help           (Shift)F2  :  Chnage Color
```

## Menu Commands

If you look at the lower portion of the screen illustration you'll see a section that lists the control commands for this level of the program. You execute a command by pressing the key for that command. The program commands are :

Quit

This command will close the Setup program when you press the ESC key.

Help

This displays information about the highlighted item when you press the F10 key.

Select Item

You can use the arrow keys on your keyboard to move around the screen and select a menu item. An item is highlighted when it is selected.

Change Color

You can change the program color scheme by pressing Shift + F2.

Modify

To change the setting of a highlighted selection you can press either the Page Up (PU) and Page Down (PD) keys or the Plus (+) and Minus (−) keys. Pressing a key once will switch to the next setting option for the selected item.

If your mainboard is already installed in a working system the proper entries are already entered on this screen and you shouldn't change them except for adjusting the Date and Time entries if necessary.

## Date & Time

The first two lines on the screen are the date and time settings for the system clock.

## Hard Disk Type & Parameters

For an IDE hard disk drive, you should set the entries to "Auto" and the BIOS will automatically detect all drive information needed.

You can also use the IDE HDD Auto Detection feature, described later, to automatically enter the drive parameters of IDE hard disk drives in these fields. If you have only SCSI hard disk drives installed in your system leave the settings here at None. Only hard disk information needs to be entered here. Other IDE devices do not use this.

If you use the IDE HDD Auto Detection utility to supervise the auto-detec

tion process, leave the drive items set to "None". You can also enter specifications manually by setting a line to the "User" option.

## Large Hard Disk Modes

The last of the drive parameter entries – Mode – has four options, Normal, LBA, Large and Auto. The Mode settings are for IDE hard disks only.

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This command will close the Setup program when you press the ESC key.

### Help

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### Select Item

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## Large Hard Disk Modes

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Normal

For IDE hard disks of 528MB or less.

LBA

This stands for Logical Block Addressing, the current standard access mode for large IDE hard disk drives. It allows the use of hard disks larger than 528MB by causing the IDE controller to translate between the logical address it creates and the hard disk's actual physical address. The maximum drive size supported is 8.4GB.

Large

For 1GB or smaller drives with more than 1024 cylinders and no LBA support. This access mode causes the Operating System to treat the drive as if it has fewer than 1024 cylinders by dividing the cylinder total in half and doubling the number of heads. Drives needing this mode are less common.

Most large IDE hard disk drives currently available use the LBA mode. Use the AUTO setting to automatically detect the correct mode for new drives.

## Floppy Disk Drives

The two floppy disk drive items set the drive type for drives A and B, and must be entered manually. The options are

360KB, 5.25 in.

1.2MB, 5.25 in.

720KB, 3.5 in.

| 1.44MB, 3.5 in. |
| --- |
| 2.88MB, 3.5 in. |
| None |

Highlight the listing after each drive name and select the appropriate entry.

## Floppy 3 Mode Support

3 Mode is a Japanese 3.5-inch floppy disk drive specification. If this type of drive is installed you should enable this feature. The default setting is Disabled.

## Video Display Types

You set this according to the type of display card in your system. This should normally be left on EGA/VGA. The options are:

| EGA/VGA |
| --- |
| Mono (for Hercules or MDA) |
| CGA 40 |
| CGA 80 |

## Error Handling

The last line – Halt On – sets when the system stops if an error occurs. The options are:

| All Errors (Default) |
| --- |
| No Errors |
| All, But Keyboard |
| All, But Diskette |
| All, But Disk/Key |

## BIOS Features Setup-

```
                    BIOS FEATURES SETUP
                     CMOS SET UTILITY
                   AWARD SOFTWARE, INC.

  Virus Warning              :Disabled    Video BIOS Shadow       :Enabled
  CPU Internal Cache         :Enabled     C8000-CBFFF Shadow      :Disabled
  External Cache             :Enabled     CC000-CFFFF Shadow      :Disabled
  Quick Power On Self Test   :Enabled     D0000-D3FFF Shadow      :Disabled
  Boot Sequence              :A, C, SCSI  D4000-D7FFF Shadow      :Disabled
  Swap Floppy Drive          :Disabled    D8000-DBFFF Shadow      :Disabled
  Boot Up NumLock Status     :On          DC000-DFFFF Shadow      :Disabled
  Gate A20 Option            :Fast
  Security Option            :Setup     ESC : QUIT        ↑↓→←   :Select Item
  PCI/VGA Palette Snoop      :Disabled   F1  :Help        PU/PD/+/-  :Modify
  OS Select For DRAM>64MB    :Non-OS2    F5  :Old Values   (Shift)F2  :Color
                                         F6  :Load BIOS Default
                                         F7  :Load Setup Default
```

## Virus Warning

This protects the primary hard disk's boot sector and partition table from infection. Any attempt to write to them will halt the system and produce a warning message. If this happens, you can either allow the system to continue or stop it and boot from a virus-free bootable floppy disk. Use an anti-virus utility located on the floppy disk to check the hard disk. The default setting is Disabled.

## CPU Internal Cache

This enables CPU's Level 1 built-in cache. Leave it enabled to maintain system performance. The default setting is Enabled.

## Quick Power On Self Test

This feature speeds up the Power On Self Test (POST) by skipping some parts of the POST. If your system is functioning normally, you can enable this feature to speed the boot process. The default setting is Enabled.

## Boot Sequence

This determines the order in which the computer checks drives for an operating system. In addition to the drive A: floppy disk drive and the drive C: boot hard disk, you can configure the order to include another IDE hard disk drive or CD-ROM drive or a SCSI device. The options are:

| | | | |
|---|---|---|---|
| A, C, SCSI | C, A, SCSI | SCSI, A, C | SCSI, C, A |
| D, A, SCSI | E, A, SCSI | F, A, SCSI | |
| C, CD-ROM, A | | CD-ROM, C, A | |
| C Only | | | |

## Swap Floppy Drive

This switches the floppy drive assignments so that drive A is treated as drive B: and drive B: as drive A: under DOS. The default setting is Disabled.

## Floppy Disk Drives

The two floppy disk drive items set the drive type for drives A and B, and must be entered manually. The options are

| |
|---|
| 360KB, 5.25 in. |
| 1.2MB,  5.25 in. |
| 720KB,  3.5 in. |

## Boot Up NumLock Status

This item allows you to select which mode the numeric keypad on an IBM-compatible extended keyboard is set to when the computer boots up. The options are:

| | |
|---|---|
| On | – Numeric keypad mode   (Default) |
| Off | – Cursor control mode |

## Gate A20 Option

This sets the gate A20 control. The two options are:

| |
|---|
| Fast – Recommended default |
| Normal |

## Security Option

This sets when password protection is active. The two options are:

| |
|---|
| System – Password required at boot up |
| Setup– Password controls access to Setup utility |

You create a password using the Password Setting option in the main menu. With no password set, the system ignores this.

## PCI/VGA Palette Snoop

If your video display card has an MPEG card attached to the feature connector, the display may invert to black on white while booting. If this happens, set this line to Enabled to correct the problem. The default setting is Disabled.

## OS Select For DRAM >64MB

If your system has more than 64MB of system memory and the OS/2 operating system is in use, set this to the OS2 setting. The default setting, Non-OS2, is for all other operating systems.

Video BIOS Shadow

This copies the video display card BIOS into system DRAM to increase display speed and is required for system performance. The default setting is Enabled.

## Chipset Features Setup

```
                    CHIPSET FEATURE SETUP
                    CMOS SET UTILITY

                    AWARD SOFTWARE, INC.

  Auto Configuration      :Enabled    ISA Bus Clock Frequency  :PCICLK/4
  DRAM Timing             :60ns       System BIOS Cacheable    :Enabled
  L2(WB) Tag Bit Length   :8 bits     Video BIOS Cachable      :Enabled
  SRAM Back -to -Back     :Enabled    Memory Hole at 15M-16M   :Disabled
  Chipset NA# Asserted    :Enabled    Peer Concurrency         :Disabled
  RAS Precharge Time      :3T         VGA Shared Memory Size   :1MB
  RAS to CAS Delay        :3T         VGA Memory Clock(MHz):55
  CAS Pulse Width(FP)     :2T
  CAS Pulse Width(EDO)    :1T
  SDRAM CAS Latency       :3T
  SDRAM WR Retire Rate    :X-2-2-2
  SDRAM Wait State Control :1WS       ESC : QUIT            ↑↓→←   :Select Item
  CPU to PCI Post Write   :3T         F1   :Help           PU/PD/+/-  :Modify
  CPU toPC I Burst Mem. WR :Disabled  F5   :Old Values     (Shift)F2  :Color
  Refresh RAS Assertion   :6T         F6   :Load BIOS Default
  Refresh Cycle Time(us)  :62.4       F7   :Load Setup Default
```

Auto Configuration

Everything on this screen except for the Memory Hole and VGA Shared Memory Size item is set automatically when auto configuration is active. If you disable it you can set the values manually, although we recommend against this. Don't disable automatic configuration unless you know what you are doing. The default setting is Enabled.

## Power Management Setup

```
                    POWER  MANAGEMENT SETUP
                        CMOS SET UTILITY

                     AWARD SOFTWARE, INC.

   Power Management  :Disable      IRQ3 (COM2)        :Enabled
   PM Control by APM  :Yes         IRQ4 (COM1)        :Enabled
   Video Off Option   :Susp, stby→Off   IRQ5(LPT2)    :Enabled
   Video Off Method   :DPMS Supported   IRQ6(Floppy Disk)  :Enabled
   MODEM Use IRQ      :3           IRQ7(LPT)          :Enabled
                                   IRQ8(RTC Alarm)    :Enabled
                                   IRQ9(IRQ2 Redir)   :Enabled
                                   IRQ10(Reserved)    :Enabled
         ** PM Timers **           IRQ11(Reserved)    :Enabled
   HDD Power Down    :Disable      IRQ12(PS/2 Mouse)  :Enabled
   Doze Mode         :Disable      IRQ13(Coprocessor) :Enabled
   Standby Mode      :Disable      IRQ14(Hard Disk)   :Enabled
   Suspend Mode      :Disable      IRQ15(Reserved)    :Enabled
   ** Break Events from Suspend **
   COM Ports Activity:Enabled      ESC : QUIT      ↑↓→←    :Select Item
   LPT Port Activity    :Enabled   F1  :Help       PU/PD/+/-  :Modify
   HDD Ports Activity:Enabled      F5  :Old Values (Shift)F2  :Color
                                   F6  :Load BIOS Default
   VGA Activity        :Disabled   F7  :Load Setup Default
```

### What Power Management Does

Power management lets you set up your computer to save electricty when it is not actively in use by putting the system into progressively greater power saving modes. In the power management scheme there are four system states which proceed in the following sequence:

Normal , Doze, Standby, Suspend

### Power Management

This controls the entire power management scheme. There are four settings:

User Defined

> You set the power saving options manually

Disable

> Turns off all power management

Max Saving

> Maximizes power saving by activating maximum power saving settings after one minute of system inactivity

Min Saving

> Produces less power saving by activating moderate power saving settings after one hour of system inactivity

**PM Control By APM**

> When this is set to Yes the Advanced Power Management feature Microsoft Windows controls power management operation. The default setting is Yes.

**Video Off After**

> This governs when the video display turned off.

**Doze Mode**

> This sets the period of system inactivity after which the system goes into Doze mode, the most limited power saving state. The settings range from 1 minute to 1 hour and can be set manually when power management is User Define mode. The default setting is Disabled. When the system goes into power saving mode, power managemnet will ship to the next mode in the sequence if this is disabled.

**Standby Mode**

> This sets the period of system inactivity after which the system goes into Standby mode, the intermediate power saving state. The settings range from 1 minute to 1 hour and can be set manually when power management is User Define mode. The default setting is Disabled. When the system goes into power saving mode, power managemnet will ship to the next mode in the sequence if this is disabled.

**Suspend Mode**

> This sets the period of system inactivity after which the system goes into Suspend mode, the maximum power saving state.

## Suspend Mode

The settings range from 1 minute to 1 hour and can be set manually when power management is in User Define mode. The default setting is Disabled. When the system goes into power saving mode, power management will skip to the next mode in the sequence if htis is disabled.

## PNP/PCI Configuration

```
                    PNP/ PCI CONFIGURATION
                       CMOS SET UTILITY

                    AWARD SOFTWARE, INC.

   PNP OS Installed        :No
   Resources Controlled By :Auto
   Reset Configuration Data :Disabled




                                ESC : QUIT          ↑↓→←  :Select Item
                                F1  :Help           PU/PD/+/- :Modify
                                F5  :Old Values      (Shift)F2  :Color
                                F6  :Load BIOS Default
                                F7  :Load Setup Default
```
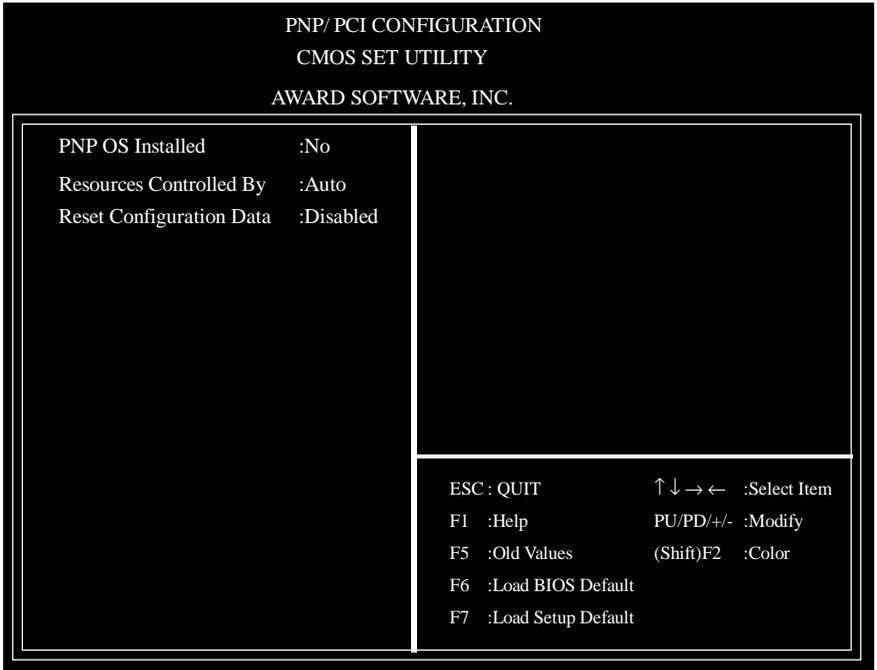
### PNP/PCI Configuration

To enter this section of the Setup program, highlight this menu item in the main menu and press the Enter key. The following screen will appear.

### Menu Commands

The menu commands for this screen are the same as for the BIOS Features Setup screen.

## Resources Controlled By

When this line is set to Auto the BIOS will automatically configure IRQ and DMA resources. This is the recommended setting. If you set this line to Manual, the screen changes as shown above and allows manual configuration. In general you should only need to do this if you are installing an ISA card that requires manual configuration.

## Reset Configuration Data

The default setting is 'Disabled'. If you need to clear the ESCD data, set this to 'Enabled'. The data will clear automatically and the BIOS will reset this line to the 'Disabled' setting.

## PCI IDE IRQ Map To

Most of PCI IDE cards are non-PCI compliant. This line defines the IRQ Routing to make them work properly.

# Integrated Peripherals

```
                    INTEGRATED PERIPHERALS
                       CMOS SET UTILITY

                    AWARD SOFTWARE, INC.

   Internal PCI/IDE           :Both
   IDE Primary Master PIO     :Auto
   IDE Primary Slave PIO      :Auto      USB Controller              :Disabled
   IDE Secondary Master PIO   :Auto
   IDE Secondary Slave PIO    :Auto      Power Button Over Ride      :Enabled
   Primary Master UltraDMA    :Auto      Ring Power Up Control       :Enabled
   Primary Slave Ultra DMA    :Auto      GPIO5 Power Up Control      :Enabled
   Secondary Master Ultra DMA :Auto      Power Up by Alarm           :Disabled
   Secondary Slave Ultra DMA  :Auto
   IDE Burst Mode             :Disabled
   IDE Data Port Post Write   :Enabled
   IDE HDD Block Mode         :Enabled

   Onboard FDC Controller     :Enabled
   Onboard UART 1             :3F8/IRQ4   ESC : QUIT        ↑↓→←  :Select Item
   Onboard UART 2             :2F8/IRQ3   F1  :Help         PU/PD/+/- :Modify
   Onboard UART 2 Mode        :Standard   F5  :Old Values   (Shift)F2 :Color
                                          F6  :Load BIOS Default
   Onboard Parallel Port      :378/IRQ7   F7  :Load Setup Default
   Parallel Port Mode         :Normal
```

## Integrated Peripherals

This section sets the IDE transfer mode for all IDE channels. It also configures the other onboard ports.

## Supervisor & User Password Settings

To use either of these commands, highlight one in the main menu and press Enter. A message will appear prompting you to enter a password.

Type in a password. The password is case sensitive, and can be up to 8 alphanumeric characters. Press Enter when you finish typing in the password.

If you typed in a password, the message "Confirm Password" will appear. Confirm the password by typing it again and pressing Enter. The message box will close.

If you decide you don't want to set a password after you activate this command, or if you want to eliminate an existing password, press Enter without typing anything else. The message "Password Disabled" will appear and the message box will close.

When you set a password, the Security Option line in BIOS Features Setup controls when the password is required. You can set the option to require the password when the system boots up or when calling up the CMOS Setup utility. The mainboard ships with no password.

## IDE HDD Auto Detection

When you install an IDE hard drive, you can use this feature to automatically detect the drive parameters and enter them in the appropriate Hard Disk section of Standard CMOS Setup. However, since the Auto settings in Standard CMOS Setup perform the same function, you do not need to configure IDE hard disk drives from here. If you want to use this feature, highlight it in the main menu and press the Enter key.

## Save And Exit Setup

When you select this and press Enter the values entered during the current session are recorded in CMOS memory.

## Exit Without Saving

When you select this and press Enter the Setup Utility closes without recording any changes made during the current session.