Notice to End Users

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

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SL-65GS/ 65GS8 SERIALS

Contents

Chapter 1
Introduction

Features

CPU

1. Supports Intel **PPGA Celeron 370 CPUs using** Socket 370 at 300MHz ~ 800MHz
2. Supports CPU voltage autodetect circuit

Chipset

1. SIS 620 chipset
2. PCI Rev 2.2, 5V, 33MHz interface compliant
3. Supports 66/133 MHz, 3.3V AGP(Accelerated Graphics Port) slot@AGP Rev 2.0 compliant
4. Meet PC99 Requirements

L2 Cache

1. PPGA Celeron 370 CPU supports 128K write back cache with Pipelined Burst SRAMs

Main Memory

1. Memory range from 8MB (minimum) to 1.5GB(SDRAM) (maximum) with DRAM Table Free configurations
2. Up to 256MB/Row support 16Mb, 64Mb, 128Mb, 256Mb SDRAM technology
3. Supports SDRAM with 12/10/8ns speed
4. Supports 3 pcs 168pin DIMM sockets (3.3V Unbuffered and 4 clock type)

BIOS

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

Super I/O Function

1. Integrated USB (Universal Serial Bus) controller with two USB ports.
2. Supports 2 IDE channels with 4IDE devices (including ZIP/LS-120 devices)
3. **Provides PCI IDE Bus Master function and supports Ultra DMA33/66 function**
4. One floppy port
5. Two high speed 16550 FIFO UART ports
6. One parallel port with EPP/ECP/SPP capabilities
7. PS/2 mouse connector
8. Built-in RTC, CMOS, keyboard controller on single I/O chip
9. Peripherals boot function (with ATX power)

Sound Chip Features

1.Integrated sound controller compatible with:
- Sound Blaster Pro™
- AdLib™
- Microsoft® Windows™ Sound System™
- MPU-401 MIDI interface

2.Microsoft® PC-97 compliant
3.Built-In QSound QXpander™ 3D Sound Enhancement Processor
4.Built-in 7-channel mixer: five stereo, two mono
5.Built-in 16-bit sigma delta stereo codec
6.Full duplex operation: record and playback Simultaneously using two 8-or 16-bit DMA channels
7.Supports IMA ADPCM,μ-law,A-law decompression
10. 8-or 16-bit stereo sound data up to 48KHz stereo
11. Supports 16-bit Type FDMA playback, accelerates telephony-audio applications
12.Digital joystick interface support, improves responsiveness(Microsoft SideWinder™)
13.DirectSound™ interface support.

Other Functions

1. ATX size 22cm x 24.5cm
2. 3 PCI Master slots, 1 ISA slots
4. Supports SCSI/CD-ROM Boot function
5. Supports jumperless setting
6. Supports 66/68/75/83/100/105/112MHz Bus Clock(from Bios)
7. Supports Wake On Lan (WOL) function. **
8. Supports keyboard power on function.
9. Onboard built-in hardware monitor feature.

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

Mainboard Layout with Default Settings

The default settings of the following figure is for the PPGA Celeron 370- 300A/66

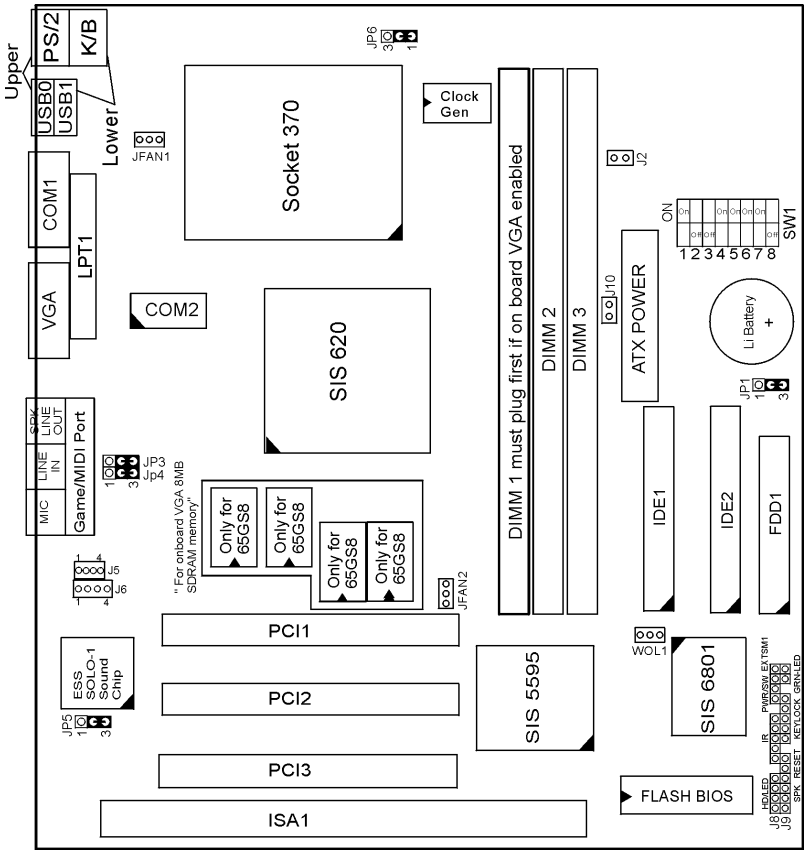


Figure 1-1. Motherboard Layout

Chapter 2
Hardware Setup

There are two ways to set the CPU speed:

1. Use DIP switch jumpers (hardware): SW1
2. Use BIOS (jumperless): Refer to BIOS “CHIPSET FEATURE SETUP ” section for detail description.

CPU Type Jumper Configuration

CPU 4.5X Clock Setting

PPGA Celeron 370-300A/66MHz

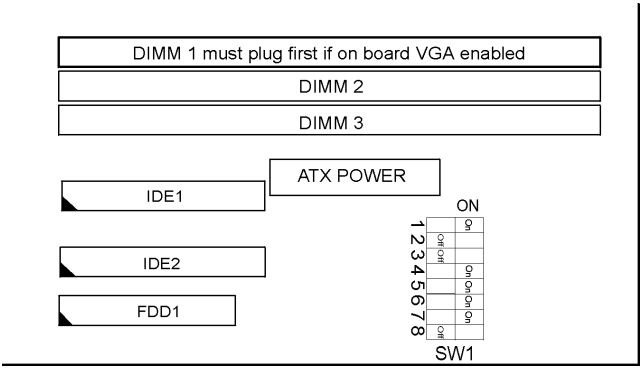


Figure 2-1CPU Type Configuration

CPU 5.0X Clock Setting
PPGA Celeron 370-333/66 MHz

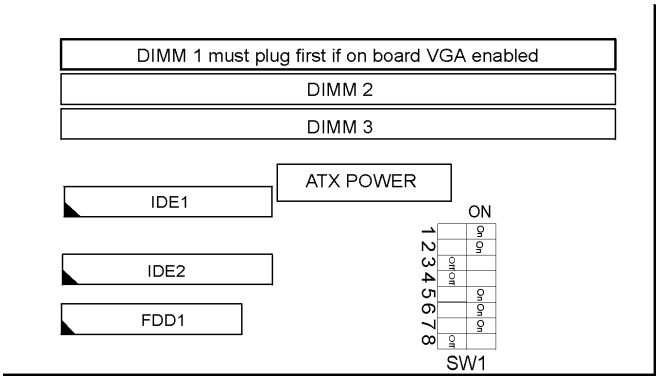


Figure 2-2 CPU Type Configuration

CPU 5.5X Clock Setting
PPGA Celeron 370–366/66 MHz

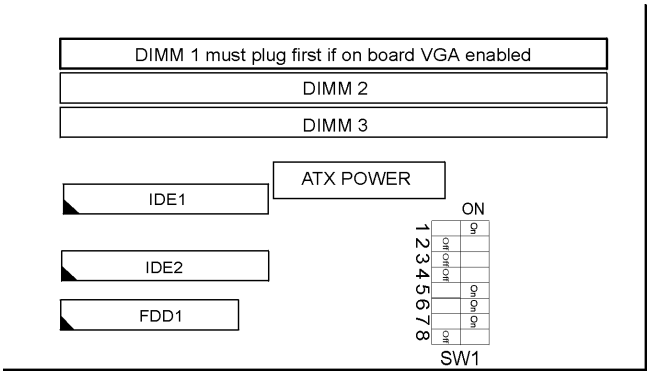


Figure 2-3 CPU Type Configuration

CPU 6.0X Clock Setting
PPGA Celeron 370-400/66 MHz

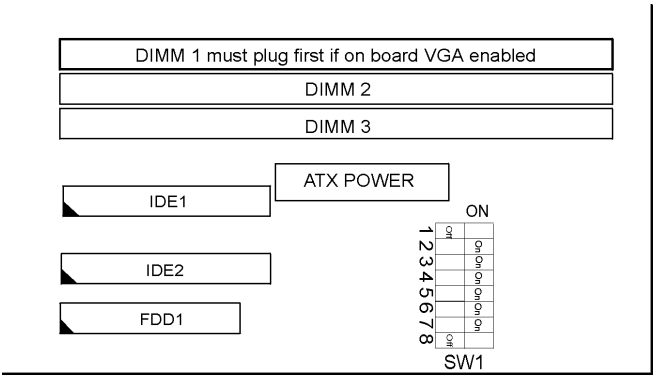


Figure 2-4 CPU Type Configuration

CPU 6.5X Clock Setting
PPGA Celeron 370-433/66 MHz

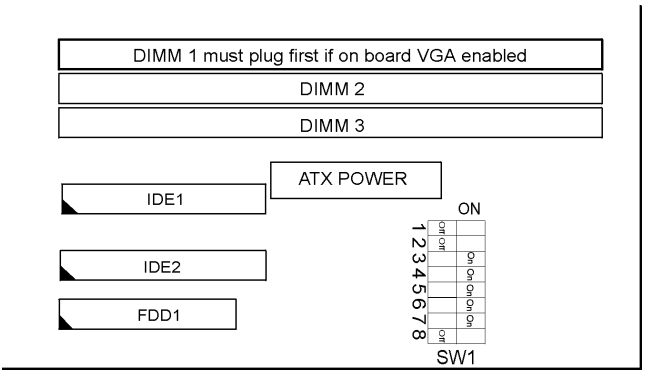


Figure 2-5 CPU Type Configuration

System Memory Configuration

This SIS620 motherboard supports 168 pin DIMM of, 16Mb, 64Mb, 128Mb and 256Mb to form a memory size between 8MB to 1.5GB(SDRAM).

SIS620 chipsets provide "Table- Free" function, but do remember that the DRAM must be 3.3V Unbuffered and 4 clock type. **User can use any DIMMs slot without any limit but if use onboard VGA the DIMM must plug into DIMM1.**

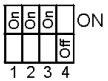
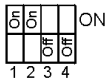
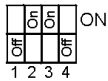
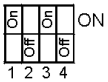
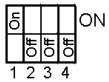
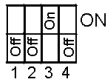
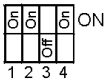
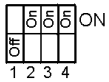
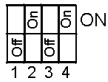
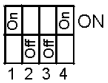
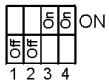
DIMM1(for on board VGA)
DIMM2
DIMM3

Jumper Settings

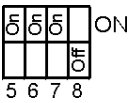
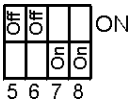
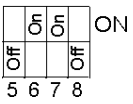
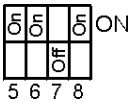
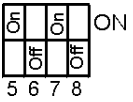
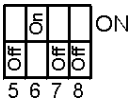
FAN 1~2: Onboard FAN (12V) Connector

FAN#	Function
FAN1	CPU FAN
FAN2	Power FAN

SW1 1~4: Bus Ratio Select

Bus Ratio	SW1: 1~4	Bus Ratio	SW1: 1~4	Bus Ratio	SW1: 1~4
3.0x		5.0x		7.0x	
3.5x		5.5x		7.5x	
4.0x		6.0x		8.0x	
4.5x		6.5x			

SW1 5-8:CPU HOST clock select

HOST CLOCK	SW1 5~8	HOST CLOCK	SW1 5~8
66MHz		100MHz	
75MHz		105MHz	
83MHz		112MHz	

J2: Onboard VGA chip Enabled/Disabled

Onboard VGA Chip	J2
Enabled(default)	
Disabled (or use external VGA)	

J10: VGA Memory Select

VGA Memory Select	J10
Use System memory (UMA)	
Use SDRAM(8MB) (only for 65GS8)	

JP1: Clear CMOS Data

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

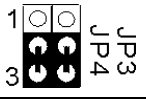
CMOS Data	JP1
Clear Data	
Retain Data (default)	

JP5: Onboard Sound Chip Enabled/Disabled

This jumper allows user to control onboard sound chip Function.

Sound Chip	JP5
Disabled	
Enabled (default)	

JP3/JP4: Sound Amplifier Control (Speaker/Line Out)

Sound Amplifier	JP3/JP4
Speaker Out (w/i amplifier) (default)	
Line Out (w/o amplifier)	

Sound Connector:

J5/J6: CD-ROM Audio Connector

Connect J5/J6 to the CD-ROM Audio Connector.

Game/MIDI port

Connect the joystick or MIDI to this connector.

Mic:Microphone Jack

Line in: Audio in Jack

Speaker Out/Line Out: Audio Out Jack

Use JP3/JP4 to control speaker out or line out.

IDE LED Activity Light: (J8 pin1-4)

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

Infrared Port Module Connector (J8 pin6-10)

The system board provides a 5-pin infrared connector-R1 for an optional wireless transmitting and receiving module. Pin 6 through 10 are Transmit, GND, Receive (low speed), Receive (high speed), and Vcc, respectively.

J8 pin12, 13: PWR Switch

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

SLEEP Switch (J8 pin14, 15)

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

Speaker Connector (J9 pin1-4)

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

Reset Switch (J9 pin5, 6)

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

WOL1: Wake On Lan (WOL) Connector

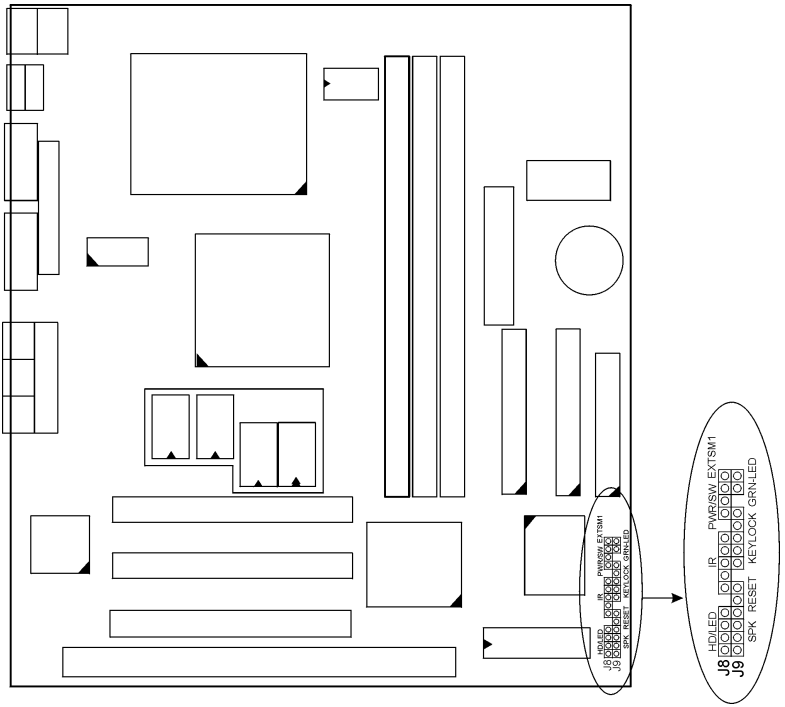
This connector is designed to use Lan to bootup the system. Connect the wake on signal from Lan card to this connector.

Power LED and Keylock Switch (J9 pin8-12)

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

Turbo LED (J9 pin14, 15)

Connect the case's turbo LED to this connector.



J8 Switch Signal Summary

J8	Pin	Signal Description
HDD LED Connector	1	+5V
	2	HDD LED Signal
	3	HDD LED Signal
	4	+5V
N.C.	5	No Connection
Infrared Connector	6	Infrared Transmit Signal
	7	GND
	8	Infrared Receive Signal (low speed)
	9	Infrared Receive Signal (high speed)
	10	+5V
N.C.	11	No Connection
PWR	12	CND
	13	Power Switch(for ATX Power)
SLEEP	14	GND
	15	Sleep Signal

J9 Switch Signal Summary

J9	Pin	Signal Description
Speaker Connector	1	Speaker Signal
	2	No Connection
	3	Ground
	4	+5V
Reset Switch	5	Reset Signal
	6	Ground
N.C.	7	No Connection
Power LED Connector	8	+5V
	9	No Connection
	10	Ground
Keylock Connector	11	Keylock Signal
	12	GND
N.C.	13	No Connection
Turbo LED Connector	14	Turbo LED Connector
	15	Ground

Chapter 3
Award BIOS Setup

This SIS620 motherboard comes with the AWARD BIOS from AWARD Software Inc. Enter the Award BIOS program Main Menu by:

1. Turn on or reboot the system.
   After a series of diagnostic checks, the following message will appear:

   PRESS <DEL> TO ENTER SETUP

2. Press the <DEL> key and the main program screen will appear as follows.

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

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING

Esc : Quit	¡ ô õ † ö :Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color

Time, Date, Hard Disk Type...

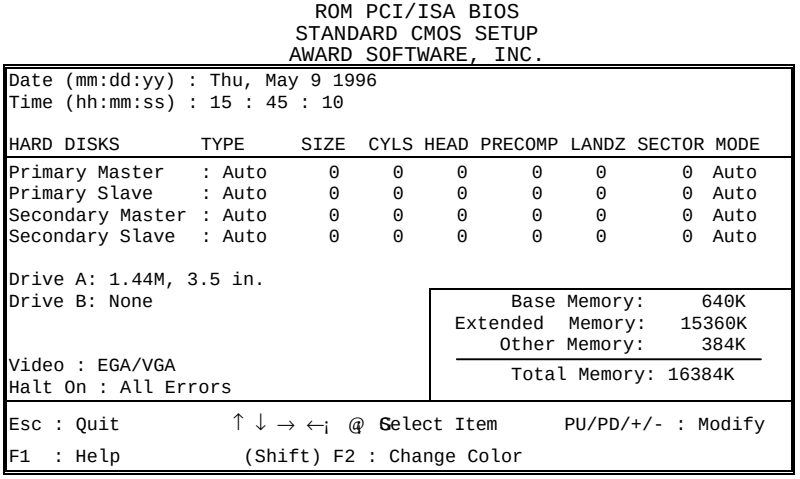
3. Using the arrows on your keyboard, select an option, and press <Enter>. Modify the system parameters to reflect the options installed in your system.
4. You may return to the Main Menu anytime by pressing <ESC> .
5. In the Main Menu, “SAVE AND EXIT SETUP” saves your changes and reboots the system,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

Standard CMOS Setup

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

Run the Standard CMOS Setup as follows:

1. Choose “STANDARD CMOS SETUP” from the Main Menu and a screen with a list of options will appear.



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

A short description of the screen options is as follows:

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

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

BIOS Features Setup

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

Run the BIOS Features Setup as follows:

1. Choose “BIOS FEATURES SETUP” from the Main Menu and a screen with a list of options will appear.

```
                ROM PCI/ISA BIOS(2A6INSN9)
                   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
CPU L2 Cache ECC Checking     : Enabled  | D0000-D3FFF Shadow    : Disabled
Quick Power on Self Test      : Enabled  | D4000-D7FFF Shadow    : Disabled
Boot Sequence                 : A,C,SCSI | D8000-DBFFF Shadow    : Disabled
Swap Floppy Drive             : Disabled | DC000-DFFFF Shadow    : Disabled
Boot Up Floppy Seek           : Enabled  |
Boot Up NumLock Status        : On       |
Memory Parity check           : Disabled |
Typematic Rate Setting        : Disabled |
Typematic Rate (Chars/Sec)    : 6        | ESC :Quit   ¡ ô õ † ø Select Item
Typematic Delay (Msec)        : 250      | F1  :Help       PU/PD/+/-: Modify
Security Option               : Setup    | F5  :Old Values(Shift)F2 : Color
PCI/VGA Palette Snoop         : Disabled | F6  :Load BIOS Defaults
Assign IRQ For VGA            : Enabled  | F7  :Load Setup Defaults
OS Select for DRAMs>64MB      : Non-OS/2 |
Report No FDD For WIN 95      : No       |
```

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

<F1>: “Help” gives options available for each item.
Shift <F2>: Change color.

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

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

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

A short description of screen options follows:

Virus Warning

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

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

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

CPU Internal Cache

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

External Cache

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

Quick Power On Self Test

Choose Enabled (default) or Disabled. This option allows you to speed up the Power-On Self-Test routine.

Boot Sequence	Default is “A, C, SCSI” This option determines which drive to look at first for an operating system.
Swap Floppy Drive	Choose Enabled or Disabled (default). This option swaps floppy drive assignments when it is enabled.
Boot Up Floppy Seek	Enabled (default): During POST, BIOS checks the track number of the floppy disk drive to see whether it is 40 or 80 tracks. Disabled: During POST, BIOS will not check the track number of the floppy disk drive.
Boot Up NumLock Status	Choose On (default) or Off. This option lets user activate the NumLock function at boot-up.
Memory Parity check	Choose Enabled or Disabled(default).
Typematic Rate Setting	Choose Enabled or Disabled (default). Enable this option to adjust the keystroke repeat rate.
Typematic Rate (Chars/Sec)	Range between 6 (default) and 30 characters per second. This option controls the speed of repeating keystrokes.
Typematic Delay (Msec)	Choose 250 (default), 500, 750, and 1000. This option sets the time interval for displaying the first and the second characters.

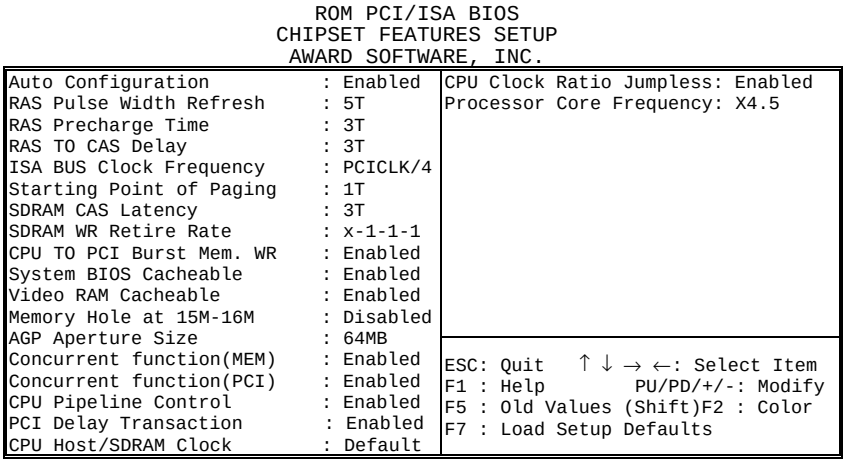
Security Option	Choose System or Setup (default). This option prevents unauthorized system boot-up or use of BIOS Setup.
PCI/VGA palette Snoop	Choose Enabled or Disabled (default). It determines whether or not the MPEG ISA cards can work with PCI/VGA.
Assign IRQ for VGA	Choose Enabled (default) or Disabled. Enabled: Add one IRQ to VGA controller. Disabled: Remove IRQ from VGA controller. The system will have extra IRQ for other devices but the VGA controller will still not be disabled (only IRQ will be removed.)
OS Select for DRAM > 64MB	Non-OS2 (default): For Non-OS/2 system. OS: For OS/2 system.
Report No FDD For WIN95	Yes: BIOS reports “NO FDD” to Win95. No (default): BIOS will not report “NO FDD” to Win95.
Video BIOS Shadow	Enabled (default): Map the VGA BIOS to system RAM. Disabled: Will not map the VGA BIOS to system RAM.
C8000-CBFFF to DC000-DFFF Shadow	These options are used to shadow other expansion card ROMs.

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

Chipset Features Setup

Chipset Features Setup changes the values of the chipset registers. These registers control the system options. Run the Chipset Features Setup as follows:

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



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

A short description of screen options follows:

Auto Configuration — Choose Enabled (default) or Disabled. The system sets all options on the left side of the screen automatically when you choose Enabled.

RAS Pulse Width Refresh — The system designer must select the number of CPU clock cycles allotted for the RAS pulse refresh, according to DRAM specifications. The choice: 4T, 5T, 6T, 7T.

RAS Precharge Time	The precharge time is the number of cycles it takes for the RAS to accumulate its charge before DRAM refreshes. If insufficient time is allowed, refresh may be incomplete and the DRAM may fail to retain data. The Choice: 2T, 3T, 4T, 5T.
RAS to CAS Delay	When DRAM is refreshed, both rows and columns are addressed separately. This setup item allows you to determine the timing of the transition from RAS (row address strobe) to CAS (column address strobe). The choice: 2T, 3T, 4T, 5T.
ISA Bus Clock Frequency	You can set the speed of the AT bus at one-third or one-fourth of the CPU clock speed. The choice: 7.159MHz, PCICLK/3, PCICLK/4.
Starting Point of Paging	This value controls the start timing of memory paging operations. The choice: 1T, 2T, 4T, 8T.
SDRAM CAS Latency	When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer. The choice: 2T, 3T.
SDRAM WR Retire Rate	The system designer must select the correct timing for data transfers from the write buffer to memory, according to DRAM specifications. The choice: X-1-1-1, X-2-2-2.

CPU to PCI Burst Mem. WR	Select enabled permits PCI burst memory write cycles, for faster performance. When disabled, performance is slightly slower, but more reliable. Choices are Enabled, Disabled.
System BIOS Cacheable	Choose Enabled or Disabled (default). When Enabled, the access to the system BIOS ROM addressed at F0000H-FFFFFH is cached.
Video RAM Cacheable	Choose Enabled or Disabled (default). When Enabled, the access to the VGA RAM addressed is cached.
Memory Hole At 15M-16M	Choose Enabled or Disabled (default). In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory's space below 16MB.
Delayed Transaction	The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1. The Choice: Enabled, Disabled.
AGP Aperture Size (MB)	Choose 4 , 8, 16, 32, 64 (default), 128, or 256 MB. Memory mapped and graphics data structures can reside in a Graphics Aperture. This area is like a linear buffer. BIOS will automatically report the starting address of this buffer to the O.S.

Concurrent Function [MEM]	**When enabled, CPU access memory cycles and PCI masters** access memory cycles can be concurrently issued onto host bus and PCI bus, respectively, and then the memory access cycles will be rearranged by SiS620 to memory sequentially. When disabled, either CPU or PCI masters starts memory access cycle will block the other one's cycle until the current cycle is finished. The choice: Enabled, Disabled.
Concurrent Function [PCI]	When this bit is enabled, CPU access PCI bus cycle and PCI masters access memory cycles can be concurrently issued onto host bus and PCI bus, respectively. By doing this, these cycles will be forwarded to PCI bus and memory bus at the same time. When disabled, either one of these two kinds of cycles will block the other until the current cycle is finished. The choice: Enabled, Disabled.
CPU Pipeline Control	Enable/disable the CPU pipeline control. The choice: Enabled, Disabled.
CPU Host Clock (CPU/SDRAM)	Choose Default,66/66,75/75,83/83, 95/95,100/100,112/112,124/124, and1 33/133MHz.
CPU Clock Ratio	Choose 1.5X,2.0X, 2.5X, 3.0X, 3.5X, 4.0X, 4.5X,5.0X, 5.5X, 6.0X,6.5X,7.0X, 7.5X, or 8.0X.

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

Power Management Setup

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

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

```
                    ROM PCI/ISA BIOS
                POWER MANAGEMENT SETUP
                 AWARD SOFTWARE, INC.

ACPI Function          : Enabled      VGA Activity           : Enabled
Power Management       : User Define  IRQ[3-7,9-15], NMI     : Enabled
PM Control by APM      : Yes          IRQ 8 Break Suspend    : Disabled
Video Off Option       : Susp, Stby-off Power Button Over Ride : Instant Off
Video Off Method       : V/H SYNC+Blank Ring Power Up Control  : Enabled
Switch Function        : Break/Wake   GPIO5 Power Up Control : Enabled
Doze Speed (div by)    : 2/8          KB Power ON Password   : Enter
Stdby Speed (div by)   : 1/8          Power UP by Alarm      : Enabled
Modem Use IRQ          : 3            Month Alarm            : NA
Hot Key Function AS    : Suspend      Day of Month Alarm     : 0
        ** PM Timers **               Week Alarm
HDD Off After          : Disabled     *** SUN MON TUE WED THU FRI SAT ***
Doze Mode              : Disabled          off off off off off off off
Standby Mode           : Disabled     Time (hh:mm:ss) Alarm  : 0: 0: 0
Suspend Mode           : Disabled
       ** PM Events **                ESC : Quit ¡ @↑ ↓ → ←: Select Item
HDD Power Activity     : Enabled      F1 : Help       PU/PD/+/- : Modify
COM Power Activity     : Enabled      F5 : Old Values (Shift)F2 : Color
LPT Power Activity     : Enabled      F7 : Load Setup Defaults
```

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

A short description of screen options follows:

ACPI Function — Select Enabled if your system has an ACPI function. The choice: Enabled, Disabled.

Power Management — This option allows you to select the type (or degree) of power saving for Doze, Standby, and Suspend modes. See the section PM Timers for a brief description of each mode. This table describes each power management mode:

Disable	No power management. Disables all four modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management -- **ONLY AVAILABLE FOR SL CPU's**. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

PM Control by APM When enabled, an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock. If Advance Power Management (APM) is installed on your system, selecting Yes gives better power savings. If the Max. Power Saving is not enabled, this will be preset to No.

Video Off Option When enabled, this feature allows the VGA adapter to operate in a power saving mode.

Always On	Monitor will remain on during power saving modes.
Suspend --> Off	Monitor blanked when the systems enters the Suspend mode.
Susp, Stby --> Off	Monitor blanked when the system enters either Suspend or Standby modes.
All Modes --> Off	Monitor blanked when the system enters any power saving mode.

Video Off Method This determines the manner in which the monitor is blanked.

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards to select video power management values.

Switch Function You can choose whether or not to permit your system to enter complete Suspend mode. Suspend mode offers greater power savings, with a correspondingly longer awakening period.The choice: Break/Wake, Disabled.

Doze Speed (div by) Sets the CPU's speed during Doze mode. The speed is reduced to a fraction of CPU's normal speed. The divisors range from 1 to 8. The choice: 1~8.

Stdby Speed (div by) Select a divisor to reduce the CPU speed during Standby mode to a fraction of the full CPU speed. The speed is reduced to a fraction of the CPU's normal speed. The divisors range from 1 to 8-0. The choice: 1~8

MODEM Use IRQ	Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system. The choice: 3, 4, 5, 7, 9, 10, 11, NA.
Hot Key Power Off	Select Enabled if your system has a hot key for soft power off. The choice: Enabled, Disabled.
PM Timers	The following four modes are Green PC power saving functions which are only user configurable when User Defined Power Management has been selected. See above for available selections.
HDD Off After	By default, this item is Disabled, meaning that no matter the mode the rest of the system, the hard drive will remain ready. Otherwise, you have a range of choices from 1 to 15 minutes or Suspend. This means that you can elect to have your hard disk drive be turned off after a selected number of minutes or when the rest of the system goes into a Suspend mode.
Doze Mode	When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.
Standby Mode	When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed.

Suspend Mode	When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

PM Events

You may disable activity monitoring of some common I/O events and interrupt requests so they do not wake up the system. The default wake-up event is keyboard activity.
When On (or named, in the case of LPT & COM), any activity from one of the listed system peripheral devices or IRQs wakes up the system.

HDD Ports Activity	When set to On (default), any event occurring at a HDD (serial) port will awaken a system which has been powered down.
COM Ports Activity	When set to On (default), any event occurring at a hard or floppy drive port will awaken a system which has been powered down.
LPT Ports Activity	When set to On (default), any event occurring at a LPT (printer) port will awaken a system which has been powered down.
VGA Activity	When set to On (default), any event occurring at VGA will awaken a system which has been powered down.

The following is a list of IRQ's, **I**nterrupt **R**e**Q**uests, which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service.
As above, the choices are On and Off.
When set On, activity will neither prevent the system from going into a power management mode nor awaken it.

IRQ [3-7, 9-15], NMI IRQ 8 Break Suspend :	You can Enable or Disable monitoring of IRQ8 (the Real Time Clock) so it does not awaken the system from Suspend mode.
Power Button Over Ride	You could press the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung.". The choice: Soft-Off, Delay 4 Sec.
Ring Power Up Control (and Wake On Lan WOL)	When you select Enabled, a signal from ring returns the system to Full On state. The choice: Enabled, Disabled.
GPIO5 Power Up Control	When you select Enabled, a signal from General Purpose Input 05 returns the system to Full On state. The choice: Enabled, Disabled.
KB Power ON Password	When you set a password for keyboard, The password you set the keyboard that returns the system to Full On state.

Power Up by Alarm	When you select Enabled, the following fields appear. They let you set the alarm that returns the system to Full On state. The choice: Enabled, Disabled.

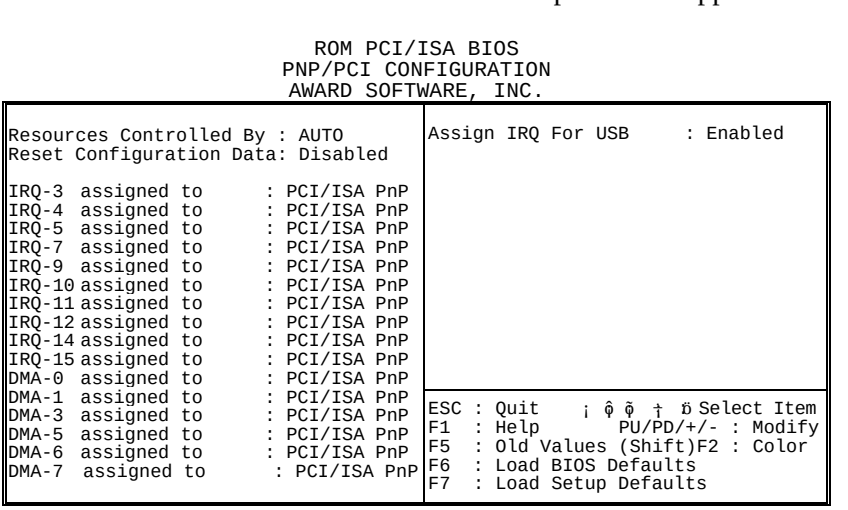
3. Press <ESC> and follow the screen instructions to save or disregard your settings.

PnP/PCI Configuration Setup

PnP/PCI Configuration Setup configures the PCI bus slots.

Run the Chipset Features Setup as follows:

1. Choose “PnP/PCI CONFIGURATION SETUP” from the Main Menu and a screen with a list of options will appear.



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

A short description of screen options follows:

[Resource controlled by

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Win95/98. The choice: Auto, Manual.

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system can not boot. The choice: Enabled, Disabled.

IRQ -# assigned to

When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt: Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1). PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture. The choice: Legacy ISA, PCI/ISA PnP.

DMA-# assigned to

When resources are controlled manually, assign each system DMA channel as one of the following types, depending on the type of device using the interrupt:
Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1). PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

Assign IRQ for USB

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

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

Load Setup Defaults

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

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

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

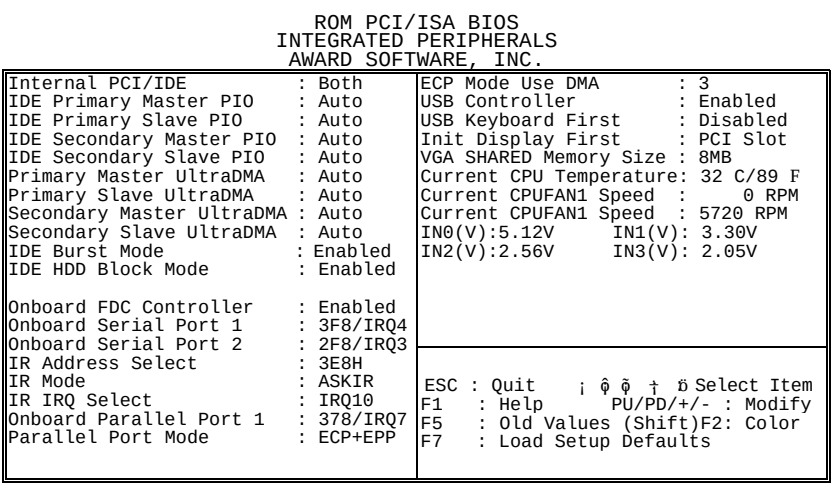
3. Press <ESC> and follow the screen instructions to save or

disregard your settings.

Integrated Peripherals

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

1. Choose “INTEGRATED PERIPHERALS” from the Main Menu and a screen with a list of options will appear.



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

A short description of screen options is as follows:

Internal PCI / IDE

This chipset contains an internal PCI IDE interface with support for two IDE channels. The choice: Primary, Secondary, Both.

IDE Primary Master/Slave PIO

The four IDE PIO (Programmed Input / Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device. The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, and Mode 4.

Primary Master/Slave UltraDMA

UDMA (Ultra DMA) is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 33 MB/s. When you select *Auto* in the four IDE UDMA fields (for each of up to four IDE devices that the internal PCI IDE interface supports), the system automatically determines the optimal data transfer rate for each IDE device. The choice: Auto, Disabled.

IDE Burst Mode

Selecting Enabled reduces latency between each drive read/write cycle, but may cause instability in IDE subsystems that cannot support such fast performance. If you are getting disk drive errors, try setting this value to Disabled. This field does not appear when the Internal PCI/IDE field, above, is Disabled. The choice: Enabled, Disabled.

IDE HDD Block Mode

The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the primary and/or secondary IDE interface. Select Disabled to deactivate this interface, if you install a primary and/or secondary add-in IDE interface IDE interface.

Enabled	Secondary HDD controller used
Disabled	Secondary HDD controller not used.

Onboard FDD Controller

This should be enabled if your system has a floppy disk drive (FDD) installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature. The choice: Enabled, Disabled.

Onboard Serial Port 1/Port 2

This item allows you to determine access onboard serial port 1/port 2 controller with which I/O address. The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

IR Address Select

Select IR Address. Choices are: Disabled, 2F8H, 3E8H, 2E8H.

IR Mode	Select IR Mode. Choices are: HP SIR, ASKIR.
IR IRQ Select	Select IRQ for IR. Choices are: IRQ3, IRQ4, IRQ10, IRQ11.
Onboard Parallel Port 1	This item allows you to determine access onboard parallel port controller with which I/O address. The choice: 3BC/IRQ7, 378/IRQ7, 278/IRQ5, Disabled.
Parallel Port Mode	Select an operating mode for the onboard parallel (printer) port. Select Normal, Compatible, or SPP unless you are certain your hardware and software both support one of the other available modes. The choice: SPP, EPP, ECP, ECP+EPP.
ECP Mode Use DMA	Select a DMA channel for the parallel port for use during ECP mode. The choice: 3, 1.
USB Controller	Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals. The choice: Enabled, Disabled.
Init Display First	This item allows you to decide to active which bus first (PCI Slot or AGP first). The choice: PCI Slot, AGP.

VGA Shared Memory Size	Specify the size of system memory to allocate for video memory, from None to 8 MB. The choice: None, 2MB, 4MB, 8MB.
Current CPUFAN1/2 Speed	These fields display the *current* speed of up to two CPU fans, if your computer contains a monitoring system.
IN0~IN3	These fields display the *current* voltage of up to seven voltage input lines, if your computer contains a monitoring system.

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

Supervisor/User Password

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

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

   "Enter Password:"

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

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

   "Confirm Password:"

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

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

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

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

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

Note: If you forget or lose the password, the only way to access the system is to clear the CMOS RAM by setting JP1. All setup information will be lost and you need to run the BIOS setup program again.

IDE HDD Auto Detection

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

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

Save & Exit Setup

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

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

Press <Enter> key to save the configuration changes.

Exit Without Saving

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

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