P5SD-AS 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.

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Chapter 1 Package & Product Information

Chapter 2 Using Your Mainboard

Chapter 3 How to use the CMOS Setup Utility

P5SD-AS Package & Product Information

This manual contains all the information you'll need to use the P5SD-AS 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

Overview

  The P5SD-AS consists of SIS 5591 & 5595 & 6326 chipset and super I/O(WINBOND 83877F). It integrated the host to PCI bridge, L2 cache & DRAM controller, the Accelerated Graphics Port Interface and PCI IDE controller. The L2 cache controller can support up to 1MB P.B.SRAM, and the DRAM controller can support EDO/FP/SDRAM memory up to 320MB with optional ECC or Parity check function, the built-in fast PCI IDE controller supports the transditional PIO/DMA, adn Ultra DMA 33 functionaity.

  The P5SD-AS also supports Serial IRQ(Option), the ACPI/Legacy PMU, the Data Acquistion Interface, the Universal Serial Bus Host Interface. It offers the ability of monitoring and reporting the environmental condition, it could monitor 4 positive analog voltage inputs, 2 fan speed inputs, and one temperature input (CPU Temp.) LAN Wake -up for using ATX Power.

  The P5SD-AS is a ideal mainboard for high performance, high quality, high energy efficient and high intergration Desktop AGP/PCI/ISA computer systems.

Package Contents

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 P5SD-AS package will include:

- ■ P5SD-AS mainboard
- ■ Cable / Bracket Pack:
  - √ 1 Floppy Controller Cable
  - √ 1 IDE Controller Cable
- ■ Support Disk
  - √ IDE Bus Master Drivers
  - √ Display Drivers
  - √ AGP Drivers
  - √ Audio Drivers

Mainboard features

P5SD-AS is a new generation mainboard with complete family of Intel Pentium®Processor, Pentium® Processor with MMX Technology support. Designed based on SiS Chipset 5591/5595, a high performance chipset compliance with PC97' specifications, P5SD-AS 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, mas-

tering IDE and USB headers, P5SD-AS 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, AMD and IDT. 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

IDT Supported:

C6

Supported Chipset

SiS5591 PCI AGP Controller

- Fully Compliant to AGP Controller
- Meet PC97 Requirements
- Supports PCI Revision 2.1 Specification
- Integrated Second Level(L2) Cache Controller
- Integrated DRAM Controller
  - ☞ Support 6 RAS Lines for FPM/EDO/SDRAM SIMMs/DIMMs
  - ☞ Support 2 Mbytes to 320 Mbytes of main memory
  - ☞ Support Cacheable DRAM Sizes up to 256 Mbytes
  - ☞ Support 64 Mb DRAM technology
  - ☞ Support Parity Checker or ECC Function
  - ☞ Support Relocation of System Management Memory
  - ☞ Support FP/EDO/SDRAM Self Refresh During Suspend Mode
  - ☞ Two Programmable Non-Cacheeable Regions
- Provides High Performance PCI Arbiter
- Integrated Host-to-PCI Bridge
- Fast PCI IDE Master/Slave Controller

SiS5595 PCI System I/O

- Intergarad PCI to ISA Bridege
- Support Advanced Power Management Logic
- Enhanced DMA Functions
- Built-in Two 8259a Interrupt Controllers
- Three Programmable 16-bit Counters Compatible with 8254
- Built-in Real Time Clock with 256B CMOS SRAM

- USB Host Controller
- Integrated Data Acquistion Hardware
- Support I2C Serial Bus

SiS6326

- AGP/PCI VGA Controller
- 3D/2D Graphics Accelerator
- NTSC/PAL TV-OUT Solution
- MPEG-2/1 Video Decoder & Video Accelerator

Expansion Slots

- 3 ISA slots (ISA1, ISA2, ISA3)
- 3 PCI slots (PCI1, PCI2, PCI3)

System Memory Options

- 512KB/1MB surface-mounted Pipelined Burst SRAM L2 cache
- 4 SIMM sockets, SIMM1, SIMM2, SIMM3, SIMM4
  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

The mainboard lets you add up to 320 MB of system memory through SIMM and DIMM sockets on the board. Four SIMM and two DIMM sockets on the board. Four SIMM sockets on the mainbord are divided into two banks: Bank 1 and Bank2. Each bank consistes of two 72-pin SIMM modules, and two 168-pin DIMM sockets are divided into two banks: Bank0, Bank1. The mainboard supports the following memory configurations.

Bank	Memory Module
Bank0 DIMM1 (168-pin DIMM) SIMM1&SIMM2 (72-pin SIMM)	4MB, 8MB, 16MB, 32MB, 64MB 128MB or 2x4MB/8MB/16MB/32MB/64MB
Bank1 DIMM2 (168-pin SIMM)	4MB, 8MB, 16MB, 32MB, 64MB 128MB
Bank2 SIMM3&SIMM4 (72-pin SIMM)	2x4MB/8MB/16MB/32MB/64MB
Total System Memory= Bank0+ Bank1+ Bank2	

Notes:

1. SIMM & DIMM, these two types of DRAM module can not be used at the same time and it is not recommended to mix DIMMs which are 3.3V devices with 5V SIMMs. Mixing 5V and 3.3V memory is not recommended for reliability. Not all 3.3V memory are 5V tolerant. .

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

3. The speed of all SIMMs and DIMM modules have to be faster than 70ns.

4. Use 2 DRAM types: Fast Page Mode or Extend DATA Out(EDO) for SIMM socket.

5. Use 3 DRAM types: Fast Page Mode, Extend Data Out(EDO), or synchronous DRAM(SDRAM) for DIMM socket.

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 port	Standard PS/2 mouse port &Keyboard
J4	VGA Connector	Connect the VGA function
J6	Line-In/MIC-In/ Speaker Out	For multimedia use
J7	Game Port	Connector for Game
J9	TV-Out Connector	Connector for TV-Out
J10	ATX Power	Connector for ATX Power supply
J12	Feature Connector	26-pin connector
J15	Floppy	34-pin connector connects to 2-device cable; End device is DriveA:, middle is Drive B:
J16	Case Feature	Connects to case features Pin1-3: Power LED; Pin4-5: Suspend Switch Pin6-8: Suspend LED Pin9-10: Reset Switch; Pin11-12: Keyboard Lock Pin13-16: Speaker Pin17-18: Hard Disk LED Pin19-20: Power Button
USB	USB Connector	Dual stacked external USB ports
COMA	COMA	Serial port at back panel is COM1, it can be set to COM3

Name	Function	Description
COMB	COMB	On board 10-pin header is COM2, can be set to COM4
IDE1	Primary IDE	40-pin connector connects to 2-device cable;End device is Primary Master, middle is Slave
IDE2	Secondary IDE	40-pin connector connects to 2-device cable; End device is Secondary Master, middle is Slave
LPT1	Parallel Port	Standard parallel port
JP1	Audio	Enable/Disable
JP2	IR Header	Connects to optional IrDA or ASKIR infrared module
JP29	CD-IN Header	CD-ROM drive audio cable connector

J16 Case Feature

POWER On Button Hard Disk LED   GREEN LED SLEEP POWER LED

SPEAKER KB LOCK RESET   2   1

LAYOUT

Game Port	Parallel
Speaker out/MIC In/ Line In	VGA/COMA
	Keybd
	Mouse

JP2   JP1

CD In

Modem

SIMM1   TV out   COMB
SIMM2
SIMM3
SIMM4   ATX Power

USB

ISA 3,2,1

PCI 3,2,1

DIMM1
DIMM2

JP12
~14   JP11

JP15

SiS 6326

JP16
JP17

JP18~20

BIOS

VGA Feature

Modem Wake Up

SYSFAN   Secondary IDE

CPU
FAN

J16   JP26   Primary IDE

FDD

LAN Wake Up

P5SD-AS Layout

The illustration above shows the connectors, heatsink, 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 card and have the Operating System automatically recognize and configure the card.

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, try it 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 do 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**
> **SIMM3 & 4:8MB EDO modules**

You should remove the two 8MB FP modules because they are lower performance and replace them with the memory upgrade, result-

ing 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

JP1

JP1~14

JP11

JP16
JP17

JP15

JP18~20

SiS
6326

Socket 7

J11

JP26

J16
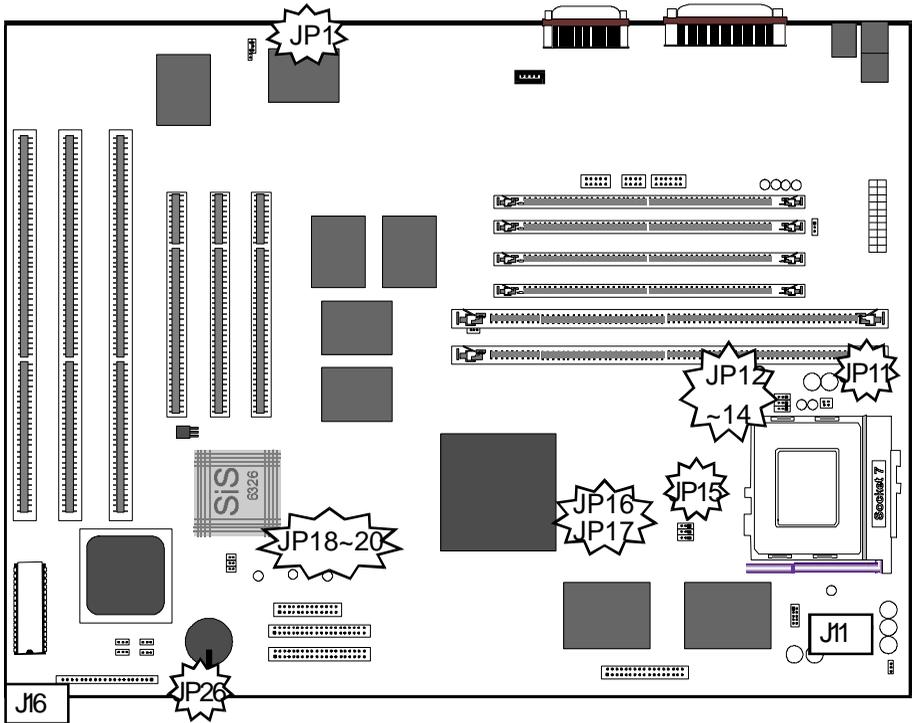
P5SD-AS CPU Jumper Setting

Function	Jumper	Settings	
External Speed	JP15~JP17	60MHz	JP15:2-3, JP16:2-3, JP17:2-3
		66.8MHz	JP15:2-3, JP16:2-3, JP17:1-2
		68.5MHz	JP15:1-2, JP16:2-3, JP17:2-3
	[D]	* 75MHz	JP15:2-3, JP16:1-2, JP17:2-3
		** 75MHz	JP15:1-2, JP16:2-3, JP17:1-2
		***83.3MHz	JP15:2-3, JP16:1-2, JP17:1-2
Internal Clock	JP12~14	1.5X/3.5X	JP12:1-2,JP13:1-2,JP14:1-2
Factor	[D]	2.0X	JP12:2-3,JP13:1-2,JP14:1-2
		2.5X	JP12:2-3,JP13:2-3,JP14:1-2
		3.0X	JP12:1-2,JP13:2-3,JP14:1-2
		4.0X	JP12:2-3,JP13:1-2,JP14:2-3
		4.5X	JP12:2-3,JP13:2-3,JP14:2-3
		5.0X	JP12:1-2,JP13:2-3,JP14:2-3

[D]:Default Setting

 * : PCI Bus speed is 32 MHz   *** : For technical testing only

 ** : PCI Bus speed is 37.5MHz

Function	Jumper		Settings				
Core Voltage	J11		1-2	3-4	5-6	7-8	9-10
Cap On= Short		2.1V	On				
Cap Off= Open		2.2V		On			
		2.5V	On		On		
		2.8V				On	
		2.9V	On			On	
		3.2V			On	On	
		3.3V	On		On	On	
	[D]	3.5V	On	On	On	On	

Others Jumper Setting

I/O Voltage	JP11	3.3V	JP11:1-2	
	[D]	3.52V	JP11:3-4	
CMOS Setup	JP26	Normal	JP26:1-2 [D]	
		Clear	JP26:2-3	
VGA INT	JP20	Disable	Open	
		Enable	Close	
TV-OUT	JP18	NTSC	Open	
		PAL	Close	
VGA	JP19	Disable	1-2	
		Enable	2-3	
Audio	JP1	Disable	2-3	
		Enable	1-2	

External Speed
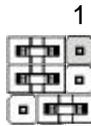
60MHz	66.8MHz	68.5MHz	75MHz(PCI32MHz)

	1	1	1	1
JP15				
JP16				
JP17				
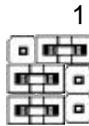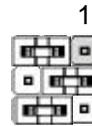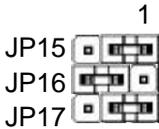
75MHz(PCI37.5MHz)   83.3MHz   (for technical testing only)

	1	1
JP15		
JP16		
JP17		
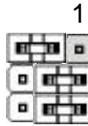
Cap:

Cap Color:Green

Internal Clock Factor

1.5X/3.5X	2.0X	2.5X	3.0X
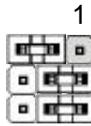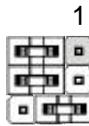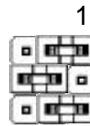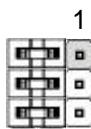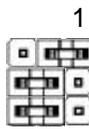
	1	1	1	1
JP12				
JP13				
JP14				

4.0X	4.5X	5X

	1	1	1
JP12			
JP13			
JP14			

Cap:

Cap Color:Yellow

Core Voltage

2.1V	2.2V	2.5V	2.8V	2.9V

J11

3.2V	3.3V	3.5V

J11

Cap:
Cap Color:Red

IO Voltage

3.3V	3.5V

JP11

CMOS Setup

Normal	Clear

JP26

Cap:
Cap Color:White
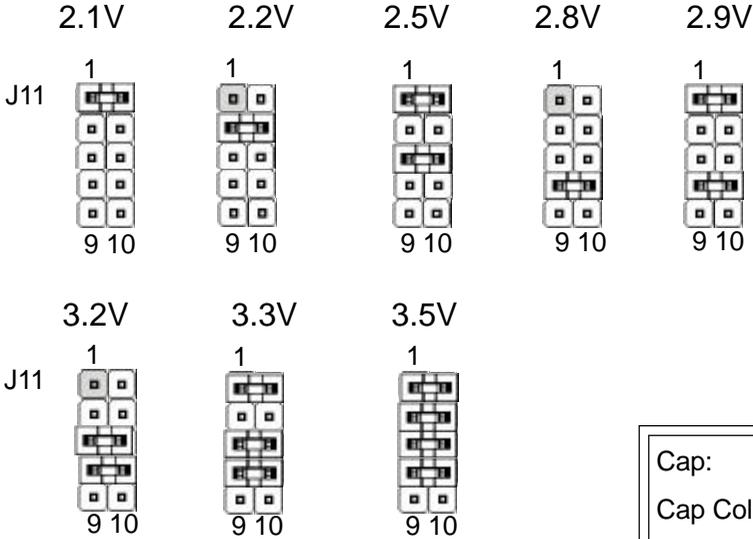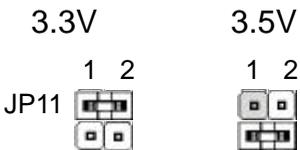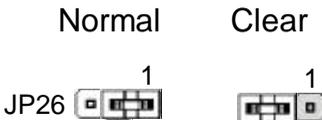
VGA INT

Disable   Enable

JP20 [□ □]

Cap:	
Cap Color:White	

TV Out

NTSC   PAL

JP18 [□ □]

VGA

Disable   Enable

1   1

JP19 [⊡□ □]   [□ ⊡□]
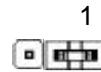
Audio

Disable   Enable

1   1

JP1

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.
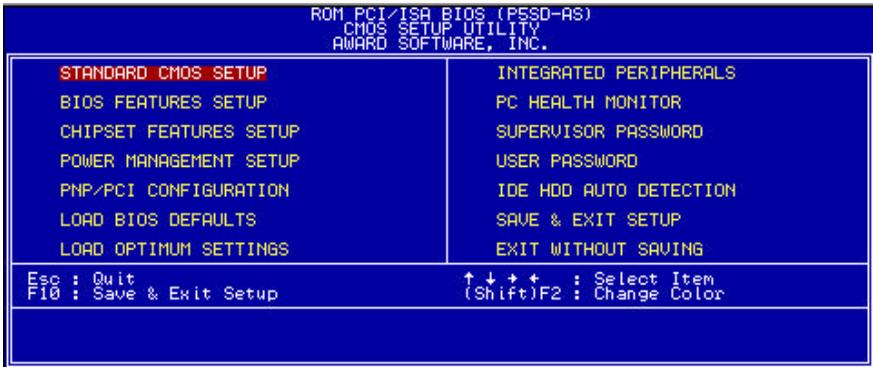
Menu Commands

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 reading, 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.

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 F1 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-detection 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.

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 ad

dress 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

When you are finished in this section, exit to the main menu screen by pressing the Esc key.

BIOS Features Setup-

```
              ROM PCI/ISA BIOS (P5SD-AS)
                   BIOS FEATURES SETUP
                    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
Boot Up System Speed       : High
Memory Parity Check        : Enabled
Security Option            : Setup
PCI/VGA Palette Snoop      : Disabled
OS Select For DRAM > 64MB  : Non-OS2


                                         ESC : Quit          ↑↓←→ : Select Item
                                         F1  : Help          PU/PD/+/- : Modify
                                         F5  : Old Values  (Shift)F2 : Color
                                         F6  : Load BIOS  Defaults
                                         F7  : Load Optimum Settings
```

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 systemand 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.

External Cache

This is Level 2 external cache. Leave this 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.

Boot Up System Speed

The default setting is high. Under normal operating conditions there should be no reason to change it.

Memory Parity Check

The default setting is Enabled. If the system memory installed on the board does not support parity checking you can set this to Disabled.

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

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.

Shadowing Address Ranges

The next six lines, from C8000-CBFFF shadow to DC000-DFFFF Shadow are address ranges for shadowing other expansion card ROMs. If there are any expansion cards with ROMs installed in your system, you have to know the address range they use to shadow then specifically. The default setting for all of these is Disabled.

When you are sone in this section press teh Esc key to return to the main menu.

Chipset Features Setup

```
                    ROM PCI/ISA BIOS (P5SD-AS)
                       CHIPSET FEATURES SETUP
                        AWARD SOFTWARE, INC.

 Auto Configuration      : Enabled       System BIOS Cacheable   : Enabled
 Refresh Cycle Time      : 1040 Clocks   Video  BIOS Cacheable   : Enabled
 RAS Pulse Width Refresh : 6T            Memory Hole at 15M-16M  : Disabled
 RAS Precharge Time      : 3T            AGP Aperture Size       : 64MB
 RAS to CAS Delay        : 3T
 CPU to PCI Post Write   : Disabled
 ISA Bus Clock Frequency : PCICLK/4
 Starting Point of Paging: 1T
 NA# Enable              : Disabled
 SDRAM CAS Latency       : 3T
 SDRAM WR Retire Rate    : X-2-2-2
 SDRAM Wait State Control: 1WS
 RAMW# Assertion Timing  : 2T
 CAS Precharge Time (EDO): 1T/2T
 CAS# Pulse Width for EDO: 1T
 CAS Precharge Time (FP) : 1T/2T         ESC : Quit          ↑↓←→ : Select Item
 CAS# Pulse Width for FP : 2T            F1  : Help          PU/PD/+/- : Modify
 Enhanced Memory Write   : Disabled      F5  : Old Values   (Shift)F2 : Color
 Read Prefetch Memory RD : Enabled       F6  : Load BIOS  Defaults
 SRAM Back-to-Back       : Enabled       F7  : Load Optimum Settings
```

Meun Commands

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

Auto Configuration

Everything on this screen except for the Memory Hole and VGA Aperture Size items are either set automatically when auto configuration is active or recommended defaults. If you disable auto-configuration you can set the auto-configured values manually, We advise against changing the recommended configuration unless you know what you are doing. The default setting is for auto-configuration is Enabled.

Memory Hole At 15M-16M

Some special add-on cards require a 1MB address space between 15 and 16MB. The documentation for this type of card should tell you if it needs this. The default setting is Disabled.

AGP Aperture Size

This sets the size of the AGP memory aperture. The memory aperture is the amount of system memory available for use an AGP display card. The default setting is 64MB. The options range from 4MB to 256MB. If there is no AGP display card installed, you can leave this set to the default, since the

aperture memory is available to the system when not being used by an AGP card.

To return to the main menu press the Esc key.

Power Management Setup

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 in what modes the video display gets turned off.

Susp, Stby – > Off	(Off in Suspend & Standby)
Susp – > Off	(Off in Suspend)
All Modes Off	(Off in Doze, Suspend & Standby)
Always On	(No video shut off)

Video Off Method

> This governs monitor power saving by controlling how power management blanks the monitor screen. The V/H Sync+Blank blanks the screen, turns off scanning and repuires a monitor with "green" features. If you don't have this type of monitor, use the Blank option. DPMS(Display Power Management System) allows the BIOS to control the display card if it has the DPMS feature.

V/H SYNC+Blank

Blank	(Non-green monitor, less saving)
DPMS	(Display card must support DPMS)[Default]

Modem Use IRQ

> If you have a modem installed in your system you can enter which IRQ it is using so that APM can control it. The default setting is 3.

HDD Off After

This shuts down IDE have disks that supports a power saving mode after a specified time period. The settings range from 1 to 15 minutes and can be set manually when power management si in User Define mode. HDD Off After does not affect SCSI hard disks. The default setting is Disabled.

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.

PM Events

The lines in this section control whether the system will wakeup from Suspend mode if there is activity on any items. The default settings are as shown in the screen illustration.

Soft-Off By Power Button

The default setting will turn off the system when the button is pressed for more than four seconds. The alternate setting is Instant Off, where clicking the power button turns the system off immediately.

Ring Power Up Control

When set to Enabled, the system can be turned on remotely by either an incoming call to an external modem connected to one odf the serial ports or a wake-up signal sent over a LAN to a LAN card installed in the system.

Power Up By Alarm

When set to Enabled, several options appear that allow you to set the system to turn on automatically at a designated time. The options are as shown in the screen illustration.

When you are finished you can press Esc key to return to the main menu.

PNP/PCI Configuration

```
           ROM PCI/ISA BIOS (P5SD-AS)
             PNP/PCI CONFIGURATION
              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  Defaults
                                F7  : Load Optimum Settings
```
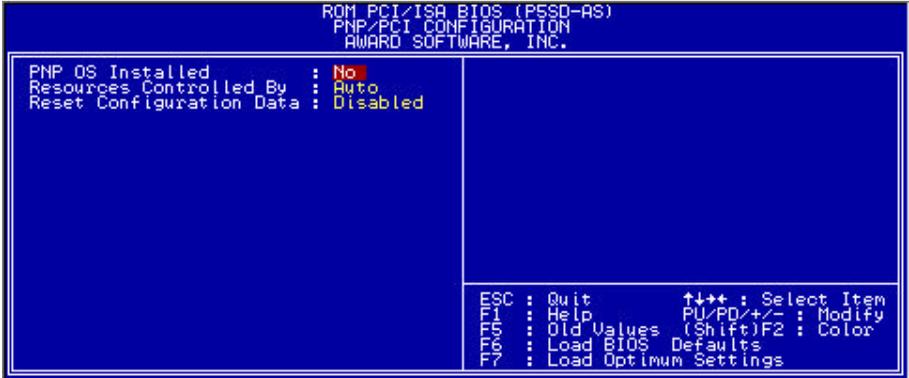
PNP/PCI Configuration

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.

PNP OS Installed

The default setting for this line is No. If you plan to use an Operating System that supports Plug and Play, you should set this line to Yes. When this line is set to Yes, the BIOS will only initialize PnP PCI card boot devices. Any other PnP PCI cards are initialized by the OS. Do not change the default setting if your OS does not support Plug and Play.

```
                    ROM PCI/ISA BIOS (P5SD-AS)
                       PNP/PCI CONFIGURATION
                       AWARD SOFTWARE, INC.

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

  IRQ-3  assigned to : PCI/ISA PnP      Legacy ISA ROM Base    : N/A
  IRQ-4  assigned to : PCI/ISA PnP
  IRQ-5  assigned to : PCI/ISA PnP
  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 Optimum Settings
```

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.

When you are finished you can press Esc key to return to the main menu.

Load BIOS Defaults

To use this command highlight it in the main menu and press Enter. A message will appear asking if you want to load the BIOS Defaults. Press the Y key and then the Enter key. The BIOS default settings will load. Press teh N key if you want to cancel.

This loads a set of trouble shooting default values permanently stored in the BIOS ROM. The settins are not optimal and turn off all the performance features. Standard CMOS Setup is not affected by this command.

Load Optimized Settings

To use this command highlight it in the main menu and press Enter. A message will appear asking if you want to load the Optimized Settings Press the Y key and the Enter key. The optimized default settings will load. Press the N key if you want to cancel.

This loads a set of optimized default values permanently stored in the BIOS ROM. Use this command to load default settings for normal system operation. Standard CMOS Setup is not affected by this command.

Integrated Peripherals

```
              ROM PCI/ISA BIOS (P5SD-AS)
                 INTEGRATED PERIPHERALS
                   AWARD SOFTWARE, INC.

 IDE HDD Block Mode       : Enabled      Onboard Parallel Port  : 378/IRQ7
                                         Onboard Parallel Mode  : SPP
 Primary   PCI IDE        : Enabled
 Secondary PCI IDE        : Enabled
 IDE Primary Master PIO   : Auto         USB Controller         : Disabled
 IDE Primary Slave  PIO   : Auto
 IDE Secondary Master PIO : Auto
 IDE Secondary Slave  PIO : Auto
 Primary Master  UltraDMA : Auto
 Primary Slave   UltraDMA : Auto
 Secondary MasterUltraDMA : Auto
 Secondary Slave UltraDMA : Auto
 IDE Burst Mode           : Enabled
 Onboard FDD Controller   : Enabled
 Onboard Serial Port 1    : 3F8/IRQ4     ESC : Quit          ↑↓←→ : Select Item
 Onboard Serial Port 2    : 2F8/IRQ3     F1  : Help          PU/PD/+/- : Modify
 UART 2 Mode              : Standard     F5  : Old Values  (Shift)F2 : Color
                                         F6  : Load BIOS  Defaults
                                         F7  : Load Optimum Settings
```

Integrated Peripherals

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

PC Health Monitority

PC Health Monitor

To enter this section of the Setup program, highlight this menu item in the main menu adn Press the Enter key.

What The Health Monitor Does

This section of the CMOS Setup utility is connected to the sensor technology on the mainboard. The sensor voltage monitor item, fan speed monitor item, temperature monitor item as the above screen, and when it detect the environment, it has to depends on what kind of CPU and your fan power is connected to the mainboard.

CPU Core voltage Item : CPU Core voltage will be detected when you configure the correctly the CPU voltage, you can refer your CPU type and vendor's supplied manual.

Fan Speed Monitor Item : It will detected your Fan speed which your fan power is connected to the mainboard fan power connector, if not , it can't detect it. When you set "enable", it will be in running status, if you make it stop, the system speaker will have a "beep" sound to warm you.

Temperature monitor item: It will auto-detected your chipset temperature.

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.