

# USER'S MANUAL

PC-580

586/6x86  
Pentium Embedded Board  
With VGA / LAN

**PC-580-M5**

***PC-580 586 / 6x86 Pentium®  
EMBEDDED BOARD  
WITH VGA / LAN***

***OPERATION MANUAL***

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This operation manual is meant to assist both Embedded Computer manufacturers and end users in installing and setting up the system. The information contained in this document is subject to change without any prior notice.

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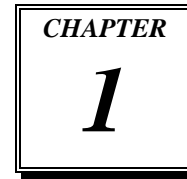
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# ***INTRODUCTION***



This chapter gives you the information for PC-580. It also outlines the System specification.

Section includes:

- About This Manual
- System Specifications
- Safety precautions

**Experienced users can skip to chapter 2 on page 2-1 for a Quick Start.**

## **1-1. ABOUT THIS MANUAL**

Thank you for purchasing our PC-580 586/6x86 Pentium Embedded Board with VGA/LAN, which is fully PC / AT compatible. The PC-580 provides faster processing speed, greater expandability and can handle more tasks than before. This manual is designed to assist you how to install and set up the system. It contains five chapters. The user can apply this manual for configuration according to the following chapters :

### ***Chapter 1 Introduction***

This chapter introduces you the background of this manual, and the specification for this system. Final in this chapter will indicate you how to avoid the damages for this board.

### ***Chapter 2 Hardware Configuration***

This chapter outlines the component's location and their function. In the end of this chapter, you will know how to set jumper and how to configure this card to meet your own needs.

### ***Chapter 3 Software Utilities***

Helpful information that informs you the proper installations of the VGA driver utilities , LAN Driver and Flash BIOS. It also describes the Watchdog-timer function.

### ***Chapter 4 Green PC Function***

This chapter explains the Green PC functions concisely.

### ***Chapter 5 Award BIOS Setup***

This chapter indicates you how to set up the BIOS configurations.

### ***Appendix A PCL-01 Adapter Card***

This Appendix gives you a detailed information about our PCL-01 Adapter card enclosed with our PC-580 Embedded Card.

### ***Appendix B Expansion Bus***

This Appendix introduces you the expansion bus for PC-104 and PCI BUS.



**Appendix C Technical Summary**

This section gives you the information about the Technical maps.

**Appendix D Trouble Shooting**

This section outlines the errors and offers you the methods to solve the problems.

## 1-2. SYSTEM SPECIFICATION

● **CPU :**

Intel, AMD, Cyrix, IDT  
54C/55C, K6/K6-2, M1/M2, C6  
321pin PGA socket.  
75/90/100/120/133/150/166/200/233/266/300/333/366MHz clock generator.  
1.8V/2.0V/2.2V/2.8V/2.9V/3.2V/3.3V/3.5V voltage regulator.

● **MEMORY :**

Up to 256MB, EDO/FPM DRAM  
Two 72-pin SIMM sockets on board.

● **CACHE :**

L1 Cache , size depended on CPU type  
L2 Cache 512K

● **REAL-TIME CLOCK / CALENDAR :**

CMOS data back up from BIOS set or BIOS default.  
Dallas DS 12887 Real Time Clock.

● **BIOS :**

Award, Flash BIOS for plug & play function.  
Easy update 128/256KB flash EEPROM.  
Support Green Function .  
Support S/IO Setup.

● **KEYBOARD CONNECTOR :**

5-pin PC/AT type connector.

● **MOUSE CONNECTOR :**

PS/2 mouse connector.

● **BUS SUPPORT :**

Internal ISA/PCI Bus, for VGA & IDE.

PC-104 BUS.

One PICMG/PCI optional slot.

● **DISPLAY :**

Support VGA for CRT & panel LCD simultaneously;

Support 32-bit PCI Local Bus;

VGA BIOS combines in 128/256KB flash ROM with system BIOS;

Support 2MB Video Memory;

Support 41-pin connector for flat panel LCD;

Panel support for color STN, TFT, EL modes;

● **WATCHDOG :**

I / O port 0443H to open watchdog;

I / O port 0441H to close watchdog;

Time-out timing select 0 / 8 / 16 / 24 / 32 / 40 / 48 / 56 / 64 / 72 / 80 / 88 / 96 / 104 / 112 / 120 sec +/- 25%;

● **IDE INTERFACE :**

Two IDE port, support UDMA/33, four Enhanced IDE devices.

● **LAN INTERFACE:**

Realtek RTL8139 PCI Fast Ethernet

10/100 Base-T PCI Bus

● **SSD SOCKET:**

32-pin SSD socket on board, supporting Disk-on-chip up to 144 MB

● **FLOPPY DISK DRIVE INTERFACE :**

Support up to two Floppy Disk Drives, 3.5" and 5.25" (360K / 720K / 1.2M / 1.44M / 2.88M).

● **UNIVERSAL SERIAL BUS :**

Universal Serial Bus Connector onboard, support up to two USB port.

● **SERIAL PORT :**

Four high speed 16550 Compatible UARTs with Send / Receive 16 Byte FIFOs; COM1/COM3/COM4: for RS-232; COM2: for RS-232/422/485  
MIDI Compatible.  
Programmable Baud Rate Generator.

● **PARALLEL PORT :**

SPP, ECP, EPP Function.  
Bi-direction parallel port.

● **GREEN FUNCTION :**

Software support by BIOS setup.  
Hardware support by switch control.

● **LED INDICATOR :**

System power.  
Hard Disk access.  
Turbo and green function mode.

● **PC-104 BUS EXPANSION & SPEED :**

ISA BUS 8MHz  
PC-104 8MHz  
PCI BUS 33MHz  
USB 12Mbit/sec

● **DMA CONTROLLER :**

82C37 x 2

● **DMA CHANNELS :**

7

● **INTERRUPT CONTROLLERS :**

82C59 x 2

● **INTERRUPT LEVELS :**

15

● **STORAGE TEMPERATURE :**

-40 to 80°C.

● **OPERATING TEMPERATURE :**

0 to 60°C.

● **SYSTEM POWER REQUIREMENT :**

DC Voltage: +5V, minimum +4.75V, maximum +5.25V.

DC Ampere: 5A.

DC Voltage: +12V, minimum +11.4V, maximum +12.6V.

DC Ampere: 500mA.

● **BOARD DIMENSION :**

146mm x 203mm (5.25 CD-ROM size)

● **BOARD WEIGHT :**

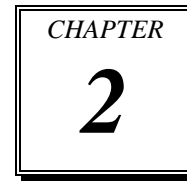
0.32 Kg.

**1-3. SAFETY PRECAUTIONS**

Follow the messages below to avoid your systems from damage:

1. Avoid your system from static electricity on all occasions.
2. Stay safe from the electric shock. Don't touch any components of this card when the card is on. Always disconnect power when the system is not in use.
3. Disconnect power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

# ***HARDWARE CONFIGURATION***



## ***\*\* QUICK START \*\****

Helpful information details you the jumper & connector settings, and component's location.

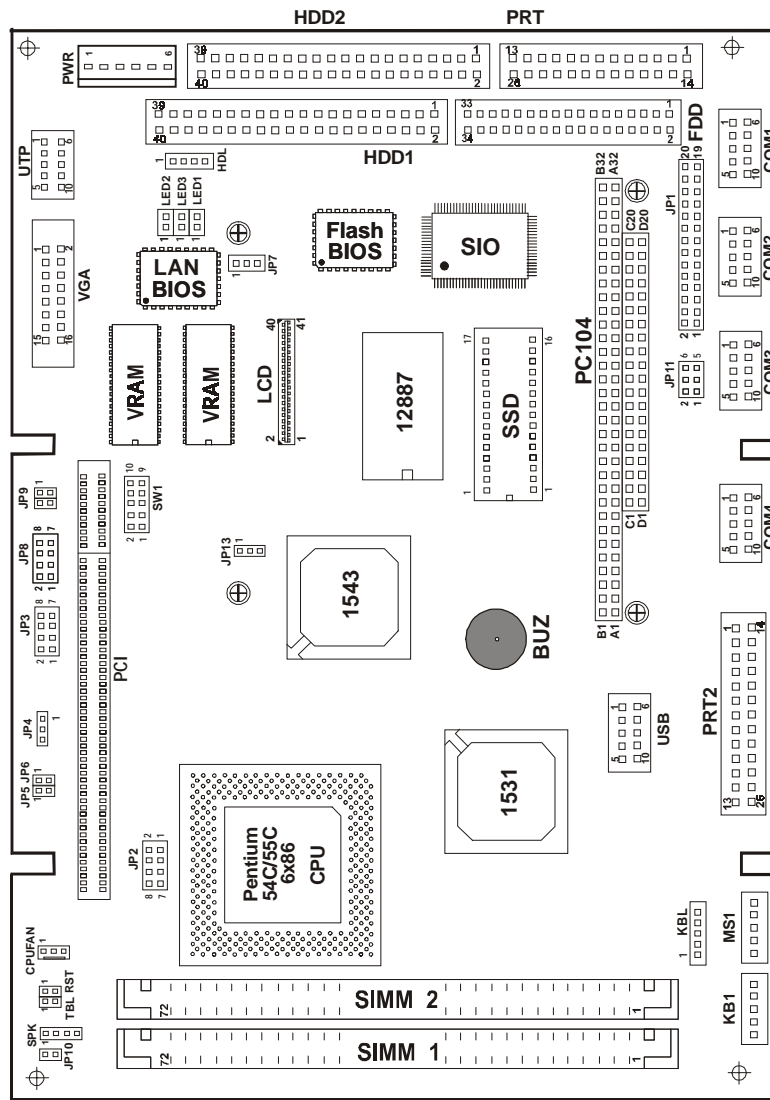
Section includes:

- Jumper & Connector Quick Reference Table
- Component's Location
- Configuration and Jumper settings
- Connector Pin Assignments

## 2-1 JUMPER & CONNECTOR QUICK REFERENCE TABLE

CPU Type & CPU Clock Selection .....	SW1, JP2, JP3
RS-232/422/485 (COM2) Selection .....	JP1
SSD Memory Mapping Selection .....	JP8, JP9
COM1 Connector .....	COM1
COM2 Connector .....	COM2
COM3 Connector .....	COM3
COM4 Connector .....	COM4
Keyboard Connector .....	KB1
PS/2 Mouse Connector .....	MS1
Reset Connector .....	RST
External Speaker Connector .....	SPK
Turbo LED .....	TBL
CPU FAN Power Connector .....	CPUFAN
Hard Disk Drive LED Connector .....	HDL
Power LED & Keylock Connector .....	KBL
VGA CRT Connector .....	VGA
Universal Serial Bus Connector .....	USB
Panel Inverter Delay-Power Connector .....	JP7
Panel VCC Selection .....	JP13
Power Connector .....	PWR
UTP Connector .....	UTP
LAN LED Indicator .....	LED1, LED2, LED3
Reset/NMI/Clear Watchdog .....	JP11
LCD Panel Connector .....	LCD
Solid-State Disk Socket .....	SSD
Floppy Disk Drive Connector .....	FDD
Hard Disk Drive Connector .....	HDD1, HDD2
Printer Connector .....	PRT1, PRT2
Memory Installation .....	SIMM1, SIMM2
PCI / Riser Card Selection .....	JP4, JP5, JP6
Reserved Pin .....	JP10

## 2-2 COMPONENT LOCATIONS



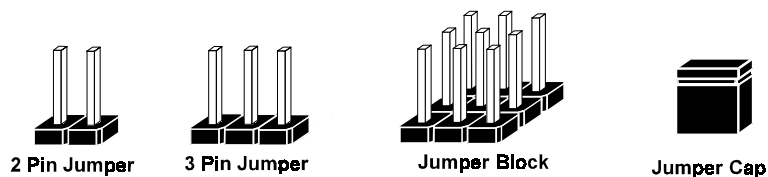
PC-580 Connector, Jumper and Component locations

## 2-3 HOW TO SET THE JUMPERS

You can configure your board by setting jumpers. A jumper consists of two or three metal pins with a plastic base mounted on the card, and a small plastic “cap” (with a metal contact inside) to connect the pins. So you can set up your hardware configuration by “open” or “close” the pins.

The jumper can be combined into sets, which is called jumper blocks. When the jumpers are all in the block, you have to put them together to set up the hardware configuration. The figure below shows how this looks.

### JUMPERS AND CAPS



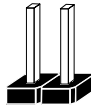
If a jumper has three pins, for example labelled PIN1, PIN2, and PIN3. You can connect PIN1 & PIN2 to create one setting and shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual diagram looks like and what they represent.



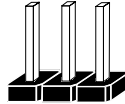
**JUMPER DIAGRAMS**



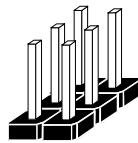
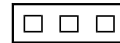
Jumper Cap  
looks like this



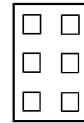
2 pin Jumper  
looks like this



3 pin Jumper  
looks like this



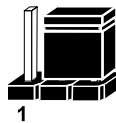
Jumper Block  
looks like this



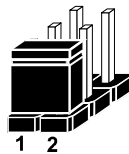
**JUMPER SETTINGS**



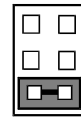
2 pin Jumper close(enabled)  
looks like this



3 pin Jumper  
2-3 pin close(enabled)  
looks like this



Jumper Block  
1-2 pin close(enabled)  
looks like this



## 2-4 CPU TYPE & CPU CLOCK SELECTION

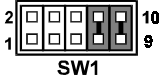

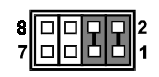
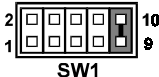

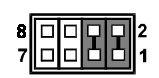
**SW1 (1-2, 3-4 5-6) :** Bus Frequency Ratio Selection

**SW1 (7-8, 9-10) :** CPU Clock Selection

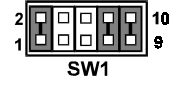
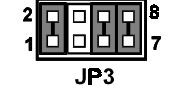
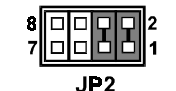
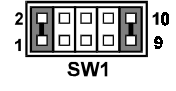
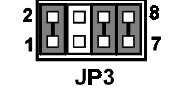
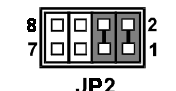
**JP2, JP3 :** CPU Voltage Selection

The jumper settings are as follows :


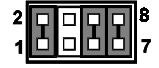
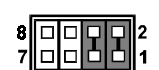

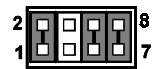

### 2-4-1 Intel 90/100 CPU type & clock Jumper setting

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
Intel Pentium 90Mhz	60Mhz	7-8 9-10	1-2 5-6 7-8	1-2 3-4	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>
Intel Pentium 100Mhz	66Mhz	9-10	1-2 5-6 7-8	1-2 3-4	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>


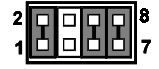
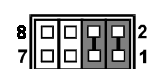
**2-4-2 Intel 120/133 CPU type & clock Jumper Setting**

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
Intel Pentium 120Mhz	60Mhz	1-2 7-8 9-10	1-2 5-6 7-8	1-2 3-4	 <p style="text-align: center;">SW1</p>  <p style="text-align: center;">JP3</p>  <p style="text-align: center;">JP2</p>
Intel Pentium 133Mhz	66Mhz	1-2 9-10	1-2 5-6 7-8	1-2 3-4	 <p style="text-align: center;">SW1</p>  <p style="text-align: center;">JP3</p>  <p style="text-align: center;">JP2</p>

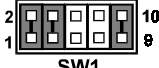
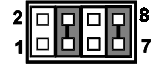
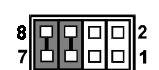

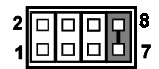

2-4-3 Intel 150/166 CPU type & clock Jumper Setting

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
Intel Pentium 150Mhz	60Mhz	1-2 3-4 7-8 9-10	1-2 5-6 7-8	1-2 3-4	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>
Intel Pentium 166Mhz	66Mhz	1-2 3-4 9-10	1-2 5-6 7-8	1-2 3-4	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>

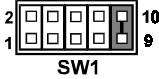
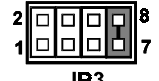
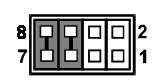
2-4-4 Intel 200 CPU type & clock Jumper Setting

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
Intel Pentium 200Mhz	66Mhz	3-4 9-10	1-2 5-6 7-8	1-2 3-4	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>

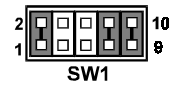
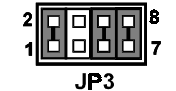
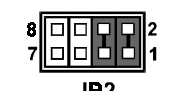
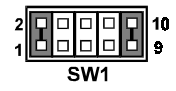
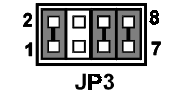

2-4-5 Intel MMX-166/200 CPU type & clock Jumper Setting

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
Intel Pentium MMX 166Mhz	66Mhz	1-2 3-4 9-10	7-8	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>
Intel Pentium MMX 200Mhz	66Mhz	3-4 9-10	7-8	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>

2-4-6 Intel MMX-233 CPU type & clock Jumper Setting


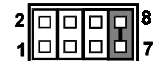

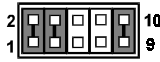
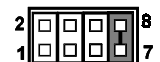

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
Intel Pentium MMX 233Mhz	66Mhz	9-10	7-8	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>

2-4-7 Cyrix P-150+/P-166+ CPU type & clock Jumper Setting


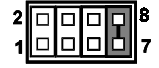
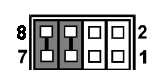

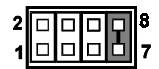

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
Cyrix P-150+	60Mhz	1-2 7-8 9-10	1-2 5-6 7-8	1-2 3-4	 SW1  JP3  JP2
Cyrix P-166+	66Mhz	1-2 9-10	1-2 5-6 7-8	1-2 3-4	 SW1  JP3  JP2



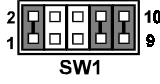
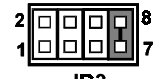
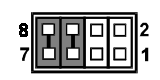
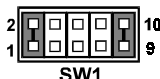

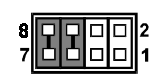
2-4-8 Cyrix MMX-166/200 CPU type & clock Jumper Setting

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
Cyrix MMX PR-166	60Mhz	1-2 3-4 7-8 9-10	7-8	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>
Cyrix MMX PR-200	66Mhz	1-2 3-4 9-10	7-8	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>

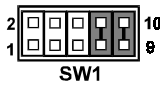
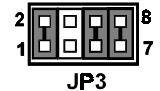
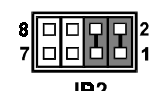
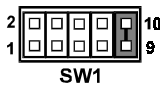
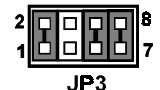
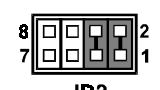
2-4-9 Cyrix MMX-233/266 CPU type & clock Jumper Setting

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
Cyrix MMX PR-233	66Mhz	3-4 9-10	7-8	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>
Cyrix MMX PR-266	66Mhz	9-10	7-8	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>

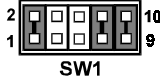
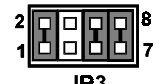
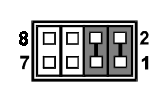
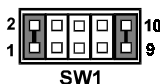
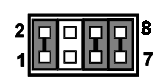

2-4-10 Cyrix 6x86L-150/166 CPU type & clock Jumper Setting

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
Cyrix 6x86L PR-150	60Mhz	1-2 7-8 9-10	7-8	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>
Cyrix 6x86L PR-166	66Mhz	1-2 9-10	7-8	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>

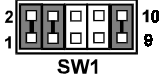

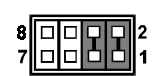
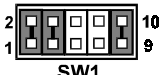
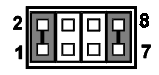
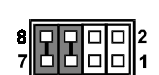
2-4-11 AMD K5-90/100 CPU type & clock Jumper Setting

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
AMD K5-90	60Mhz	7-8 9-10	1-2 5-6 7-8	1-2 3-4	 SW1  JP3  JP2
AMD K5-100	66Mhz	9-10	1-2 5-6 7-8	1-2 3-4	 SW1  JP3  JP2


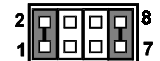

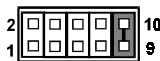


2-4-12 AMD K5-120/133 CPU type & clock Jumper Setting

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
AMD K5-120	60Mhz	1-2 7-8 9-10	1-2 5-6 7-8	1-2 3-4	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>
AMD K5-133	66Mhz	1-2 9-10	1-2 5-6 7-8	1-2 3-4	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>

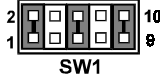

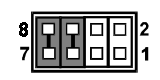
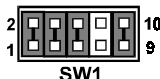
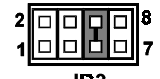
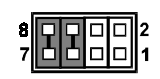
2-4-13 AMD K5-166/K6-166 CPU type & clock Jumper Setting

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
AMD K5-166	66Mhz	1-2 3-4 9-10	1-2 5-6 7-8	1-2 3-4	 SW1  JP3  JP2
AMD K6-166	66Mhz	1-2 3-4 9-10	1-2 7-8	5-6 7-8	 SW1  JP3  JP2

2-4-14 AMD K6-200/233 CPU type & clock Jumper Setting

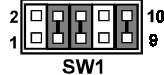

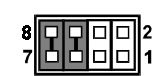


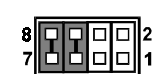
CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
AMD K6-200	66Mhz	3-4 9-10	1-2 7-8	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>
AMD K6-233	66Mhz	9-10	5-6 7-8	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>

2-4-15 AMDK6-2-266/300 CPU type & clock Jumper Setting

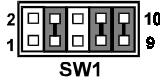


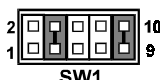
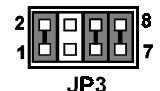
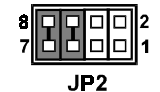
CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
AMD K6-2-266	66Mhz	1-2 5-6 9-10	5-6	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>
AMD K6-2-300	66Mhz	1-2 3-4 5-6 9-10	5-6	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>



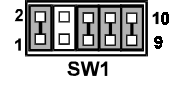
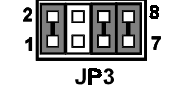
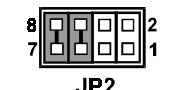
2-4-16 AMDK6-2-333/366 CPU type & clock Jumper Setting

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
AMD K6-2-333	66Mhz	3-4 5-6 9-10	5-6	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>
AMD K6-2-366	66Mhz	5-6 9-10	5-6	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>

2-4-17 IDT Winchip C6-180/200 CPU type & clock Jumper Setting

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
IDT Winchip C6 180Mhz	60Mhz	3-4 7-8 9-10	1-2 5-6 7-8	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>
IDT Winchip C6 200Mhz	66Mhz	3-4 9-10	1-2 5-6 7-8	5-6 7-8	 <p>SW1</p>  <p>JP3</p>  <p>JP2</p>

2-4-18 IDT Winchip C6-240 CPU type & clock Jumper Setting

CPU TYPE	CPU CLOCK	Jumper setting (Pin closed)			Jumper Illustration
		SW1	JP3	JP2	
IDT Winchip C6 240Mhz	60Mhz	1-2 5-6 7-8 9-10	1-2 5-6 7-8	5-6 7-8	 SW1  JP3  JP2

## 2-5 RS232/422/485 (COM2) SELECTION

**JP1:** RS-232/422/485 Selection

COM1 is fixed for RS-232 function only.

COM2 is selectable for RS232, 422, 485 function

The jumper settings are as follows :

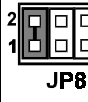
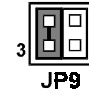
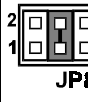
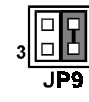
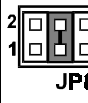
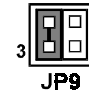
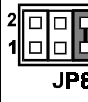
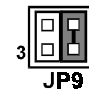
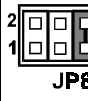
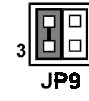
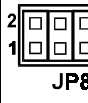
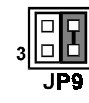
COM 2 Function	Jumper Settings (pin closed)	Jumper Illustration
RS-232	Open	<p style="text-align: center;"><b>JP1</b></p>
RS-422	1-2, 5-6, 7-8, 9-10, 11-12, 13-14, 15-16, 17-18, 19-20	<p style="text-align: center;"><b>JP1</b></p>
RS-485	1-3, 4-6, 7-8, 9-10, 11-12, 13-14, 15-16, 17-18, 19-20	<p style="text-align: center;"><b>JP1</b></p>

\*\*\* Manufactory default --- RS-232.

## 2-6 SSD MEMORY MAPPING SELECTION

**JP8, JP9:** SSD Memory Mapping Selection.

A 32-pin SSD socket supports an SSD up to 144MB. This PnP flash ROM SSD can be installed as one of user's hard disks. And if set as Drive C, it can be used to boot up the computer with MS-DOS installed. The SSD Memory Mapping is as follow:

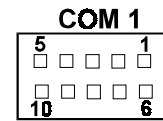
SSD Memory Map	JUMPER SETTING (pin closed)		JUMPER ILLUSTRATION	
	JP8	JP9	JP8	JP9
CC000h-CDFFFh	1-2	3-4		
D0000h-D1FFFh	3-4	1-2		
D4000h-D5FFFh	3-4	3-4		
D8000h-D9FFFh	5-6	1-2		
DC000h-DDFFFh	5-6	3-4		
E0000h-E1FFFh	7-8	1-2		

\*\*\*Manufactory default --- CC000h-CDFFFh

## 2-7 COM1 CONNECTOR

**COM1** : COM1 Connector is fixed for RS-232.  
The COM1 Connector assignments are as follows :

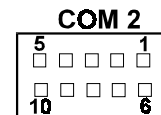
PIN	ASSIGNMENT
1	DCD1
2	RX1
3	TX1
4	DTR1
5	GND
6	DSR1
7	RTS1
8	CTS1
9	RI1
10	NC



## 2-8 COM2 CONNECTOR

**COM2** : COM2 Connector, selectable with JP1 for RS-232/422/485.  
The COM2 Connector assignments are as follows :

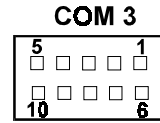
PIN	ASSIGNMENT		
	RS-232	RS-422	RS-485
1	DCD2	TX-	TX-
2	RX2	TX+	TX+
3	TX2	RX+	RX+
4	DTR2	RX-	RX-
5	GND	GND	GND
6	DSR2	RTS-	NC
7	RTS2	RTS+	NC
8	CTS2	CTS+	NC
9	RI2	CTS-	NC
10	NC	NC	NC



### 2-9 COM3 CONNECTOR

**COM3 :** COM3 Connector is fixed for RS-232.  
The COM3 Connector assignments are as follows :

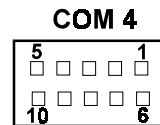
PIN	ASSIGNMENT
1	DCD3
2	RX3
3	TX3
4	DTR3
5	GND
6	DSR3
7	RTS3
8	CTS3
9	RI3
10	NC



### 2-10 COM4 CONNECTOR

**COM4 :** COM4 Connector is fixed for RS-232.  
The COM4 Connector assignments are as follows :

PIN	ASSIGNMENT
1	DCD4
2	RX4
3	TX4
4	DTR4
5	GND
6	DSR4
7	RTS4
8	CTS4
9	RI4
10	NC



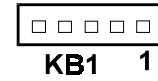
## 2-11 KEYBOARD CONNECTOR

**KB1** : Keyboard Connector

The keyboard connector can support PC/AT Keyboard.

The pin assignments for keyboard are as follows :

PIN	ASSIGNMENT
1	KBCLK
2	KBDATA
3	NC
4	GND
5	VCC

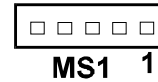


## 2-12 PS/2 Mouse Connector

**MS1** : PS/2 Mouse Connector.

The pin assignments are as follows:

PIN	ASSIGNMENT
1	KBCLK
2	KBDATA
3	NC
4	GND
5	VCC

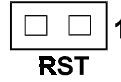




### 2-13 RESET CONNECTOR

**RST** : Reset Connector  
The pin assignments are as follows :

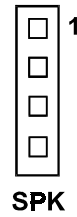
PIN	ASSIGNMENT
1	Reset
2	Ground



### 2-14 EXTERNAL SPEAKER CONNECTOR

**SPK** : External Speaker Connector  
The pin assignments are as follows :

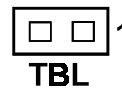
PIN	ASSIGNMENT
1	VCC
2	Ground
3	NC
4	Speaker Signal



### 2-15 TURBO LED

**TBL** : Turbo LED Connector  
The pin assignments are as follows :

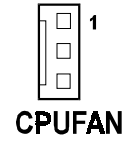
PIN	ASSIGNMENT
1	Vcc
2	Turbo Signal



## 2-16 CPU FAN POWER CONNECTOR

**CPUFAN** : CPU Fan power connector  
The pin assignments are as follows:

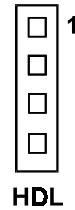
PIN	ASSIGNMENT
1	GND
2	+12V
3	CPUFAN



## 2-17 HARD DISK DRIVE LED CONNECTOR

**HDL** : Hard Disk Driver LED Connector  
The pin assignments are as follows :

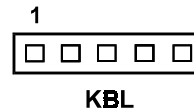
PIN	ASSIGNMENT
1	Vcc
2	HDD Active Signal
3	HDD Active Signal
4	HDD Active Signal



## 2-18 POWER LED & KEYLOCK CONNECTOR

**KBL** : Power LED & Keylock Connector  
The pin assignments are as follows :

PIN	ASSIGNMENT
1	Power LED
2	NC
3	Ground
4	Keyboard INT
5	Ground

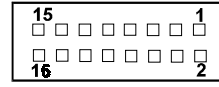


## 2-19 VGA CRT CONNECTOR

**VGA :** VGA CRT Connector

The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	RED	9	NC
2	GREEN	10	GND
3	BLUE	11	NC
4	NC	12	NC
5	GND	13	HSYNC
6	GND	14	VSYNC
7	GND	15	NC
8	GND	16	NC



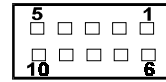
VGA

## 2-20 USB CONNECTOR

**USB :** Universal Serial Bus Connector

The pin assignments are as follows:

PIN	ASSIGNMENT
1	Vcc
2	USBP0-
3	USBP0+
4	GND
5	GND
6	Vcc
7	USBP1-
8	USBP1+
9	GND
10	GND



USB

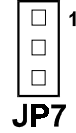
## 2-21 PANEL INVERTER DELAY-POWER CONNECTOR

**JP7** : Panel Inverter Delay-power Connector

This Connector acts as an inverter to supply proper power to panel LCD. Please make sure that JP13 jumper must be set at the same time.

The pin assignments are as follows :

PIN	ASSIGNMENT
1	LCD+12V
2	GND
3	LCD VDD(+5V)



## 2-22 PANEL VCC SELECTION

**JP13** : Panel VCC Selection

The pin assignments are as follows :

Panel VCC Selection	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
VCC	1-2	<p>The diagram shows a vertical three-pin connector labeled JP13. Pins 1 and 2 are connected by a jumper, while pin 3 is open.</p>
VCC3.3V	2-3	<p>The diagram shows a vertical three-pin connector labeled JP13. Pin 1 is open, while pins 2 and 3 are connected by a jumper.</p>

## 2-23 POWER CONNECTOR

**PWR** : Power Connector

The pin assignments are as follows:

PIN	ASSIGNMENT
1	NC
2	+5V
3	+12V
4	-12V
5	GND
6	GND



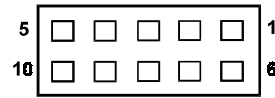
**PWR**

## 2-24 UTP CONNECTOR

**UTP** : UTP Connector

The pin assignments are as follows:

PIN	ASSIGNMENT
1	TX+
2	TX-
3	RX+
4	ISOLATED GND
5	ISOLATED GND
6	RX-
7	ISOLATED GND
8	ISOLATED GND
9	SG
10	SG



**UTP1**

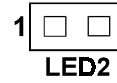
Please refer our Appendix A for more informations about installation.

## 2-25 LAN LED INDICATOR

This card possesses 3 LAN LED Indicator, namely: LED1, LED2, and LED3. The pin assignments are as follows:

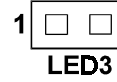
### LED2: LAN LED Indicator

DIN	ASSIGNMENT
1	Pull Hi
2	LED2



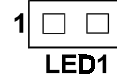
### LED3: LAN LED Indicator

DIN	ASSIGNMENT
1	Pull Hi
2	LED3



### LED1: LAN LED Indicator

DIN	ASSIGNMENT
1	Pull Hi
2	LED1



Please refer our Appendix A for more information about installation.

## 2-26. RESET/NMI/CLEAR WATCHDOG

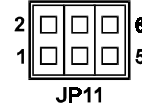
JP11 (1-2) : For Reset

JP11 (3-4) : For NMI

JP11 (5-6) : For Clear Watchdog

The pin assignments are as follows:

PIN	ASSIGNMENT
1	WDGRST
2	WDGRSTJ
3	WDGNMI
4	IOCHKJ
5	CLRWDG
6	GND

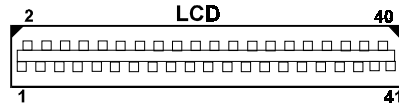


## 2-27 LCD PANEL CONNECTOR

**LCD** : LCD Panel Connector

The connector LCD is a 41-pin, dual-in-line header used for Flat Panel display.

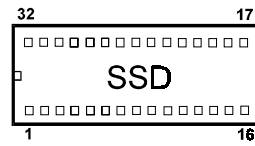
The pin assignments are as follows :



PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	P20	2	GND
3	P16	4	VCC
5	P21	6	P0
7	P17	8	P8
9	P22	10	P1
11	P18	12	P9
13	P23	14	P2
15	P19	16	P10
17	VCC	18	P3
19	FLM	20	P11
21	MDE	22	P4
23	LP	24	P12
25	SHFCLK	26	P5
27	3.3V	28	P13
29	3.3V	30	P6
31	ENABKL	32	P14
33	LCDVDD	34	P7
35	ENVEE	36	P15
37	GND	38	+12V
39	GND	40	+12V
41	NC		

## 2-28 SOLID-STATE DISK SOCKET

**SSD** : 32-pin Disk-on-chip Socket.  
 The pin assignment are as follows:



PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	NC	17	SD3
2	NC	18	SD4
3	NC	19	SD5
4	SA12	20	SD6
5	SA7	21	SD7
6	SA6	22	CE
7	SA5	23	SA10
8	SA4	24	OE
9	SA3	25	SA11
10	SA2	26	SA9
11	SA1	27	SA8
12	SA0	28	NC
13	SD0	29	NC
14	SD1	30	VCC
15	SD2	31	WE
16	GND	32	VCC

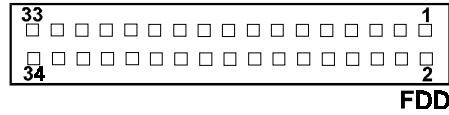


## 2-29 FLOPPY DISK DRIVE CONNECTOR

**FDD :** Floppy Disk Drive Connector

You can use a 34-pin daisy-chain cable to connect two FDDs. On one end of this cable is a 34-pin flat cable to attach the FDD on the board, the other side is to attach two FDDs.

The pin assignments are as follows :

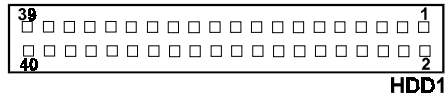


PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	2	RPM
3	GND	4	NC
5	GND	6	RATE0
7	GND	8	INDEX
9	GND	10	MTR0
11	GND	12	DRV1
13	GND	14	DRV0
15	GND	16	MTR1
17	GND	18	DIR
19	GND	20	STEP
21	GND	22	WDATA
23	GND	24	WGATE
25	GND	26	TRK0
27	GND	28	WRPRT
29	GND	30	RDATA
31	GND	32	SEL
33	GND	34	DSKCHG

## 2-30 HARD DISK DRIVE CONNECTOR

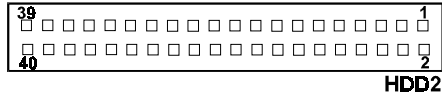
**HDD1:** Hard Disk Drive Connector

The PC-580 possesses two HDD connectors, HDD1 and HDD2. The pin assignments are as follows:



PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERST	21	IDEREQ0
2	GND	22	GND
3	IDED7	23	IDEIOW
4	IDED8	24	GND
5	IDED6	25	IDEIOR
6	IDED9	26	GND
7	IDED5	27	IDERDY
8	IDED10	28	PULL HI
9	IDED4	29	IDEACK0
10	IDED11	30	GND
11	IDED3	31	IRQ14
12	IDED12	32	IOCS16
13	IDED2	33	IDEA1
14	IDED13	34	GND
15	IDED1	35	IDEA0
16	IDED14	36	IDEA2
17	IDED0	37	IDECS1P
18	IDED15	38	IDECS3P
19	GND	39	IDELEDP
20	N.C.	40	GND

**HDD2:** Hard Disk Drive Connector  
 The pin assignments are as follows:



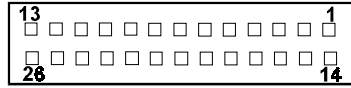
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERST	21	IDEREQ1
2	GND	22	GND
3	IDED7	23	IDEIOW
4	IDED8	24	GND
5	IDED6	25	IDEIOR
6	IDED9	26	GND
7	IDED5	27	IDERDY
8	IDED10	28	PULL HI
9	IDED4	29	IDEACK1
10	IDED11	30	GND
11	IDED3	31	IDESIRQ
12	IDED12	32	IOCS16
13	IDED2	33	IDEA1
14	IDED13	34	GND
15	IDED1	35	IDEA0
16	IDED14	36	IDEA2
17	IDED0	37	IDECS1S
18	IDED15	38	IDECS3S
19	GND	39	IDELEDS
20	N.C.	40	GND

## 2-31 PRINTER CONNECTOR

### **PRT1, PRT2** : Printer Connector

As to link the Printer to the card, you need a cable to connect the DB25 connector with parallel port. PC-580 possesses two Printer connector.

The pin assignments are as follows :



**PRT1, PRT2**

<b>PIN</b>	<b>ASSIGNMENT</b>	<b>PIN</b>	<b>ASSIGNMENT</b>
1	STB	14	AUTFE
2	P0	15	ERROR
3	P1	16	INIT
4	P2	17	SLCTIN
5	P3	18	GND
6	P4	19	GND
7	P5	20	GND
8	P6	21	GND
9	P7	22	GND
10	ACK	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT	26	NC

## 2-32 MEMORY INSTALLATION

The PC-580 PCI local bus Embedded Computer will support 4 DRAM banks, bank 0 to bank 3 in two 72-pin SIMM sockets on board.

**Note:** SIMM 1,2 for single & double Bank DRAM module (72pin x 32bit x 2)

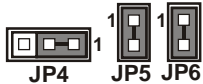
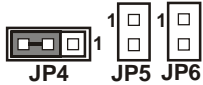
### DRAM BANK CONFIGURATION

<b>SIMM 1 BANK 0,1</b>	<b>SIMM 2 BANK 2,3</b>	<b>TOTAL MEMORY</b>
4M		4M
4M	4M	8M
8M		8M
	8M	8M
8M	8M	16M
16M		16M
	16M	16M
16M	16M	32M
32M		32M
	32M	32M
32M	32M	64M
64M		64M
	64M	64M
64M	64M	128M
128M		128M
	128M	128M
128M	128M	256M

## 2-33 PCI / RISER CARD SELECTION

The PCI Bus found in this board can support PCI card or Riser card. User may select to use either to use PCI card or Riser card by setting the JP4, JP5, and JP6 jumper.

The PCI/Riser card selections are shown as follows:

FUNCTION	JUMPER SETTING (pin closed)			JUMPER ILLUSTRATION
	JP4	JP5	JP6	
Riser Card	1-2	Closed	Closed	
PCI Card	2-3	Open	Open	

# ***SOFTWARE UTILITIES***

CHAPTER

**3**

This chapter comprises the detailed information of VGA driver, and LAN driver. It also describes how to install the watchdog timer configurations.

Section includes:

- VGA Drivers Utility
- Flash BIOS Update
- LAN Drivers Utility
- Watchdog Timer Configuration

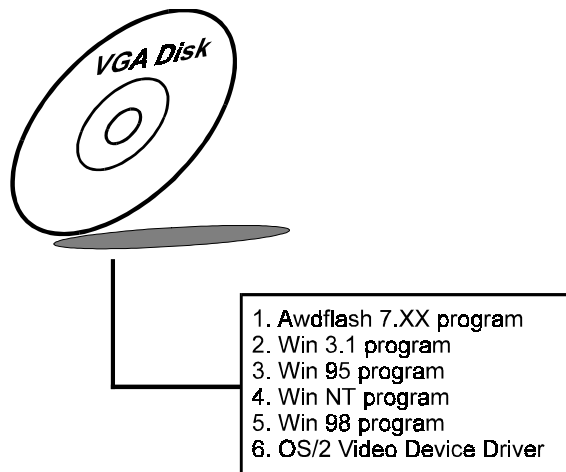
### 3-1. INTRODUCTION

Enclosed with our PC-580 package is our driver utility, which may come in a form of a CD ROM disc or floppy diskettes. For CD ROM disc user, you will only need some of the files contained in the CD ROM disc, please kindly refer to the following chart:

File name (Assume that CD ROM drive is D:)	Purpose
D:\VGA\C&T\CT6555x	For VGA driver installation
D:\Flash\Awdflash.exe	For BIOS update
D:\LAN\RTL8139	For LAN Driver installation

### 3-2. VGA DRIVER UTILITY

The VGA interface embedded with our PC-580 can support a wide range of display mode, such as SVGA, STN, TFT, EL,.....etc. You can display CRT and LCD Panel simultaneously on this board, but make sure that the modes for CRT and LCD Panel are the same. If not, only one of them can be displayed.





### 3-2-2. Installation of VGA Driver for PCI

#### 1. Install VGA Driver to Windows 3.1

- (1). To install VGA driver to Windows 3.1, please insert Utility Disk into floppy disk drive A/B or CD ROM drive under your Windows 3.1 system, and go to directory where VGA driver is located.
- (2). Click Setup.exe file for VGA driver installation directly. Follow the instructions on the screen and complete the installation.
- (3). Once installation is completed, you must shut down system and restart in order for changes to take effect.

#### 2. Install VGA Driver to Windows 95

- (1). Click START, SETTINGS, then CONTROL PANEL.
- (2). On CONTROL PANEL, click the DISPLAY icon and enter the SETTINGS tab of the DISPLAY PROPERTIES window.
- (3). Select the SETTINGS page, push the CHANGE DISPLAY TYPE button. Click the CHANGE button in the "Adapter Type" area.
- (4). Push the "HAVE DISK BUTTON" and press OK.
- (5). Specify the path for the new driver and press the <Enter> key. The "Select Device" dialog box will appear. Select the "Chips and Tech 65555 PCI".
- (6). Follow the remaining instruction, that appear on the screen to complete the rest of the installation, then restart your computer.

#### 3. Install VGA driver to Windows NT 3.5x/4.0

- (1). To install VGA drivers to Windows 3.5x/4.0 is as you normally would. Click START, then SETTINGS, then CONTROL PANEL of the operating system.
- (2). Select the DISPLAY icon to start the DISPLAY PROPERTIES window, then choose the SETTING tab, then DISPLAY TYPE.
- (3). In the CHANGE DISPLAY TYPE window, click on the CHANGE button in the ADAPTER TYPE, this will bring up the SELECT DEVICE window.

- (4). In the CHANGE DISPLAY window, click on Have Disk. Follow the instructions appearing on the screen until you complete the whole installation.
- (5). Once installation is completed, the system must be shut down and restarted for the new drivers to take effect.

#### **4. Install VGA driver to OS/2 Warp Operation System**

##### (1) Preliminary Steps:

- (i) OS/2 DOS Support must be installed.
- (ii) If you previously installed SVGA support, you must reset the system to VGA mode. VGA is the default video mode enable when OS/2 is to be installed.
- (iii) To restore VGA mode, Use SELECTIVE INSTALL and select VGA for PRIMARY DISPLAY. For more information on this procedure, see the section on Changing Display Adapter Support in the OS/2 User's Guide.

##### (2) Start Driver installation

- (i) Open an OS/2 full screen or windowed session.
- (ii) Place into Drive A/B the Utility Disk, which contains the 65550 Display Driver.
- (iii) At the OS/2 command prompt , type the following commands to copy the files to the OS/2 drive:  
Type A: and press ENTER to make this the default drive.  
Type Setup A: C: and press ENTER
- ⌚ When the setup Program is completed, you will need to perform a shut down and then restart the system in order for changes to take effect.
- (iv) After restarting the system, first open the OS/2 System folder.
- (v) Then open the System Setup folder.
- (vi) Open the Display Driver Install Object.
- (vii) When the Display Driver Install window appears, select PRIMARY DISPLAY, and click OK.
- (viii) When the Primary Display Driver List window appears, select "Chips and Technologies 65550" from the list of Adapter types, then select OK to install the video driver.

- (ix) When installation is complete, you should shut down and restart the system for the changes to take effect. And also make sure to remove the install Utility Disk before restarting system.

### 3-3. FLASH BIOS UPDATE

#### 3-3-1. System BIOS Update:

Users of PC-580 can use the program "Awdflash.exe" contained in Utility Disk for update of system BIOS and VGA BIOS.

#### 3-3-2. To update VGA BIOS for LCD Flat Panel Display:

As PC-580 user, you have to update the VGA BIOS for your specific LCD flat panel, you are going to use. In doing this, you need two files. One is the "Awdflash.exe" file and the other is the VGA BIOS C&T 65550 file for LCD panel display. Both files should be provided by PC-580 vendor or manufacturer. When you get these two files ready, follow the following steps for updating your VGA BIOS:

1. Install "Awdflash.exe" from Utility Disk to Drive C.
2. Insert into a suitable drive the VGA BIOS file you have obtained from PC-580 vendor.
3. Type the path to Awdflash.exe and execute the VGA BIOS update with file 580xxxxx.bin

C:\UTIL\AWDFLASH>AWDFLASH 580xxxxx.bin

4. The screen will display the table below:

FLASH MEMORY WRITER v7.xx ( C ) Award Software 1999 All Rights Reserved	
For 8-ALi-154x-2A5KFP6FC	DATE: 12/18/1999
Flash Type - MXIC 28F2000PPC	/12V
File Name to Program : 580xxxxx.bin	
Error Message : Do You Want To Save BIOS (Y/N)	

You can choose “Y” or “N”. If you want to save the original BIOS type “Y” and press <Enter>. The original BIOS will be save as another new file name. Then the table below will display on screen. If you choose “N”, the following table will appear on screen also.

FLASH MEMORY WRITER v7.xx ( C ) Award Software 1999 All Rights Reserved	
For 8-ALi-154x-2A5KFP6FC	DATE : 12/18/1999
Flash Type - MXIC 28F2000PPC	/12V
File Name to Program : 580xxxxx.bin	
Error Message : Are You Sure To Program (Y/N)	

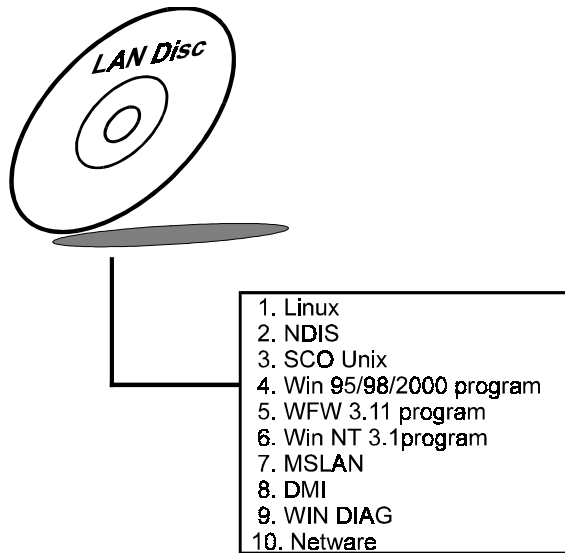
Select “Y”, and the BIOS will be renewed. When you are refreshing your BIOS, do not turn off or reset the system, or you will damage the BIOS.

After you have completed all the programming, you will see the line: “Programming Flash Memory ok”. Please power off or reset the system. Then the Flash BIOS is fully implemented.

## 3-4. LAN DRIVER UTILITY

### 3-4-1. Introduction

PC-580 Embedded Board is enhanced with LAN function can support various network adapters. Installation programs for LAN drivers are listed as follows:



### 3-4-2. Installation Procedures on Microsoft Windows 95

Executing Windows 95, it will auto-detect your system configuration and find the adapter hardware.

1. Insert the LAN Driver disk into Drive A or CD ROM drive and specify the setup file pathname A:\.
2. Windows 95 will appear some messages to insert Windows 95 system disk to complete setup.
3. Windows 95 will finish the other installation procedure automatically, and then restart the system.

### **3-4-3. Installation Procedures on Microsoft Windows NT**

1. In the Main group to NT, select the "Control Panel" icon.
2. In the Control Panel window, choose the "Network" icon.
3. In the Network Settings dialog box, choose the "Add adapter" button. The Add Network Adapter dialog box appears.
4. In the list of network cards, select "<Other> requires disk from manufacturer", and then press <Enter> button.
5. Insert the LAN Driver disk in Drive A/B or CD ROM drive, and type D:\ (pathname) where the setup file OEMSETUP.INF is located, and then choose OK button.
6. The screen will appear "Select Line Speed" dialog box, which is provided by RTL8139.SYS driver. The default value is "auto" so that the line speed can be auto detected as 10Mb or 100Mb, while the RTL8139.SYS is loading.
7. The screen will appear "Input Ethernet ID" dialog box, which is provided by RTL8139.SYS driver. This option is only required when you have more than one RTL8139 PCI Fast Ethernet adapters on this computer. Select "SKIP" if only one adapter is installed on this computer.
8. "Bus Location" display in next screen. If your system contains more than one hardware bus, please select the Bus Type and Bus number on which your network adapter card is installed.
9. NT will then perform the binding process. If any additional network software options were installed, you may be prompted for specific information for these packages.
10. Re-boot your system to complete the installation process.

\*\*\* Note: Installing Multiple LAN Adapters:

Enter Windows NT and follow above setup procedure step 2, in the "Network Setting" dialog box, choose the "Configure.." button. The "Input Ethernet ID" dialog box appears and input adapter's Ethernet ID. Last step to select OK and close NETWORK SETUP. Select SKIP if only one adapter is installed on this computer.

**For more details on Installation procedure, please refer to TXT directory found on LAN DRIVER UTILITY.**

### 3-5. WATCHDOG TIMER CONFIGURATION

The watchdog timer can reset the system automatically. It is defined at I/O port **0443H**. When you want to enable the watchdog timer, please write I/O port **0443H**, then the system will reset itself. When you want to disable the function, write I/O port **0441H**, the system will run the command to stop the Watchdog function.

The PC-580 watchdog function, You must write your program so when it writes I/O port address 0443 for enable watchdog and write I/O port address 0441 for disable watchdog. The timer's intervals have a tolerance of 25% so you should program an instruction that will refresh the timer about every second.

The following program shows you how to program the watch timer in your program.

**Watchdog enable program:**

```
MOV     AX, 000FH    (choose the values you need; start from 0)
MOV     DX, 0443H
OUT     DX, AX
```

**Watchdog disable program:**

```
MOV     AX, 000FH    (this value can be ignored)
MOV     DX, 0441H
OUT     DX, AX
```

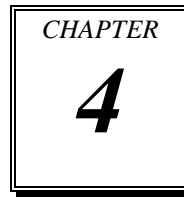
The Watchdog Timer control table is as follow:

Level	Value	Time/sec	Level	Value	Time/sec
1	F	0	9	7	64
2	E	8	10	6	72
3	D	16	11	5	80
4	C	24	12	4	88
5	B	32	13	3	96
6	A	40	14	2	104
7	9	48	15	1	112
8	8	56	16	0	120





# ***GREEN PC FUNCTION***

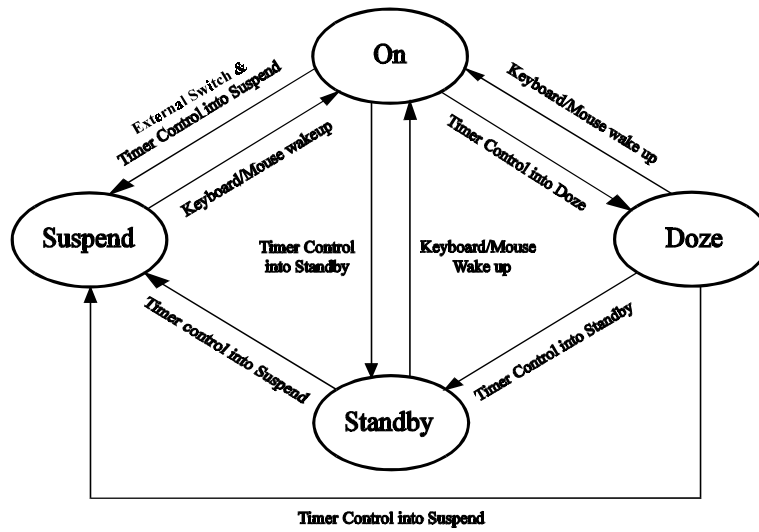


This chapter gives you the concise information for Green PC Function.

Section includes:

- Power Saving Block Diagram
- CPU Doze Mode
- System STANDBY Mode
- System SUSPEND Mode

## 4-1. POWER SAVING BLOCK DIAGRAM



## 4-2. CPU DOZE MODE

1. After out of the timer, CPU clock is slow down to 8MHz.
2. One beep sound.
3. Flash LED to indicate power saving status.
4. Monitor Activity, according to the setting of Advanced Setup.
5. Any activity occurs, system will exit from Doze mode to On mode.

## 4-3. SYSTEM STANDBY MODE

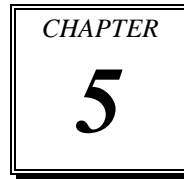
1. After out of the timer, CPU clock is slow down to 8MHz.
2. Two beep sound.
3. Flash LED to indicate power saving status.
4. Level 1 cache are disabled.
5. VGA monitor displays blank screen.
6. Fixed disk driver motor will be spin off.
7. Any activity occurs, system will exit from Standby mode to On mode.

#### **4-4 SYSTEM SUSPEND MODE**

1. After out of the timer, CPU clock is slow down to 8MHz, if you use Intel, Pentium or Cyrix (SMI) CPU, then CPU clock will be stopped.
2. Three beep sounds.
3. Flash LED to indicate power saving status.
4. Level 2 cache are disabled.
5. VGA monitor displays blank screen.
6. Fixed disk driver motor will be spin off.
7. Monitor activity according to the setting of Advanced Setup.
8. When system in Suspend mode, only Keyboard / Mouse / Alarm resume can wakeup system.



# ***AWARD BIOS SETUP***



This chapter states out how to set up the Award BIOS.

Section includes:

- Introduction
- Entering Setup
- The Standard CMOS Setup
- The BIOS Features Setup
- The Chipset Features Setup
- Power Management Setup
- PNP/PCI Configuration
- Load BIOS defaults
- Integrated Peripherals
- IDE HDD Auto Detection
- Save Setup

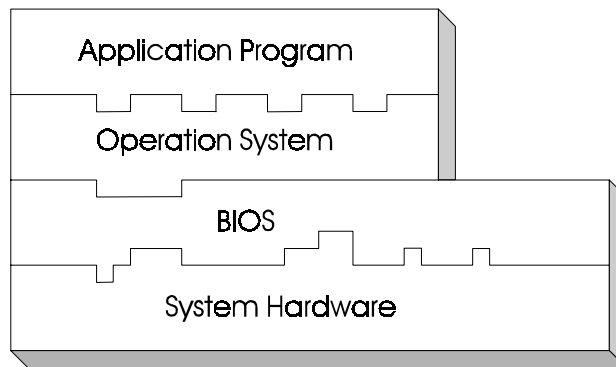
## 5-1. INTRODUCTION

This chapter will show you the function of a BIOS in managing the features of your system. The PC-580 Pentium CPU Board is equipped with the BIOS for system chipset from Award Software Inc. This page briefly explains the function of a BIOS in managing the special features of your system. The following pages describe how to use the BIOS for system chipset Setup menu.

Your application programs (such as word processing, spreadsheets, and games) rely on an operating system such as DOS or OS/2 to manage such things as keyboard, monitor, disk drives, and memory.

The operating system relies on a BIOS (Basic Input and Output system), a program stored on a ROM (Read-only Memory) chip, to initialize and configure your computer's hardware. As the interface between the hardware and the operating system, the BIOS enables you to make basic changes to your system's hardware without having to write a new operating system.

The following diagram illustrates the interlocking relationships between the system hardware, BIOS, operating system, and application program:



## 5-2 ENTERING SETUP

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines and the following message will appear on the lower screen:

**PRESS <DEL> TO ENTER SETUP, ESC TO SKIP MEMORY TEST**

As long as this message is present on the screen you may press the <Del> key (the one that shares the decimal point at bottom of the number keypad) to access the Setup program. In a moment, the main menu of the Award SETUP program will appear on the screen:

ROM PCI / ISA BIOS (2A5KIP6A) 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	HDD LOW LEVEL FORMAT
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time, Date, Hard Disk Type.....	

**Setup program initial screen**

You may use the cursor up/down keys to highlight the individual menu items. As you highlight each item, a brief description of that item's function appears in the lower window. If you have a color monitor you can use the Shift F2 keys to scroll through the various color combinations available.

### 5-3 THE STANDARD CMOS SETUP MENU

Highlight STANDARD CMOS SETUP and press < ENTER > and the screen will display the following table:

ROM PCI / ISA BIOS (2A5KIP6A)						
STANDARD CMOS SETUP						
AWARD SOFTWARE, INC.						
Date (mm:dd:yy) : Thu Sep 24 1998						
Time (hh:mm:ss) : 17 : 10 : 16						
	CYLS.	HEADS	PRECOMP	LANDZONE	SECTORS	MODE
Primary Master : Auto ( Mb)	0	0	0	0	0	AUTO
Primary Slave : Auto ( Mb)	0	0	0	0	0	AUTO
Secondary Master : Auto ( Mb)	0	0	0	0	0	AUTO
Secondary Slave : Auto ( Mb)	0	0	0	0	0	AUTO
Drive A : 1.44M , 3.5 in.						Base Memory: 640K
Drive B : None						Extended Memory: 7168K
						Other Memory: 384K
Video : EGA/VGA						-----
Halt On: All Errors						Total Memory: 8192K
Esc : Quit	↑↓→← : Select Item		Pu/Pd/+/- : Modify			
F1 : Help	(Shift) F2 : Change Color					

CMOS setup screen

In the above table the base memory size and the extended memory size are displayed. This is automatically read from your systems, and you do not need to set these parameters. The screen shows a calendar. The week display will depend on the date set in your system clock and the flashing indicating the current date. Since you have not yet set the time and date, the date displayed is probably incorrect. Information on each item is



**Date:**

< Month >, < Date > and <Year >. Ranges for each value are in the CMOS Setup Screen, and the week-day will skip automatically.

**Time:**

< Hour >, < Minute >, and < Second >. Use 24 hour clock format, i.e., for PM numbers, add 12 to the hour. For examples, 4: 30 P.M. You should enter the time as 16:30:00.

**Primary Master/Primary Slave/Secondary Master/Secondary Slave :**

The categories identify the types of 2 channels that have been installed in the computer. There are 45 predefined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to Type 45 are predefined. Type User is user-definable.

Press PgUp / <+> or PgDn / <-> to select a numbered hard disk type or type the number and press < Enter >. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually.

If you select Type User, related information is ask to be entered to the following items. Enter the information directly from the keyboard and press < Enter >. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is ESDI, the selection shall be "Type 1".

If the controller of HDD interface is SCSI, the selection shall be "None".

If the controller of HDD interface is CD-ROM, the selection shall be "None".

**TYPE:**

This is the number designation for a drive with certain identification parameters.

**CYLS.:**

This is the number of cylinders found in the specified drive type.

**HEADS:**

This is the number of heads found in the specified drive type.

**PRECOMP:**

WPcom is the read delay circuitry which takes into account the timing differences between the inner and outer edges of the surface of the disk platter. The number designates the starting cylinder of the signal.

**LANDZONE:**

Landzone is the landing zone of the heads. This number determines the cylinder location where the heads will normally park when the system is shut down.

**SIZE (CAPACITY):**

This is the formatted capacity of the drive based on the following formula: (# of heads) X (# of cylinders) X (# of sets) X ( 512bytes/sects)

**DRIVE A AND DRIVE B:**

The options are 360KB 5.25in, 1.2KB 5.25in, 720KB 3.5in, 1.44MB 3.5in, 2.88MB 3.5in and None. Not Installed could be used as an option for diskless workstations.

**VIDEO:**

Options are Monochrome, Color 40, VGA/EGA, Color 80.

**HARD DISK ATTRIBUTES:**

Type	Cylinders	Heads	V-P comp	LZone	Sect	Capacity
1	306	4	128	305	17	10
2	615	4	300	615	17	20
3	615	6	300	615	17	30
4	940	8	512	940	17	62
5	940	6	512	940	17	46
6	615	4	65535	615	17	20
7	642	8	256	511	17	30
8	733	5	65535	733	17	30
9	900	15	65535	901	17	112
10	820	3	65535	820	17	20
11	855	5	65535	855	17	35
12	855	7	65535	855	17	49
13	306	8	128	319	17	20
14	733	7	65535	733	17	42
15	000	0	0000	000	00	00
16	612	4	0000	663	17	20
17	977	5	300	977	17	40
18	977	7	65535	977	17	56
19	1024	7	512	1023	17	59
20	733	5	300	732	17	30
21	733	7	300	732	17	42
22	733	5	300	733	17	30
23	306	4	0000	336	17	10
24	977	5	65535	976	17	40
25	1024	9	65535	1023	17	76
26	1224	7	65535	1223	17	71
27	1224	11	65535	1223	17	111
28	1224	15	65535	1223	17	152
29	1024	8	65535	1023	17	68
30	1024	11	65535	1023	17	93
31	918	11	65535	1023	17	83
32	925	9	65535	926	17	69
33	1024	10	65535	1023	17	85
34	1024	12	65535	1023	17	102
35	1024	13	65535	1023	17	110
36	1024	14	65535	1023	17	119
37	1024	2	65535	1023	17	17
38	1024	16	65535	1023	17	136
39	918	15	65535	1023	17	114
40	820	6	65535	820	17	40
41	1024	5	65535	1023	17	42
42	1024	5	65535	1023	26	65
43	809	6	65535	852	17	40
44	809	6	65535	852	26	61
45	776	8	65335	775	33	100
47			AUTO			

**Award Hard Disk Type Table**

## 5-4 The BIOS FEATURES SETUP MENU

Choose the "BIOS FEATURES SETUP" in the main menu, the screen shown as below.

ROM PCI/ISA BIOS (2A5KIP6A)			
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,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	Cyrix 6x86/MII CPU ID	: Enabled
Boot Up System Speed	: High		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250	Esc : Quit	↑↓→← : Select Item
Security Option	: Setup	F1 : Help	Pu/Pd/+/- : Modify
PCI/VGA Palette snoop	: Disabled	F5 : Old Values	(Shift)F2 : Color
OS Select For DRAM > 64Mb	: Non-OS2	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

### BIOS Features Setup

The BIOS FEATURES SETUP allows you find true certain features supported by the chipset and Award BIOS. It also includes support for shadow RAM under which the contents of the ROM BIOS can be copied into memory at boot up, enhancing performance. When you change any of the setting, you may recall the default settings at any time from the main menu.

This is detailed later. To get help on each item, highlight the relevant item and press the F1 key. A Windows will appear on your screen detailing the various options available for each item. A brief introduction of each setting in the BIOS FEATURES SETUP program is given below.

**CPU INTERNAL CACHE:**

This item should always be Enable, if your system is 486CPU or above, even if you have installed the external cache. If you have no external cache installed this item should be enabled to allow use of the internal 8K cache in the 486 CPU.

**EXTERNAL CACHE:**

Enable or disable this function according to whether you want external cache enabled or disabled.

**QUICK POWER ON SELF TEST:**

You can enable or disable this item to speed up Power On Self Test (POST) after you power on the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

**BOOT SEQUENCE:**

You may define whether the system will look first at drive A: and then at drive C: when booting up, or vice versa.

**BOOT UP FLOPPY SEEK:**

You may enable / disable this item to define whether the system will look for a floppy disk drive to boot at power-on, or directly to the hard disk drive.

**BOOT UP NUMLOCK STATUS:**

Use this item to enable / disable the NumLock on your keyboard automatically at power-on.

**BOOT UP SYSTEM SPEED:**

Select High to configure your system in the turbo speed mode at boot up, select Low to configure your system in normal speed mode. Whichever setting you choose you will still be able to use the turbo switch to toggle between the two modes during use.

**MEMORY PARITY CHECK:**

Enable or Disable this item according to whether you wish the system to check the memory parity during boot up or not. If you disable this item even if the BIOS encounters a parity error it will be ignored. We re-recommend that you always enable the item in order to ensure that the memory is good each time you turn your PC on.

**GATE 20A OPTION:**

When you set this category as Fast. The A20 signal is controlled by chipset specific method.

**TYPEMATIC RATE SETTING:**

Enable this item if you wish to be able to configure the characteristics of your keyboard. Typematic refers to the way in which characters are entered repeatedly if a key is held down. For example, if you press and hold down the "A" key, the letter "a" will repeatedly appear on your screen on your screen until you release the key. This item is disable by default.

**TYPEMATIC RATE (CHARS-SEC):**

You can use this item to define the typematic rate delay of your keyboard, i.e. the rate at which characters will be repeated when a key held down.

**TYPEMATIC DELAY (MSEC):**

You can use this item to define the period after which the typematic function become active i.e. how long after you press a key the characters will be repeated.

**SECURITY OPTION:**

This category allows you to limit access to the system and Setup, or just to Setup. To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

### 5-5 CHIPSET FEATURE SETUP

Choose the "CHIPSET FEATURES SETUP" from the main menu, the screen shown as below.

ROM PCI/ISA BIOS (2A5KIP6A) CHIPSET FEATURES SETUP AWARD SOFTWARE, INC.			
Auto Configuration	: Enable	Passive Release	: Enabled
AT Bus Clock	: CLK2/4	ISA Line Buffer	: Enabled
DRAM Write WS	: X-3-3-3	Delay Transaction	: Disabled
Page Mode Read WS	: X-4-4-4		
RAS Precharge Period	: 4T		
RAS-to-CAS Delay Time	: 3T		
EDO Read WS	: X-3-3-3		
DRAM Speculative Read	: Disabled		
SDRAM CAS Latency	: 3		
SDRAM Access Timing	: 3-6-9		
SDRAM Speculative Read	: Disabled		
Pipelined Function	: Enabled		
DRAM Refresh Period (us)	: 60		
DRAM Data Integrity Mode	: Disabled		
Memory Hole At 15-16M	: Disabled		
Primary Frame Buffer	: 2MB	Esc : Quit	↑↓→← : Select Item
VGA Frame Buffer	: Enabled	F1 : Help	Pu/Pd/+/- : Modify
Data Merge	: Disbled	F5 : Old Values	(Shift)F2 : Color
Byte Merge	: Disabled	F6 : Load BIOS Defaults	
Fast Back-to-Back	: Disabled	F7 : Load Setup Defaults	

#### Chipset Features Setup

By moving cursor to the desired selection and pressing < F1 > key, the all options for the desired selection will be displayed for choice. User has to use select the desired option.

#### AUTO CONFIGURATION FUNCTION:

When this option is Enabled, the BIOS automatically configures cache and clock settings based on detection of the CPU clock speed, you cannot change the other parameters. Set this option to Disabled to manually set DRAM, cache and I/O bus clock operating parameters.

#### AT BUS Clock:

You can set the speed of the AT bus in terms of a fraction of the CPU clock speed (PCLK2), or at the fixed speed of 7.16Mhz.  
The Choice: 7.16Mhz, CLK2/2, CLK2/3, CLK2/4, CLK2/5, CLK2/6

**DRAM Write WS:**

This setup item allows you to set the wait state, time that the CPU is held idel, while the system is writing to DRAM.

**Page Mode Read WS:**

Select the correct cycle timing combination for the system board design and Page Mode DRAM specifications.

**RAS Precharge Period:**

DRAM must continually be refreshed or it will lose its data. Normally, DRAM is refreshed entirely as the result of a single request. This option allows you to determine the number of CPU clocks allocated for the Row Address Strobe to accumulate its charge before the DRAM is refreshed. If insufficient time is allowed, refresh may be incomplete and data lost..

**RAS-to-RAS Delay Time:**

This sets the time delay between Row Address Strobe and Column Address Strobe. The unit of measurement is a CPU cycle.

**EDO Read WS:**

Select the correct cycle timing combination for the system board design and EDO DRAM specification

**DRAM Speculative Read:**

This item is capable of allowing a DRAM read request to be generated slightly before the address has been fully decoded. This can reduce all read latencies.

More simply, the CPU will issue a read request and included with this request is the place (address) in memory where the desired data is to be found. This request is received by the DRAM controller. When it is enabled, the controller will issue the read command slightly before it has finished determining the address.

**SDRAM CAS Latency:**

You can select a CAS latency delay in HCLKs of 2 or 3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU.



**SDRAM Access Timing:**

You can select the SDRAM Access Timing.

**SDRAM Speculative Read:**

The chipset can “speculate” on a DRAM read address, thus reducing read latencies. The CPU issues a read request containing the data memory address. The DRAM controller receives the request. When this field is Enabled, the controller issues the read command slightly before it has finished decoding the data address.

**Piplined Function:**

When Enabled, this controller signals the CPU for a new memory address before all data transfers for the current cycles are complete, resulting in faster performance.

The choice: Enabled, Disabled

**DRAM Refresh Period:**

Select the period required to refresh the DRAMs, according to DRAM specifications.

**DRAM Data Integrity Mode:**

Select Parity or ECC (error-correcting code), according to the type of installed DRAM.

**Memory Hole At 15-16M:**

You can reserve this area of system memory for ISA adapter ROM.

When this area is reserved it can not be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirement.

**Primary Frame Buffer:**

Select a size for the PCI frame buffer. The size of the buffer should not impinge on local memory.

**VGA Frame Buffer:**

When Enabled, a fixed VGA frame buffer from A000h to BFFFh and a CPU-to-PCI write buffer are implemented..

**Data Merge:**

This field controls the word-merge feature for frame buffer cycles.

When Enabled, this controller checks the eight CPU Byte Enable signals to determine if data words read from the PCI bus by the CPU can merged.

**Byte Merge:**

This field controls the byte-merge feature for frame buffer cycles. When Enabled, this controller checks the eight CPU Byte Enable signals to determine if data bytes read from the PCI bus by the CPU can be merged.

**Fast Back-to-Back:**

When Enabled, consecutive write cycles targeted to the same slave become fast back-to-back on the PCI bus.

**Passive Release:**

When Enabled, CPU to PCI bus accesses are allowed during passive release. Otherwise, the arbiter only accepts another PCI master access to local DRAM.

**ISA Line Buffer:**

This PCI to ISA Bridge has an 8-byte bi-directional line buffer for ISA or DMA bus master memory reads from or writes to the PCI bus. When Enabled, an ISA or DMA bus master can prefetch two double words to the line buffer for a read cycle..

**Delay Transaction:**

This bridge has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to supportT compliance with PCI specification version 2.1.

## 5-6 POWER MANAGEMENT SETUP

Choose "POWER MANAGEMENT SETUP" option on the main menu, a display will be shown on screen as below :

ROM PCI/ISA BIOS (2A5KIP6A)		POWER MANAGEMENT SETUP	
AWARD SOFTWARE, INC.			
ACPI Function	: Enabled	<b>** External Switch **</b>	
Power Managemet	: Disabled	Power button	: Power Off
MODEM Use IRQ	: Yes	DOCK I/O SMI	: Disabled
Video Off Option	: 3		
Video Off Method	: Susp, Stby ->off		
	: DPMS Support		
<b>** PM Timer **</b>			
HDD Power Down	: Disabled		
Doze Mode	: Disabled		
Standby Mode	: Disabled		
Suspend Mode	: Disabled		
<b>** Standby Events **</b>			
Primary HDD	: Disabled	Esc : Quit	↑↓→← : Select Item
Floppy	: Disabled	F1 : Help	Pu/Pd/+/- : Modify
Serial Ports	: Enabled	F5 : Old Values	(Shift)F2 : Color
Keyboard	: Enabled	F6 : Load BIOS Defaults	
Parallel Ports	: Disabled	F7 : Load Setup Defaults	

### Power Management Setup

This category determines how much power consumption for system after selecting below items. Default value is Disable. Having made all the settings above, press < Esc > to return to the main menu.

#### POWER MANAGEMENT:

This category allows you to select the type (or degree) of power saving and is directly related to the follow modes:

1. HDD Power Down
2. Doze Mode
3. Standby Mode
4. Suspend Mode

There are four selections for Power Management, three of which have fixed mode settings.

Disable (default)	No powre management. Disables all four modes.
Min. Power Saving	Minimum power management. Doze Mode = 1hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum Power Management -- <b>ONLY AVAILABLE FOR SL CPU.</b> Doze Mode = 1 mn., 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 ab activated to enhance the Max. Power Saving mode and stop the CPU internal clock. If APM is installed on your system, selecting Yes gives better power savings.

**MODEM Use IRQ:**

This determines the IRQ in which the MODEM can use.

**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.

**HDD Power Down**

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

**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.

**Power Button:**

This item allows you to select the function of power button.

**DOCK I/O SMI:**

This item allows you to enable or disable the function of DOCK I/O SMI.

## 5-7 PNP/PCI CONFIGURATION

Choose “PNP/PCI CONFIGURATION” from the main menu, a display will be shown on screen as below:

ROM PCI/ISA BIOS (2A5KIP6A)			
PNP/PCI CONFIGURATION			
AWARD SOFTWARE, INC.			
PNP OS Installed	: Yes	PCI IDE 2nd Channel	: Disabled
Resources Controll By	: Auto	PCI IRQ Actived By	: Level
Reset configuration Data	: Disabled	PCI IDE IRQ Map To	: ISA
		Esc : Quit      ↑↓→← : Select Item	
		F1 : Help      Pu/Pd/+/ - : Modify	
		F5 : Old Values (Shift)F2 : Color	
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

### PNP/PCI CONFIGURATION

You can manually configurate the PnP/PCI Device's IRQ. Highlight the selected item and pressing <F1> key, the all options for the desired selection will be displayed for choice. User has to use select the desired options. Having made all the above setting according to your configuraton. Press <Esc> to return to the main menu.

#### PNP OS Installed:

This item allows you to determine install PnP OS or not.

#### Resource Controller 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 Windows 95.

**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 serious conflict that the operating system can not boot.

**PCI IDE 2nd Channel:**

Select Disabled to deactivate the onboard PCI IDE second channel interface, if you install a secondary add-in IDE interface.

**PCI IRQ Activated By:**

This sets the method by which the PCI bus recognizes that an IRQ service is being requested by a device. Under all circumstances, you should retain the default configuration unless advised otherwise by your system manufacturer.

**PCI IDE IRQ Map to:**

This allows you to configure your system to the type of IDE disk controller in use. By default, Setup assumes that your controller is an ISA (Industry Standard Architecture) device rather than a PCI controller. The more apparent difference is the type of slot being used.

If you have equipped your system with a PCI controller, changing this allows you to specify which slot has the controller and which PCI interrupt (A, B, C or D) is associated with the connected hard drives.

Remember that this setting refers to the hard disk drive itself, rather than individual partitions. Since each IDE controller supports two separate hard drives, you can select the INT# for each. Again, you will note that the primary has a lower interrupt than the secondary as described in *Lot x Using INT#* above.

Select *CI Auto* allows the system to automatically determine how your IDE disk system is configured.

## **5-8 LOAD BIOS DEFAULTS**

### **AUTO CONFIGURATION WITH BIOS DEFAULTS**

"LOAD BIOS DEFAULTS" loads the default BIOS values. When the diagnostic aid of your system becomes unusable, choose this option and the following message appears :

Load BIOS Defaults ( Y / N ) ? N

To use the BIOS defaults, change the prompt to "Y" and press < Enter >, the CMOS is load automatically when you power on the PC-580.

## **5-9 LOAD SETUP DEFAULTS**

### **AUTO CONFIGURATION WITH SETUP DEFAULTS**

This Main Menu item uses the default SETUP values. Use this option as a diagnostic aid of your system behaves erratically. Choose this item and the following message appears:

Load SETUP Defaults ( Y / N )? N

To use the SETUP defaults, change the prompt to "Y" and press <Enter> The CMOS is load automatically form SETUP default values:



## 5-10 INTEGRATED PERIPHERALS

Choose “INTEGRATED PERIPHERALS” from the main menu, a display will be shown on screen as below:

ROM PCI/ISA BIOS (2A5KIP6A)			
INTEGRATED PERIPHERALS			
AWARD SOFTWARE, INC.			
On-Chip Primary IDE	: Enabled	Onboard Serial Port 3	: 3E8H/IRQ10
IDE Primary Master PIO	: Auto	Onboard Serial Port 4	: 2E8H/IRQ11
IDE Primary Slave PIO	: Auto	Onboard Parallel Port 2	: 278H/IRQ5
IDE Secondary Master UDMA	: Auto	Parallel Port 2 Mode	: SPP
IDE Secondary Slave UDMA	: Auto		
On-Chip Secondary IDE	: Enabled		
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
IDE HDD Block Mode	: Enabled		
On-Chip USB Controller	: Disabled		
Onboard FDC Controller	: Enabled	Esc : Quit	↑↓→← : Select Item
Onboard UART 1	: 3F8/IRQ4	F1 : Help	Pu/Pd/+/- : Modify
Onboard UART 2	: 2F8/IRQ3	F5 : Old Values	(Shift)F2 : Color
Onboard Parallel Port	: 378/IRQ7	F6 : Load BIOS Defaults	
Parallel Port Mode	: Normal	F7 : Load Setup Defaults	

### INTEGRATED PERIPHERALS

By moving cursor to the desired selection and pressing <F1> key, the all options for the desired selection will be displayed for choice. User has to use select the desired option. Having made all the setting according to your selections. Press <Esc> to return to the Main Menu.

#### On-Chip Primary IDE:

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.

#### IDE Primary/Secondary 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 on board IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

**IDE Primary/Secondary Master/Slave UDMA:**

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33, select Auto to enable BIOS support.

**On-Chip Secondary IDE:**

The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the secondary IDE interface. Select Disabled to deactivate this interface.

**IDE HDD Block Mode:**

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support.

**On-Chip USB Controller:**

Select Enabled if your system contains a Universal Serial Bus (USB) controller.

**Onboard FDC Controller:**

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, select Disabled in this field.

**Onboard Serial Port1/Port2:**

This item allows you to determine access onboard serial port1/port 2 controller with which I/O address.

**Onboard Parallel Port:**

This item allows you to determine access onboard parallel port controller with which I/O address.

**Parallel Port Mode:**

Select an operating mode for the onboard parallel (printer) port. Select Normal unless your hardware and software require one of the other modes offered in this field.

## 5-11 PASSWORD SETTINGS

You may choose to select to set either supervisor or user password, or both of them. The differences is that the supervisor password can enter and change options of the setup menus while user password can only enter setup menu but does not have any rights to change any settings.


### TO SET A PASSWORD

If you want to enable this item you should choose the "PASSWORD SETTING" option from the main menu, the following message will appear at the center of the screen to assist you in creating a password.

Enter Password:

Type the password, up to eight characters, and press < Enter >. You will be asked to confirm the password. Type the password again and press < Enter >. You may also press < Esc > to abort the selection and not enter a password.

To change the original password, enter CMOS setup Menu again you will be asked to enter the original password, then select "PASSWORD SETTING" and press enter. The system will asked you to enter a password, then you may enter new password and re-type new password for confirmation.

 User should bear in mind that when a password is set, you will be ask to enter the password whenever you enter CMOS setup Menu. This can prevent an unauthorized person from changing any part of your system configuration.

You may determine when the password is required within the BIOS Features Setup Menu and its Security Option. If the Security Option is set to "System", the password will be required both at boot and at entry to Setup. If set to "Setup", prompting only occurs when trying to enter Setup.

### **TO DISABLE THE PASSWORD**

Upon entering the CMOS setup Menu, the system will ask you to enter the original password. Type the original password, select "PASSWORD SETTING" and you will be prompted to enter a password. Instead of typing a new password, press the enter key and a message will appear at the center of the screen.

Password Disabled!!!  
Press any key to continue...

Press < Enter > and the password will be disabled. Once the password is disabled, you can enter Setup freely.

## 5-12 IDE HDD AUTO DETECTION

Choose the "IDE HDD AUTO DETECTION" option . The screen will be shown as below.

ROM PCI / ISA BIOS (2A5KIP6A)							
STANDARD CMOS SETUP							
AWARD SOFTWARE, INC.							
		CYLS.	HEADS	PRECOMP	LANDZONE	SECTORS	MODE
Primary Master : ( Mb)		0	0	0	0	0	-----
Primary Slave :							
Secondary Master :							
Secondary Slave :							
Select Secondary Slave Option (N=Skip) : N							
Option	Size	Cyls	Heads	Precomp	Landzone	Sectors	Mode
2(Y)	1280	620	64	0	2481	63	LBA
1	1281	2482	16	65535	2481	63	Normal
3	1280	620	64	65535	2481	63	Large
Note: Some Oses (like SCO-UNIX) must use "Normal" for installation							
Esc : Skip							


### IDE HDD AUTO DETECTION Screen

This setup menu allows you to save time in finding the Hard Disk Drive information, just follow the following steps:

1. Select the "IDE HDD AUTO DETECTION" from the Main Menu.
2. After a couple of seconds, the screen will appear the Hard Disk information and following message:

**"SELECT PRIMARY MASTER OPTION (N=SKIP):N"**

3. Enter Y or N to confirm the acceptance of the parameter reported by BIOS, then press the <ENTER> key.

 The process will repeat again form Primary Slave, Secondary Master and Secondary Slave Hard Disks.

## 5-13 HDD LOW LEVEL FORMAT

Choose “INTEGRATED PERIPHERALS” from the main menu, a display will be shown on screen as below:

Hard Disk Low Level Format Utility		NO. CYLS HEAD					
----- SELECT DRIVE ----- ----- BAD TRACK LIST ----- ----- PREFORMAT -----							
Current Select drive is : C							
DRIVE : C CYLINDER : 0 HEAD : 0							
	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master :	1281	2482	16	65535	2481	63	AUTO
Primary Slave :	0	0	0	0	65280	0	AUTO
Secondary Master :	0	0	0	0	5376	0	AUTO
Secondary Slave :	0	0	0	65535	65535	0	AUTO
Up/Down - Select item		Enter - Accept		ESC - Exit / Abort			
Copyright (C) Award Software, Inc. 1992-94 All Rights Reserved							

**HDD LOW LEVEL FORMAT**

By moving cursor to the desired selection and pressing <F1> key, the all options for the desired selection will be displayed for choice. User has to use select the desired option. Having made all the setting according to your selections. Press <Esc> to return to the Main Menu.

### 5-14 SAVE & EXIT SETUP

When you have completed adjusting all the settings as required, you must have these setting into the CMOS RAM. Select SAVE & EXIT and press<Enter>, as the display shown on below:

ROM PCI / ISA BIOS (2A5KIP6A) 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 CONF	FORMAT
LOAD BIOS DE	ETUP
SAVE to CMOS and EXIT (Y/N)? N	
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Save Data to CMOS & Exit SETUP	

When you confirm that you wish to save the settings your machine will be automatically rebooted and the changes you have made will be implemented. You may call up the setup program at any time to adjust any of the individual items by pressing the <Del> key during boot up.

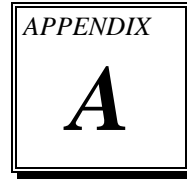
## 5-15 EXIT WITHOUT SAVING

If wish to cancel any changes you have made, select “EXIT WITHOUT SAVING” and the original setting stored in the CMOS will be retained. The screen will be shown as below:

ROM PCI / ISA BIOS (2A5KIP6A) 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 CONF	FORMAT
LOAD BIOS DE	ETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Abandon all Datas & Exit SETUP	



# ***PCL-01 ADAPTER CARD***



This appendix gives you a detailed information about our PCL-01 Adapter Card enclosed with our PC-580 Embedded Card.

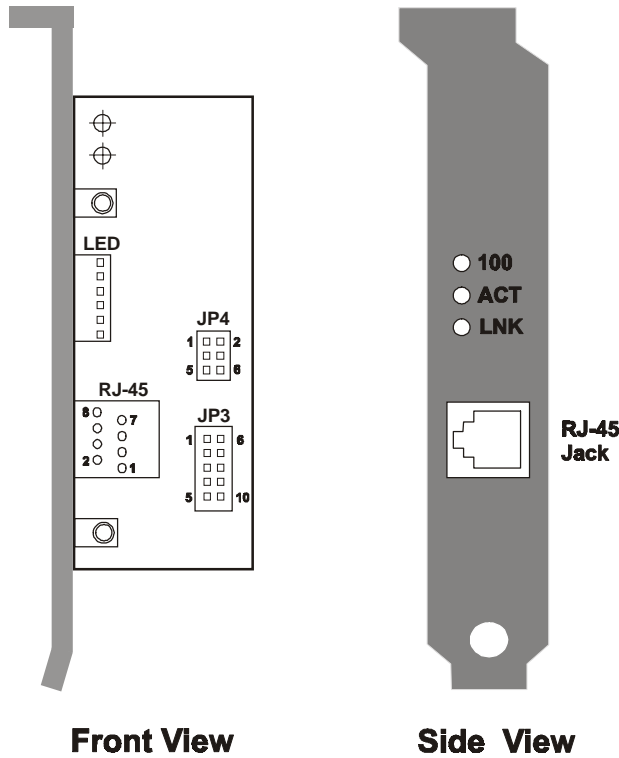
Section includes:

- PCL-01 Adapter Card
- UTP Connector
- LED Lights Indicator

## **PCL-01 ADAPTER CARD**

You will find a PCL-01 Adapter Card enclosed with our PC-580 Embedded Card. This card is designed as a converter of UTP connector and to connect LED LAN Indication found on our board.

PCL-01 Adapter Card contains two jumper block, three LED light indicator and one RJ-45 Connector. Below, you will find an illustration of our PCL-01 Adapter Card:



## UTP CONNECTOR

The JP3 found in our PCL-01 Adapter Card is used to connect the UTP Connector found in our PC-580 Embedded Board. While the RJ-45 Jack (resembling a phone jack) is provided to connect UTP cable to the hub port.

For more information about JP3 and RJ-45, below you will find the respective pin assignments.

PIN	ASSIGNMENT
1	TX+
2	TX-
3	RX+
4	ISOLATED GND
5	ISOLATED GND
6	RX-
7	ISOLATED GND
8	ISOLATED GND
9	SG
10	SG

**For installation, please do the following steps:**

1. Turn OFF the system.
2. Check the UTP cable enclosed with our PC-580 Embedded Card.
3. Connect one end to the UTP Connector (found in PC-580) and  
Connect the other end to the JP3 (found in PCL-01).
4. Plug one end of the UTP cable into the adapter's RJ-45 Jack and the  
other end to the 10/100 BASE-TX hub port.

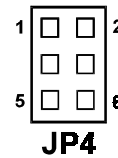
## LED LIGHTS INDICATOR

There are three LEDs light indicators found on our PCL-01 Adapter Card. They are:

Name	Color	Function
100	Red	Hub Detector
ACT	Yellow	Data transfer active signal
LNK	Green	Lights when power on.

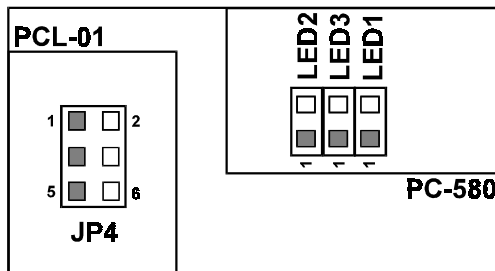
In order to activate the lights, you must connect the three LED LAN Connector (found in our PC-580 Embedded Board) to the JP4 (found in our PCL-01). The pin assignments for JP4 are as follows:

PIN	ASSIGNMENT
1	LED1
2	VCC
3	LED2
4	VCC
5	LED3
6	VCC



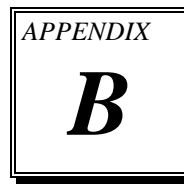
**For installation, please do the following steps and illustration:**

1. Turn OFF the system.
2. Connect LED cable from LED2 to JP4 (3-4) pins.
3. Connect LED cable from LED3 to JP4 (5-6) pins.
4. Connect LED cable from LED1 to JP4 (1-2) pins.



⚠ Before installation, make sure to check sequence of LED LAN Connector.

# ***EXPANSION BUS***



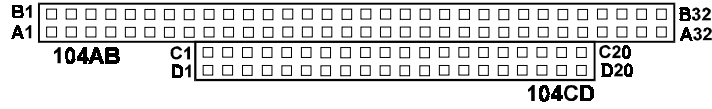
This appendix indicates you the pin assignments.

Section includes:

- PC-104 Connector Pin Assignment
- PCI BUS Pin Assignment

## PC-104 CONNECTOR PIN ASSIGNMENT

### 104AB, 104CD : PC-104 Connector



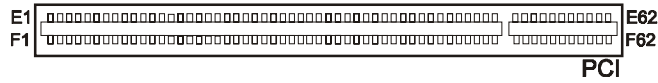
The PC-104 can support multi-pieces of PC-104 modules. This card has two connectors : one (104AB) consists of 64 pin; the other one (104CD) consists of 40 pin, both of them are dual-in-line headers

The pin assignments for connector 104AB & 104CD are as follow:

104AB				104CD			
PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT
A1	IOCHK	B1	GND	C1	GND	D1	GND
A2	D7	B2	REST	C2	SBHE	D2	MEMCS16
A3	D6	B3	VCC	C3	LA23	D3	IOCS16
A4	D5	B4	IRQ9	C4	LA22	D4	IRQ10
A5	D4	B5	-5V	C5	LA21	D5	IRQ11
A6	D3	B6	DRQ2	C6	LA20	D6	IRQ12
A7	D2	B7	-12V	C7	LA19	D7	IRQ15
A8	D1	B8	OWS	C8	LA18	D8	IRQ14
A9	D0	B9	+12V	C9	LA17	D9	DACK0
A10	IOCHRDY	B10	GND	C10	MEMR	D10	DRQ0
A11	AEN	B11	SMEMW	C11	MEMW	D11	DACK5
A12	A19	B12	SMEMR	C12	D8	D12	DRQ5
A13	A18	B13	IOW	C13	D9	D13	DACK6
A14	A17	B14	IOR	C14	D10	D14	DRQ6
A15	A16	B15	DACK3	C15	D11	D15	DACK7
A16	A15	B16	DRQ3	C16	D12	D16	DRQ7
A17	A14	B17	DACK1	C17	D13	D17	VCC
A18	A13	B18	DRQ1	C18	D14	D18	MASTER
A19	A12	B19	REFRESH	C19	D15	D19	GND
A20	A11	B20	CLK	C20	KEY PIN	D20	GND
A21	A10	B21	IRQ7				
A22	A9	B22	IRQ6				
A23	A8	B23	IRQ5				
A24	A7	B24	IRQ4				
A25	A6	B25	IRQ3				
A26	A5	B26	DACK2				
A27	A4	B27	TC				
A28	A3	B28	BALE				
A29	A2	B29	VCC				
A30	A1	B30	OSC				
A31	A0	B31	GND				
A32	GND	B32	GND				

## PCI BUS PIN ASSIGNMENT

The PCI Bus divided into two sets : one consists of 98 pins; the other consists of 22 pins. The pin assignments are as follow :

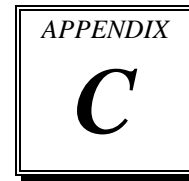


F		E		F		E	
PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT
F1	-12V	E1	TRST#	F31	+3.3V	E31	AD18
F2	TCK	E2	+12V	F32	AD17	E32	AD16
F3	GND	E3	TMS	F33	C/BE2#	E33	+3.3V
F4	TDO	E4	TDI	F34	GND	E34	FRAME#
F5	+5V	E5	+5V	F35	IRDY#	E35	GND
F6	+5V	E6	INTA#	F36	+3.3V	E36	TRDY#
F7	INTB#	E7	INTC#	F37	DEVSEL#	E37	GND
F8	INTD#	E8	+5V	F38	GND	E38	STOP#
F9	REQ3#	E9	CLKC	F39	LOCK#	E39	+3.3V
F10	REQ1#	E10	+5V(I/O)	F40	PERR#	E40	SDONE
F11	GNT3#	E11	CLKD	F41	+3.3V	E41	SB0#
F12	GND	E12	GND	F42	SERR#	E42	GND
F13	GND	E13	GND	F43	+3.3V	E43	PAR
F14	CLKA	E14	GNT1#	F44	C/BE1#	E44	AD15
F15	GND	E15	RST#	F45	AD14	E45	+3.3V
F16	CLKB	E16	+5V(I/O)	F46	GND	E46	AD13
F17	GND	E17	GNT0#	F47	AD12	E47	AD11
F18	REQ0#	E18	GND	F48	AD10	E48	GND
F19	+5V(I/O)	E19	REQ2#	F49	GND	E49	AD09
F20	AD31	E20	AD30	F52	AD08	E52	C/BE0#
F21	AD29	E21	+3.3V	F53	AD07	E53	+3.3V
F22	GND	E22	AD28	F54	+3.3V	E54	AD06
F23	AD27	E23	AD26	F55	AD05	E55	AD04
F24	AD25	E24	GND	F56	AD03	E56	GND
F25	+3.3V	E25	AD24	F57	GND	E57	AD02
F26	C/BE3#	E26	GNT2#	F58	AD01	E58	AD00
F27	AD23	E27	+3.3V	F59	+5V(I/O)	E59	+5V(I/O)
F28	GND	E28	AD22	F60	ACK64#	E60	REQ64#
F29	AD21	E29	AD20	F61	+5V	E61	+5V
F30	AD19	E30	GND	F62	+5V	E62	+5V





# ***TECHNICAL SUMMARY***

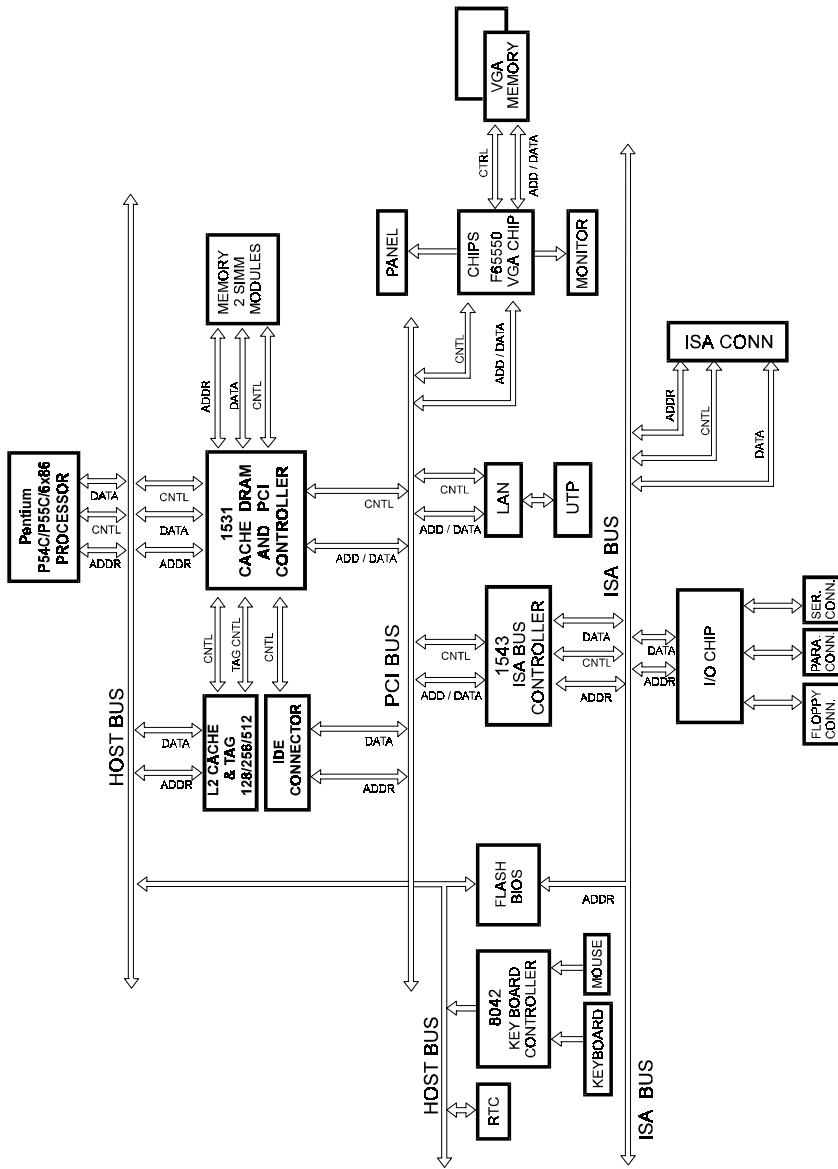


This section introduce you the maps concisely.

Section includes:

- Block Diagram
- Interrupt Map
- RTC & CMOS RAM Map
- Timer & DMA Channels Map
- I / O & Memory Map

**BLOCK DIAGRAM**



**INTERRUPT MAP**

<b>IRQ</b>	<b>ASSIGNMENT</b>
0	System TIMER interrupt from TIMER-0
1	Keyboard output buffer full
2	Cascade for IRQ 8-15
3	Serial port 2
4	Serial port 1
5	Parallel port 2
6	Floppy Disk adapter
7	Parallel port 1
8	RTC clock
9	Available
10	Available
11	Available
12	Available
13	Math coprocessor
14	Hard Disk adapter
15	Available

## RTC & CMOS RAM MAP

CODE	ASSIGNMENT
00	Seconds
01	Second alarm
02	Minutes
03	Minutes alarm
04	Hours
05	Hours alarm
06	Day of week
07	Day of month
08	Month
09	Year
0A	Status register A
0B	Status register B
0C	Status register C
0D	Status register D
0E	Diagnostic status byte
0F	Shutdown byte
10	Floppy Disk drive type byte
11	Reserve
12	Hard Disk type byte
13	Reserve
14	Equipment byte
15	Base memory low byte
16	Base memory high byte
17	Extension memory low byte
18	Extension memory high byte
30	Reserved for extension memory low byte
31	Reserved for extension memory high byte
32	Date Century byte
33	Information Flag
34-3F	Reserve
40-7f	Reserved for Chipset Setting Data

## TIMER & DMA CHANNELS MAP

### Timer Channel Map :

Timer Channel	Assignment
0	System timer interrupt
1	DRAM Refresh request
2	Speaker tone generator

### DMA Channel Map :

DMA Channel	Assignment
0	Available
1	IBM SDLC
2	Floppy Disk adapter
3	Channel-3 Available
4	Cascade for DMA controller 1
5	Available
6	Available
7	Available

## I/O & MEMORY MAP

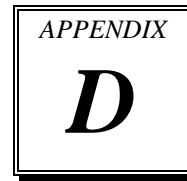
### Memory Map :

MEMORY MAP	ASSIGNMENT
0000000-009FFFF	System memory used by DOS and application
00A0000-00BFFFF	Display buffer memory for VGA/ EGA / CGA / MONOCHROME adapter
00C0000-00DFFFF	Reserved for I/O device BIOS ROM or RAM buffer.
00E0000-00EFFFF	Reserved for PCI device ROM
00F0000-00FFFFFF	System BIOS ROM
0100000-BFFFFFFF	System extension memory

### I/O Map :

I/O MAP	ASSIGNMENT
000-01F	DMA controller (Master)
020-021	Interrupt controller (Master)
022-023	Chipset controller registers I/O ports.
040-05F	Timer control registers.
060-06F	Keyboard interface controller (8042)
070-07F	RTC ports & CMOS I/O ports
080-09F	DMA register
0A0-0BF	Interrupt controller (Slave)
0C0-0DF	DMA controller (Slave)
0F0-0FF	Math coprocessor
1F0-1F8	Hard Disk controller
278-27F	Parallel port-2
2B0-2DF	Graphics adapter controller
2F8-2FF	Serial port-2
360-36F	Net work ports
378-37F	Parallel port-1
3B0-3BF	Monochrome & Printer adapter
3C0-3CF	EGA adapter
3D0-3DF	CGA adapter
3F0-3F7	Floppy disk controller
3F8-3FF	Serial port-1

# ***TROUBLE SHOOTING***



This section outlines the errors may occur when you operate the system. It also gives you the suggestions on solving the problems.

Section includes:

- Trouble Shooting for Error Messages
- Trouble Shooting for POST Code

## **TROUBLE SHOOTING FOR ERROR MESSAGE**

The following information informs you the error messages and the trouble shooting. Please adjust your systems according to the messages below. And make sure all the components and connectors are in proper position and firmly attached. If the errors still encountered, please contact with your distributor for maintenance.

### **POST BEEP :**

Currently there are two kinds of beep codes in BIOS. The one code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by three short beeps. The other one code indicates that your DRAM error has occurred. This beep code consists of a single long beep repeatedly.

### **CMOS BATTERY FAILURE :**

When the CMOS battery is out of work or has run out, the user has to replace the whole unit.

### **CMOS CHECKSUM ERROR :**

This error inform you that the CMOS is corrupted. When the battery runs weak, this situation might happen. Please check the battery and change a new one when necessary.

### **DISPLAY SWITCH IS SET INCORRECTLY :**

Display switch on the motherboard can be set to either monochrome or color. This indicates the switch is set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the video selection.

### **DISK BOOT FAILURE:**

When you can't find the boot device, insert a system disk into Drive A and press < Enter >. Make sure both the controller and cables are all in proper positions, also make sure the disk is formatted correct device. Then reboot the system.



**DISKETTE DRIVES OR TYPES MISMATCH ERROR :**

When the diskette drive type is different from CMOS, please run setup or configure the drive again.

**ERROR ENCOUNTERED INITIALIZING HARD DRIVE :**

When you can't initialize the hard drive. Assure the adapter is installed correctly and all cables are correctly and firmly attached. Also be sure the correct hard drive type is selected in Setup.

**ERROR INITIALIZING HARD DISK CONTROLLER :**

When this error occurs. Be sure the cord is exactly installed in the bus. Make sure the correct hard drive type is selected in Setup. Also check whether all of the jumpers are set correctly in the hard drive.

**FLOPPY DISK CONTROLLER ERROR OR  
NO CONTROLLER PRESENT :**

When you cannot find or initialize the floppy drive controller, please check the controller whether in proper Setup. If there are no floppy drive installed, Ensure the Diskette Drive selection in Setup is set to NONE.

**KEYBOARD ERROR OR NO KEYBOARD PRESENT :**

When this situation happens, please check keyboard attachment and no keys being pressed during the boot. If you are purposely configuring the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. This will cause the BIOS to ignore the missing keyboard and continue the boot.

**MEMORY ADDRESS ERROR :**

When the memory address indicates error. You can use this location along with the memory map for your system to find and replace the bad memory chips.

**MEMORY SIZE HAS CHANGED :**

Memory has been added or removed since the last boot. In EISA mode use Configuration Utility to re-configure the memory configuration. In ISA mode enter Setup and enter the new memory size in the memory fields.

**MEMORY VERIFYING ERROR :**

It indicates an error verifying a value already written to memory. Use the location along with your system's memory map to locate the bad chip.

**OFFENDING ADDRESS MISSING :**

This message is used in connection with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem cannot be isolated.

**REBOOT ERROR :**

When this error occurs that requires you to reboot.. Press any key and the system will reboot.

**SYSTEM HALTED :**

Indicates the present boot attempt has been aborted and the system must be rebooted. Press and hold down the CTRL and ALT keys and press DEL.

**TROUBLE SHOOTING FOR POST CODES**

When you power on your PC, and the screen display nothing. You have to insert the POST Card for test. The address for ISA POST port is 80h. Make sure the card is in correct slot. The lists below indicate you the error messages. Please follow the instruction to adjust your system. If the error still occurred, please contact with your distributor for maintenance.

**C0 :** Turn off OEM specific cache, shadow.....

**03 :** Initialize all the standard devices with default values Standard devices includes :  
DMA controller (8237).  
Programmable Interrupt Controller (8259).  
Programmable Interval Timer (8254).  
RTC chip.

**05 :** 1.Keyboard Controller Self-Test.  
2.Enable Keyboard Interface.

**07 :** Verifies CMOS's basic R/W functionality.

- BE** : Program defaults values into chipset according to the MODBINable Chipset Default Table.
- C1** : Auto-detection of onboard DRAM & Cache.
- C5** : Copy the BIOS from ROM into E0000-FFFFF shadow RAM so that POST will go faster.
- 08** : Test the first 256K DRAM.
- 09** : 1. Program the configuration register of Cyrix CPU according to the MODBINable Cyrix Register Table.  
2. OEM specific cache initialization (if needed).
- 0A** : 1. Initialize the first 32 interrupt vectors with corresponding Interrupt handlers  
Initialize INT no from 33-120 with Dummy(Spurious) Interrupt Handler.  
2. Issue CPUID instruction to identify CPU type.  
3. Early Power Management initialization (OEM specific).
- 0B** : 1. Verify the RTC time is valid or not.  
2. Detect bad battery.  
3. Read CMOS data into BIOS stack area.  
4. PnP initializations including (PnP BIOS only).  
    -Assign CSN to PnP ISA card.  
    -Create resource map from ESCD.  
5. Assign I/O & Memory for PCI devices (PCI BIOS only).
- 0C** : Initialization of the BIOS Data Area (40 : 0N-40:FF).
- 0D** : 1. Program some of the Chipset's value according to Setup. (Early Setup Value Program).  
2. Measure CPU speed for display & decide the system clock speed.  
3. Video initialization including Monochrome ,CGA, EGA/VGA. If no display device found, the speaker will beep.

- 0E** : 1. Initialize the APIC (Multi-Processor BIOS only).  
2. Test video RAM (If Monochrome display device found).  
3. Show messages including :  
    -Award Logo, Copyright string, BIOS Date code & Part No.  
    -OEM specific sign on messages.  
    -Energy Star Logo (Green BIOS only).  
    -CPU brand, type & speed.  
    -Test system BIOS checksum (Non-compress Version only).
- 0F** : DMA channel 0 test.
- 10** : DMA channel 1 test.
- 11** : DMA page registers test.
- 14** : Test 8254 Timer 0 Counter2.
- 15** : Test 8259 interrupt mask bits for channel 1.
- 16** : Test 8259 interrupt mask bits for channel 2.
- 19** : Test 8259 functionality.
- 30** : Detect Base Memory & Extended Memory Size.
- 31** : 1. Test Base Memory from 256K to 640K.  
2. Test Extended Memory from 1M to the top of memory.
- 32** : 1. Display the Award Plug & Play BIOS Extension message (PnP BIOS only).  
2. Program all onboard super I/O chips (if any) including COM ports, LPT ports, FDD port....according to setup value.
- 3C** : Set flag to allow users to enter CMOS Setup Utility.
- 3D** : 1 Initialize Keyboard.  
2 Install PS2 mouse.
- 3E** : Try to turn on Level 2 cache.  
Note : Some chipset may need to turn on the L2 cache in this stage. But usually, the cache is turn on later in POST 61h.

- BF** : 1. Program the rest of the Chipset's value according to Setup. (Later Setup Value Program).  
2. If auto-configuration is enabled, programmed the chipset with pre-defined value in the MODBINable Auto-Table.
- 41** : Initialize floppy disk drive controller.
- 42** : Initialize Hard drive controller.
- 43** : If it is a PnP BIOS, initialize serial & parallel ports.
- 45** : Initialize math coprocessor.
- 4E** : If there is any error detected (such as video, kb....), show all the error messages the screen & wait for user to press <F1> key.
- 4F** : 1. If password is needed, ask for password.  
2. Clear the Energy Star Logo (Green BIOS only).
- 50** : Write all CMOS values currently in the BIOS stack area back into the CMOS.
- 52** : 1. Initialize all ISA ROMs.  
2. Later PCI initializations (PCI BIOS only).  
    -assign IRQ to PCI devices.  
    -initialize all PCI ROMs.  
3. PnP Initializations (PnP BIOS only).  
    -assign I/O, Memory, IRQ & DMA TO PnP ISA devices.  
    -initialize all PnP ISA ROMs.  
4. Program shadows RAM according to Setup settings.  
5. Program parity according to Setup setting.  
6. Power Management Initialization.  
    -Enable/Disable global PM.  
    -APM interface initialization.
- 53** : 1. If it is NOT a PnP BIOS, initialize serial & parallel ports.  
2. Initialize time value in BIOS data area by translate the RTC time value into a timer tick value.
- 60** : Setup Virus Protection (Boot Sector Protection) functionality according to Setup setting.

- 61 :** 1. Try to turn on Level 2 cache.  
Note : if L2 cache is already turned on in POST 3D, this part will be skipped.  
2. Set the boot up speed according to Setup setting.  
3. Last chance for Chipset initialization.  
4. Last chance for Power Management initialization (Green BIOS only).  
5. Show the system configuration table.
- 62 :** 1. Setup daylight saving according to Setup value.  
2. Program the NumLock, typematic rate & typematic speed according to Setup setting.
- 63 :** 1. If there is any changes in the hardware configuration, update the ESCD information (PnP BIOS only).  
2. Clear memory that have been used.  
3. Boot system via INT 19H.
- FF :** System Booting. this means that the BIOS already pass the control right to the operating system.









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