

PSC-486 Ver.C
ISA/PCI 486
Single Board Computer

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1

Introduction

Welcome to the PSC-486 ISA/PCI 486 Single Board Computer. The PSC-486 board is an ISA/PCI and PC/104 form factor board, which comes equipped with high performance 486DX/DX2/DX4 or the latest Cyrix 5x86 CPU and advanced high performance multi-mode I/O, designed for the system manufacturers, integrators, or VARs that want to provide all the performance, reliability, and quality at a reasonable price.

An advanced high performance super AT I/O chip SMC FDC37C665 is used in the PSC-486 board. Both on-chip UARTs are compatible with the NS16C550. The parallel port and IDE interface are compatible with IBM PC/AT and XT architecture's. The FDC37C665 incorporates sophisticated power control circuitry(PCC). The PCC supports multiple low power down modes.

In addition, the PSC-486 provides three 72-pin SIMMsockets for its on-board DRAM. The 72-pin accepts 1MB, 2MB, 4MB, 8MB, 16MB, and 32MB SIMM. So, the total on-board memory can be configured from 1MB to 128MB.

PSC-486 uses the ALI chipset, M1489 and M1487, which are 100% ISA/PCI compatible chipset.

1.1 Specifications :

The PSC-486 ISA/PCI 486 Single Board Computer provides the following specification:

- **CPU** : 486SX/DX/DX2/ DX4 or Cyrix 5x86
- **Bus** : ISA bus and PCI 32-bit local bus
- **DMA channels** : 7
- **Interrupt levels** : 15
- **Chipset** : M1489 and M1487
- **Real-time clock/calendar** : DS-12887 chip and quartz oscillator, 128B CMOS memory, powered by lithium battery for over 10 years of data retention.
- **RAM memory** : 1MB to 128MB,EDO and standard DRAM supported
- **Second Cache memory** : 128KB,256KB,512KB,or 1MB
- **E-IDE hard disk drive interface** : up to two PCI Ehnace IDE hard drives.
- **Floppy disk drive interface** : two 2.88 MB, 1.44MB, 1.2MB, 720KB, or 360KB floppy disk drives.
- **Two high speed Series ports** : NS16C550 compatible UARTs
- **Bi-directional Parallel Port**
- **Watch-dog timer** : can be set by 1,2,10,20,110 or 220 seconds period. Reset or NMI was generated when CPU did not periodically trigger the timer. Your program use hex 043 and 443 to control the watch-dog and generate a system reset.
- **PC/104 expansion bus**
- **External power connector**
- **Keyboard connector**
- **Mouse** : PS/2 Mouse Port on-board.

- **Power Consumption** : +5V @ 2.5A (486DX2-66, 4MB RAM)
±12V @ 20mA (for RS-232 only)
- **Operating Temperature** : 0° ~ 60° C (CPU needs Cooler)

1.2 What You Have

In addition to this *User's Manual*, the PSC-486 package includes the following items:

- PSC-486 ISA/PCI 486 Single Board Computer
- Printer Cable
- FDD/HDD Cable
- 6-pin Mini-Din to 5-pin Din Keyboard Adapter Cable

If any of these items is missing or damaged, contact the dealer from whom you purchased the product. Save the shipping materials and carton in case you want to ship or store the product in the future.

2

Installation

This chapter describes how to install the PSC-486. At first, the layout of PSC-486 is shown, and the unpacking information that you should be careful is described. The jumpers and switches setting for the PSC-486's configuration, such as CPU type selection, system clock setting, and interrupt IRQ setting for serial ports and parallel port, are also included.

Important Note :

The PSC-486 supports **3 Master and 1 Slave PCI Devices**. The 3 Master PCI slots are the PCI Slot 1-3 on the PCI/ISA Backplane. The PCI Slot 1-3 usually are the next 3 PCI slots to ISA/PCI CPU board slot.

Almost PCI VGA Board is a Slave PCI Device and Network /SCSI Board is a Master PCI Device.

2.1 PSC-486's Layout

< reference next page >

2.2 Unpacking

Your PSC-486 Single Board Computer contains sensitive electronic components that can be easily damaged by static electricity.

In this section, we describe the precautions you should take while unpacking, as well as during installation. It is very important that the instructions be followed correctly, to avoid static damage, and to successfully install the board.

The system board should be done on a grounded anti-static mat. The operator should be wearing an anti-static wristband, grounded at the same point as the anti-static mat.

Inspect the cardboard carton for obvious damage. Shipping and handling may cause damage to your board. Be sure there are no shipping and handling damages on the board before processing.

After opening the cardboard carton, exact the system board and place it only on a grounded anti-static surface component side up.

Again inspect the board for damage. Press down on all the socketed IC's to make sure that they are properly seated. Do this only with the board place on a firm flat surface.

Note : DO NOT APPLY POWER TO THE BOARD IF IT HAS BEEN DAMAGED.

You are now ready to install your PSC-486 Single Board Computer.

2.3 Jumper Description

You can change the PSC-486's configuration by setting jumper switches on the board. The board's jumpers are preset at the factory. Under normal circumstances, you should not need to change the jumper settings.

A jumper switch is **closed** (sometimes referred to as shorted with the plastic cap inserted over two pins of the jumper). A jumper is **open** with the plastic cap inserted over one or no pin(s) of the jumper. Figure 2.2 below shows different jumper settings which will be used in this chapter.

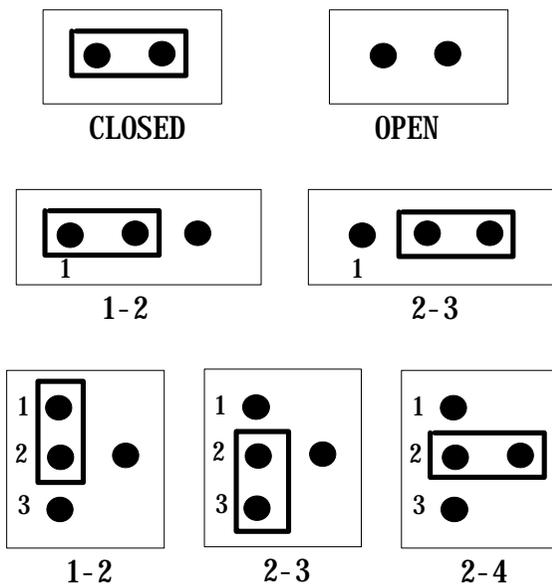


Figure 2.2

2.4 Setting the CPU for PSC-486 Ver.B/C (Apr.10,1996)

If you want to upgrade the CPU, you must do two things:

1. Set the jumpers for CPU type.
2. Adjust the jumpers setting for CPU speed.

• CPU Type Setting:

CPU Type	JP2	JP7	JP8	JP9	JP10	JP11	JP12	JP13	JP14
Intel DX2/DX4 DX4 &E	OFF	ON	1-2	2-3	2-3	3-4	3-4	3-4	OFF
Cyrix 5x86 Intel DX4 &EW AMD DX4+ (SV8B)	2-3	ON	2-3	2-3	2-3	3-4	3-4	3-4	5-6
Cyrix/TI/SGS DX2/DX4	1-2	ON	1-2	2-3	2-3	5-6	5-6	5-6	1-2
AMD DX2/DX4 (NV8T)	OFF	OFF	1-2	2-3	2-3	OFF	OFF	1-2	OFF
AMD X5(133) 5x86 - P75 AMD DX2+ (SV8B)	2-3	ON	2-3	2-3	2-3	3-4	3-4	3-4	1-3 5-6

ON=CLOSE OFF=OPEN

Factory Default : JP6 - OPEN

• CPU Clock Setting :

CPU Clock	JP15	JP16	JP17 1-2	JP17 3-4
25MHz	OPEN	1-2	OPEN	OPEN
* 33MHz	OPEN	1-2	CLOSE	CLOSE
40MHz	CLOSE	2-3	OPEN	CLOSE

(*): default setting

Note :

DX2-66/DX4-100/5x86-100 sets CPU Clock - 33Mhz

DX2-80/DX4-120/5x86-120 sets CPU Clock - 40Mhz

AMD 5x86-P75(133Mhz) sets CPU Clock - 33Mhz

- CPU Voltage Selection - +5V, 3.3V, or 3.45V

Because right now in the market have several kind of CPUs using different voltage in core logic. For example the AMD offers 486DX2-66/80 and DX4-100/120 at 3.3V, Intel offers DX4-75/100 at 3.3V, and some Cyrix CPU will use 3.45V.

CPU Voltage	JP19	JP25
+5V	1-2 ,3-4, 5-6	2-3
* +3.3V	OPEN	2-3
+3.45V	OPEN	1-2

(*) : default setting

2.5 Upgrade the External Cache

The PSC-486 offers two banks external cache the range is from 128KB to 1MB. The different cache memory setting is as follows,

Cache Size	JP1	JP3	JP4	JP5
128KB,32Kx8,bank 0	1-2 3-4	2-3	1-2	1-2
256KB,32Kx8,bank 0/1	1-2 3-4 5-6	1-2	1-2	1-2
256KB,64Kx8,bank 0	1-2 3-4 5-6	1-2	2-3	1-2
512KB,64Kx8,bank 0/1	1-2 3-4 5-6 7-8	1-2	1-2	1-2
512KB,128Kx8,bank 0	1-2 3-4 5-6 7-8	1-2	1-2	2-3
1MB,128Kx8,bank 0/1	1-2 3-4 5-6 7-8 9-10	1-2	1-2	1-2

Note : Tag RAM (U5): 32K x 8 for one bank cache memory
 64K x 8 for two banks cache memory
 bank 0 : U1-U4 bank 1 : U7-U10

2.6 System Memory DRAM(EDO RAM supported)

There are three 72-pin SIMM sockets to accept 1Mb,2MB,4MB,8MB,16MB,or 32MB memory modules. The total capacity is from 1MB to 128MB(**total 4 banks**). Customer can free install any memory module on any socket. Don't care which socket is first to install.

NOTE :
SIMM 1, 3 accept one or two banks RAM modules
SIMM 2 only accepts one bank RAM module.

2.7 Watch-Dog Timer

The Watch-Dog Timer is enabled by reading port 443H. It should be triggered before the time-out period ends, otherwise it will assume the program operation is abnormal and will issue a reset signal to start again, or activate NMI to CPU. The Watch-Dog Timer is disable by reading port 043H. See Appendix A for more detailed description of Watch-Dog Timer.

• JP27 : Watch-Dog Active Type Setting

JP27	DESCRIPTION
*1-2	RESET WHEN WDT TIME-OUT
2-3	ACTIVATE NMI TO CPU WHEN WDT TIME-OUT
OPEN	DISABLE WDT

(*): default setting

• JP18: WDT Time-Out Period

PERIOD	1-2	3-4	5-6	7-8
1 sec.	OPEN	OPEN	CLOSE	OPEN
2 sec.	OPEN	OPEN	CLOSE	CLOSE
*10 sec.	OPEN	CLOSE	OPEN	OPEN
20 sec.	OPEN	CLOSE	OPEN	CLOSE
110 sec.	CLOSE	OPEN	OPEN	OPEN
220 sec.	CLOSE	OPEN	OPEN	CLOSE

(*) : default setting

2.8 Parallel Port Interface

This port can be set I/O address to 378H~37FH, 278H~27FH, 3BCH~3BEH or Disabled by BIOS setup. Also, the port's interrupt can be set to IRQ7 or IRQ5 by jumper JP20, set Data Request Selection by JP23, and set Data Acknowledge by JP22.

The PSC-486 allows installation of up to three different I/O ports. These three ports are called: LPT1, LPT2, and LPT3. The printer port on the Monochrome/Printer Adapter that is addressed at 3BCH~3BEH will be LPT1 when it is installed. Then the port's address 378H~37FH will be LPT2, and 278H~27FH will be LPT3. If the Monochrome/Printer Adapter is used instead of Color/Graphic Adapter, then the 378H~37FH will be LPT1, and 278H~27FH will be LPT2. All the setting for the parallel port is done by BIOS Setup program, please refer to Chapter 4 for more details.

• JP20 : Parallel Port Interrupt Setting

JP20	DESCRIPTION
* 1-2	IRQ7
2-3	IRQ5

(*) : default setting

• JP23: Parallel Port Data Request Setting

JP23	DESCRIPTION
1-2	DRQ1
* 2-3	DRQ3

(*) : default setting

• JP22 : Parallel Data Acknowledge

JP22	DESCRIPTION
1-2	DACK1
* 2-3	DACK3

(*) : default setting

2.9 Serial Port Interface

There are two on-board RS-232 serial ports interface, CN13(ACE0) and CN16(ACE1). The serial ports can be configured as COM1, COM2, COM3, COM4, or Disabled by BIOS setup.

• JP24 : COM1 Serial Port Interrupt Setting

JP24	COM1
* 1-2	IRQ4
2-3	IRQ15

(*) : default setting

• JP21 : COM2 Serial Port Interrupt Setting

JP21	COM2
* 1-2	IRQ3
2-3	IRQ11

(*) : default setting

2.10 FDC37C665 Multi-I/O Chipset

The PSC-486 comes equipped with super multi-I/O chipset SMC FDC37C665, you can select JP26 to enable or disable the FDC37C665.

• JP26 : Multi-I/O FDC37C665/666 Setting

JP26	DESCRIPTION
* OPEN	ENABLE FDC37C665
CLOSE	DISABLE FDC37C665

(*) : default setting

2.11 PS/2 Mouse Setting

The PSC-486 have built-in PS/2 mouse port to release one serial port for other application. The PS/2 mouse normally will use the IRQ12 when install it.

• **JP30 : PS/2 Mouse IRQ Selection**

JP30	DESCRIPTION
OPEN	Non
*CLOSE	IRQ12

(*) : default setting

2.12 DiskOnChip™Flash Disk

The DiskOnChip™Flash Disk Chip(DOC) is produced by M-Systems. The DOC have two models in market : ED1102 and ED1202. The ED1102 is 28-pin DIP package and ED1202 is 32-pin package, both models can be used in PSC-486's 32-pin DOC socket. Because the DOC is 100% compatible to hard disk and DOS. Customer don't need any extra software utility. It is just "plug and play", easy and reliable. Right now the DOC is available in 1MB/2MB capacity, in the near future will have 4MB/8MB/16MB model. There also have PROMDISK-Chip™ can be used with the same socket.

• **JP31 : DiskOnChip Memory Address Setting**

JP31	Address
1-2	D000
3-4	D800
* 5-6	E000

(*) : default setting

WARNING !!

If you install the ED1102, 28-pin type, the ED1102 pin-1 should be at the 32-pin socket's pin-3. Wrong installation will damage the ED1102 DOC.

3

Connection

This chapter describes how to connect peripherals, switches and indicators to the PSC-486 board.

3.1 Floppy Disk Drive Connector

PSC-486 board comes equipped with a 34-pin daisy-chain driver connector cable.

• CN6 : FDC CONNECTOR

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GROUND	2	REDUCE WRITE
3	GROUND	4	N/C
5	GROUND	6	N/C
7	GROUND	8	INDEX#
9	GROUND	10	MOTOR ENABLE A#
11	GROUND	12	DRIVE SELECT B#
13	GROUND	14	DRIVE SELECT A#
15	GROUND	16	MOTOR ENABLE B#
17	GROUND	18	DIRECTION#
19	GROUND	20	STEP#
21	GROUND	22	WRITE DATA#
23	GROUND	24	WRITE GATE#
25	GROUND	26	TRACK 0#
27	GROUND	28	WRITE PROTECT#
29	GROUND	30	READ DATA#
31	GROUND	32	SIDE 1 SELECT#
33	GROUND	34	DISK CHANGE#

3.2 PCI E-IDE Disk Drive Connector

You can attach two IDE(Integrated Device Electronics) hard disk drives to the PSC-486 internal controller.

• CN5: IDE Interface Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RESET#	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	N/C
21	N/C	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	N/C	28	BALE - DEFAULT
29	N/C	30	GROUND - DEFAULT
31	INTERRUPT	32	IOCS16#-DEFAULT
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GROUND

3.3 Parallel Port

This port is usually connected to a printer, The PSC-486 includes an on-board parallel port, accessed through a 26-pin flat-cable connector CN7.

• CN7 : Parallel Port Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	STROBE#	2	DATA 0
3	DATA 1	4	DATA 2
5	DATA 3	6	DATA 4
7	DATA 5	8	DATA 6
9	DATA 7	10	ACKNOWLEDGE
11	BUSY	12	PAPER EMPTY
13	PRINTER SELECT	14	AUTO FORM FEED #
15	ERROR#	16	INITIALIZE
17	PRINTER SELECT LN#	18	GROUND
19	GROUND	20	GROUND
21	GROUND	22	GROUND
23	IOW#	24	GROUND
25	GROUND		

3.4 Serial Ports

The PSC-486 offers two high speed NS16C550 compatible UARTs with Read/Receive 16 byte FIFO serial ports.

- **CN13 & CN16 : Serial Port DB-9 Connector(ACE0 & ACE1)**

PIN NO.	DESCRIPTION
1	DATA CARRIER DETECT (DCD)
2	RECEIVE DATA (RXD)
3	TRANSMIT DATA (TXD)
4	DATA TERMINAL READY (DTR)
5	GROUND (GND)
6	DATA SET READY (DSR)
7	REQUEST TO SEND (RTS)
8	CLEAR TO SEND (CTS)
9	RING INDICATOR (RI)

- **CN12 & CN15 : Serial Port 10-pin Header(ACE0 & ACE1)**

Pin No.	Description	Pin No.	Description
1	DCD	2	DSR
3	RXD	4	RTS
5	TXD	6	CTX
7	DTR	8	RI
9	GND	10	NC

3.5 Keyboard Connector

The PSC-486 provides two keyboard connectors.

- **CN10 : 5-pin Header Keyboard Connector**

PIN NO.	DESCRIPTION
1	KEYBOARD CLOCK
2	KEYBOARD DATA
3	N/C
4	GROUND
5	+5V

• **CN17 : 6-pin Mini-DIN Keyboard Connector**

PIN NO.	DESCRIPTION
1	KEYBOARD DATA
2	N/C
3	GROUND
4	+5V
5	KEYBOARD CLOCK
6	N/C

3.6 External Switches and Indicators

There are many external switches and indicators for monitoring and controlling your CPU board.

• **CN3 : RESET BUTTON**

PIN NO.	DESCRIPTION
1	EXTERNAL RESET
2	GROUND

• **CN1 : POWER LED & KEYLOCK**

PIN NO.	DESCRIPTION
1	POWER LED ANODE
2	KEY
3	GROUND
4	KEYLOCK
5	GROUND

• **CN4 : IDE LED connector**

PIN-NO	DESCRIPTION
1	+5V
2	HDD ACTIVE#

3.7 External Power Connector

The PSC-486 has an on-board external power connector CN11. You can connect power directly to the CPU board for some single-board-computer(without passive backplane) application.

• **CN11 : EXTERNAL POWER CONNECTOR**

PIN NO.	DESCRIPTION
1	+5V
2	+12V
3	-12V

4	GROUND
5	GROUND
6	-5V
7	+12V
8	+5V

3.8 External Speaker

The PSC-486 has its own buzzer, you also can connect to the external speaker through the connector CN2.

- **CN2 : Speaker Connector**

PIN NO.	DESCRIPTION
1	SPEAKER SIGNAL
2	NC
3	GROUND
4	+5V

3.9 PS/2 Mouse 6-pin Mini-DIN Connector

- **CN14 : PS/2 Mouse Connector**

PIN NO.	DESCRIPTION
1	MS DATA
2	NC
3	GROUND
4	+5V
5	KBT1
6	NC

3.10 PC/104 Connection Bus

The PSC-486's PC/104 expansion bus let you attach any kind of PC/104 modules. The PC/104 bus is already become the industrial standard, so you could easily install over thousands of PC/104 modules from hundreds of vendors in the world.

Note :

The PC/104 connector allows stack-thru PC/104 Module directly to plug in. Don't need any additional mounting Kit.

• **CN8 & CN9 : PC/104 Expansion Bus**

(CN8 = 64-pin female connector;

CN9 = 40-pin female connector.)

Pin NO.	J1 / P1 Row A	J1 / P1 Row B	J2 / P2 Row C	J2 / P2 Row D
0	--	--	0V	0V
1	IOCHECK*		SBHE*	MEMSC16*
		0V		
2	SD7	RESETDRV	LA23	IOSC16*
3	SD6	+5V	LA22	IRQ10
4	SD5	IRQ9	LA21	IRQ11
5	SD4	-5V	LA20	IRQ12
6	SD3	DRQ2	LA19	IRQ15
7	SD2	-12V	LA18	IRQ14
8	SD1	NOWS*	LA17	DACK0*
9	SD0	+12V	MEMR*	DRQ0
10	IOCHRDY	(KEY)	MEMW*	DACK5*
11	AEN	SMEMW*	SD8	DRQ5
12	AS19	SMEMR*	SD9	DACK6*
13	SA18	IOW*	SD10	DRQ6
14	SA17	IOR*	SD11	DACK7*
15	SA16	DACK3*	SD12	DRQ7
16	SA15	DRQ3	SD13	+5V
17	SA14	DACK1*	SD14	MASTER*
18	SA13	DRQ1	SD15	0V
19	SA12	REFRESH*	(KEY)	0V
20	SA11	SYSCLK	--	--
21	AS10	IRQ7	--	--
22	SA9	IRQ6	--	--
23	SA8	IRQ5	--	--
24	SA7	IRQ4	--	--
25	SA6	IRQ3	--	--
26	SA5	DACK2*	--	--
27	SA4	TC	--	--
28	SA3	BALE	--	--
29	SA2	+5V	--	--
30	SA1	OSC	--	--
31	SA0	0V	--	--
32	0V	0V	--	--

NOTES:

1. Rows C and D are not used on 8-bit modules.
2. P2 has two connector options with differing physical pinout orientation.
3. B10 and C19 are key locations.
4. Signal timing and function are as specified in p996.
5. Signal source/sink current differ from P996 values.

4

AWARD BIOS Setup

The PSC-486 uses the AWARD PCI/ISA BIOS for system configuration. The AWARD BIOS setup program is designed to provide maximum flexibility in configuring the system by offering various options which may be selected for end-user requirements. This chapter is written to assist you in the proper usage of these features.

4.1 Getting Start

When powered on the system, the BIOS will enter the Power-On-Self-Test routines. These routines will be executed for System Test and Initialization and System Configuration Verification. After the POST routines are completed, the following message appears :

" Press DEL to enter setup"

To access AWARD PCI/ISA BIOS Setup program, press key. The following screen will be displayed at this time.

4.2 Standard CMOS Setup

The Standard CMOS Setup is used for basic system hardware configuration. Every time when you change any hardware configuration, for example memory size, you have to modify this setup again. Please refer the following screen for this setup.

Mode Setting for >528MB IDE HDD

When the IDE hard disk drive you are using is larger than 528MB, please set the HDD mode to **LBA** mode.

Note : Setting incorrect drive mode may make the drive working improperly.

4.3 BIOS Features Setup

This setup is designed for customer's tuning best performance of the PSC-486 board. As for normal operation customers don't have to change any default setting. The default setting is pre-set for most reliable operation. Please refer the following screen for the BIOS Features Setup.

Virus Waring :

Enable - Will halt system when any attempt to write to boot sector or partition table of hard disk.

Memory Parity Check :

Disable - Will not check the DRAM module's parity.
Right now almost 72-pin SIMM DRAM did not have parity function.

Video BIOS Shadow :

Enable - Will increase the video speed.

C8000-CFFFF,D0000-D7FFF,& D8000-DFFFF Shadow :

When the installed add-on card's ROM address is as above address,you could enable the shadow to get higher operation performance.When you enable the shadow function,it will also reduce the memory available by between 640KB and 1024KB.

4.4 Chipset Features Setup

This setup functions are almostly working for ChipSet(ALI M1489 and M1487). These options are used to change the ChipSet's registers. Please carefully change any default setting ,otherwise the system could be running un-stable.

Auto Configuration :

Enable : The BIOS will configure the ChipSet features automatically when boot up the system.

Disable : The BIOS will allow customer to change the setting on the screen.

AT -BUS Clock - CLK/4 means -

$33\text{Mhz}/4 = 8.25\text{Mhz}$ (DX2-66 CPU)

Parallel Port Mode : Normal(default),EPP,ECP,ECP+EPP

Onboard FDC Controller : Enabled(default),Disabled

Onboard Serial Port 1 : COM1(default),COM2,COM3,COM4
Disabled

Onboard Serial Port 2 : COM2(default),COM1,COM3,COM4
Disabled

Onboard Parallel Port : 378H(default),278H,3BCH,Disabled

4.5 Power Management Setup

Power Management Setup help user handles the PSC-486 board's "green" function. The features will shut down the video display and hard disk to save energy. The power management setup screen is as following,

Power Management :

This is the master control of all power management functions.

The default setting is “disable” for general application.

User Defined : Allows user to set any power saving options.

Min. Saving : System enters power saving mode after
1 hour no activity.

Max. Saving : System enters power saving mode after
5 seconds no activity.

PM Control by APM :

No - Default setting

Yes - System BIOS will wait for APM prompt before it enters
any power management mode.

Note : APM Mode :

This mode is using for DOS 6.0 or higher version with
the driver POWER.EXE. The driver should be loaded
at system power-on by CONFIG.SYS file. POWER.EXE
will monitor the system status thru the BIOS APM
interface.

Video Off Option :

Susp,Stby j -Off - Screen Off when system in Suspend or
Standby mode.

Susp j -Off - Screen Off when system in Suspend mode.

All Modes j -Off - Screen Off when system in Suspend,
Standby,or Doze mode.

Always On - System BIOS will never turn off the screen.

Video Off Method :

Blank Screen : When BIOS do the video off the screen will be blank.

V/H Sync, + Blank : When BIOS do the video off, BIOS will turn of the V-sync & H-sync signals from VGA card and also let the screen blank.

PM Timers :

User can set the HDD Power Down, Doze Mode, Standby Mode, and Suspend Mode's time out period. The system will be recovered when the system is re-activity.

PM Events :

If there is any activity occurred on the list of the group, the system will wake up. You can set the IRQ1, IRQ3-15 individually in the list.

4.6 PCI Configuration Setup

This screen help user configure their PCI bus slots. The PSC-486 supports 3 master PCI slots and one slave slot.

+

Slot 1-4 Using INT# : (for PSC-486 slot 4 not function)

Auto - BIOS will ask the PCI add-on card which INT#(A-D) is used for interrupt.

BIOS will check out which IRQ is available for using.

BIOS will inform the PCI add-on card which IRQ have been assigned to it.

A,B,C,D - These options are reserved for some PCI cards did not allow BIOS to check out the card's status.

Before you set the A,B,C,or D,please make sure the card's INT setting.

1st-4th Available IRQ :

The system BIOS will assign the PCI add-on card's IRQ under the available priority.

PCI IRQ Activity by :

Level - Most PCI cards use the level trigger method.

Edge - Be sure the PCI cards use the edge trigger method before you set it.

PCI IDE IRQ Map to :

PCI-Auto - BIOS will scan all PCI add-on cars and determine the location of the PCI IDE devices.

PCI-Slot1 - Assign IRQ14 for primary IDE INT# and IRQ15 for secondary IDE INT# for the PCI-slot1

PCI-Slot2 - Assign IRQ14 for primary IDE INT# and IRQ15

for secondary IDE INT# for the PCI-slot2
 PCI-Slot3 - Assign IRQ14 for primary IDE INT# and IRQ15
 for secondary IDE INT# for the PCI-slot3
 PCI-Slot4 - Assign IRQ14 for primary IDE INT# and IRQ15
 for secondary IDE INT# for the PCI-slot4
 ISA - The setting is for some PCI IDE cards which directly
 connect the IRQ14 and IRQ15 to ISA slot thru a
 cord. This cord is called the Legacy Header.

Appendix A. Watch-Dog Timer

The Watch-Dog Timer is provided to ensure that standalone systems can always recover from catastrophic conditions that caused the CPU to crash. This condition may have occurred by external EMI or a software bug. When the CPU stops working correctly, hardware on the board will either perform a hardware reset (cold boot) or a non-maskable interrupt (NMI) to bring the system back to a known state.

The Watch-Dog Timer is controlled by two I/O ports.

443 (hex)	Read	Enable the refresh the Watch-Dog Timer.
043 (hex)	Read	Disable the Watch-Dog Timer.

To enable the Watch-Dog Timer, a read from I/O port 443H must be performed. This will enable and activate the countdown timer which will eventually time out and either reset the CPU or cause an NMI depending on the setting of JP27. To ensure that this reset condition does not occur, the Watch-Dog Timer must be periodically refreshed

by reading the same I/O port 433H. This must be done within the time out period that is selected by jumper group JP18.

A tolerance of at least 30% must be maintained to avoid unknown routines within the operating system (DOS), such as disk I/O that can be very time consuming. Therefore if the time out period has been set to 10 seconds, the I/O port 443H must be read within 7 seconds.

Note: when exiting a program it is necessary to disable the Watch-Dog Timer, otherwise the system will reset.

```
10    REM EXAMPLE PROGRAM
11    REM WATCH-DOG TIMER == WDT
20    GOSUB 5000 REM ENABLE AND REFRESH THE WDT
30    GOSUB 1000 REM TASK 1, 2 SECS
40    GOSUB 5000 REFRESH THE WDT
50    GOSUB 2000 REM TASK 2, 3 SECS
60    GOSUB 6000 REM DISABLE THE WDT
70    GOSUB 3000 REM TASK 3, 5 SECS
80    GOSUB 5000 REM ENABLE AND REFRESH THE WDT
90    GOTO 30

1000  REM SUBROUTINE #1
      2 SECONDS TO COMPLETE
1070  RETURN

2000  REM SUBROUTINE #2
      3 SECONDS TO COMPLETE
2070  RETURN

5000  REM SUBROUTINE TO ENABLE AND RESET WDT
5010  X = INP( &H443) REM ENABLE AND REFRESH TIMER
5020  RETURN

6000  REM SUBROUTINE TO DISABLE THE WDT
6010  X = INP( &H43) REM RESET WDT
6020  RETURN
```