P5HX-LA

User's Manual (for Award BIOS)

V1.1

October, 1996

This motherboards requires correct configuration information; otherwise, a malfunction may result.

Static electricity can cause serious damage to integrated circuit motherboards. To avoid building up a static electric charging on your body, be sure you discharge any static electricity by grounding yourself before handling the motherboards. If motherboards are handed from one person to another, they should touch hands first, then pass the motherboards.

Information presented in this publication has been carefully checked for reliability; however, no responsibility is assumed for inaccuracies. The information contained in this document is subject to change without notice.

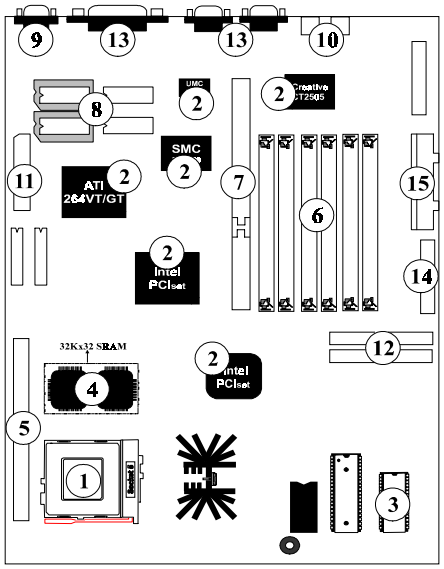
Contact your dealer for warranty details.

Trademarks

All brands and product names used in this manual may be trademarks or registered trademarks of their respective companies.

1 Introduction

Mainboard Description



1. **Processor**
2. **Chipset**
3. **System BIOS**
4. **L2 On-board Cache**
5. **L2 Cache Module**
6. **SIMM System Memory Socket**
7. **EISA like Expansion Slot**
8. **Video Memory**
9. **VGA Connector**
10. **PS/2 Mouse & Keyboard set**
11. **VGA Feature Connector & AMC Connector**
12. **IDE Connectors**
13. **Serial / Parallel Ports**
14. **FDD Connector**
15. **Power Supply Connectors**

P5HX-LA is a multimedia Pentium PCI W/Z I/O mainboard using Intel 430HX chipset (TXC, PIIX 3) and SMC I/O chip 37C669, ATI VGA Chip 264VT/GT, VT2 / RAGE II , CREATIVE ViBRA 16C Sound chip, and LPX Form factor.

1. **Processor:**
   On-board 7.5 A Regulator supports:
   Intel Pentium™ 75/90/100/120/133/150/166/200 MHz
   Intel Pentium OverDrive (P54CT/P54CTB)
   Intel 166/200 MHz (P55C) (Optional)
   Cyrix 6X86 100/110/120/133 MHz (P120+/P133+/P150+/P166+)

2. **Chipset:**
   Intel 430HX (TXC, PIIX 3)
   SMC 37C669 (SUPER I/O)
   ATI-264VT/ VT2 (GRAPHICS & VIDEO) or ATI-264GT/ RAGEII (manufacture optional)
   CREATIVE VIBRA 16C CT2505 (SOUND)

3. **System BIOS:**
   Award BIOS

4. **L2 On-board Cache:**
   Provide On-board 0 K or 256K Pipelined Burst L2 Cache.

5. **L2 Cache Module :**
   An optional ECS "CM161" or later version or upgrade cache module can be inserted to expand the cache memory size to 256KB or 512KB.
   An "COASt 2.1" or later cache module can also be used to upgrade the cache memory size.

6. **SIMM System Memory Socket:**
   Support 72-pin SIMMs of 4MB, 8MB, 16MB , 32MB or 64MB to form a memory size between 8MB to 384MB.

7. **EISA like Expansion Slot:**
   1 EISA like expansion Bus Slot. (supports PCI & ISA)

8. **Video Memory:**
   On-board default 1 M EDO Video Memory which is upgradable to 2MB EDO.
   Manufacture optional supports SDRAM to 1MB or 2MB.

9. **VGA Connector:**
   15-pin D-type female VGA Connector.
   Supports Energy Star, DDC 1/2 monitor.

10. PS/2 Mouse & Keyboard Set:
Provides Connectors for PS/2 Keyboard & PS/2 Mouse.

11.VGA Feature Connector and AMC Connector:
Provides 40-pin feature connector and AMC Connector (ATI Multimedia Connector) for general VGA feature connector and some types of MPEG card or TV tuner cards.

12.IDE Connector:
Two Enhanced IDE up to 4 IDE Devices Connectors.

13.Serial / Parallel Port:
Provides two serial ports and one parallel port.

14.FDD Connector:
Provides an on-board FDD Connector which supports 360KB/720KB/1.2MB/1.44MB/2.88MB type drives.

15.Power Supply Connectors:
Provides the connectors for standard PC / AT power supply.

Features

- **CPU:**
  - One Socket 7 suppports Pentium 75/90/100/120/133/150/166/200 MHz CPU with On-board Regulator and Intel OverDrive CPUs.
  - Upgradable to Intel Pentium OverDrive.
  - Supports Cyrix 6x86 P120+/P133+ /P150+/P166+ CPU.
- **BIOS:**
  - Award BIOS with Flash ROM.
    - PNP specification V1.0a
- **Cache:**
  - Supports the CPU's internal first level (L1) cache and external secondary level (L2) cache.

    16KB Level 1 Cache:
    - Data Cache: supports 8KB Write-Through and Write-Back policy.
    - Code Cache: supports 8KB Write-Through policy.

    256KB /512KB(optional) Pipelined Burst SRAM On Board.

160-pin Cache Module Socket for Level 2:

- Ä supports Global Write Pipelined Burst Extended Cacheability for 256KB/512KB.
- Ä supports Global Write Pipelined Burst for 256KB/512KB.

❑ **Memory:**

- 6 pieces of 72-pin SIMM sockets with memory size from 8MB to 384MB.
- 64MB SIMM DRAM Technology support.
- Enhanced EDO/ Hyper Page Mode DRAM support.

❑ **IDE:**

- Built-in chip 32-bit PCI IDE interface with 2 IDE channels.
- Supports up to 4 IDE devices.
- Supports up to PIO mode 4 or DMA mode 2 with transfer rate up to 22MB/sec.

❑ **FDC:**

- 2 floppy drives support 360K/720K/1.2MB/1.44MB/2.88MB and 3 mode format.

❑ **I/O:**

- 1 multi-mode parallel port supports standard, enhanced (EPP), and high speed (ECP) mode.
- Two 16C550 compatible UARTs.
- Two USB channels (cable bracket option)

❑ **Power Management:**

- Compatible with EPA “Energy-Star” specification.
- Fully compatible with Microsoft APM 1.2.
- Supports VESA Display Power Management Signaling (DPMS) compliant VGA monitor for power management.
- Supports 2 power management modes : Full-on and Standby modes.

- Programmable idle detector including one programmable I/O & one memory region.

❑ **VGA:**

- Programmable dual-clock synthesizer and 24-bit DAC.
  - Ä Pixel clock programmable to 135MHz.
- 32-bit direct-connect CPU interface.
- 64-bit DRAM display memory interface.
  - Ä Supports 1 or 2 MB display memory. (EDO, SDRAM)
- 64x64 hardware cursor.
- 64-bit GUI acceleration.
- Accelerated support for packed-24 mode.
- Supports super high resolution graphic modes.
  - Ä 24-bit RAMDAC Integrated (135 MHz)
  - Ä Resolution up to 1280 x 1024 at 75Hz.
- Supports video playback, overlay and capture by H/W video engine.
- ATI AMC Connector to support video channel.
- Supports DDC 1/2 B monitor plug & play.

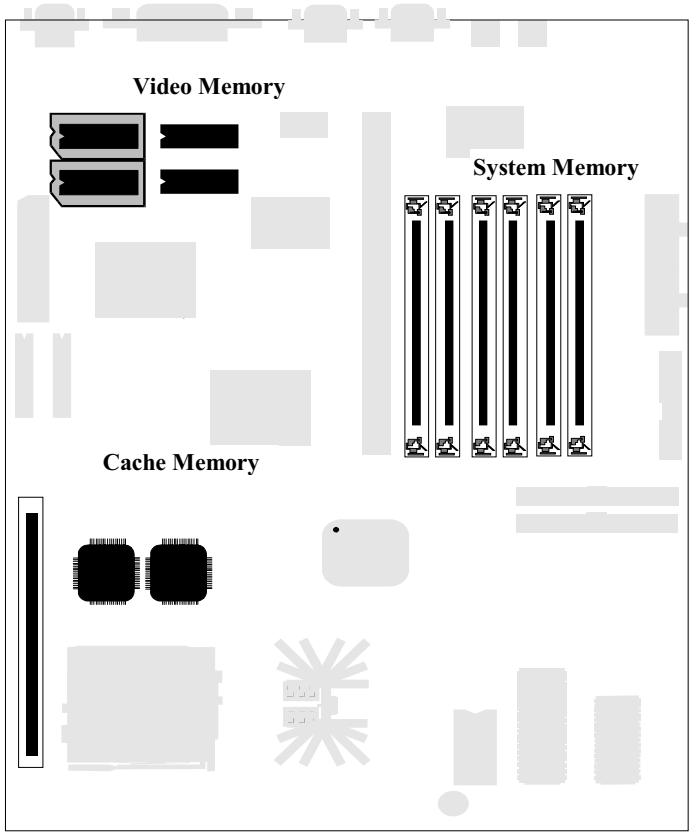
❑ **Audio:**

- Sound Blaster ^{TM} 16 compatible.
- Integrated Music Synthesis and DAC.
- Supports Plug and Play .
- Roland MPU401 VART mode compatible.
- Fully MPC, MPC II compatible.
- Supports APX (All Position Expansion) 3D-sound.

This Page Intentionally Left Blank.

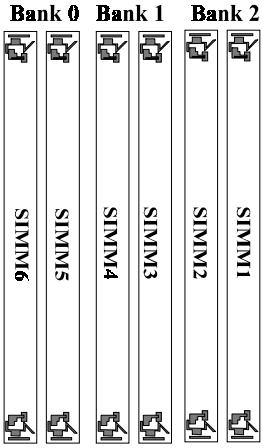
2 Memory Configurations

This chapter contains the detailed memory configuration:
System Memory, Cache Memory and **Video Memory**.



The diagram above displays the location of VGA DRAM, SIMM Sockets, Pipelined Burst SRAM and Cache Sockets on P5HX-LA motherboard.

System Memory



SIMM

P5HX-LA provides tremendous flexibility DRAM configurations. It accepts a maximum of 384MB memory size. The on-board DRAM is installed with 72-pin SIMM (Single-In-line-Memory Module).
There are three memory banks which support the 4M/ 8M/ 16M/32M/64M type, single and/or double-density modules.

The type of SIMM must be same if they exist at the same bank.

The following table lists some possible SIMM module combinations and the total memory size of each combination.

Bank 0		Bank 1		Bank 2		Total
SIMM 6	SIMM 5	SIMM 4	SIMM 3	SIMM 2	SIMM 1	Memory Size
4MB	4MB	-----	-----	-----	-----	8MB
4MB	4MB	4MB	4MB	-----	-----	16MB
4MB	4MB	4MB	4MB	4MB	4MB	24MB
8MB	8MB	-----	-----	-----	-----	16MB
8MB	8MB	4MB	4MB	-----	-----	24MB
8MB	8MB	4MB	4MB	4MB	4MB	32MB
8MB	8MB	8MB	8MB	-----	-----	32MB
8MB	8MB	8MB	8MB	8MB	8MB	48MB
16MB	16MB	-----	-----	-----	-----	32MB
16MB	16MB	4MB	4MB	-----	-----	40MB
16MB	16MB	4MB	4MB	4MB	4MB	48MB
16MB	16MB	8MB	8MB	-----	-----	48MB
16MB	16MB	8MB	8MB	8MB	8MB	64MB
16MB	16MB	16MB	16MB	-----	-----	64MB
16MB	16MB	16MB	16MB	16MB	16MB	96MB

Continued.....

Bank 0		Bank 1		Bank 2		Total
SIMM 6	SIMM 5	SIMM 4	SIMM 3	SIMM 2	SIMM 1	Memory Size
32MB	32MB	-----	-----	-----	-----	64MB
32MB	32MB	4MB	4MB	-----	-----	72MB
32MB	32MB	4MB	4MB	4MB	4MB	80MB
32MB	32MB	8MB	8MB	-----	-----	80MB
32MB	32MB	8MB	8MB	8MB	8MB	96MB
32MB	32MB	16MB	16MB	-----	-----	96MB
32MB	32MB	16MB	16MB	16MB	16MB	128MB
32MB	32MB	32MB	32MB	-----	-----	128MB
32MB	32MB	32MB	32MB	32MB	32MB	192MB
64MB☆	64MB☆	-----	-----	-----	-----	128MB
64MB☆	64MB☆	4MB	4MB	-----	-----	136MB
64MB☆	64MB☆	4MB	4MB	4MB	4MB	144MB
64MB☆	64MB☆	8MB	8MB	-----	-----	144MB
64MB☆	64MB☆	8MB	8MB	8MB	8MB	160MB
64MB☆	64MB☆	16MB	16MB	-----	-----	160MB
64MB☆	64MB☆	16MB	16MB	16MB	16MB	192MB
64MB☆	64MB☆	32MB	32MB	-----	-----	192MB
64MB☆	64MB☆	32MB	32MB	32MB	32MB	256MB
64MB☆	64MB☆	64MB ☆	64MB☆	-----	-----	256MB
64MB☆	64MB☆	64MB ☆	64MB☆	64MB☆	64MB☆	384MB

Table 2 -1. System Memory Configurations

☆: *means the memory type is not available for testing when the manual is edited.*

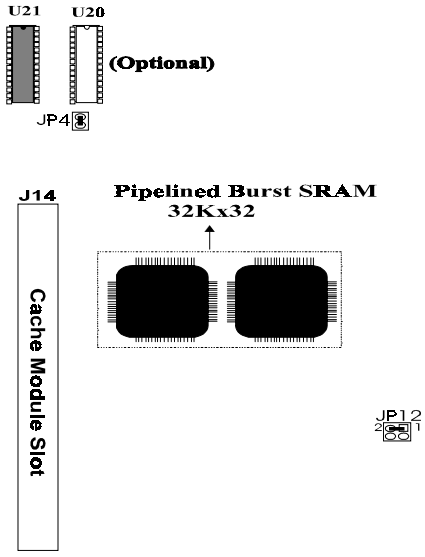
Cache Memory Subsystem

Level 1 Cache:

16KB Level 1 Cache includes Data Cache and Code Cache.
1. Data Cache: supports 8KB Write-Through and Write Back policy.
2. Code Cache: supports 8KB Write-Through policy.

Level 2 Cache:

If Motherboard with 256KB L2 Cache On-board

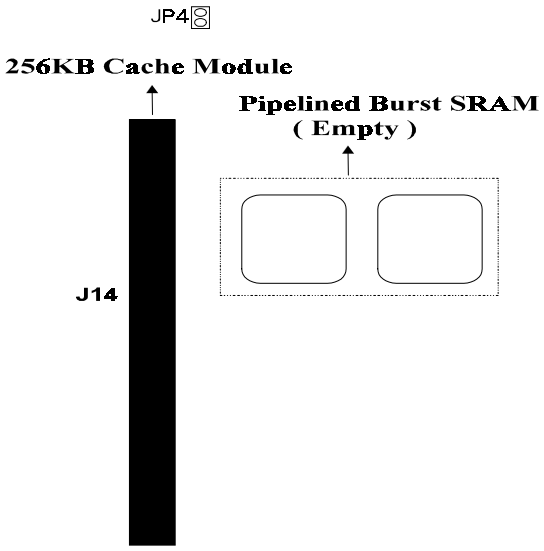


If there is an "On-board 256KB L2 Cache" in the motherboard, users may either upgrade to 512KB by inserting and ECS " CM161" or COASt (2.1 or later) upgrade cache module of 256KB. Users can refer to **page 3-4** , **page 3-11** and **Page 3-12** for detailed settings and graphics.

If you use on-board cache, you have to install TAG RAM. Installing U21 (8Kx8 15ns or 32Kx8 15ns) , the cacheable memory size maximize 64MB.

If you install both U21 and U20 (8Kx8 15ns or 32Kx8 15ns) , the cacheable memory size maximize 384MB. (The BIOS have to set 512MB.)

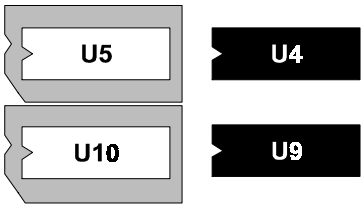
If Motherboard with 0 KB L2 Cache On-board



If there is not any " On-board 256KB L2 Cache" in the motherboard, users may either upgrade to 256KB or 512KB by inserting an ECS " CM161" or COASt (2.1 or later) upgrade cache module of 256KB or 512KB. . Users can refer to **page 3-4** , **page 3-11** and **page 3-12** for detailed settings and graphics.

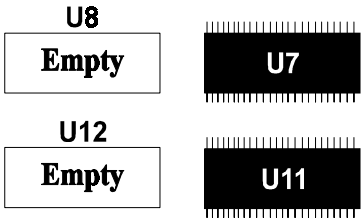
Video Memory

EDO RAM:

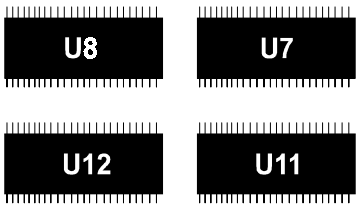


The diagram left displays the default 1M EDO Video Memory (U4, U9 On-board)
Users can add 256Kx16-7 Video Memory on U5 and U10 to update to 2M EDO. Please refer to **p3-16** for the clear location.

SDRAM:



Supports 2 pcs 128Kx16x2 SDRAM to 1 M SDRAM. (manufacture option)



Can add 128Kx16x2 SDRAM type Video Memory to mount on U8 and U12 in order to update to 2M. (manufacture option)

Please reconfirm your video memory type beofre you upgrade the BIOS.

3 Jumpers and Connectors

Setting the Jumpers

The table below summarizes the function and jumper settings of each jumper on the P5HX-LA. You can refer to the next section for the graphic descriptions.

Function			Jumper Settings
CPU Type	Intel Pentium (P54C) (P54CT) (P54CTB)	Intel 75MHz (50MHz Host Clock)	JP5 short 1-2 JP6 short 1-2 JP8 short 2-3 JP20 short 2-3 JP14 short 1-2 JP15 short 1-2 JP16 short 1-2 JP17 short 1-2
		Intel 90MHz (60MHz Host Clock)	JP5 short 1-2 JP6 short 1-2 JP8 short 1-2 JP20 short 2-3 JP14 short 1-2 JP15 short 1-2 JP16 short 1-2 JP17 short 1-2
		Intel 100MHz (66MHz Host Clock)	JP5 short 1-2 JP6 short 1-2 JP8 short 2-3 JP20 short 1-2 JP14 short 1-2 JP15 short 1-2 JP16 short 1-2 JP17 short 1-2
		Intel 120MHz (60MHz Host Clock)	JP5 short 2-3 JP6 short 1-2 JP8 short 1-2 JP20 short 2-3 JP14 short 1-2 JP15 short 1-2 JP16 short 1-2 JP17 short 1-2

Continued.....

Function			Jumper Settings
CPU Type	Intel Pentium (P54C) (P54CT) (P54CTB)	Intel 133MHz (66MHz Host Clock)	JP5 short 2-3 JP6 short 1-2 JP8 short 2-3 JP20 short 1-2 JP14 short 1-2 JP15 short 1-2 JP16 short 1-2 JP17 short 1-2
		Intel 150MHz (60MHz Host Clock)	JP5 short 2-3 JP6 short 2-3 JP8 short 1-2 JP20 short 2-3 JP14 short 1-2 JP15 short 1-2 JP16 short 1-2 JP17 short 1-2
		Intel 166MHz (66MHz Host Clock)	JP5 short 2-3 JP6 short 2-3 JP8 short 2-3 JP20 short 1-2 JP14 short 1-2 JP15 short 1-2 JP16 short 1-2 JP17 short 1-2
		Intel 200MHz (66MHz Host Clock)	JP5 short 1-2 JP6 short 2-3 JP8 short 2-3 JP20 short 1-2 JP14 short 1-2 JP15 short 1-2 JP16 short 1-2 JP17 short 1-2
	Intel Pentium (P55C) (Optional) (U45 must be mounted)	Intel 166MHz (66MHz Host Clock)	JP5 short 2-3 JP6 short 2-3 JP8 short 2-3 JP20 short 1-2 JP14 short 2-3 JP15 short 2-3 JP16 short 2-3 JP17 short 2-3

Continued.....

Function			Jumper Settings
CPU Type	Intel Pentium (P55C) (Optional) (U45 must be mounted)	Intel 200MHz (66MHz Host Clock)	JP5 short 1-2 JP6 short 2-3 JP8 short 2-3 JP20 short 1-2 JP14 short 2-3 JP15 short 2-3 JP16 short 2-3 JP17 short 2-3
	Cyrix(6x86)	100MHz (P120+) (50MHz Host Clock)	JP5 short 2-3 JP6 short 1-2 JP8 short 2-3 JP20 short 2-3 JP14 short 1-2 JP15 short 1-2 JP16 short 1-2 JP17 short 1-2
		110MHz (P133+) (55MHz Host Clock)	JP5 short 2-3 JP6 short 1-2 JP8 short 1-2 JP20 short 1-2 JP14 short 1-2 JP15 short 1-2 JP16 short 1-2 JP17 short 1-2
		120MHz (P150+) (60MHz Host Clock)	JP5 short 2-3 JP6 short 1-2 JP8 short 1-2 JP20 short 2-3 JP14 short 1-2 JP15 short 1-2 JP16 short 1-2 JP17 short 1-2
		133MHz (P166+) (66MHz Host Clock)	JP5 short 2-3 JP6 short 1-2 JP8 short 2-3 JP20 short 1-2 JP14 short 1-2 JP15 short 1-2 JP16 short 1-2 JP17 short 1-2

Continued.....

Function		Jumper Settings
CPU Core Voltage ☆1	2.5V	JP21 short 1-2
	2.8V (default)	JP21 short 3-4
	2.9V	JP21 short 5-6
CPU Voltage Selection	3.3V (STD)	JP13 short 1-2
	3.52V (VRE) (default)	JP13 short 3-4
CMOS RAM Clear Switch	Normal	JP11 short 2-3
	CMOS Data Clear	JP11 short 1-2
On Board Cache	Exist	JP4 short
	Not Exist	JP4 open
L2 Cache Memory Size	256KB	JP12 short 1-2 open 3-4
	512KB	JP12 short 3-4 open 1-2
	No L2 Cache	JP12 open 1-2, 3-4
VGA	Enabled	JP1 open 1-2
	Disabled	JP1 short 1-2
	Interrupt Enabled	JP1 open 3-4
	Interrupt Disabled	JP1 short 3-4
	Spare I/O Decoding	JP1 open 5-6
	Block I/O Decoding	JP1 short 5-6
Audio ☆2	Enabled Audio	JP23 short 2-3
	Disabled Audio	JP23 short 1-2

Table 3 -1. Jumper Settings

☆1: *This function is available on PCB 1.0/1.0A and later version.*

☆2: *This function is available on PCB 1.0A and later version.*

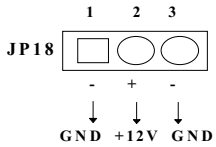
*The table below presents the detailed Jumper Settings for different CPU Clock. For example, if Pentium 100MHz CPU is installed, you should set Host Clock as 66 MHz and CPU Core Clock as Host Clock *1.5.*

Host Clock	50 MHz	JP8 short 2-3 JP20 short 2-3
	55 MHz	JP8 short 1-2 JP20 short 1-2
	60 MHz	JP8 short 1-2 JP20 short 2-3
	66 MHz	JP8 short 2-3 JP20 short 1-2
CPU Core Clock	Host Clock * 1.5	JP5 short 1-2 JP6 short 1-2
	Host Clock * 2	JP5 short 2-3 JP6 short 1-2
	Host Clock * 2.5	JP5 short 2-3 JP6 short 2-3
	Host Clock * 3	JP5 short 1-2 JP6 short 2-3

Green Function

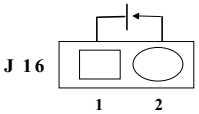
CPU Cooling Fan Control

P5HX-LA provides the ability to turn the **CPU cooling fan** off while the system is in low-power suspend mode. Please connect the CPU cooling fan power to JP18 in order to make it work.

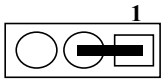


Green Function Indicator

Connect the **LED** to J16 to LED blinking indicate the system in low-power suspend mode.



Graphic Descriptions of Jumper Settings

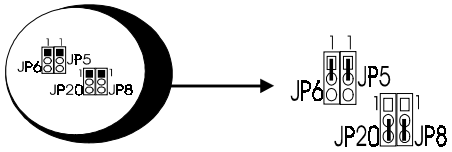


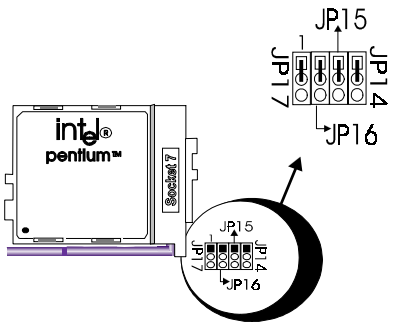
means Pin 1 & 2 are set as hort"

means this jumper is set as pen"

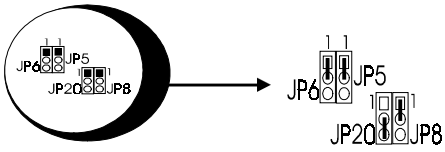
CPU Type

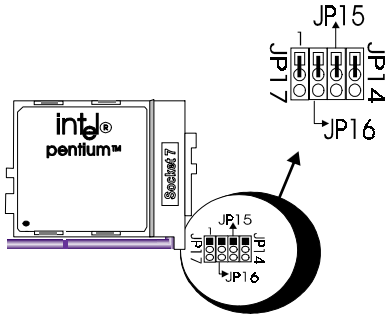
1. Intel Pentium 75MHz (P54C/P54CT/P54CTB) CPU (50MHz Host Clock) installed on board



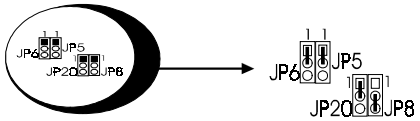


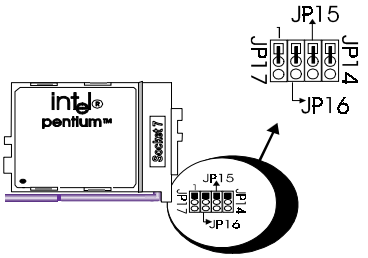
2. Intel Pentium 90MHz (P54C/P54CT/P54CTB) CPU (60MHz Host Clock) installed on board



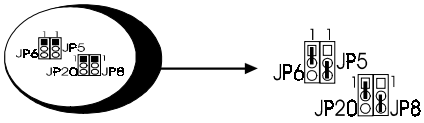


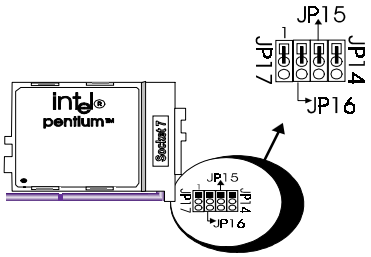
3. Intel Pentium 100MHz (P54C/P54CT/P54CTB) CPU (66MHz Host Clock) installed on board



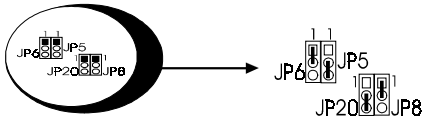


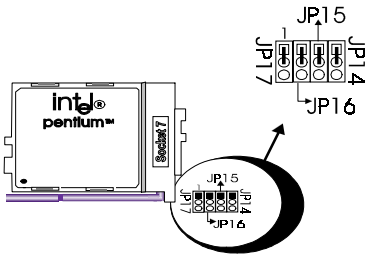
5. Intel Pentium 133MHz (P54C/P54CT/P54CTB) CPU (66MHz Host Clock) installed on board



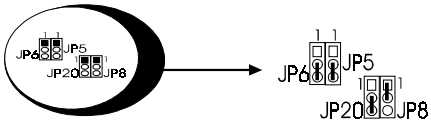


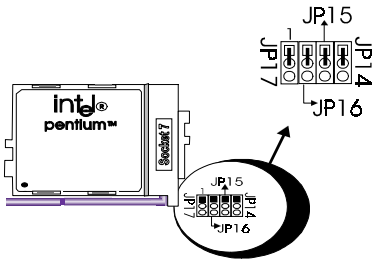
4. Intel Pentium 120MHz (P54C/P54CT/P54CTB) CPU (60MHz Host Clock) installed on board



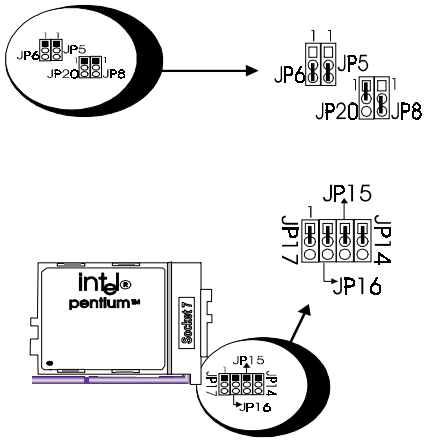


6. Intel Pentium 150MHz (P54C/P54CT/P54CTB) CPU (60MHz Host Clock) installed on board

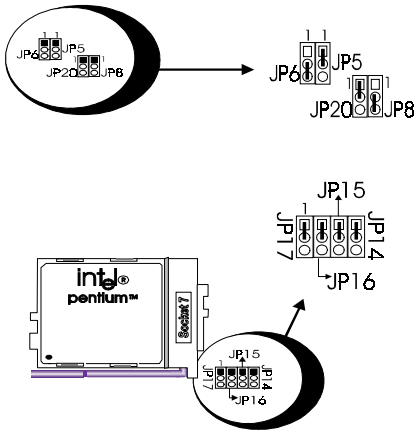




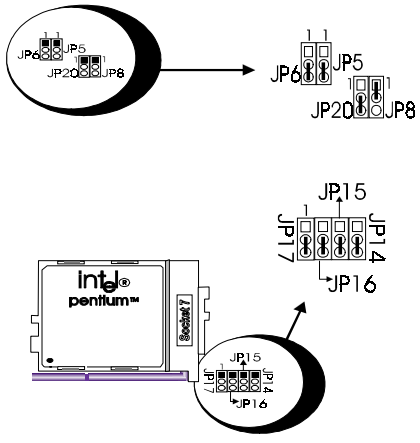
7. Intel Pentium 166MHz (P54C/P54CT/P54CTB) CPU (66MHz Host Clock) installed on board



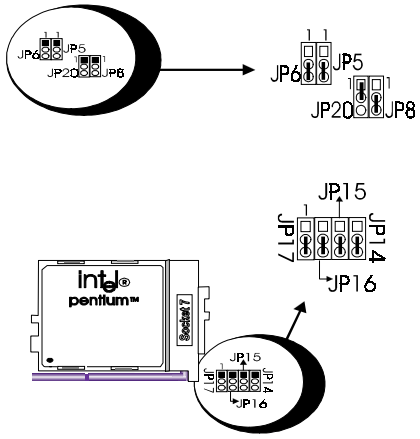
8. Intel Pentium 200MHz (P54C/P54CT/P54CTB) CPU (66MHz Host Clock) installed on board



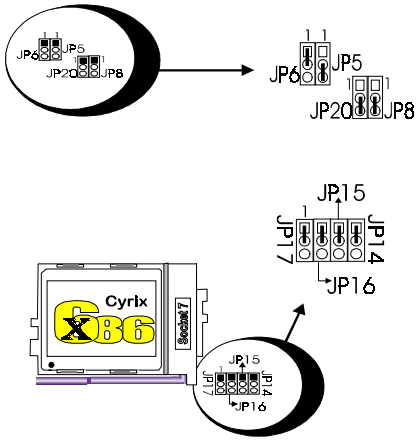
9. Intel Pentium 150MHz (P55C) CPU (60MHz Host Clock) installed on board



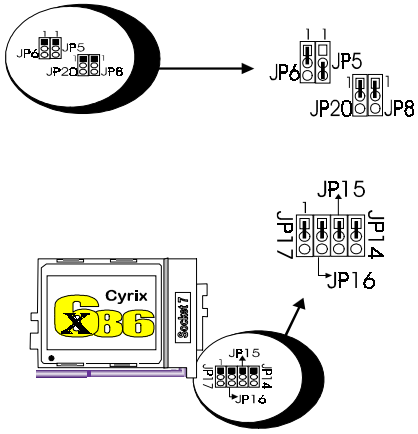
10. Intel Pentium 166MHz (P55C) CPU (66MHz Host Clock) installed on board



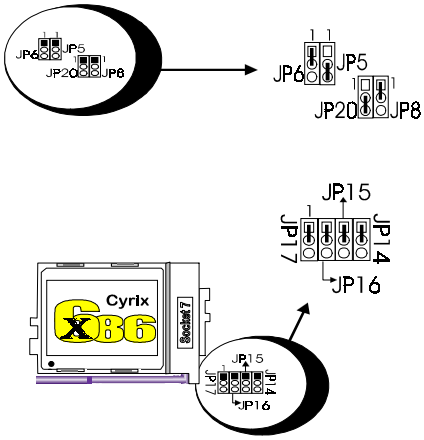
11. Cyrix 6X86 (P120+) 100MHz CPU (50MHz Host Clock) installed on board



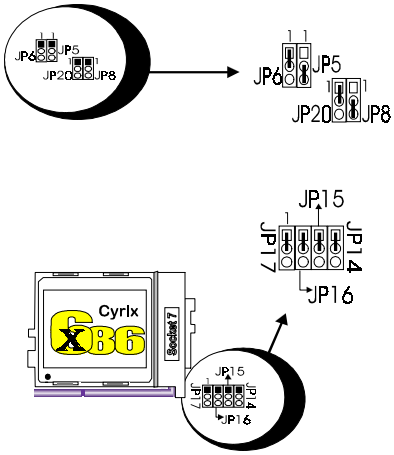
12. Cyrix 6X86 (P133+) 110MHz CPU (55MHz Host Clock) installed on board



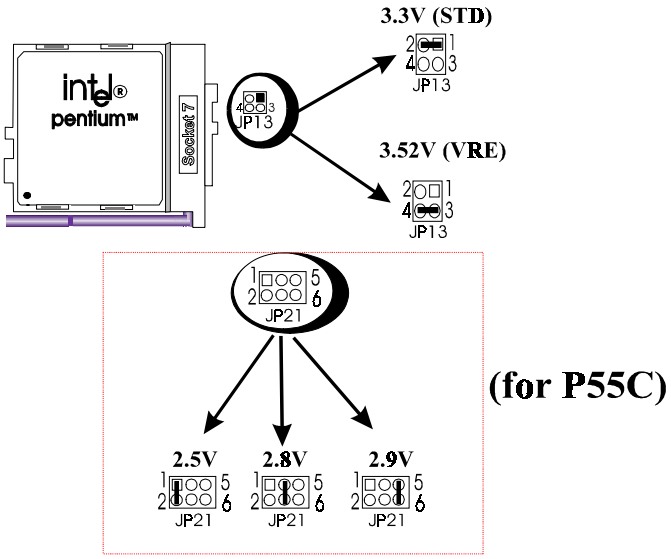
13. Cyrix 6X86 (P150+) 120MHz CPU (60MHz Host Clock) installed on board



14. Cyrix 6X86 (P166+) 133MHz CPU (66MHz Host Clock) installed on board



CPU Voltage Selection

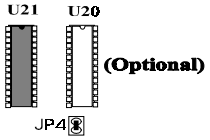


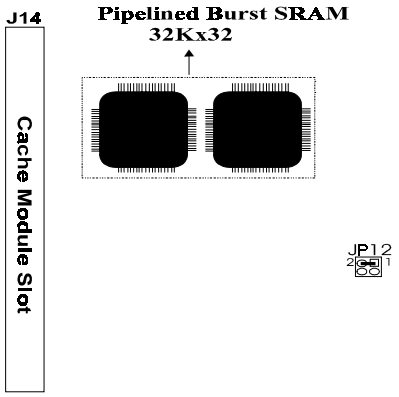
(for P55C)

Cache Memory Size

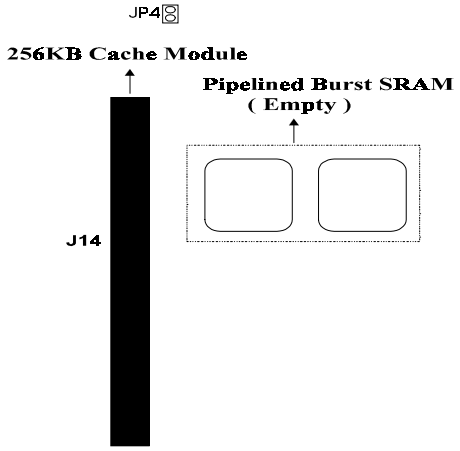
1. 256KB

a. On-Board Cache



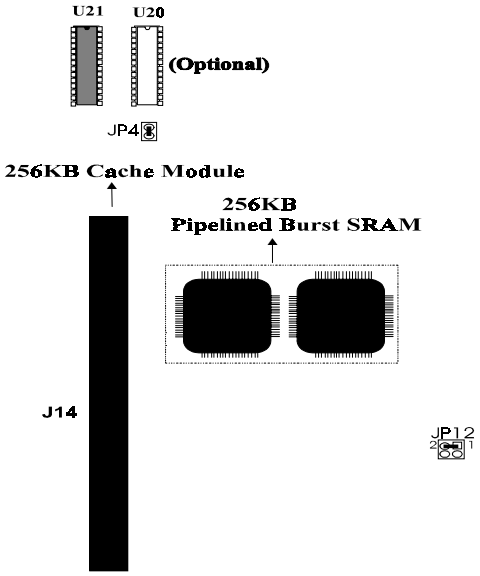


b. Cache Module Only

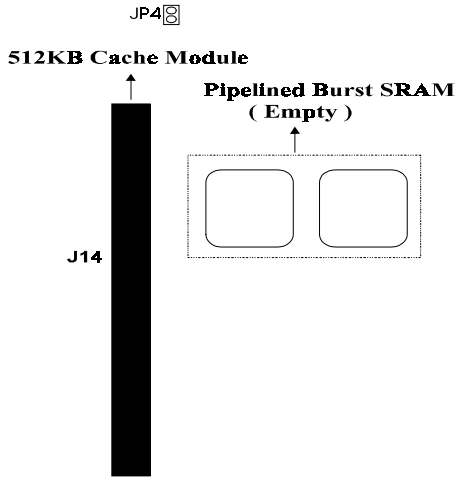


2. 512KB

a. 256KB On-Board Cache + 256KB Cache Module



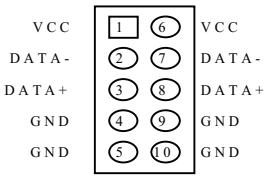
b. Cache Module Only



Connectors

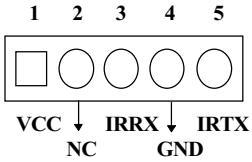
The following table lists all connectors located on the P5HX-LA. They can be used to connect with some peripheral devices to enhance the operating performance of the system. Please refer to the mainboard layout figure on page 3-16 for the positions of all the connectors.

Connector	Function
J1	COM1/ COM3
J2	COM2/ COM4
J3	Printer Port
J4	PS/2 Mouse Connector
J5	PS/2 Keyboard Connector
J6	VGA Monitor Connector
J7	CD Audio In
J8	USB Header



J9	VGA Feature Connector and AMC (ATI Multimedia Connector)

	Connector
J10	IR Header (Intel)

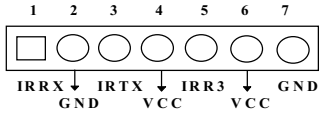


IRRX: Alternate IR Receive Input.
IRTX: Alternate IR Transmite Output.

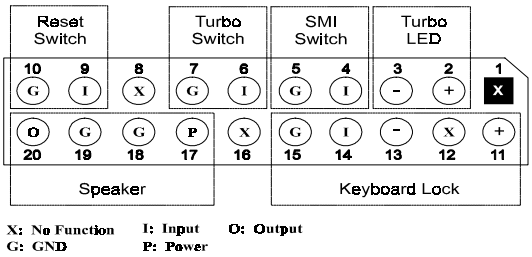
J11	FDD Connector
J12	Primary IDE Connector
J13	Secondary IDE Connector
J14	Cache Module Connector

Continued.....

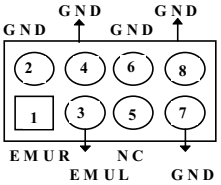
Connector	Function
J15	HDD LED
J16	Green Mode LED
J17	Fast IR Header (Temic / IBM & HP) (SMC 37C669 FR only)



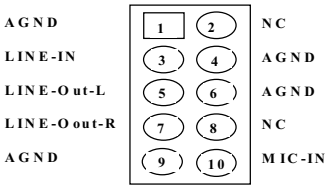
J18



JP18	CPU Cooling Fan Control (Green Function)
JP19	Wave Table (for Creative CT1920 only)



J20 Modem Blaster Pro Interface Connector (for Creative only)



Continued.....

Connector	Function
J21	Audio Connector Bracket

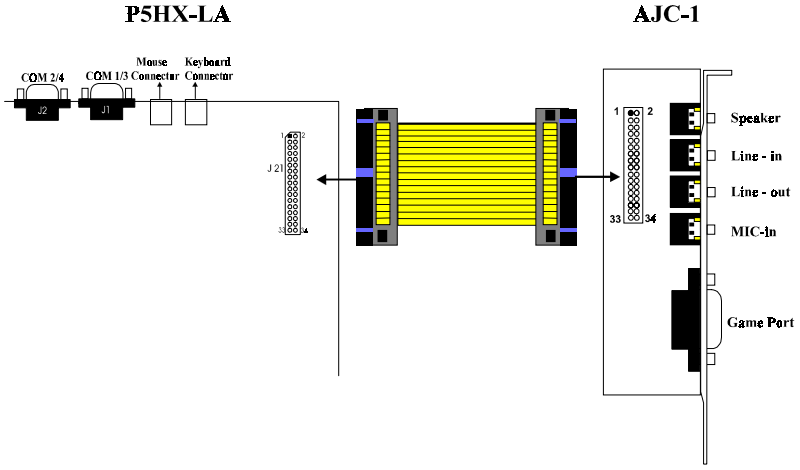


Table 3 -2. Connectors

Board Layout

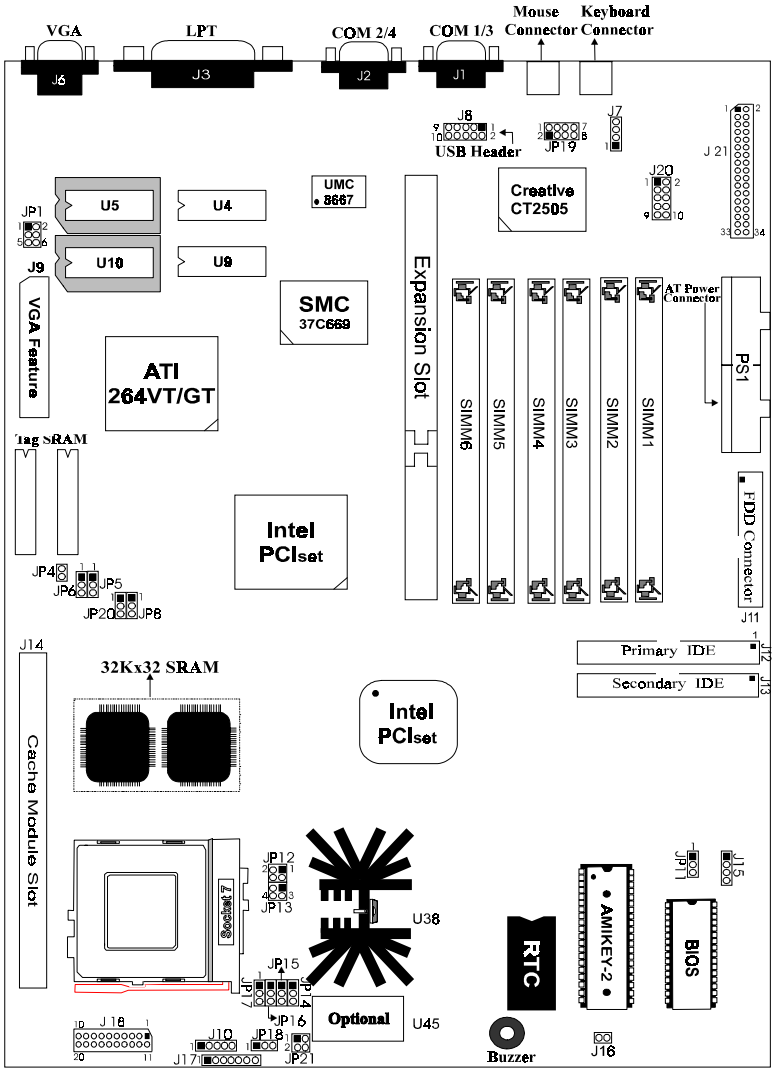


Figure 3 -1. P5HX-LA Mainboard Layout

4 Built-in BIOS Setup Program

SETUP Program

This chapter describes the Award BIOS setup for P5HX-LA. The setup program uses a number of menus that you can specify changes to your hardware and turn the special features on or off.

To enter the BIOS setup program, users can turn on or reboot the system. Press the <DEL> key when the system displays "`Press DEL to enter SETUP`".

The following screen will be displayed.

```
                    ROM PCI/ISA BIOS <<P5HX-LA>>
                     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 BIOS DEFAULTS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time, Date, Hard Disk Type ...	

Figure 4 -1. SETUP Main Menu

The instructions at the bottom of Main Menu Screen show the items of each option.

- **STANDARD CMOS SETUP** - This option allows users to check or modify the basic system configuration.
- **BIOS FEATURES SETUP** - This option is used to setting the various system options for the users, including the virus warning, external cache, security option, boot operations, and video BIOS shadow, etc.
- **CHIPSET FEATURES SETUP** - This option allows users to control the features of chipset.
- **POWER MANAGEMENT SETUP** - This option allows users to set the power saving status for reducing the power consumption.

- **PNP/PCI CONFIGURATION SETUP** - This option is used to setting the various system function and internal addresses of the PCI devices. Allows users to configure system IRQ and DMA to **PCI/ISA PnP** or **Legacy ISA** .
- **LOAD BIOS DEFAULTS** - Users can load the BIOS default values to boot the system safely.
- **LOAD SETUP DEFAULTS** - This option supports the better performance for the system. It is recommended to choose **SETUP Defaults** for the setup.
- **INTEGRATED PERIPHERALS -** This option allows users to decide how many kinds peripherals need to change their I/O type , mode and used or not . This options also allows user to set the various system function and onboard PCI IDE controller.
- **SUPERVISOR PASSWORD** - Password is required when entering and changing all of the SETUP option or booting your system. Users can change the current password stored in the CMOS by accessing this option.
- **USER PASSWORD** - Password is required when booting your system and entering to change only the USER PASSWORD . Users can change the current password stored in the CMOS by accessing this option.
- **IDE HDD AUTO DETECTION** - This option can automatic detect the hard disk drive type(s) including the number of cylinders and heads, write pre-compensation time, read/write head landing zone, and number of sectors per track.
- **SAVE & EXIT SETUP** - After saving the changes what you have made in the SETUP program, then exit and reboot the system.
- **EXIT WITHOUT SAVING** - Abandon all previous settings, then exit and reboot the system.

After choosing an item from the SETUP main menu, move the cursor by using the ↑,↓,→,← arrow keys and press <Enter>. To modify the setting of an option, simply press the <PgUp> or <+> and the <PgDn> or <-> keys. Press the <F2> key when changing the color setting, <F1> for a context sensitive help function, and the <ESC> key when quitting SETUP.

Standard CMOS Setup

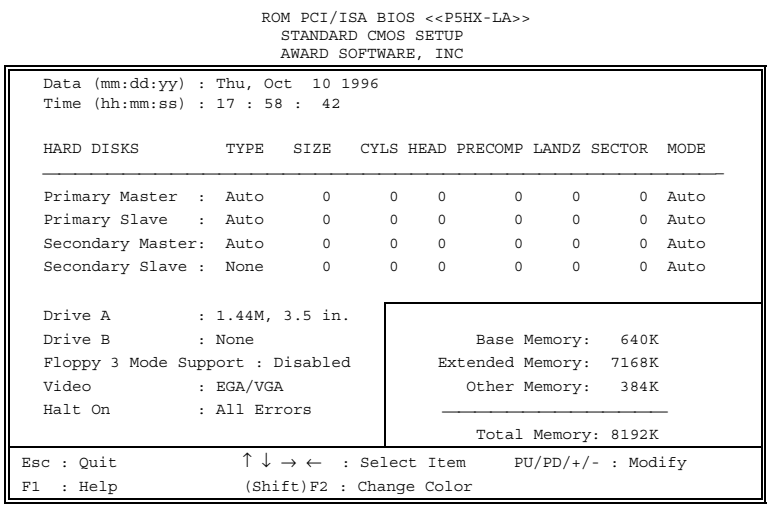


Figure 4 -2. Standard CMOS SETUP Screen

Date - Allows manual setting of the electronic calendar on the mainboard.

Time - Sets the internal clock of the system which includes hour, minutes, and seconds.

Primary Master - Specifies the physical and electronic properties of the standard hard disk drives installed. Relevant specifications include the type, number of cylinders (CYLS), heads (HEAD), write pre-compensation time (PRECOMP), read/write head landing zone (LANDZ), number of sectors per track (SECTOR), and HDD mode (MODE). Selecting "***AUTO***" in the hard disk type item avoids the necessity of loading the HDD specifications and the function of the IDE HDD Auto Detection option in the main menu. The system BIOS will automatically detect the hard drive installed on the system upon bootup.

Drive A:/B: - Specifies the capacity and format of the floppy drive installed in your system.

Floppy 3 Mode Support - If 3 mode function is enabled, Floppy Diskette is only compatible to the Floppy Diskette Format of Japan Spec. : **1.2MB, 3.5 in.** Otherwise, it is compatible to Floppy Diskette Format of IBM PC.

Video - Specifies the display adapter installed.

Halt On - Enables the system to halt on several conditions/options. The default value is set as "***All Errors***."

Base/Extended/Other Memory - A small section in the lower right corner of the screen displays the important information about your system which includes the base, extended, and other memory sizes. They are updated automatically by the SETUP program according to the status detected by the BIOS self-test. This section of the Standard CMOS SETUP screen is for viewing purpose only; therefore, manual modifications are not allowed.

BIOS Features Setup

```
                    ROM PCI/ISA BIOS <<P5HX-LA>>
                      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     : Disabled   D0000-D3FFF Shadow        : Disabled
Boot Sequence                : A,C        D4000-D7FFF Shadow        : Disabled
Swap Floppy Drive            : Disabled   D8000-DBFFF Shadow        : Disabled
Boot Up NumLock Status       : On         DC000-DFFFF Shadow        : Disabled
Gate A20 Option              : Fast
Security Option              : Setup
PCI/VGA Palette Snoop        : Disabled
OS Select For DRAM >64MB     : Non-OS
                                          ESC : Quit        ↑↓→←: Select Item
                                          F1  : Help        PU/PD/+/- : Modify
                                          F5  : Old Values  (Shift)F2 : Color
                                          F6  : Load BIOS  Defaults
                                          F7  : Load Setup Defaults
```

Figure 4 -3. BIOS Features Setup Screen

Virus Warning - Allows the virus warning feature for the hard disk boot sector to display a warning message and produce a beep sound whenever an attempt is made to write on the hard disk's boot sector. The default value for this option is "***Disabled***."

CPU Internal Cache - Enables the internal 16KB code/data cache of the Intel Pentium CPU when this option is set to "***Enabled***" (default).

External Cache - Enables the on-board secondary cache (either standard non-burst or burst cache) when this options is set to "***Enabled***" (default).

Quick Power On Self Test - Allows the power on self test to run at either a fast or a normal speed. The available options are:

- Disabled (default)
- Enabled

Boot Sequence - Selects the drive where the system would search for the operating system to run with. The available options are:

- A,C (default)
- C,A
- C,CDROM, A
- CDROM,C,A

Swap Floppy Drive - "***Enabled***" will effectively change the A: drive to B: and the B: to A: drive. "***Disabled***" (default) sets the floppy drives in their default states.

Boot Up NumLock Status - Sets the <Num Lock> key to either on or off during system boot-up. The available options are:

- On (default)
- Off

Gate A20 Option - Boosts the performance of system with softwares by using the protected mode such as OS/2 or UNIX. This option determines the accessibility of the extended memory. The available options are:

- Fast (default)
- Normal

Security Option - Determines if the password will be asked for every boot (***System***), or when entering into the SETUP program (***Setup*** - default). Refer to the section entitled SUPERVISOR PASSWORD for the password setting procedure.

PCI/VGA Palette Snoop - Selects "Enabled" to solve the abnormal color in Windows while using ISA MPEG and PCI VGA card. The available options are:

- Disabled (default)
- Enabled

OS Select For DRAM>64MB -Selects the OS if DRAM > 64MB. This option allows you to access the memory that over 64MB in OS/2. The available options are:

- Non-OS2 (default)
- OS2

Video BIOS Shadow - Enables the system shadowing and achieve the best performance of the system. The available options are:

- Enabled (default)
- Disabled

C8000-CBFFF, CC000-CFFFF, D0000-D3FFF, D4000-D7FFF, D8000-DBFFF, DC000-DFFFF Shadow - If you have a shadowing of the BIOS at any of the above segments, you may set the appropriate memory cacheable function to "***Enabled***". Otherwise, select ***"Disabled"*** (default).

Chipset Features Setup

```
áROM PCI/ISA BIOS <<P5HX-LA>>
  CHIPSET FEATURES SETUP
   AWARD SOFTWARE, INC.
```

Auto Configuration	: Enabled	Memory Parity/ECC Check	: Disabled
DRAM Timing	: <70ns		
DRAM RAS# Precharge Time	: 4	L2 Cache Cacheable Size	: 64MB
DRAM R/W Leadoff Timing	: 7/6	Chipset NA# Asserted	: Enabled
Fast RAS# To CAS# Delay	: 3		
DRAM Read Burst <EDO/EPM>	: x222/x333		
DRAM Write Burst Timing	: x222		
DRAM Speculative Leadoff	: Enabled		
Turn-Around Insertion	: Disabled		
ISA Clock	: PCICLK/4		
Turbo Read Leadoff	: Disabled		
System BIOS Cacheable	: Enabled		
Video BIOS Cacheable	: Enabled		
8 Bit I/O Recovery Time	: 1		
16 Bit I/O Recovery Time	: 1		
Memory Hole At 15M-16M	: Disabled	ESC : Quit	↑↓→←: Select Item
Peer Concurrency	: Enabled	F1 : Help	PU/PD/+/- : Modify
DRAM ECC/PARITY Select	: Parity	F5 : Old Values	(Shift)F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Figure 4 -4. Chipset Features Setup Screen

Auto Configuration - The default values of this options is "***Enabled***" (default). When enabled, this options is for the following DRAM and cache options. Otherwise, "***Disabled***" allows you to program each option .

- Enabled (default)
- Disabled

The following items are controlled by **Auto Configuration** *when users select "Enabled". For this reason, their default values will be changed by the speed of CPU. These items are :*

"DRAM RAS# Precharge Time" , "DRAM R/W Leadoff Timing", " "Fast RAS# to CAS# Delay", "DRAM Read Burst <EDO/EPM>", "DRAM Write Burst Timing" "DRAM Speculative Leadoff", "Turn-Around Insertion" and "ISA Clock".

DRAM Timing - Configures the DRAM read/write timing for the maximum performance. The available options are:

- <70ns (default)
- <60ns

DRAM RAS# Precharge Time - Selects RAS# precharge time for DRAM access. The available options are:

- 4 (default)
- 3

DRAM R/W Leadoff Timing - Determines the leadoff time for R/W to the cache. The available options are:

- 7/6 (default)
- 6/5

Fast RAS# To CAS# Delay - Selects the RAS-to-CAS delay time for DRAM access . The available options are:

- 3 (default)
- 2

DRAM Read Burst <EDO/SPM> - Determines the timing for burst read to the cache . If your DRAM type is EDO DRAM , we suggest you to select x222(EDO) timing to get a better performance . The available options are:

- x222/ x333 (default)
- x444/ x444
- x333/ x444

DRAM Write Burst Timing - Determines the timing for burst write to the cache . If your DRAM type is EDO DRAM , we suggest you to select x222(EDO) timing to get a better performance . The available options are:

- x222 (default)
- x333
- x444

DRAM Speculative Leadoff - Determines the timing for speculative leadoff to the cache . The available options are:

- Enabled (default)
- Disabled

Turn-Around Insertion - Determines to access turn-around insertion or not . The available options are:

- Disabled (default)
- Enabled

ISA Clock - ISA clock divide by 4 or 3 depending on PCI bus clock. Users can refer to the formula for clear figure. (**ISA Clock = PCI Clock / 3 or ISA Clock = PCI Clock / 4**). The available options are:

- PCICLK/4 (default)
- PCICLK/3

Turbo Read Leadoff - This bit will affect the read leadoff timings of the DRAM. When this bit is set, it will get a 1 HCLK pull-in of all read leadoff timings. The available options are:

- Disabled (default)
- Enabled

System BIOS Cacheable - Allows system BIOS to be cacheable. The available options are:

- Enabled (default)
- Disabled

Video BIOS Cacheable - Allows video BIOS to be cacheable. The available options are:

- Enabled (default)
- Disabled

8 Bit I/O Recovery Time - Defines the 8-bit I/O recovery time with one of the following system clock options. The available options are:

- 1 (default)
- 2/3/4/5/6/7/8/NA

16 Bit I/O Recovery Time - Defines the 16-bit I/O recovery time with one of the following system clock options. The available options are:

- 1 (default)
- 2/3/4/NA

Memory Hole At 15M-16M -Enables this option to reserve the certain space in memory for ISA cards. The available options are:

- Disabled (default)
- Enabled

Peer Concurrency - Determines the CPU allowed to run DRAM/L2 cycles or not when non-PHLD PCI master devices are targeting peer device . The available options are:

- Enabled (default)
- Disabled

DRAM ECC/PARITY Select - Allows users to configure the DRAM error check method. The available options are:

- Parity (default)
- ECC

Memory Parity/ECC Check - Determines the memory check function "**enabled"** or "**disabled"** and the function can enable only under the DRAM with parity bit support . Otherwise , please select "**auto"** . BIOS can auto-detect whether DRAM support DRAM ECC/Parity function . The available options are:

- Disabled (default)
- Enabled
- Auto

L2 Cache Cacheable Size - Determines the L2 cache cacheable size 64MB or 512MB . The available options are:

- 64MB (default)
- 512MB

Chipset NA# Asserted - Determines to enable the Next Address (NA#) cycle or not . The available options are:

- Enabled (default)
- Disabled

Power Management Setup

```
                    ROM PCI/ISA BIOS <<P5HX-LA>>
                     Power MANAGEMENT SETUP
                      AWARD SOFTWARE, INC.

Power Management      : Disabled          ** Power Down & Resume Events **
PM Control by APM     : Yes               IRQ3  (COM 2)            : ON
Video Off Method      : DPMS              IRQ4  (COM 1)            : ON
CPU Fan Power Green   : Enabled           IRQ5  (LPT 2)            : ON
MODEM Use IRQ         : NA                IRQ6  (Floppy Disk)      : ON
                                          IRQ7  (LPT 1)            : ON
Doze Mode             : Disabled          IRQ8  (RTC Alarm)        : OFF
Standby Mode          : Disabled          IRQ9  (IRQ2 Redir)       : ON
Suspend Mode          : Disabled          IRQ10 (Reserved)         : ON
HDD Power Down        : Disabled          IRQ11 (Reserved)         : ON
                                          IRQ12 (PS/2 Mouse)       : ON
**Wake Up Events In Doze & Standby  **    IRQ13 (Coprocessor)      : ON
IRQ3 (Wake-Up Event) : ON                 IRQ14 (Hard Disk)        : ON
IRQ4 (Wake-Up Event) : ON                 IRQ15 (Reserved)         : ON
IRQ8 (Wake-Up Event) : OFF
IRQ12(Wake-Up Event) : ON
                                          ESC : Quit        ↑↓→←: Select Item
                                          F1  : Help        PU/PD/+/- : Modify
                                          F5  : Old Values  (Shift)F2 : Color
                                          F6  : Load BIOS Defaults
                                          F7  : Load Setup Defaults
```

Figure 4 -5. Power Management Setup Screen

Power Saving Mode - Allows users to determine how often the Power Saving actives . The available options are:

- Disable (default)
- Max Saving
- Min Saving
- User Define

PM Control by APM - Sets the power management (PM) control by APM. The available options are:

- Yes (default)
- No

Video Off Method - Sets the video power green method . The available options are:

- DPMS (default)
- V/H SYNC+Blank
- Blank Screen

CPU Fan Power Green - Determines CPU Fan Green to be supported or not . The available options are:

- Enabled (default)
- Disabled

MODEM Use IRQ - Sets the IRQ which is used by modem to have the system wake-up when the ring in signal is received.

- NA (default)
- 3/4/5/7/9/10/11

Doze Mode - Sets the time interval when the system enters DOZE mode. The available options are:

- Disabled (default)
- 1 Hour

- 1/2/4/6/8/10/20/30/40 Min

Standby Mode - Sets the timer interval when the system enters STANDBY mode. The available options are:

- Disabled (default)
- 1 Hour
- 1/2/4/6/8/10/20/30/40 Min

Suspend Mode -Sets the time interval when the system enters SUSPEND mode. The available options are:

- Disabled (default)
- 1 Hour
- 1/2/4/6/8/10/20/30/40 Min

HDD Power Down - Sets the timer of the HDD when to enter the Standby mode. The available options are:

- Disabled (default)
- 1....15 Min

Wake Up Events In Doze & Standby

IRQ 3/4/8/12 (Wake-Up Event) - Sets the wake-up event to "**ON**" or "**OFF**" when system enters the suspend mode.

Power Down & Resume Events

Power Down Activities - The manual also lists the Power Management SETUP (PM) events by which the system wakes up from STANDBY or SUSPEND modes. Switch the following parameters to ***"ON"*** or ***"OFF"***:

- COM Ports Accessed
- LPT Ports Accessed
- Drive Ports Accessed
- IRQ3 (COM2)
- IRQ4 (COM1)
- IRQ5 (LPT2)
- IRQ6 (Floppy Disk)
- IRQ7 (LPT 1)
- IRQ8 (RTC Alarm)
- IRQ9 (IRQ2 Redir)
- IRQ10 (Reserved)
- IRQ11 (Reserved)
- IRQ12 (PS/2 Mouse)
- IRQ13 (Coprocessor)
- IRQ14 (Hard Disk)
- IRQ15 (Reserved)

The default values of "IRQ9 (IRQ2 Redir)", "IRQ10 (Reserved) " and "IRQ11 (Reserved)" are ***OFF*** *now. In the following version (V1.2), these values will be changed to* ***ON****.*

PNP/PCI CONFIGURATION Setup

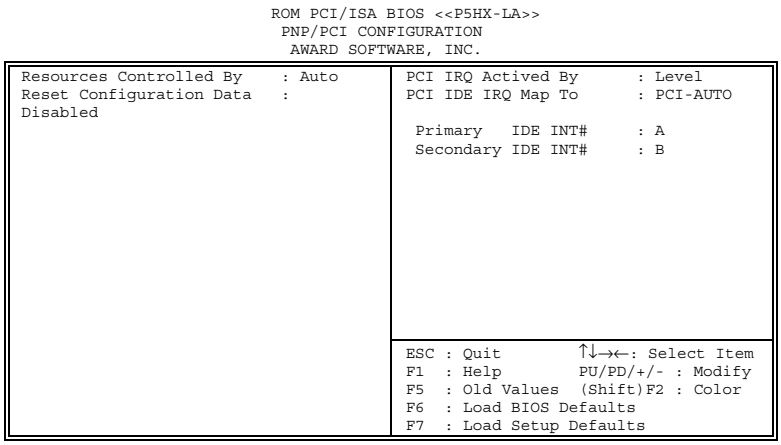


Figure 4 -6. PNP/PCI CONFIGURATION SETUP Screen

Resources Controlled By - Allows users to use what kind IRQs assignment. The available options are:

- Auto (default)
- Manual

The default of " ***Resources Controlled By"*** *is Auto. If users set Manual option for the setting,"* ***IRQ-3 / IRQ-4 / IRQ-5 / IRQ-7 / IRQ-9 / IRQ-10 / IRQ-11 / IRQ-12 / IRQ-14 / IRQ-15 / DMA-0 / DMA-1 / DMA-3 / DMA-5 / DMA-6 / DMA-7 assigned to****" options below will be shown on the screen.*

Reset Configuration Data - Clears the data in ESCD area. (Extended System Configuration). The available options are:

- Enabled (default)
- Disabled

IRQ-3 / IRQ-4 / IRQ-5 / IRQ-7 / IRQ-9 / IRQ-10 / IRQ-11 / IRQ-12 / IRQ-14 / IRQ-15 / DMA-0 / DMA-1 / DMA-3 / DMA-5 / DMA-6 / DMA-7 assigned to - Users can select resources controlled by "**manual"** method to fix legacy ISA card IRQ & DMA in Plug & Play problem . Legacy card has the highest priority to use someone IRQ# & DMA# which one assigned by manual . The available options are:

- Legacy ISA (default of IRQ-3 / IRQ-4 / IRQ-7 / IRQ-14 / IRQ-15 assigned to)
- PCI/ISA PnP (default of IRQ-5 / IRQ-9 / IRQ-10 / IRQ-11 / IRQ-12 / DMA-0 / DMA-1 / DMA-3 / DMA-5 / DMA-6 / DMA-7 assigned to)

PCI IRQ Actived By - Programs the PCI IRQ to single edge or logic level. Level/Edge sensitivity is programmed per controller. Every IRQ input for a given bank is either "***EDGE***" or "***LEVEL***" (default) triggered.

PCI IDE IRQ Map To - Defines the IDE IRQ Routing either from the PCI Bus or the ISA Bus. The available options are:

- PCI-AUTO (default)
- ISA
- PCI-SLOT 1
- PCI-SLOT 2
- PCI-SLOT 3
- PCI-SLOT 4

If user sets this option to "ISA", both the "Primary IDE INT#" and "Secondary IDE INT#" options below will not be shown on the screen.

Primary/Secondary IDE INT# - Defines the primary/secondary IDE INT# of the PCI IDE card. The available options are:

- A (default of Primary IDE INT#)
- B (default of Secondary IDE INT#)
- C
- D

This option may not be able to configure all the values within the SETUP program according to the installed equipments (i.e., floppy drives A: & B:, hard disk drives C: & D:).

Load BIOS Defaults

In the event of a loss in memory on the configuration SETUP, the user can restore the information on the BIOS by loading its default values. Loading the BIOS defaults provides safety booting of the system.

Load Setup Defaults

SETUP defaults are considered default values with which the system will be enabled to perform better. This is due to the enabling of some options within the SETUP program. However, if problems are encountered after loading the SETUP defaults, reboot the system and load the BIOS defaults instead.

INTEGRATED PERIPHERALS

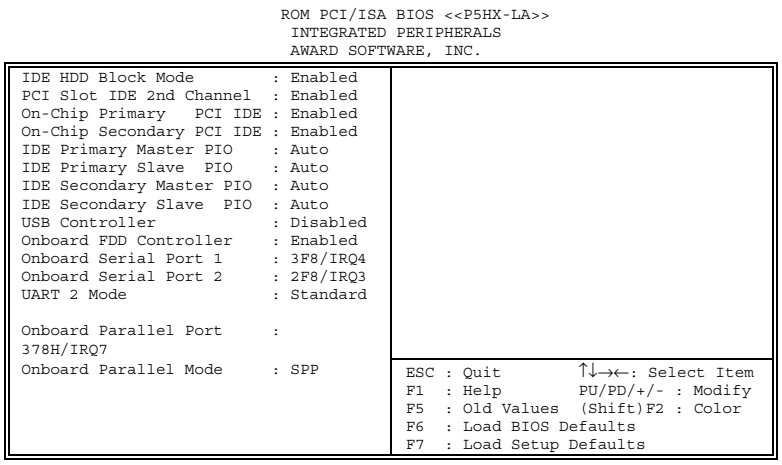


Figure 4 -7. PNP CONFIGURATION SETUP Screen

IDE HDD Block Mode - Determines the block transfer mode will be used or not . The available options are:

- Enabled (default)
- Disabled

PCI Slot IDE 2nd Channel - ***Enables*** or ***Disables*** the second IDE channel of PCI slot if users use the PCI IDE card on board. The available options are:

- Enabled (default)
- Disabled

On-Chip Primary/Secondary PCI IDE - Enables or Disables the primary/ secondary PCI IDE of Intel IDE controller. Selecting "***Disabled***" can release IRQ14.

- Enabled (default)
- Disabled

IDE Primary/Secondary Master/ Slave PIO - Sets the advanced hard disk PIO transfer mode which effects your hard disk transfer rate. The program will auto detect the mode of this option when users select " ***Auto***". Otherwise, you must set this option by yourself. The available options are:

- Auto (default)
- Mode 0
- Mode 1
- Mode 2
- Mode 3
- Mode 4

USB Controller - Enables or Disables the USB function of Intel on-board chip. The available options are :

- Disabled (default)
- Enabled

Onboard FDD Controller - Enables or Disables the FDD controller or on-board I/O chip. The available options are:

- Enabled (default)
- Disabled

Onboard Serial Port 1/2 - Sets the I/O address for serial port 1/2.

- 3F8/IRQ4 (default of Onboard serial Port 1)
- 2F8/IRQ3(default of Onboard serial Port 2)
- 3E8/IRQ4
- 2E8/IRQ3
- Disabled

UART 2 Mode - Determines which type IR module to be used . The available options are:

- Standard (default)
- ASKIR
- HPSIR

*If users set this option to "Standard" (default), the **"IR Duplex Mode"** option below will not be shown on the screen.*

IR Duplex Mode - Allows users to control the infrared communication duplex mode. The available options are:

- Half (default)
- Full

Onboard Parallel Port - Sets the I/O address for the parallel port. The available options are:

- 378H/IRQ7 (default)
- Disabled

*If users set this option to "Disabled", the **"Onboard Parallel Mode"** option below will not be shown on the screen.*

Onboard Parallel Mode - Selects the working mode of parallel port. The available options are:

- SPP (default)
- ECP/EPP
- EPP/SPP
- ECP

1. *If users set this option to "SPP", the **"ECP Mode Use DMA" and "Parallel Port EPP Type"** options below will not be shown on the screen.*

2. *If users set this option to "EPP/SPP", the "**ECP Mode Use DMA**" option below will not be shown on the screen.*

ECP Mode Use DMA - Selects the DMA channel of ECP Mode to transfer your data. The available options are:

- 3 (default)
- 1

Parallel Port EPP Type - Determines what version of EPP protocal to be supported . The available options are:

- EPP1.7 (default)
- EPP1.9

SUPERVISOR PASSWORD

The SUPERVISOR PASSWORD utility allows you to set, change, and disable the password which is stored in the BIOS. To change the password setting, press <Enter> on the SUPERVISOR PASSWORD option of the main menu and then type the new password.

Configure the Security Option within the BIOS Features Setup corresponding to the setting in this utility. SUPERVISOR PASSWORD access right hither than USER PASSWORD .

The password can be at most 8 characters long. The program will require you to confirm the new password before it exits and will enable the utility. To disable the SUPERVISOR PASSWORD, press the <F1> when the program asks you to enter the new password.

USER PASSWORD

USER PASSWORD only can be used when the system is booting . Users only can enter SETUP screen to change the USER PASSWORD.

The password can be at most 8 characters long. The program will require you to confirm the new password before it exits and enables the utility. To disable the USER PASSWORD, press the <F1> as the program asks you to enter the new password.

IDE HDD Auto Detection

The IDE HDD Auto Detection provides auto configuration of the hard drive installed in the system. It supports LBA, Large, and Normal modes. If the system's hard disk drive has a capacity of over 528MB and does not supports LBA functions, you may select either the LBA mode or the Large mode. On the other hand, if the hard disk drive's capacity is over 528MB but does support LBA functions, you may select the Large mode in order to use the area over 528MB.

a. *The LBA and Large modes will only appear on the screen when the installed hard disk drive is specified to support the LBA mode.*

b. *In the case when a hard disk drive's cylinder specification exceeds 1024, and does not support the LBA functions, only the Large mode will be displayed on the screen.*

c. *With a hard disk drive supporting cylinders below 1024, only the Normal mode will appear on the screen. The Normal mode will also be shown on the screen under conditions a & b above.*

d. *Hard disk drives with less than 528MB total capacity must be set to Normal mode when combined with either old BIOS versions or the Award BIOS.*

LBA and Large modes are new specifications which may not be fully supported by all operating systems. An example of which is the current version of UNIX System (R3.2.4) which is still unable to support the LBA function. Therefore, determine the specifications of your hard disk drive and operating system before selecting the drive's mode.

After pressing the <Enter> key on this item of the main menu, the display screen will show the following screen.

```
                ROM PCI/ISA BIOS <<P5HX-LA>>
                  CMOS SETUP UTILITY
                  AWARD SOFTWARE, INC.

HARD DISKS          TYPE   SIZE   CYLS HEAD PRECOMP LANDZ SECTOR  MODE
-------------------------------------------------------------------------
Primary Master  :

                Select Primary Master   Option (N=Skip) : N
  OPTIONS       SIZE   CYLS HEAD PRECOMP LANDZ SECTOR  MODE
     1             0      0    0       0      0      0  NORMAL

  Note: Some OSes (like SCO-UNIX) must use "NORMAL" for installation
                          Esc : Skip
```

Figure 4 -8. IDE HDD Auto Detection Screen

Once the program detects the type of hard disk installed, it will display the relative information such as the type, cylinders, heads, write pre-compensation, landing zone, number of sectors per track, size and mode. A message asking you to accept the IDE HDD detected will also be flashed on the screen.

Quitting SETUP

After making all modifications in the SETUP program, go to the option "Save & Exit SETUP" then press the <Enter> key.

Press <Y> to confirm the changes made, and the <N> or the <ESC> keys if further modifications are still necessary before exiting the SETUP program. Once the <Y> key is pressed, the system will automatically exit the program and reboot. However, if you want to cancel all changes made under the SETUP program, go to the option "Exit Without Saving".

Press <Y> and the system will exit the SETUP program then reboot without saving any of the changes made.

You may also use the <F10> key to save the new settings.