

**PT-5VP**  
**SYSTEM BOARD**  
**( VER. 1.x )**

**OPERATION MANUAL**

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## **TRADEMARKS**

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## **NOTE**

The “LOAD SETUP DEFAULTS” function loads the default settings directly from BIOS default table, these default settings are the best-case values that should optimize system performance and increase system stability . This function will be necessary when you accept this system board, or the system CMOS data is corrupted. By pressing “Enter ” key. the SETUP default values will be loaded. (please refer to the Chapter 5 AWARD BIOS SETUP procedures in this manual.)

## **NOTICE**

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

## **1. INTRODUCTION**

### **1.1 SYSTEM OVERVIEW**

The □PT-5VP□ Pentium PCI Local Bus system board is designed based on AT form-factor on the VIA VT82C580VP PCIset system chipsets and SMC I/O chipset, which built-in two channels PIO and Bus Master Enhanced PCI IDE port, one Floppy Disk control port, two high speed Serial ports (UARTs) and one multimode Parallel port and also supports IR and USB ports. It is designed to fit a high performance, Pentium 75 MHz to 233 MHz based solution for high-end and true GREEN-PC computer systems.

This system board supports the Peripheral Component Interconnect (PCI) Local Bus standard (PCI Specification Rev. 2.1 compliant). It not only breaks through the I/O bottlenecks of the traditional ISA main board, but also provides the performance needs for networking and multi-user environments.

## 2. SPECIFICATIONS

**Chipset**

VIA VT82C585VPX, VT82C586A, VT82C587VP and SMC669.

**CPU**

Intel : Pentium processor and OverDrive processor (P54C / P54CS / P54CTB / P55C) 75 / 90 / 100 / 120 / 133 / 150 / 166 / 200 / 233 MHz.

Cyrix : 6x86 / 6x86L-P120+ / P133+ / P150+ / P166+ / P200+.  
6x86MX-PR166 / PR200 / PR233 / PR266.

AMD : K5-PR75 / PR90 / PR100 / PR120 / PR133 / PR150 / PR166.  
K6 / PR2-166 / PR2-200 / PR2-233

**CPU VCC**

(1).CPU I/O voltage : "+3.3V DC" and "+3.5V DC".

(2).CPU CORE voltage : "+2.0V,+2.5V,+2.8V,+2.9V,+3.2V,+3.3V,+3.5V DC".

**System Clock**

50 / 55 / 60 / 66.6 / 75 MHz adjustable.

**Memory**

DRAM : Three banks, each bank could be single or double sided, 4MB up to 512MB. Supports fast page mode (FPM) , Extended Data Out (EDO) and SDRAM memory (Using 72-pin SIMM module x 4, and 168-pin DIMM module x 2). DIMMs' operating voltage supports +3.3V DC.

SRAM : 256KB or 512KB pipelined burst SRAM on board.

**BIOS**

AWARD System BIOS. 128KBx8 Flash ROM (for Plug & Play BIOS).

**Expansion Slots**

PCI Slots : 32-bit x 4 (All Master / Slave, PCI 2.1 Compliant).

ISA Slots : 16-bit x 3 (Non PCI / ISA slot shared).

**IDE Ports**

Two channel PIO and “Ultra DMA/33” Synchronous mode PCI IDE ports, maximum could be connected to 4 IDE Hard Disk and ATAPI CD-ROM device. PIO Mode 4 transfer rate up to 14 Mbytes/s transfer rates and supports “Ultra DMA/33” mode transfers up to 33MBytes/sec.

 **Super I/O Ports**

1. Two high speed NS16C550 compatible serial ports (UARTs).
2. One SPP/EPP/ECP mode Bi-directional parallel port.
3. One Floppy Disk Control port.

 **IR Port**

One HPSIR and ASKIR compatible Infrared port.

 **Mouse and Keyboard**

Supports PS/2 Mouse connector, PS/2 Keyboard connector (optional) and AT Keyboard connector.

 **USB Ports**

Two Universal Serial Bus (USB) ports.

 **Software compatibility**

MS-DOS, WindowsNT, OS2, XENIX, UNIX, NOVELL, CAD/ CAM, compatibility Windows, Windows 95....etc.

 **DIMENSION**

Width & Length : 220 mm x 230 mm.

Height : 3/4 inches with components mounted.

PCB Thickness : 4-layers, 0.05 inches normal.

Weight : 20 ounces.

 **ENVIRONMENT**

Operating Temperature : 10□ to 40□. (50□ to 104□)

Require Airflow : 50 linear feet per minute across CPU.

Storage Temperature : -40□ to 70□. (-40□ to 158□)

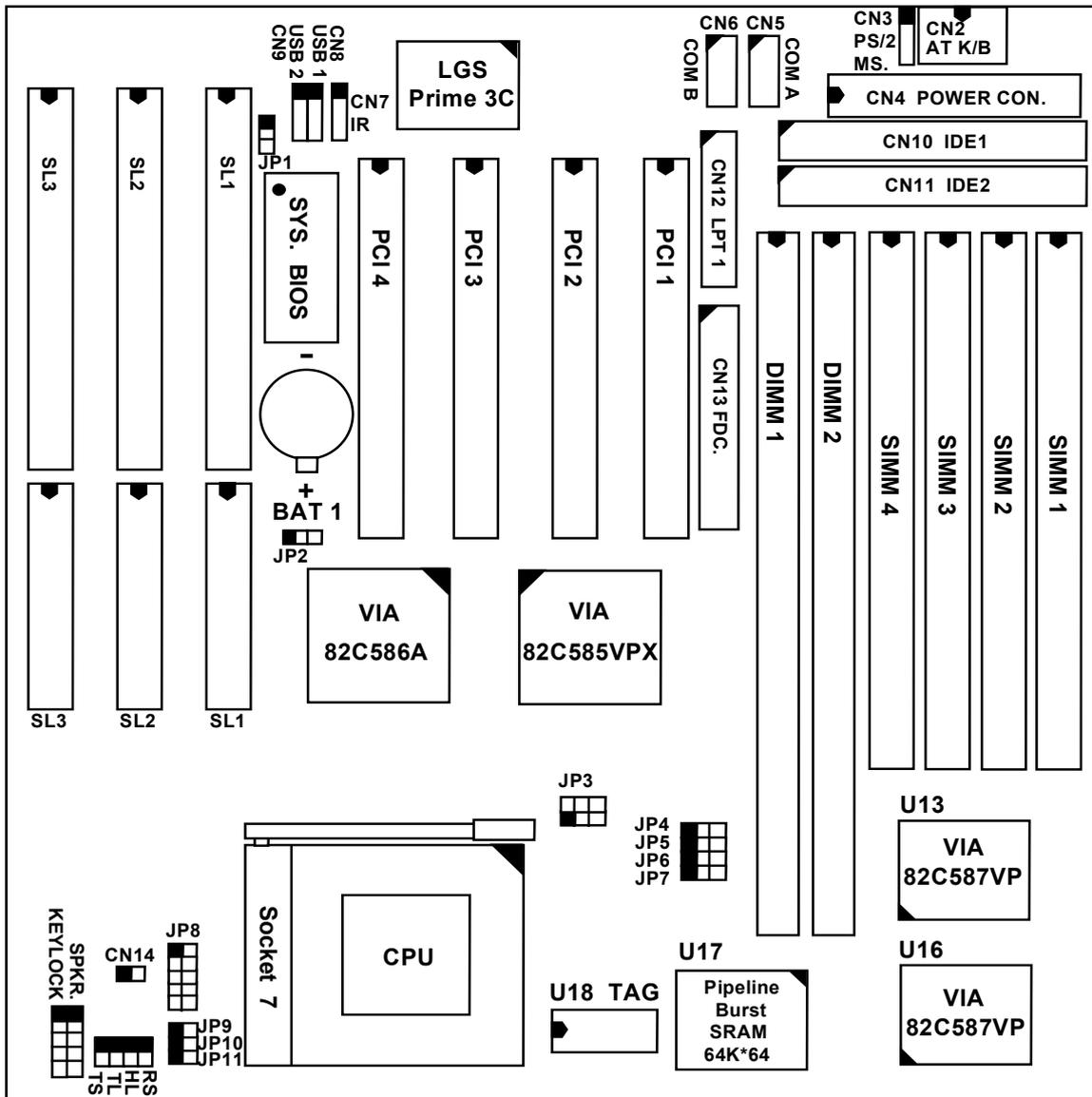
Humidity : 0 to 90□ noncondensing.

Altitude : 0 to 10,000 feet.

### 3. SYSTEM BOARD LAYOUT

#### 3.1 PT-5VP VER. 1.x

Explanation : All connectors, jumpers and components which marks by a black point on the corner means the pin-1 side of the connector, jumper and component.



## 4. HARDWARE SETUP

### 4.1 UNPACKING

The system board package should contain the following parts :

- The PT-5VP system board.
- OPERATION MANUAL.
- Cable set for IDE and I/O device.

### 4.2 HARDWARE CONFIGURATION

Before the system board is ready to operate, the hardware must be configured to allow for various functions within the system. To configure the PT-5VP system board is a simple task, only a few jumpers, connectors, cables and sockets needs to be selected and installed. (For the detailed locations of each component please refer to the "system board layout figure" which appears in page 3-1.)

#### 4.2.1 DRAM INSTALLATION

The PT-5VP system board will support three banks main memory (bank0 - 2) on board, (using four 72-Pin SIMM socket, SIMM 1 - 4 and two 168-pin DIMM socket, DIMM 1 - 2) each bank could be single-sided or double-sided, 4MB up to 512 MB of local memory can be attained. Supports standard fast page mode (FPM), Extended Data Out (EDO) and synchronous (SDRAM) memory.

The usable DRAM modules :

- |                          |                           |                          |
|--------------------------|---------------------------|--------------------------|
| (1) FPM and EDO memory : | 512Kbx32 ( <b>2MB</b> ),  | 1Mbx32 ( <b>4MB</b> ),   |
|                          | 2Mbx32 ( <b>8MB</b> ),    | 4Mbx32 ( <b>16MB</b> ),  |
|                          | 8Mbx32 ( <b>32MB</b> ),   | 16Mbx32 ( <b>64MB</b> ). |
| (2) SDRAM memory :       | 1Mbx64 ( <b>8MB</b> ),    | 2Mbx64 ( <b>16MB</b> ),  |
|                          | 4Mbx64 ( <b>32MB</b> ),   | 8Mbx64 ( <b>64MB</b> ),  |
|                          | 16Mbx64 ( <b>128MB</b> ). |                          |
|                          |                           |                          |

The speed of FPM DRAMs must be used 70ns or faster than 70ns, the speed of EDO DRAMs and SDRAMs must be used 60ns or faster than 60ns.

SIMMs' and DIMM's operating voltage :

(1) SIMM1 - SIMM4 : + 5V DC

(2) DIMM1 - DIMM2 : + 3.3V DC.

DRAM Bank can be populated in any order (bank 0 does not have to be populated before bank 2). Within any given bank, the SIMMs must be the same size. Among the three banks, SIMM (DIMM) densities can be mixed in any order. EDO, FPM and SDRAMs can be mixed between SIMMs (DIMM), a given SIMM (DIMM) must contain only one type of DRAM. When DRAM types are mixed each SIMM (DIMM) runs optimized for that particular type of DRAM.

There is no jumper needed for DRAM configuration, DRAMs' type and size will be detected by system BIOS automatically.

The following table provides the possible combinations for DRAM memory installation.

Bank 0		Bank 1		Bank 2	
SIMM3 - 4	DIMM1		DIMM2	SIMM1 - 2	
Single-sided	Empty		Empty	Single-sided	
Double-sided	Empty		Empty	Double-sided	
Empty	Single-sided		Single-sided	Empty	
Empty	Double-sided		Double-sided	Empty	

**Note** : *We strongly recommend, Don't install 5V SIMM module and 3.3V DIMM modules at the same time.*

#### 4.2.2 L2 CACHE MEMORY INSTALLATION

The PT-5VP system board will support 256KB or 512KB cache memory on board, using synchronous pipeline-burst SRAMs. Both Write Back and Write Through cache update policy are supported.

The following table lists the detailed combination about cache memory installation.

Cache Size	Data SRAMs(U17)	Tag SRAMs(U18)
256 KB	32KB x 64	8KB or 16KB or 32KB x 8
512 KB	64KB x 64	16KB or 32KB x 8

### 4.2.3 CONNECTORS

A connector is two or more pins that are used make connections to the system standard accessories (such as power, mouse, printer,...etc.) The following is a list of connectors on board, as well as descriptions of each individual connector.

(A) BAT1 Non-Rechargeable battery (Using 3 Volts Lithium battery : CR2032)

<u>Pin #</u>	<u>Assignment</u>
<input type="checkbox"/>	Battery Positive
<input type="checkbox"/>	Ground

(B) CN1 PS/2 Keyboard connector (option)

<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
1	Keyboard Data	3	Ground	5	Keyboard Clock
2	No Connection	4	+5V DC	6	No Connection

(C) CN2 AT Keyboard connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
1	Keyboard Clock	3	No Connection	5	+5V DC
2	Keyboard Data	4	Ground		

(D) CN3 PS/2 Mouse connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
1	Mouse Data	3	Ground	5	Mouse Clock
2	No Connection	4	+ 5VSB DC		

(E) CN4 Power connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
1	Power Good	5	Ground	9	-5V DC
2	+5V DC	6	Ground	10	+5V DC
3	+12V DC	7	Ground	11	+5V DC
4	-12V DC	8	Ground	12	+5V DC

(F) CN5 COM A (Serial Port 1) connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
1	DCD (Data Carrier Detect)	6	DSR (Data Set Ready)
2	RD (Received Data)	7	RTS (Request To Send)
3	TD (Transmit Data)	8	CTS (Clear To Send)
4	DTR (Data Terminal Ready)	9	RI (Ring Indicator)
5	Ground		

(G) CN6 COM B (Serial Port 2) connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
1	DCD (Data Carrier Detect)	6	DSR (Data Set Ready)
2	RD (Received Data)	7	RTS (Request To Send)
3	TD (Transmit Data)	8	CTS (Clear To Send)
4	DTR (Data Terminal Ready)	9	RI (Ring Indicator)
5	Ground		

(H) CN7 IR (Infrared Rays) transmission connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
1	+5V DC	3	IR Receive	5	IR Transmit
2	No Connection	4	Ground		

(I) CN8 USB 1 (Universal Serial Bus port 1) connector

<u>Pin #</u>	<u>Assignment</u>
1	+ 5V DC
2	DATA □
3	DATA □
4	Ground
5	Ground

(J) CN9 USB 2 (Universal Serial Bus port 2) connector

1	<u>Pin #</u>	<u>Assignment</u>
<input type="checkbox"/>	1	+ 5V DC
<input type="checkbox"/>	2	DATA <input type="checkbox"/>
<input type="checkbox"/>	3	DATA <input type="checkbox"/>
<input type="checkbox"/>	4	Ground
<input type="checkbox"/>	5	Ground

(K) CN10 IDE 1 connector (Primary IDE Port, I/O address is 1F0H, using IRQ14)

(L) CN11 IDE 2 connector (Secondary IDE Port, I/O address is 170H, using IRQ15)

(M) CN12 Parallel Port connector

1	14	<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
<input type="checkbox"/>	<input type="checkbox"/>	1	STROBE <input type="checkbox"/>	14	AUTO FEED <input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	2	Data Bit 0	15	ERROR <input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	3	Data Bit 1	16	INIT <input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	4	Data Bit 2	17	SLCT IN <input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	5	Data Bit 3	18	Ground
<input type="checkbox"/>	<input type="checkbox"/>	6	Data Bit 4	19	Ground
<input type="checkbox"/>	<input type="checkbox"/>	7	Data Bit 5	20	Ground
<input type="checkbox"/>	<input type="checkbox"/>	8	Data Bit 6	21	Ground
<input type="checkbox"/>	<input type="checkbox"/>	9	Data Bit 7	22	Ground
<input type="checkbox"/>	<input type="checkbox"/>	10	ACK <input type="checkbox"/>	23	Ground
<input type="checkbox"/>	<input type="checkbox"/>	11	BUSY	24	Ground
<input type="checkbox"/>	<input type="checkbox"/>	12	PE	25	Ground
<input type="checkbox"/>		13	SLCT		

(N) CN13 Floppy Disk Control Port connector (Using IRQ6, DMA channel 2)

(O) CN14 Cooling Fan Power Connector

1	<u>Pin #</u>	<u>Assignment</u>
<input type="checkbox"/>	1	+ 12V DC



2 Ground

(P) RS Reset Button connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin1&amp;2</u>	<u>Function</u>
1	Ground	Open	No action
2	Reset Control	Short	System Reset

(Q) HL IDE HDD LED connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
1	Pullup (+5V DC)	2	Signal Pin

(R) TL Turbo LED connector

<u>Pin #</u>	<u>Assignment</u>
1	Pullup (+5V DC)
2	Signal Pin

(S) TS Turbo / Suspend Switch connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin1&amp;2</u>	<u>Function</u>
1	Turbo Control	Open	Turbo
2	Ground	Short	Suspend

(T) SPEAKER Speaker connector

1	<u>Pin #</u>	<u>Assignment</u>
<input type="checkbox"/>	1	+ 5V DC
<input type="checkbox"/>	2	No Connection
<input type="checkbox"/>	3	No Connection
<input type="checkbox"/>	4	Speaker Data Signal
<input type="checkbox"/>	5	No Connection

(U) KEY LOCK Front Panel Power LED &amp; Key-Lock connector

1	<u>Pin #</u>	<u>Assignment</u>
<input type="checkbox"/>	1	Pullup (+ 5V DC for Power LED)
<input type="checkbox"/>	2	No Connection
<input type="checkbox"/>	3	Ground
<input type="checkbox"/>	4	Keyboard Lock
<input type="checkbox"/>	5	Ground

5

4.2.4 JUMPERS

A jumper is two, three or more pins which may or may not be covered by a plastic connector plug (mini-jumper). A jumper is used to select different system options. *Please make sure all jumpers at correct position before this system board used.*

(A) JP4, JP5, JP6, JP7, JP9, JP10, JP11 CPU type selection

(1) 50Mhz x 1.5

	1 2 3		Intel 80502-75
1			JP4
1			JP5
1			JP6
1			JP7
			AMD K5-PR75
1			JP9
1			JP10
1			JP11

(2) 60Mhz x 1.5

	1 2 3		Intel 80502-90
1			JP4
1			JP5
1			JP6
1			JP7
			AMD K5-PR90 K5-PR120
1			JP9
1			JP10
1			JP11

(3) 66Mhz x 1.5 / 66Mhz x 3.5

	1 2 3		Intel 80502-100 80503-233
1			JP4
1			JP5
1			JP6
1			JP7
			AMD K5-PR100 K5-PR133 K6-PR233
1			JP9
1			JP10
1			JP11
			Cyrix 6x86 MX - PR266

(4) 50Mhz x 2

	1 2 3		
1			JP4
1			JP5
1			JP6
1			JP7
1			JP9
1			JP10
1			JP11
			Cyrix 6x86 / 6x86L - P120+

(5) 55Mhz x 2

1		JP9	Cyrix 6x86 / 6x86L - P133+
1		JP10	
1		JP11	

(6) 60Mhz x 2

			Intel 80502-120
1		JP9	Cyrix 6x86 / 6x86L - P150+
1		JP10	
1		JP11	

(7) 66Mhz x 2

			Intel 80502-133
1		JP9	Cyrix 6x86 / 6x86L - P166+
1		JP10	
1		JP11	

(8) 75Mhz x 2

1		JP9	Cyrix 6x86 / 6x86L - P200+
1		JP10	
1		JP11	

(9) 60Mhz x 2.5

			Intel 80502-150
			AMD K5-PR150
1		JP9	Cyrix 6x86MX - PR166
1		JP10	
1		JP11	

(10) 66Mhz x 2.5

			Intel 80502-166 80503-166
			AMD K5-PR166 K6-PR166
1		JP9	Cyrix 6x86MX - PR200
1		JP10	
1		JP11	

(11) 66Mhz x 3

	1 2 3	
1		JP4
1		JP5
1		JP6
1		JP7
1		JP9
1		JP10
1		JP11
		Intel 80502-200 80503-200  AMD K6-PR200   Cyrrix 6x86MX - PR233

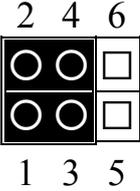
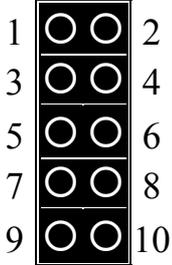
(12) 66Mhz x 4

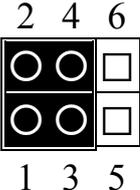
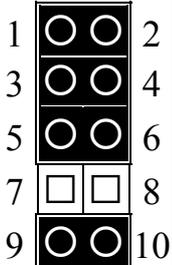
	1 2 3	
1		JP4
1		JP5
1		JP6
1		JP7
1		JP9
1		JP10
1		JP11

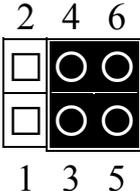
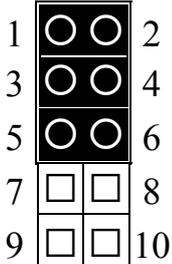
(13) 66Mhz x 4.5

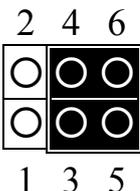
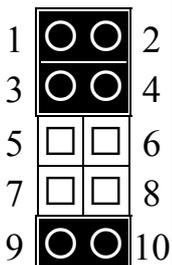
	1 2 3	
1		JP4
1		JP5
1		JP6
1		JP7
1		JP9
1		JP10
1		JP11

(B) JP3, JP8 CPU voltage selection

JP3	JP8	CORE Voltage	I/O Voltage	CPU TYPE
		3.5V	3.5V	<b>AMD K5</b> <b>Cyrix 6x86</b>

JP3	JP8	CORE Voltage	I/O Voltage	CPU TYPE
		3.3V	3.3V	<b>Intel P54C</b>

JP3	JP8	CORE Voltage	I/O Voltage	CPU TYPE
		3.2V	3.3V	<b>AMD K6-233</b>

JP3	JP8	CORE Voltage	I/O Voltage	CPU TYPE
		2.9V	3.3V	<b>AMD K6-166</b> <b>AMD K6-200</b> <b>Cyrix 6x86MX</b>

JP3	JP8	CORE Voltage	I/O Voltage	CPU TYPE
		2.8V	3.3V	Intel P55C Cyrix 6x86L

JP3	JP8	CORE Voltage	I/O Voltage	CPU TYPE
		2.5V	3.3V	

JP3	JP8	CORE Voltage	I/O Voltage	CPU TYPE
		2.0V	3.3V	

Remark :

- P54C : pentium CPU (80502)
- P55C : pentium MMX CPU (80503)

(C) JP1 ROM BIOS selection (option)

<u>Pin #</u>	<u>Function</u>	<u>Pin #</u>	<u>Function</u>
1-2	for +5V FLASH ROM	2-3	for +12V FLASH ROM

(D) JP2 Clear CMOS button

<u>Pin #</u>	<u>Function</u>	<u>Pin #</u>	<u>Function</u>
1-2	Normal operation	2-3	Clear CMOS

***(Note : Don't forget to turn this jumper return 1-2 within 3 to 5 seconds)***

## 5. AWARD BIOS SETUP

### 5.1 GETTING STARTED

When the system is first powered on or reset, the BIOS will enter the Power-On Self Test routines ( POST : Display a copyright message on the screen followed by a diagnostics and initialization procedure.) (If an EGA or VGA card is installed, the copyright message of the video card maybe displayed on the screen first.) The BIOS will indicate any error or malfunction by a series of beeps or display the error message on screen.

Normally, the simulate figure 5-1 will display on the screen when the system is powered on.



Fig. 5-1 Initial Power-On screen.

After the POST routines are completed, the following message appears :

" Press **DEL** to enter SETUP "

To execute the Award BIOS Setup program, press **DEL** key. The simulate screen in figure 5-2 MAIN MENU will be displayed at this time.

### 5.2 MAIN MENU

ROM PCI/ISA BIOS (2A5LDXXX)  
 CMOS SETUP UTILITY  
 AWARD SOFTWARE, INC.

<b>STANDARD CMOS SETUP</b>	SUPERVISOR PASSWORD
BIOS FEATURES SETUP	USER PASSWORD
CHIPSET FEATURES SETUP	IDE HDD AUTO DETECTION
POWER MANAGEMENT SETUP	HDD LOW LEVEL FORMAT
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
INTEGRATED PERIPHERALS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time, Date, Hard Disk Type ...	

Fig. 5-2 CMOS SETUP MAIN MENU screen.

### 5.3 CONTROL KEYS

Listed below is an explanation of the keys displayed at the bottom of the screens accessed through the BIOS SETUP program :

- Arrow Keys** : Use the arrow keys to move the cursor to the desired item.
- Enter** : To Select the desired item.
- F1** : Display the help screen for the selected feature.
- (Shift)F2** : To change the screen color, total 16 colors.
- ESC** : Exit to the previous screen.

**PgUp(-)/PgDn(+)** : To modify the default value of the options for the highlighted feature.

**F5** : Retrieves the previous CMOS values from CMOS, only for the current option page setup menu.

**F7** : Loads the SETUP default values from BIOS default table, only for the current option page setup menu.

**F10** : Save all changes made to CMOS RAM, only for the MAIN MENU.

The following pages will show the simulate screens of CMOS SETUP, each figure contains the setup items and the default settings of them. Below each figure may or may not be contained a lists of function description for commonly used settings. For the other settings' function description you needed, please feel free to contact with your supplier.

## 5.4 STANDARD CMOS SETUP

ROM PCI / ISA BIOS (2A5LDXXX)  
STANDARD CMOS SETUP  
AWARD SOFTWARE, INC.

Date (mm : dd : yy) : Thu, <b>Jul</b> 24 1997									
Time (hh : mm : ss) : 11 : 33 : 55									
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE	
Primary Master	Auto	0	0	0	0	0	0	0	Auto
Primary Slave	None	0	0	0	0	0	0	0	-----
Secondary Master	Auto	0	0	0	0	0	0	0	Auto
Secondary Slave	None	0	0	0	0	0	0	0	-----
Drive A : 1.44M, 3.5 in.					Base Memory : 640 K Extended Memory : xxxxxx K Other Memory : xxxxxx K <hr style="width: 50%; margin: 0 auto;"/> Total Memory : xxxxxx K				
Drive B : None									
Video : EGA/VGA									
Halt On : All Errors									
ESC : Quit			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item			PU/PD/+/- : Modify			
F1 : Help			(Shift)F2 : Change Color						

Fig. 5-3 STANDARD CMOS SETUP screen.

### MODE :

For IDE hard disks, this BIOS provides three modes to support both normal size IDE hard disks and also disks size larger the 528MB:

NORMAL : For IDE hard disks size smaller then 528MB.

LBA : For IDE hard disks size larger then 528MB and up to 8.4GB (Giga Bytes)

that use Logic Block Addressing (LBA) mode.

Large : For IDE hard disks size larger then 528MB that do not use LBA mode. Large mode is a new specifition which may not be fully supported by all operation systems. Now it can only be used with the MS-DOS and is uncommon.

*Note: Some OSes (like SCO-UNIX) must use "NORMAL" for installation.*

## 5.5 BIOS FEATURES SETUP

ROM PCI / ISA BIOS (2A5LDXXX)

BIOS FEATURES SETUP

AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000-DFFFF Shadow	: Disabled
Boot Up NumLock Status	: On		
Boot Up System Speed	: High		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup		
IDE Second Channel Control	: Enabled		
PCI/VGA Palette Snoop	: Disabled	ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
OS Select For DRAM > 64MB	: Non-OS2	F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values (Shift)	F2 : Color
		F7 : Load Setup Defaults	

Fig. 5-4 BIOS FEATURES SETUP screen.

### Virus Warning :

This feature flashes on the screen. During and after the system boots up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and

an error message will appear, in the mean time, you can run anti-virus program to locate the problem. Default values is "Disabled"

**Enabled** : Activate automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.

**Disabled** : No warning message to appear when anything attempts to access the boot sector or hard disk partition table.

**CPU Internal Cache :**

This option enables CPU's internal (L1) cache memory. If you want to use the internal (L1) cache memory and external (L2) cache memory, this option must be enabled.

**External Cache :**

This option enables L2 (secondary) external cache memory. If none external cache memory on board you must set this option to "disabled", otherwise, you can select enabled or disabled.

## 5.6 CHIPSET FEATURES SETUP

ROM PCI / ISA BIOS (2A5LDXXX)  
 CHIPSET FEATURES SETUP  
 AWARD SOFTWARE, INC.

Auto Configuration	: Disabled	OnChip USB	: Disabled
DRAM Timing Control	: Normal		
SDRAM Cycle Length	: 3		
SDRAM Bank Interleave	: Disabled		
Sustained 3T Write	: Disabled		
2 Bank PBSRAM	: 3-1-1-1		
Read Pipeline	: Disabled		
Write Pipeline	: Enabled		
Cache Timing	: Fast		
Video BIOS Cacheable	: Disabled		
System BIOS Cacheable	: Disabled		
Memory Hole At 15Mb Addr.	: Disabled		
		ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values (Shift)	F2 : Color
		F7 : Load Setup Defaults	

Fig. 5-5 CHIPSET FEATURES SETUP screen.

**WARNING** : The CHIPSET FEATURES SETUP in this screen are provided so that technical professionals can modify the Chipset to suit their requirement. If you are not a technical engineer, do not use this program !

### Auto Configuration :

When "Enabled", this parameter automatically enters and locks some of the optimum values for the chipset and CPU. Otherwise, this parameter allows the values of these parameters could be changed.

### DRAM Timing :

When "Auto Configuration" is "Enabled", this parameter provides two suit of the optimum values for the chipset and CPU, depends on the DRAMs' speed, you can select "70 ns" or "60 ns", but the first value maybe caused your system more stable.

## 5.7 POWER MANAGEMENT SETUP

ROM PCI / ISA BIOS (2A5LDXXX)  
 POWER MANAGEMENT SETUP  
 AWARD SOFTWARE, INC.

Power Management	: <b>User Define</b>	IRQ5 (LPT 2)	: Primary
PM Control by APM	: Yes	IRQ6 (Floppy Disk)	: Primary
Video Off Option	: Suspend -> Off	IRQ7 (LPT 1)	: Primary
Video Off Method	: Blank Screen	IRQ8 (RTC Alarm)	: Disabled
Conserve Mode	: Disabled	IRQ9 (IRQ2 Redir)	: Secondary
MODEM Use IRQ	: 3	IRQ10 (Reserved)	: Secondary
		IRQ11 (Reserved)	: Secondary
<b>** PM Timers **</b>		IRQ12 (PS/2 Mouse)	: Primary
HDD Power Down	: Disable	IRQ13 (Coprocessor)	: Primary
Doze Mode	: Disable	IRQ14 (Hard Disk)	: Primary
Suspend Mode	: Disable	IRQ15 (Reserved)	: Disabled
<b>** PM Events **</b>			
VGA	: OFF	ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
LPT & COM	: LPT/COM	F1 : Help	PU/PD/+/- : Modify
HDD & FDD	: ON	F5 : Old Values (Shift)	F2 : Color
DMA/master	: OFF	F7 : Load Setup Defaults	
Primary INTR	: ON		
IRQ3 (COM 2)	: Primary		
IRQ4 (COM 1)	: Primary		

Fig. 5-6 POWER MANAGEMENT SETUP screen.

**WARNING** : The POWER MANAGEMENT SETUP in this screen are provided so that technical professionals can modify the Chipset to suit their requirement. If you are not a technical engineer, do not use this program !

### Power Management :

This setting controls the Power Management functions. "User Define" allows the values of all parameters could be modified. "Min Saving" and "Max Saving" fixed the values of four parameters, including "Doze Mode", "Suspend Mode" and "HDD Power Down". "Disable" disabled all Power Management functions. Default is "User Define".

## 5.8 PNP/PCI CONFIGURATION

ROM PCI / ISA BIOS (2A5LDXXX)  
 PNP/PCI CONFIGURATION  
 AWARD SOFTWARE, INC.

PNP OS Installed	: No	CPU to PCI Write Buffer	: Enabled
Resources Controlled By	: Manual	PCI Dynamic Bursting	: Enabled
Reset Configuration Data	: Disabled	PCI Master 0 WS Write	: Enabled
<i>IRQ-3 assigned to</i>	: <i>Legacy ISA</i>	PCI Peer Concurrency	: Disabled
<i>IRQ-4 assigned to</i>	: <i>Legacy ISA</i>	PCI Delay Transaction	: Disabled
<i>IRQ-5 assigned to</i>	: <i>PCI/ISA PnP</i>	PCI IRQ Activated By	: Edge
<i>IRQ-7 assigned to</i>	: <i>Legacy ISA</i>	PCI IDE IRQ Map To	: PCI-AUTO
<i>IRQ-9 assigned to</i>	: <i>PCI/ISA PnP</i>	Primary IDE INT#	: A
<i>IRQ-10 assigned to</i>	: <i>PCI/ISA PnP</i>	Secondary IDE INT#	: B
<i>IRQ-11 assigned to</i>	: <i>PCI/ISA PnP</i>		
<i>IRQ-12 assigned to</i>	: <i>Legacy ISA</i>		
<i>IRQ-14 assigned to</i>	: <i>Legacy ISA</i>		
<i>IRQ-15 assigned to</i>	: <i>Legacy ISA</i>		
<i>DMA-0 assigned to</i>	: <i>PCI/ISA PnP</i>		
<i>DMA-1 assigned to</i>	: <i>PCI/ISA PnP</i>	ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
<i>DMA-3 assigned to</i>	: <i>PCI/ISA PnP</i>	F1 : Help	PU/PD/+/- : Modify
<i>DMA-5 assigned to</i>	: <i>PCI/ISA PnP</i>	F5 : Old Values (Shift)	F2 : Color
<i>DMA-6 assigned to</i>	: <i>PCI/ISA PnP</i>	F7 : Load Setup Defaults	
<i>DMA-7 assigned to</i>	: <i>PCI/ISA PnP</i>		

Fig. 5-7 PNP/PCI CONFIGURATION setup screen.

**WARNING** : The PNP/PCI CONFIGURATION in this screen are provided so that technical professionals can modify the Resources Configuration to suit their requirement. If you are not a technical engineer, do not use this program !

### Resources Controlled by :

**Manual** : The system BIOS will not reference the ESCD for IRQ & DMA informations. Instead, it will reference the items in this setup menu for assigning IRQ & DMA, but for I/O and Memory space the system BIOS still refer to the ESCD.

**Atuo** : The system BIOS will reference the ESCD all legacy informations.

**Reset Configuration Data :**

Disabled : The system BIOS will do nothing.

Enabled : The system BIOS will clear/reset the ESCD during "POST". After clearing the ESCD, the system BIOS will then change this item's value back to "Disable", otherwise, the ESCD will become useless.

**IRQ# / DMA# assigned to :**

Legacy : The system BIOS will skip never assign this specified IRQ/DMA resource to ISA PCI or ISA PnP devices.

PCI/ISA: All items set to this value will make the specified IRQ/DMA have a chance to PnP be assigned to PCI or ISA PnP devices.

**PCI IDE IRQ Map To :** (for off-board PCI IDE cards)

PCI-AUTO : The BIOS will scan for PCI IDE devices and determine the location of the PCI IDE device, then assign IRQ 14 for primary IDE INT#, and assign IRQ 15 for secondary IDE INT#.

ISA : The BIOS will not assign any IRQs even if PCI IDE card is found. Because some IDE cards connect the IRQ 14 and 15 directly from ISA slot through a card. (This card is called Legacy Header)

PCI-SLOT1 : For the specified slot, the BIOS will assign IRQ 14 for primary IDE INT#, to and assign IRQ 15 for secondary IDE INT#.

PCI-SLOT4

Note : No matter the item "Resources Controlled By" is set to "Manual" or "Auto", the system BIOS assign IRQs to PCI devices from high to low. For ISA PnP devices, the sequence is from low to high. IRQ 12 is always the last one available for PCI/PnP due to IRQ 12 is always reserves for the PS/2 mouse.

**Explanation for proper nouns :****PnP device :**

Device that has Plug & Play compatibility. That means it can request for DMA, IRQ, I/O and Memory from the PnP BIOS and all these requests can be relocatable. In other words, these devices do not utilize any fixed resources.

All PCI devices and all ISA PnP devices are PnP devices.

**Legacy device :**

A legacy device is a device that all its resources are fixed by hardware (or selected by jumpers).

All ISA Non-PnP devices are legacy device.

**Extended System Configuration Data (ESCD) :**

A media between the user and the system BIOS for passing the legacy devices informations. These informations are stored in the onboard NVRAM (flash ROM).

## 5.9 INTEGRATED PERIPHERALS

ROM PCI / ISA BIOS (2A5LDXXX)  
 INTEGRATED PERIPHERALS  
 AWARD SOFTWARE, INC.

OnChip IDE First Channel : <b>Enabled</b>	Onboard Parallel Port : 378 / IRQ7
OnChip IDE Second Channel : Enabled	Onboard Parallel Mode : Normal
IDE Prefetch Mode : Enabled	
IDE HDD Block Mode : Enabled	
IDE Primary Master PIO : Auto	
IDE Primary Slave PIO : Auto	
IDE Secondary Master PIO : Auto	
IDE Secondary Slave PIO : Auto	
IDE Primary Master UDMA : Auto	
IDE Primary Slave UDMA : Auto	
IDE Secondary Master UDMA : Auto	
IDE Secondary Slave UDMA : Auto	
Onboard FDD Controller : Enabled	
Onboard Serial Port 1 : 3F8 / IRQ4	
Onboard Serial Port 2 : 2F8 / IRQ3	ESC : Quit <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
UART 2 Mode : Standard	F1 : Help PU/PD/+/- : Modify
	F5 : Old Values (Shift)F2 : Color
	F7 : Load Setup Defaults

Fig. 5-8 INTEGRATED PERIPHERALS setup screen.

**WARNING** : The INTEGRATED PERIPHERALS in this screen are provided so that technical professionals can modify the Chipset to suit their requirement. If you are not a technical engineer, do not use this program !

### UART 2 Mode :

This setting determines the IR port (CN 7) function mode. Supports both HPSIR and ASKIR.

### Onboard Parallel Mode :

This setting determines the onboard parallel port (LPT 1) transmission mode. Supports either Normal, EPP, ECP or ECP+EPP.

## 5.10 LOAD SETUP DEFAULTS

This option loads the SETUP default values from BIOS default table. By pressing "Enter" key, while "LOAD SETUP DEFAULTS" is highlighted, then presses "Y" and "Enter" key. the SETUP default values will be loaded. The SETUP default settings are the best-case values that should optimize system performance and increase system stability. If CMOS RAM is corrupted, the SETUP DEFAULTS settings are loaded automatically.

## 5.11 SUPERVISOR PASSWORD / USER PASSWORD

Type the Password and press "Enter", then repeat. Enters up to eight alphanumeric characters. By pressing "Enter" key twice, without any alphanumeric character enters, the PASSWORD will be disabled.

## 5.12 IDE HDD AUTO DETECTION

By pressing "Enter" key, while "IDE HDD AUTO DETECTION" is highlighted causes the system to attempt to detect the type of hard disk. If successful, then presses "Y" (or 1, 2, ...) and "Enter" key, it fills in the remaining fields on this menu and the correlated fields in the STANDARD CMOS SETUP menu.

## 5.13 HDD LOW LEVEL FORMAT

This option provides an utility program for IDE HDD Low Level Format. Performing the Hard Disk Format will destroy any data on the Hard Disk. Back up the Hard Disk(s) before actually performing of these routines.

*Note : These routines are not valid for a SCSI Disk Drive.*

## 5.14 SAVE & EXIT SETUP

This option saves all setup values to CMOS RAM & EXIT SETUP routine, by moving the cursor to "SAVE & EXIT SETUP" and pressing "Enter" key, then types "Y" and "Enter" key, the values will be saved, the setup program will be terminated and the system will be reboot.

## 5.15 EXIT WITHOUT SAVING

This option exits setup routine without saving any changed values to CMOS RAM, by moving the cursor to "EXIT WITHOUT SAVING" and pressing "Enter" key, then

types "Y" and "Enter" key, the setup program will be terminated and the system will be reboot.

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