PCM-6892

All-in-One Single Board Computer onboard VIA C3 EBGA CPU with LCD, LVDS, TV-out, Audio, Dual Ethernet, CFD, PCMCIA, & 4 USBs

FCC STATEMENT

THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE. (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINTST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTATLLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

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Manual PCM-6892 4th Edition

Prepared in Taiwan Feb 2004

A Message to the Customer

AAEON Customer Services

Each and every AAEON product is built to the most exacting specifications to ensure reliable performance in the harsh and demanding conditions typical of industrial environments. Whether your new AAEON equipment is destined for the laboratory or the factory floor, you can be assured that your product will provide the reliability and ease of operation for which the name AAEON has come to be known.

Your satisfaction is our primary concern. Here is a guide to AAEON customer services. To ensure you get the full benefit of our services, please follow the instructions below carefully.

Technical Support

We want you to get the maximum performance from your products. So if you run into technical difficulties, we are here to help. For the most frequently asked questions, you can easily find answers in your product documentation. These answers are normally a lot more detailed than the ones we can give over the phone.

So please consult this manual first. If you still cannot find the answer, gather all the information or questions that apply to your problem, and with the product close at hand, call your dealer. Our dealers are well trained and ready to give you the support you need to get the most from your AAEON products. In fact, most problems reported are minor and are able to be easily solved over the phone.

In addition, free technical support is available from AAEON engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products.

Product Warranty

AAEON warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by AAEON, or which have been subject to misuse, abuse, accident or improper installation. AAEON assumes no liability under the terms of this warranty as a consequence of such events.

Because of AAEON high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an AAEON product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU type and speed, AAEON products used, other hardware and software used, etc.) Note anything abnormal and list any on-screen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return material authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Packing List

Before you begin installing your card, please make sure that the following materials have been shipped:

1.PCM-6892 All-in-One Single Board Computer

2.Quick Installation Guide

3.CD-ROM contains the followings:

- User Manual (this manual in PDF file)
- System drivers and utilities
- Ethernet drivers and utilities
- VGA drivers and utilities
- Audio drivers and utilities
- Short Copper Kit
- Jumper Cap

The PCM-6892 requires several cables for operation. You can make them yourself or purchase an optional cable kit, PCM-10489-6 .

If any of these items are missing or damaged, contact your distri-buitor or sales represntative immediately.

Notice

Dear Customer,

Thank you for purchasing the PCM-6892 board. This user manual is designed to help you to get the most out of the PCM-6892, please read it thoroughly before you install and use the board. The product that you have purchased comes with an two-year limited warranty, but AAEON will not be responsible for misuse of the product. Therefore, we strongly urge you to first read the manual before using the product.

To receive the lastest version of the user manual, please visit our Web site at:

http://www.aaeon.com.tw

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CHAPTER 1

General Information

This chapter gives background information on the PCM-6892.

Sections include:

- Board Introduction
- Board Features
- Board Specifications

Introduction

AAEON new compact size board PCM-6892 targets home automation, POS, Networking, and Kiosk/POI markets. To fulfill the critical demand of the above markets, PCM-6892 features PCMCIA expansion interface, large size display support ability, low profile design, dual lan and yet still remains a cost-effective solution.

Onboard VIA Ezra/Eden EBGA mobile CPU is manufactured with 0.13 and 0.18 micron manufacturing process enabling cool processing by minimizing power consumption and heat generation. Built-in level 1 and level 2 cache accelerate computing performance. With the embedded 3DNow! and MMX Technology, this CPU is capable of high-end multi media application. Eden CPU features World smallest x86 processor die is an ideal choice for your fanless solution.

The PCM-6892 comes with VIA 8606 Twister T North Bridge integrated AGP 4X 2D/3D graphics accelerator. With 18 bit/36 bit dual channel LVDS interface and TTL signal, you can utilize this board to display CRT.

This board offers two alternatives of power supply type: AT and ATX. You can select whichever suitable for your application. The ATX power supply board features power management to minimize power consumption. It complies with the ACPI standard and supports two types of power-saving features: Doze mode and Suspend modes.

Dual 10/100Base-Tx Ethernet controllers provide superior networking access ability. The compact flash will offer a larger memory bank for data storage of all types. And the integrated AC97 2.0/Sound-Blaster legacy audio provides better presentation for multimedia application. Onboard PCMCIA interface on the solder side can be widely used for IEEE 1394, Modem, Wireless LAN, Storage, Sound Card and SCSI etc.. Equipped with the above functions, this versatile board can be easily applied to a variety of fields.

PCM-6892 also includes four high-speed serial ports (three RS-232, one RS-232/422/485), one multimode (ECP/EPP/SPP) parallel port, four USB ports, 2 floppy drives, an Ultra DMA/100 Enhanced IDE controller supporting two devices with data transfer rate up to 100MB per second, and a keyboard/PS/2 mouse interface. This AAEON embedded PC includes almost everything you need for fast, worry-free embedded PC performance.

Features

- Onboard VIA Ezra(800MHz)/Eden(400-667MHz) EBGA mobile CPU
- Integrated AGP 4X 2D/3D Graphics Accelerator
- Supports CRT
- Integrated AC-97 2.0 / SoundBlaster-compatible legacy audio
- Dual channel LVDS interface onboard
- Supports one Type II Compact Flash Memory
- Supports two Type II PCMCIA Slots (Optional)
- Two 10/100Base-T Fast Ethernet
- Supports UDMA100
- 5V only operation

Specifications

CPU	VIA C3 Ezra (800MHz)/Eden(400MHz-667MHz) EBGA CPU (with system bus frequencies of 66/ 100/133 MHz)
BIOS	Award 256KB Flash BIOS
Chipset	VIA VT8606/VT82C686B
Memory	Onboard one 168-pin DIMM socket supports up to 512MB SDRAM
Enhanced IDE	Supports up to two IDE devices. Supports Ultra DMA100 mode with transfer rate up to 100MB/sec.
FDD interface	Supports up to two floppy disk drives, 5.25 inch (360KB and 1.2 MB) and/or 3.5inch (720KB, 1.44MB and 2.88MB)
Parellel Port	One bi-directional parallel port. Supports SPP, ECP, and EPP modes
Serial Port	Three RS-232 serial ports and one RS-232/422/ 485 serial ports. Ports can be configured as COM1, COM2, COM3, COM4, or disabled individually. (16C550 equivalent)
IrDA port	Supports one IrDA Tx/Rx header
KB/Mouse connector	A 7(4x2-1)-pin header supports PC/AT Keyboard and PS/2 mouse.
USB connectors	Two 10-pin headers onboard support four USB ports

Battery	Lithium battery for data retention
Watchdog Timer	Can generate a system reset. Supports Windows 2000, Windows 98, Windows 95, Windows 3.1. Software selectable time-out interval (1 sec.~255 sec.)
DMA	7 DMA channels (8237 equivalent)
Interrupt	15 interrupt levels (8259 equivalent)
Power management	Supports ATX or AT power supply. Supports PC97 I/O peripheral devices support power saving and doze/ standby/suspend modes. APM 1.2 compliant

Audio Interface

Chipset	VIA VT82C686B. Integrated SoundBlaster, Sound Blaster Pro, and Windows Sound System

Flat Panel/CRT Interface

Chipset	VIA VT8606
Display memory	Share memory up to 32MB
Display Type	Supports 18/36 bit TTL/dual channel LVDS TFT LCD. Can display CRT and flat panel simultaneeously.
Resolution	Up to 1600 x 1200 @ 16bpp colors for CRT
TV output interface	VIA 1621 supports NTSC/PAL composite outputs

Ethernet Interface

Chipset	Dual RTL 8139C PCI-bus Ethernet controllers onboard
Ethernet interface	Onboard dual 10/100Base-T RJ-45 connectors

Expansion Interface

PC/104 Connector	One 16-bit 104-pin connector onboard
PCI Slot	One 32-bit 120-pin PCI slot onboard
PCMCIA Slot	Two Type II PCMCIA slots on solder side
SDD Interface	One type II Compact Flash Socket

Mechanical and Environmental

Power Supply voltage	+5V(4.75V to 5.25V), AT or ATX type
Operating temperature	32 to 140 degrees F (0 to 60 degrees C)
Board Size	8 (L) x 5.75 (W) (203mm x 146mm)
Weight	1.2 lb. (0.5Kg)

PCM-6892

Compact Board onboards VIA C3 Ezra/Eden EBGA CPU with LCD, LVDS, TV-out, Audio, Dual Ethernet, CFD, PCMCIA, & 4 USBs

PCM-6892

Quick Installation Guide

Notice

The guide is designed for experienced users to setup the system within the shortest time. For detailed information, please refer to the electronic user's manual.

Safety Precautions

Warning! Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution! Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

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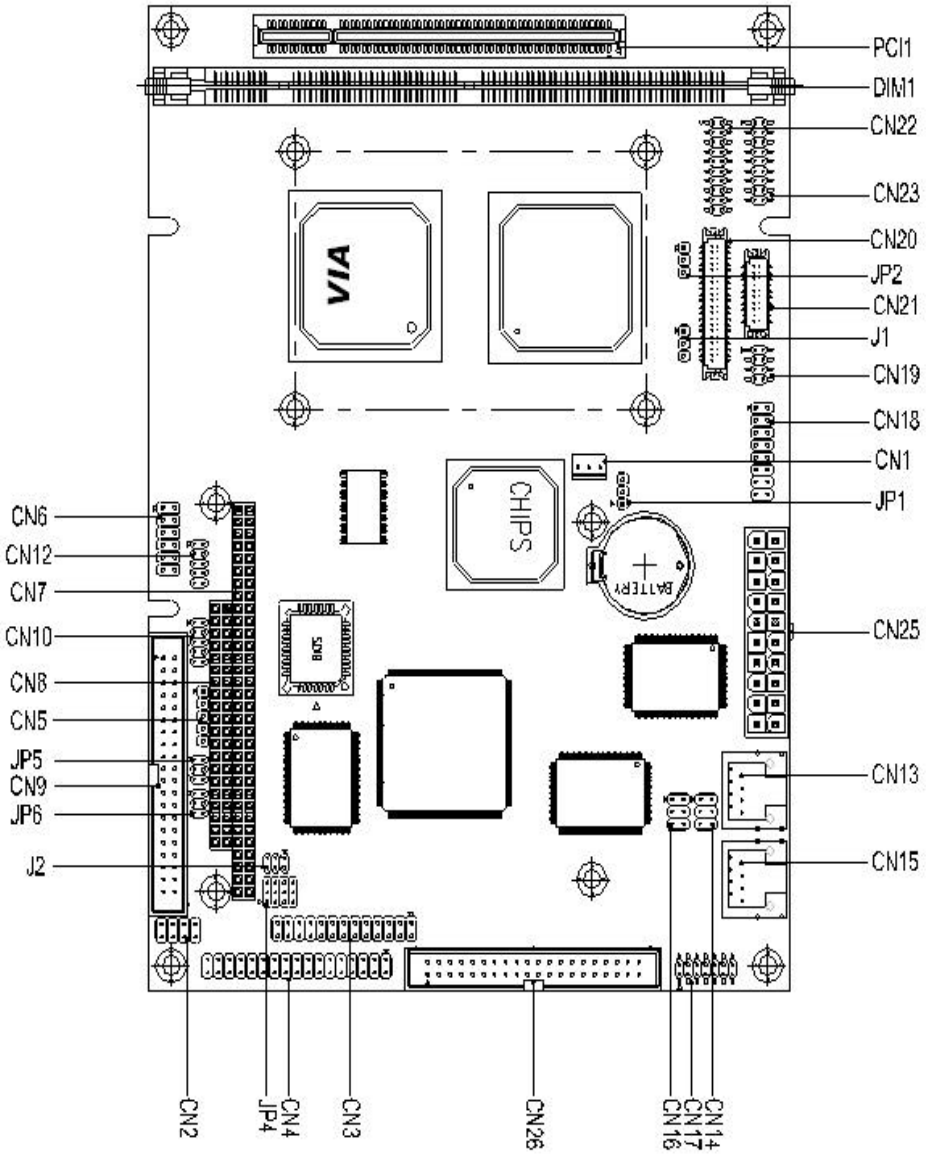
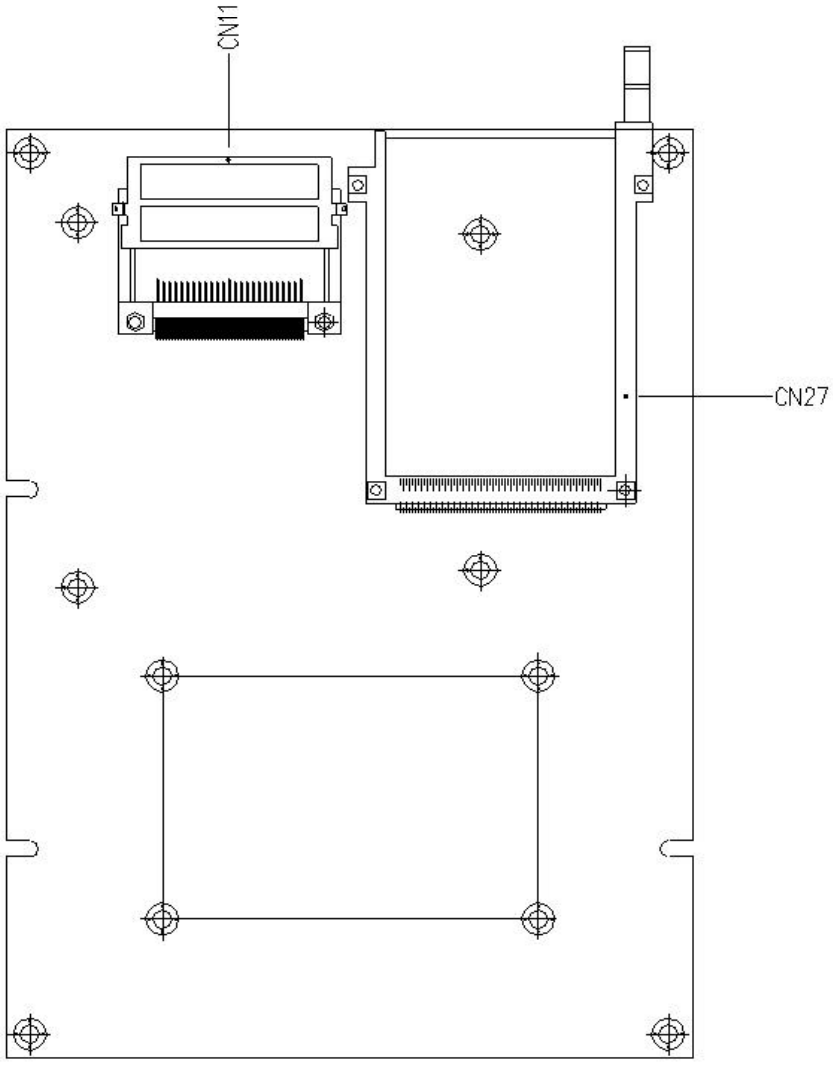
Locating Jumpers & Connectors

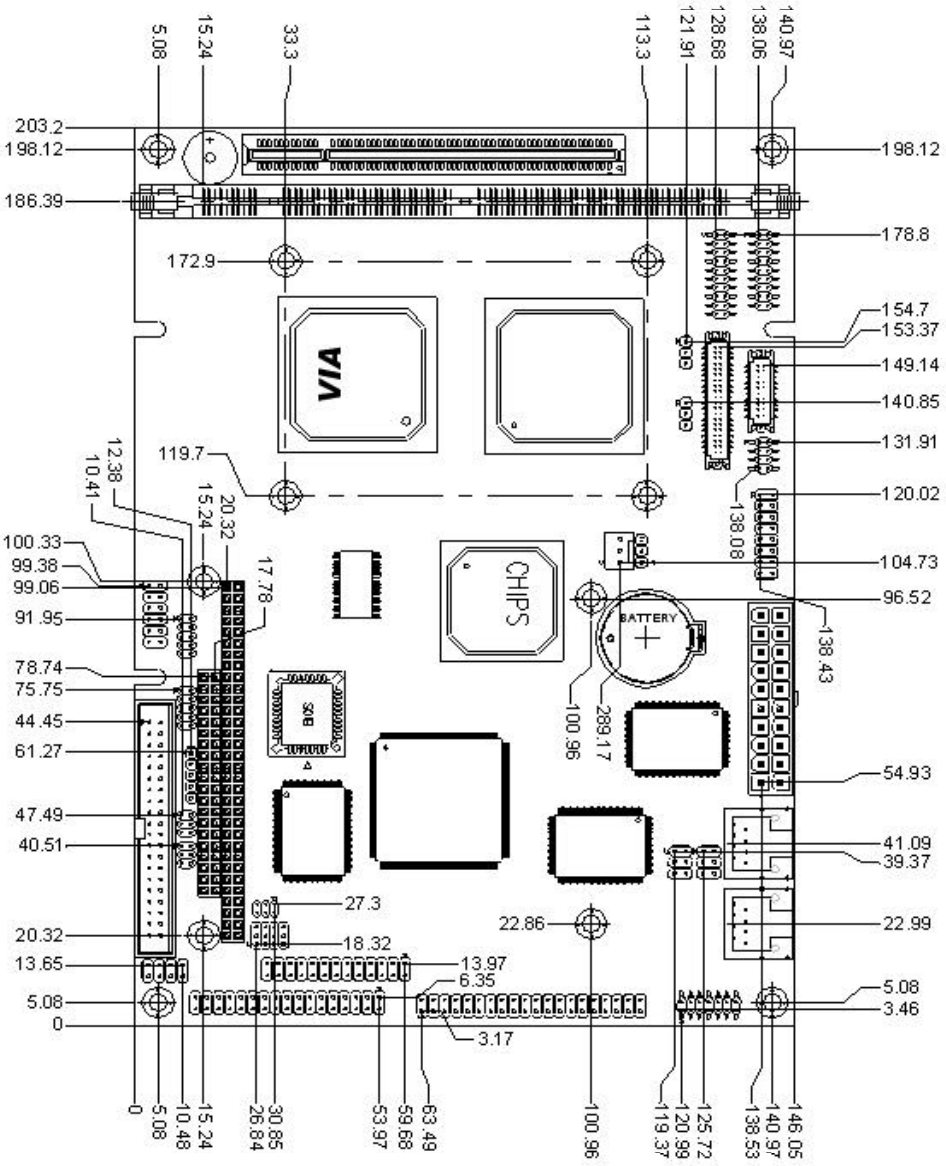


Quick Installation Guide

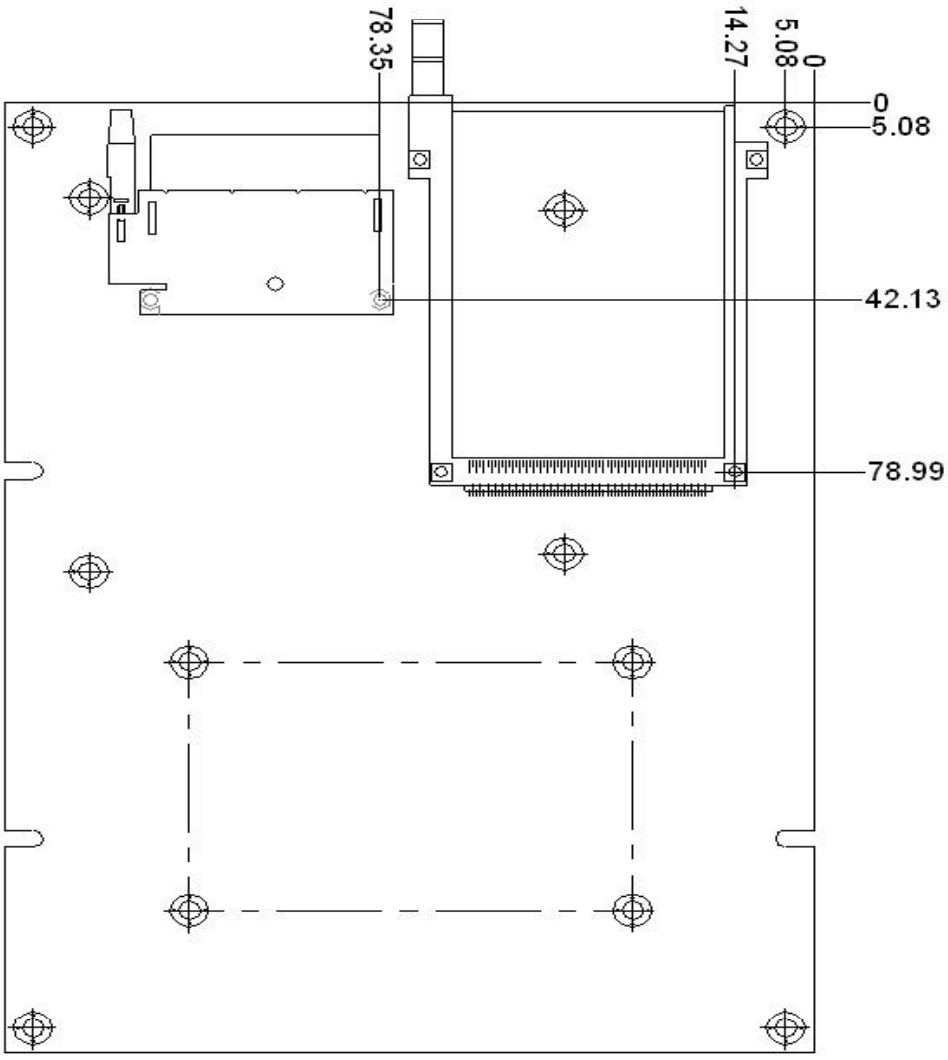
Locating Jumpers & Connectors



Mechanical Drawing



Mechanical Drawing



Jumpers and Connectors

Connectors on the board link themselves to external devices, such as hard disk drives, a keyboard, or floppy drives. In addition, the board has a number of jumpers that allow you to configure your system to suit your applications. The table below lists the function of each jumper and connector:

Jumpers

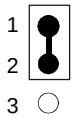
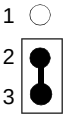
Label	Function
JP1	Clear CMOS
JP2	LCD Voltage Select
JP4	RS-232, RS-422, & RS-485 Select
JP5	Serial Port 3 RING Status Setup
JP6	Serial Port 4 RING Status Setup
J1	LCD Shift Clock Setting
J2	Serial Port 2 Status Setup

Connectors

Label	Function
CN1	CPU Fan Connector
CN2	K/B & PS2 Mouse Connector
CN3	LPT Connector
CN4	FDD Connector
CN5	IR Connector
CN6	Front Panel Connector
CN7	PC/104 Connector
CN8	PC/104 Connector
CN9	IDE Hard Drive Connector
CN10	USB Connector (Port 0, Port 1)
CN11	Compact Flash Connector
CN12	USB Connector (Port 2, Port 3)
CN13	LAN1 Port
CN14	LAN1 Status Connector (LED)
CN15	LAN2 Port
CN16	LAN2 Status Connector (LED)
CN17	Audio Connector
CN18	VGA Port
CN19	TV-out Connector
CN20&21	TTL LCD Connector
CN22&23	LVDS Connector
CN24	AT Power Connector (Optional)
CN25	ATX Power Connector (Default)
CN26	COM1, COM2, COM3, & COM4
CN27	Card Bus Connector

Clear CMOS(JP1)

You can use JP1 to clear the CMOS data if necessary. To reset the CMOS data, set jumper to 2-3 closed for few seconds, and then move the jumper back to 1-2 closed.

*Protect (default)	Clear CMOS
	

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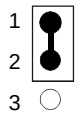
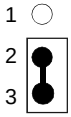
LCD Voltage Select (JP2)

+5V	*+3.3V
	

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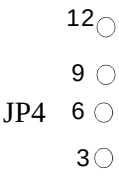
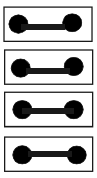
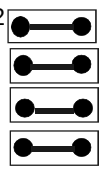
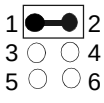
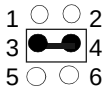
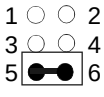
Serial Port 2 Status Setup (JP4 & J2)

	RS-232*	RS-422	RS-485
JP4			
J2			

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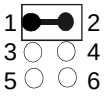
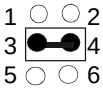
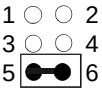
Serial Port 3 Ring Status Setup (JP5)

+12V	+5V	Ring*
		

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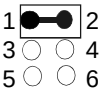
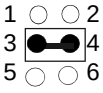
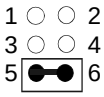
Serial Port 4 Ring Status Setup (JP6)

+12V	+5V	Ring*
		

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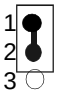
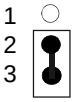
LCD Shift Clock Setting (J1)

shclk*	-shclk
	

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CPU Fan Connector (CN1)

Pin	Signal
1	GND
2	+12V
3	SENSOR

K/B & PS2 Mouse Connector (CN2)

Pin	Signal	Pin	Signal
1	KB Data	2	KB CLK
3	GND	4	5VSB
5	MS DATA	6	MS CLK
7	N.C	8	N.C

LPT Connector (CN3)

Normally, the parallel port is used to connect the card to a printer. The PCM-6892 includes an onboard parallel port, accessed through the CN3 connector, a 26-pin flat-cable connector.

Pin	Signal	Pin	Signal
1	#STROBE	2	#AFD
3	PTD0	4	#ERROR
5	PTD1	6	#INIT
7	PTD2	8	#SLIN
9	PTD3	10	GND
11	PTD4	12	GND
13	PTD5	14	GND
15	PTD6	16	GND
17	PTD7	18	GND
19	#ACK	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SELECT	26	N.C.

FDD Connector (CN4)

You can attach up to two floppy disks to the PCM-6892's on-board controller and use any combination of 5.25" (360 KB and 1.2 MB) and/or 3.5" (720 KB, 1.44 MB, and 2.88 MB) drives.

The PCM-6892 CPU card comes with a 34-pin daisy-chain drive connector cable. On one end of the cable is a 34-pin flat-cable connector. There are two sets of floppy disk drive connectors, one in the middle, and one on the other end. Each set consists of a 34-pin flat-cable connector (usually used for 3.5" drives) and a printed-circuit board connector (usually used for 5.25" drives).

Connecting the Floppy Drive

1. Plug the 34-pin flat-cable connector into the CN4 connector.

2. Attach the appropriate connector on the other end of the cable to the floppy drive(s). You can use only one connector in the set. The set on the end (after the twist in the cable) connects to the A: floppy and the other set in the middle connects to the B: floppy.

Pin	Signal	Pin	Signal
1~33	**(odd)**GND	2	#REDWC
4	N.C.	6	#DS1
8	#INDEX	10	#MOTOR A
12	#DRIVE SELECT B	14	#DRIVE SELECT A
16	#MOTOR B	18	#DIR
20	#STEP	22	#WRITE DATA
24	#WRITE GATE	26	#TRACK0
28	#WRITE PROTECT	30	#READ DATA
32	#SIDE1	34	#DISK CHANGE

IR Connector (CN5)

Pin	Signal
1	VCC +5V
2	N.C.
3	IRRX
4	GND
5	IRTX

Front Panel Connector (CN6)

Pin	Signal	Pin	Signal
1	GND	2	PWBT#
3	HDDLED#	4	VCC +5V
5	BEEPR	6	VCC +5V
7	GND	8	PWLED
9	GND	10	RSTIN#

IDE Hard Drive Connector (CN9)

You can attach two Enhanced Integrated Device Electronics hard disk drives to the PCM-6892's internal controller.

Connecting the Hard Drive

Wire number 1 on the cable is red, and the other wires are gray.

1. Connect one end of the cable to the IDE connector and make sure that the red wire corresponds to pin 1 on the connector, which is labeled on the board (on the right side).

2. Plug the other end of the cable to the Enhanced IDE hard drive, with pin 1 on the cable corresponding to pin 1 on the hard drive. (See your hard drive's documentation for the location of the connector.)

Unlike floppy drives, you can make the connections with any of the connectors on the cable. If you install two drives, you will need to set one as the master and the other as the slave by using jumpers on the drives. If you install just one drive, set it as the master.

The following table lists the pin numbers and their respective signals:

Pin	Signal	Pin	Signal
1	IDE RESET	2	GND
3	DATA7	4	DATA8
5	DATA6	6	DATA9
7	DATA5	8	DATA10
9	DATA4	10	DATA11
11	DATA3	12	DATA12
13	DATA2	14	DATA13
15	DATA1	16	DATA14
17	DATA0	18	DATA15
19	GND	20	N.C.
21	REQ	22	GND
23	IO WRITE	24	GND
25	IO READ	26	GND
27	IO READY	28	GND
29	DACK	30	GND
31	IRQ 14	32	N.C.
33	ADDR1	34	UDMA DETECT(33/100)
35	ADDR0	36	ADDR2
37	CS#1	38	CS#3
39	HDD LED	40	GND

USB Connector (CN10 & CN12)

Pin	Signal	Pin	Signal
1	5VSB	2	GND
3	USB DT0-	4	GND
5	USB DT0+	6	USB DT1+
7	GND	8	USB DT1-
9	GND	10	5VSB

Compact Flash Connector (CN11)

Pin	Signal	Pin	Signal
1	GND	26	GND
2	DATA3	27	DATA11
3	DATA4	28	DATA12
4	DATA5	29	DATA13
5	DATA6	30	DATA14
6	DATA7	31	DATA15
7	CS#1	32	CS#3
8	GND	33	GND
9	GND	34	IO READ
10	GND	35	IO WRITE
11	GND	36	+5V
12	GND	37	IRQ15
13	+5V	38	+5V
14	GND	39	CSEL
15	GND	40	N.C.
16	GND	41	IDE RESET
17	GND	42	IO READY
18	ADDR2	43	N.C.
19	ADDR1	44	+5V
20	ADDR0	45	DASP
21	DATA0	46	DIAG
22	DATA1	47	DATA8
23	DATA2	48	DATA9
24	N.C.	49	DATA10
25	GND	50	GND

LAN1 & LAN2 Port (CN13 & CN15)

Pin	Signal	Pin	Signal
1	**TX+**	**2**	**TX-**
3	RX+	4	TEMP_GND
5	TEMP_GND	6	RX-
7	TEMP_GND	8	TEMP_GND
9	CHASSIS_GND	10	CHASSIS_GND

LAN1 & LAN2 Status Connector (CN14 & CN16)

Pin	Signal	Pin	Signal
1	RXLED	2	5VSB
3	Link LED	4	5VSB
5	TX LED	6	5VSB

Audio Connector (CN17)

Pin	Signal	Pin	Signal
1	MIC IN	2	MIC BIAS
3	GND	4	GND
5	LINE IN LEFT	6	CD IN LEFT
7	LINE IN RIGHT	8	CD IN GND
9	GND	10	CD IN RIGHT
11	LINE OUT LEFT	12	LINE OUT RIGHT
13	GND	14	GND

VGA Port (CN18)

Pin	Signal	Pin	Signal
1	RED	9	N.C
2	GREEN	10	GND
3	BLUE	11	N.C
4	N.C	12	DAT
5	GND	13	HSYNC
6	GND	14	VSYNC
7	GND	15	DCLK
8	GND	16	GND

TV-out Connector (CN19)

Pin	Signal	Pin	Signal
1	Y-OUT	2	COMP
3	GND	4	GND
5	C-OUT	6	N.C
7	GND	8	N.C

TTL LCD Connector (CN20)

Pin	Signal	Pin	Signal
1	+5V	2	+5V
3	GND	4	GND
5	+3.3V	6	+3.3V
7	ENVDD	8	GND
9	NC	10	NC
11	O_BLUE0	12	O_BLUE1
13	O_BLUE2	14	O_BLUE3
15	O_BLUE4	16	O_BLUE5
17	NC	18	NC
19	O_GREEN0	20	O_GREEN1
21	O_GREEN2	22	O_GREEN3
23	O_GREEN4	24	O_GREEN5
25	NC	26	NC
27	O_RED0	28	O_RED1
29	O_RED2	30	O_RED3
31	O_RED4	32	O_RED5
33	GND	34	GND
35	SHFCLK	36	VFLM
37	DEO	38	VLP
39	NC	40	ENAVEE

TTL LCD Connector (CN21)

Pin	Signal	Pin	Signal
1	GND	2	GND
3	E_BLUE0	4	E_BLUE1
5	E_BLUE2	6	E_BLUE3
7	E_BLUE4	8	E_BLUE5
9	E_GREEN0	10	E_GREEN1
11	E_GREEN2	12	E_GREEN3
13	E_GREEN4	14	E_GREEN5
15	E_RED0	16	E_RED1
17	E_RED2	18	E_RED3
19	E_RED4	20	E_RED5

LVDS Connector (CN22)

Pin	Signal	Pin	Signal
1	TX1OUT1+	2	TX1OUT1-
3	CHASSIS_GND	4	CHASSIS_GND
5	TX1CLK	6	TX1CLK-
7	CHASSIS_GND	8	LCDVCC
9	LCDVCC	10	LCDVCC
11	TX1OUT2+	12	TX1OUT2-
13	CHASSIS_GND	14	CHASSIS_GND
15	TX1OUT0	16	TX1OUT0-
17	N.C.	18	N.C.
19	ENVDD	20	N.C.

LVDS Connector (CN23)

Pin	Signal	Pin	Signal
1	TX2OUT1+	2	TX2OUT1-
3	CHASSIS_GND	4	CHASSIS_GND
5	TX2CLK	6	TX2CLK-
7	CHASSIS_GND	8	LCDVCC
9	LCDVCC	10	LCDVCC
11	TX2OUT2+	12	TX2OUT2-
13	CHASSIS_GND	14	CHASSIS_GND
15	TX2OUT0	16	TX2OUT0-
17	N.C.	18	N.C.

AT Power Connector (CN24)

Pin	Signal
1	PWR-OK
2	+5V
3	+12V
4	-12V
5	GND
6	GND
7	GND
8	GND
9	-5V
10	+5V
11	+5V
12	+5V

ATX Power Connector (CN25)

Pin	Signal	Pin	Signal
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	PS-ON
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	PWR-OK	18	-5V
9	5VSB	19	+5V
10	+12V	20	+5V

COM1, COM2, COM3, & COM4 (CN26)

Pin	Signal	Pin	Signal
1	DCD1	2	DSR1
3	RXD1	4	RTS1
5	TXD1	6	CTS1
7	DTR1	8	RI1
9	GND	10	N.C
11	DCD2(485TXD -)	12	DSR2
13	RXD2(422RXD+)	14	RTS2
15	TXD2(485TXD+)	16	CTS2
17	DTR2(422RXD -)	18	RI2
19	GND	20	N.C
21	DCD3	22	DSR3
23	RXD3	24	RTS3
25	TXD3	26	CTS3
27	DTR3	28	RI3/+5V/+12V
29	GND	30	N.C
31	DCD4	32	DSR4
33	RXD4	34	RTS4
35	TXD4	36	CTS4
37	DTR4	38	RI4/+5V/+12V
39	GND	40	N.C

Card Bus Connector(CN27)

PCM-6892 comes with two type II PCMCIA slots onboard for expansion. You can insert your IEEE 1394 card, modem card, wireless LAN card, storage card, sound card for add-on functions.

Note: When utilizing 16 bit PC Card under Windows 98, you have to assign an IRQ address to it. From the BIOS main menu, select **PnP/PCI Configurations**. In the **Resourse Controlled by** item, select **Manual**. In **IRQ Resourse** column, assign IRQ-11 to **Legacy ISA.**

CHAPTER 3

Award BIOS Setup

This chapter describes how to configure the BIOS for the system.

Starting Setup

The Award BIOS is immediately activated when you first turn on the computer. The BIOS reads system configuration information in CMOS RAM and begins the process of checking out the system and configuring it through the power-on self test (POST).

When these preliminaries are finished, the BIOS seeks an operating system on one of the data storage devices (hard drive, floppy drive, etc.). The BIOS launches the operating system and hands control of system operations to it.

During POST, you can start the Setup program in the following way:

By pressing Del immediately after switching the system on.

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the RESET button on the system case. You may also restart by simultaneously pressing Ctr-Alt-Del. If you do not press the keys at the correct time and the system does not boot, an error message appears and you are again asked to

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

Setup Keys

These keys helps you navigate in Award BIOS:

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item in the left hand
Right arrow	Move to the item in the right hand
Esc	Main Menu:Quit and not save changes into CMOS RAM Other pages:Exit current page and return to Main Menu
PgUP/+	Increase the numeric value or make changes
PgDn/-	Decrease the numeric value or make changes
F1	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2	Item Help
F3	Reserved
F4	Reserved
F5	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6	Load the default CMOS RAM value from BIOS default table, only for Option Page Setup Menu
F7	Load the default
F8	Reserved
F9	Reserved
F10	Save all the CMOS changes, only for Main Menu

Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press Esc or the F1 key again.

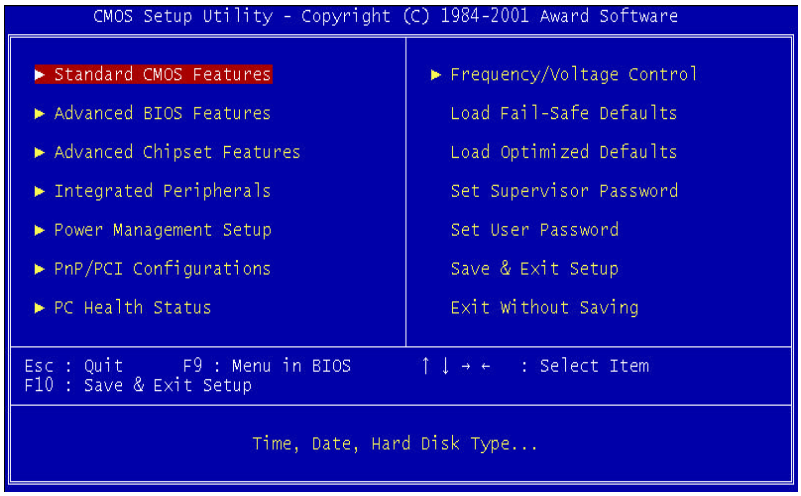
In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the **Award BIOS** supports an override to the CMOS settings that resets your system to its default configuration.

You can invoke this override by immediately pressing Insert; when you restart your computer. You can restart by either using the ON/OFF switch, the RESET button or by pressing Ctrl-Alt-Delete.

The best advice is to alter only settings that you thoroughly understand. In particular, do not change settings in the Chipset screen without a good reason. The Chipset defaults have been carefully chosen by Award Software or your system manufacturer for the best performance and reliability. Even a seemingly small change to the Chipset setup may cause the system to become unstable.

Main Setup Menu



Standard CMOS Features

Use this menu for basic system configuration. (Date, time, IDE, etc.)

Advanced BIOS Features

Use this menu to set the advanced features available on your system.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals. (Primary slave, secondary slave, keyboard, mouse etc.)

Power Management Setup

Use this menu to specify your settings for power management. (HDD power down, power on by ring etc.)

PnP/PCI Configurations

This entry appears is your system supports PnP/PCI.

PC Health Status

Your system does not allow you to alter any of the setting in this menu. The system engineer has already designated the correct setting for PCM-6892.

Frequency/Voltage Control

Use this menu to specify your settings for frequency/ voltage control.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/ stable performance for your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While AWARD has designated the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

Set Supervisor/User Password

Use this menu to set Supervisor/User Passwords.

Save and Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

Standard CMOS Features

This standard setup menu allows users to configure system components such as the date, time, hard disk drive, floppy drive, display, and memory. Online help for each field can be accessed by pressing F1.

Date and Time Configuration

The BIOS determines the day of the week from the other date information. This field is for information only.

Press the left or right arrow key to move to the desired field (date, month, year). Press the PgUp/- or PgDn/+ key to increment the setting, or type the desired value into the field.

The time format is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00 hours. Press the left or right arrow key to move to the desired field. Press the PgUp/- or PgDn/+ key to increment the setting, or type the desired value into the field.

IDE Primary/Secondary Master/Slave

IDE HDD Auto-Detection

The BIOS supports up to two IDE drives. This section does not show information about other IDE devices, such as a CD-ROM drive, or other hard drive types, such as SCSI drives.

***NOTE**: We recommend that you select type AUTO for all drives.*

The BIOS can automatically detect the specifications and optimal operating mode of almost all IDE hard drives. When you select AUTO for a hard drive, the BIOS will detect its specifications

IDE Primary/Secondary Master/Slave

If you do not want to select "AUTO", other methods of selecting the drive type are available:

1.NONE: No drive type to be selected.

2.Manual: This will allow you to manually set the drive type you are using in your system. (See as below)

Access Mode

- **Auto**: The BIOS automatically determines the optimal mode.
- **CHS**: This allows the user to enter their own hardware values.
- **Large**: For drives that do not support LBA and have more than 1024 cylinders.
- **LBA** (Logical Block Addressing): During drive access, the IDE controller transforms the data address described by sector, head, and cylinder number into a physical block address, significantly improving data transfer rates. For drives with greater than 1024 cylinders.

Here is a brief explanation of drive specifications:

Capacity: Disk drive capacity (approximate). Note that this size is usually slightly greater than the size of a formatted disk given by a disk-checking program.

Cylinder: Number of cylinders.

Head: Number of heads.

Precomp: Write precompensation cylinder .

Landing Zone: Landing zone.

Sector: Number of sectors.

Drive A

Drive B

Select the correct specifications for the diskette drive(s) installed in the computer.

None	No diskette drive installed
360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
720K, 3.5 in	3-1/2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5 in	3-1/2 inch double-sided drive; 1.44 mega byte capacity
2.88M, 3.5 in	3-1/2 inch double-sided drive; 2.88 mega byte capacity

Halt On

During the power-on-self-test (POST), the computer stops if the BIOS detects a hardware error. You can tell BIOS to ignore certain errors during POST and continue the boot-up process.

The choices: All,But Keyboard; All,But Diskette; All, But Disk/ Key; All Errors; No Errors.

Select Display Device

PCM-6892 can be used with various visual display peripherals. This function allows the end user to select the type of visual display peripheral they are incorporating with the PCM-6892 single board computer.

The choices: CRT, LCD,CRT+ LCD, TV, CRT+TV

Panel Type

PCM-6892 supports only 18-bit and 36-bit TTL/LVDS display panels with various resolutions. When your display devices include LCD panel, you have to select the type of panel you are incorporating with your single board computer. Consult your panel manual for detail information.

The choices: 640x480 TTL, 800x600 TTL, 1024x768 1ch TTL, 1024x768 2ch TTL, 800x600 1ch LVDS, 1024x768 1ch LVDS, 1024x768 2ch LVDS.

TV Type

When your display devices include TV, you have to select the suitable TV output standard in your area.

The choices: US NTSC, PAL, Japanese NTSC

Memory

You cannot change any values in the Memory fields; they are only for your information. RAM is counted in kilobytes (KB: approximately one thousand bytes) and megabytes (MB: approximately one million bytes).

RAM is the computer's working memory, where the computer stores programs and data currently being used, so they are accessible to the CPU. Modern personal computers may contain up to 64 MB, 128 MB, or more.

Base Memory

Typically 640 KB. Also called conventional memory. The DOS operating system and conventional applications use this area.

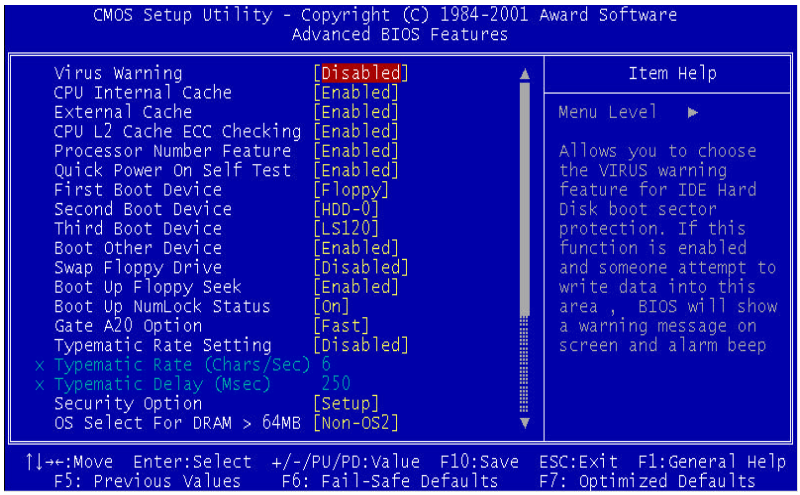
Extended Memory

Above the 1-MB boundary. Early IBM personal computers could not use memory above 1 MB, but current PCs and their software can use extended memory.

Total Memory

The fields show the total installed random access memory (RAM).

Advanced BIOS Features



The displayed configuration is based on the manufacturer's SETUP DEFAULTS settings.

Virus Warning

When enabled, you receive a warning message if a program (specifically, a virus) attempts to write to the boot sector or the partition table of the hard disk drive. You should then run an anti-virus program. Keep in mind that this feature protects only the boot sector, not the entire hard drive.

NOTE: *Many disk diagnostic programs that access the boot sector table can trigger the virus warning message. If you plan to run such a program, we recommend that you first disable the virus warning.*

The choices: Enabled, Disabled.

CPU Internal Cache/External Cache

Enable this function to utilize the CPU Internal/External Cache memory to enhance computing performance. The External Cache field may not appear if your system does not have external cache memory.

The choices: Enabled, Disabled.

CPU L2 Cache ECC Checking

When you select Enabled, memory checking is enable when the external cache contains ECC SRAMs.

The choices:Enabled, Disabled.

Quick Power On Self Test

Select Enabled to reduce the amount of time required to run the power-on-self-test (POST). A quick POST skips certain steps. We recommend that you normally disable quick POST. Better to find a problem during POST than lose data during your work.

The choices: Enabled, Disabled.

First/Second/Third Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

The choices: Floppy, LS120, HDD0, HDD1, HDD2, SCSI, CDROM, ZIP100, Disabled.

Boot Other Device

If your boot device is not included in the following choices Floppy, **LS120, HDD0, HDD1, HDD2, SCSI, CDROM, ZIP100 you may set First/Second/Third Boot devices to "Disable"** and **enable the BOOT Other Device function**. The system will automatically boot the other device.

The choices: Enabled, Disabled.

Swap Floppy Drive

This field is effective only in systems with two floppy drives. Selecting enabled assigns physical drive B to logical drive A, and physical drive A to logical drive B.

The choices: Enabled, Disabled.

Boot Up Floppy Seek

When Enabled, the BIOS tests (seeks) floppy drives to determine whether they have 40 or 80 tracks. Only 360-KB floppy drives have 40 tracks; drives with 720 KB, 1.2 MB, and 1.44 MB capacity all have 80 tracks. Because very few modern PCs have 40-track floppy drives, we recommend you to choose "Disabled" to save time.

The choices: Enabled, Disabled.

Boot Up NumLock Status

Toggle between On or Off to control the state of the NumLock key when the system boots. When toggled On, the numeric keypad generates numbers instead of controlling cursor operations.

The choices: On, Off.

Gate A20 Option

Gate A20 refers to the way the system addresses memory above 1 MB (extended memory). When set to Fast, the system chipset controls Gate A20. When set to Normal, a pin in the keyboard controller controls Gate A20. Setting Gate A20 to Fast improves system speed, particularly with OS/2 and Windows.

The choices: Fast, Normal.

Typematic Rate Setting

Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.

The choices: Enabled/Disabled.

Typematic Rate

When the typematic rate setting is enabled, you can select a typematic rate (the rate at which character repeats when you hold down a key) of 6, 8, 10, 12, 15, 20, 24, 30.

Typematic Delay

When the typematic rate setting is enabled, you can select a typematic delay (the delay before key strokes begin to repeat) of 250, 500, 750 or 1000 milliseconds.

Security Option

If you have set a password, select whether the password is required every time the System boots, or only when you enter Setup.

The choices: Setup, System.

OS Select For DRAM>64MB

Select the operating system that is running with greater than 64MB or RAM on the system.

The choices: Non-OS2, OS2.

Report No FDD For WIN 95

Select "Yes" to release IRQ6 when the system contains no floppy drive, for compatibility with Windows 95 logo certification. In the Integrated Peripherals screen, select Disabled for the Onboard FDD Controller field.

The choices: Yes, No.

Shadow

Software that resides in a read only memory (ROM) chip on a device is called firmware. The Award BIOS permits shadowing of firmware such as the system BIOS, video BIOS, and similar operating instructions that come with some expansion peripherals such as a SCSI adaptor.

Shadowing copies firmware from ROM into system RAM, where the CPU can read it through the 16-bit or 32-bit DRAM bus. Firmware not shadowed must be read by the system through the 8-bit X-bus. Shadowing impoves the performance of the system BIOS and similar ROM firmware for expansion peripherals. but it also reduces the amount of high memory (640 KB to 1 MB) available for loading device drivers, etc.

Enable shadowing into each section of memory separately. Many system designers hardwire shadowing of the system BIOS and eliminate a System BIOS Shadow option.

Video BIOS shadows into memory are C0000-C7FFF. The remaining areas shown on the BIOS Features Setup screen may be occupied by other expansion card firmware. If an expansion peripheral in your system contains ROM-based firmware, you need to know the address range the ROM occupies to shadow it into the correct area of RAM.

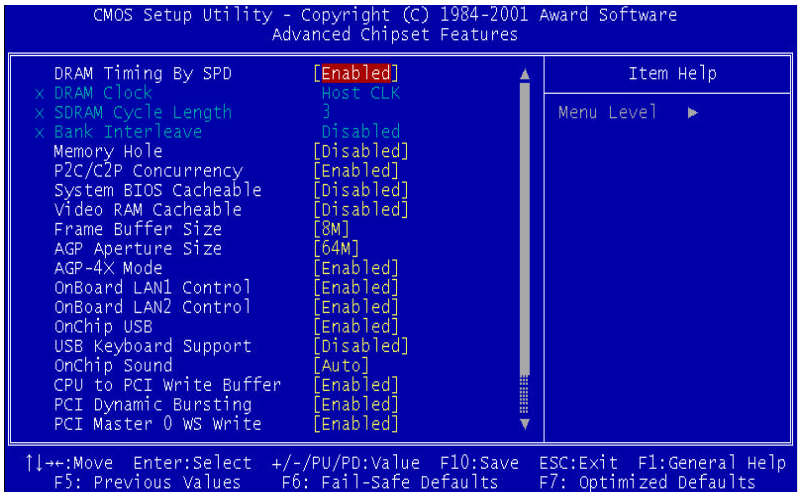
The choices: Enabled, Disabled.

Small Logo (EPA) Show

If you want to show your logo, please enable it.

The choices: Enabled, Disabled

Advanced Chipset Features



DRAM Timing By SPD

This item allows you to select the value in this field, depending on whether the board has paged DRAMs or EDO (extended data output) DRAMs.

The choices: Enabled, Disabled.

DRAM Clock

This item allows you to control the DRAM speed.

The choice: Host Clock, HCLK-33M.

SDRAM Cycle Length

This field sets the CAS latency timing.

The choices: 3, 2.

Bank Interleave

Select 2 Bank or 4-Bank interleave for 64-Mb SDRAM. If 16-Mb SDRAM is installed, leave Disabled.

The choices: 2 Bank, 4 Bank, Disabled.

Memory Hole

In order to improve performance, certain space in memory is reserved for ISA cards. This memory must be mapped into the memory.

The choices: 15M-16 M, Disabled.

P2C/C2P Concurrency

This item allows yo to enable/disable the PCI to CPU, CPU to PCI concurrency.

The choices: Enabled, Disabled.

System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

The choices: Enabled, Disabled.

Video RAM Cacheable

Selecting Enabled allows caching of the video memory (RAM) at A0000h to AFFFFh, resulting in better video performance. However, if any program writes to this memory area, a memory access error may result.

The choices: Enabled, Disabled.

Frame Buffer Size

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

The choices: 2M, 4M, 8M, 16M, 32M.

AGP Aperture Size

Select the size of Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

The choices: 4M, 8M, 16M, 32M, 64M, 128M.

AGP-4X Mode

Enable 4X mode will enhance your system performance.

The choices: Enabled, Disabled.

Onboard LAN1/2 Control

Select enabled to utilize LAN 1 and LAN 2 function.

The choices: Enabled, Disabled.

OnChip USB

Select enabled if your system contains a Universal Serial Bus controller and you have a USB keyboard. If you disable this function you will not be able to access the USB Keyboard Support below.

The choices: Enabled, Disabled.

USB Keyboard Support

Select enabled if your system contains a Universal Serial Bus controller and you have a USB keyboard.

The choices: Enabled, Disabled.

OnChip Sound

This item allows you to control the onboard VIA VT82C686B audio.

The choices: Auto, Disabled.

CPU to PCI Write Buffer

When this field is enabled, writes from the CPU to the PCI bus are buffered, to compensate for the speed differences between the CPU and PCI bus. When disabled, the writes are not buffered and the CPU must wait until the write is complete before starting another write cycle.

The choices: Enabled, Disabled.

PCI Dynamic Bursting

When enabled, every write transaction goes to the write buffer. Burstable transactions then burst on the PCI bus and nonburstable transactions do not.

The choices: Enabled, Disabled.

PCI Master 0 WS Write

When enabled, writes to the PCI bus are executed with zero wait states.

The choices: Enabled, Disabled.

PCI Delay Transaction

The chipset has an embedded 32 -bit posted write buffer to support delay transactions cycles. Select enabled to support compliance with PCI specification version 2.1.

The choices: Enabled, Disabled.

PCI#2 Access #1 Retry

When disabled, PCI#2 will be connected until access finishes(default). When enabled, PCI#2 will be disconnected if max retries are attempted without success.

The choices: Enabled, Disabled.

AGP Master 1 WS Write

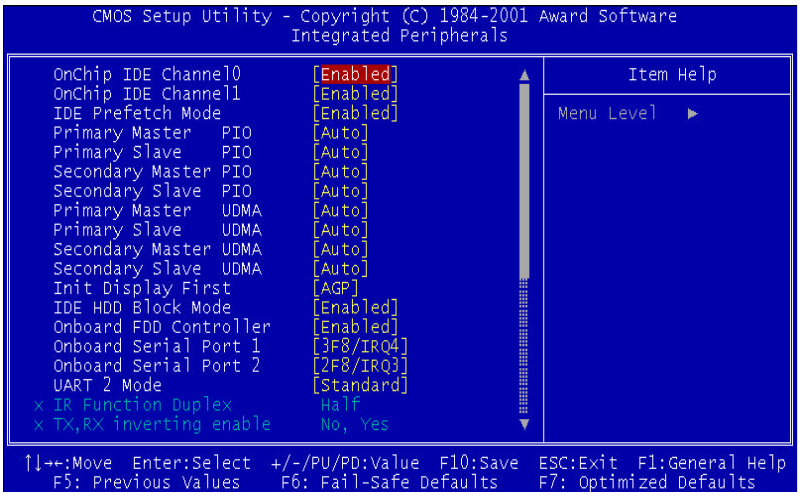
System will run **single wait state delay** before writing data from buffer. If the setting is configured as disabled, system will run **twice wait states** so that system can be more stable.

The choices: Enabled, Disabled.

AGP Master 1 WS Read

System will run **single wait state delay** before reading data from buffer. If the setting is configured as disabled, system will **run twice wait states** so that system can be more stable.

The choices: Enabled, Disabled.



Onchip IDE Channel0/Onchip IDE Channel1

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Please select " Enabled" to activate each channel separately.

The choices: Enabled, Disable.

IDE Prefetch Mode

The onboard IDE drive interfaces supports IDE prefetching, for faster drive accesses. If you install a primary and/or secondary add-in IDE interface, set this field to Disabled if the interface does not support prefetching.

The choices: Enabled, Disable.

Primary/Secondary Master/Slave PIO

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

The choices: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4

Secondary Master/Slave PIO reserves for future purpose

Primary/Secondary Master/Slave UDMA

Ultra DMA33/66/100 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver. If your hard drive and IDE cable both support Ultra DMA 33/66/100 select Auto to enable BIOS support.

The choices: Auto, Disable.

Secondary Master/Slave UDMA reserves for future purpose

Init Display First

You can select AGP or PCI slot to initialize it as the primary display before initializing any other display device on the system.

The choices:AGP, PCI Slot

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), please select "Enabled" for automatic detection of the optimal number of block read/writes per sector the drive can support.

The choices: Enabled, Disabled.

Onboard FDD 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 an add-in FDC or the system has no floppy drive, select Disabled in this field.

The choices: Disabled, Enabled.

Onboard Serial Ports (1, 2)

Normally, the boards' I/O chips will occupy a certain portion of memory space. For each I/O device the computer provides an I/O address. The more devices attached the more address needed to organize the memory storage areas. If all the I/O devices were run through the same address, your devices would come to a near halt. Also the corresponding interrupt needs to be selected.

The choices: Disabled, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/ IRQ3.

UART 2 Mode

If you don't disable Onboard Serial Port 2, you will have to select an operating mode for the second serial port:
Standard: RS-232C serial port

HPSIR: IrDA-compliant serial infrared port

ASKIR: Amplitude shift keyed infrared port

If you select HPSIR or ASKIR, you have to set the following two functions.

IR Function Duplex

Select the value required by the IR device connected to the IR port. Full-duplex mode permits simultaneous two-direction transmission. Half-duplex mode permits transmission in one direction only at a time.

The choices: Full, Half.

Tx, Rx inverting enable

Please consult your IR peripheral documentation to select the correct setting of the TxD and RxD signals.

The choices: Yes/Yes, No/No, No/Yes, Yes/No.

Onboard Parallel Port

Select a logical LPT port address and corresponding interrupt for the physical parallel port

The Choice:3BC/IRQ7, 378/IRQ7, 278/IRQ5, Disabled.

Onboard Parallel Mode

Two bidirectional parallel ports. Supports Normal, ECP, EPP, ECP/EPP.

The choices: Normal, EPP, ECP, ECP/EPP .

ECP Mode Use DMA

Select a DMA channel for the port.

The choices: 1, 3.

Parallel Port EPP Type

You can use this feature to choose which version of EPP to use. For better performance, use EPP 1.9. But if you are facing connection issues, try to set it to EPP 1.7.

The choices: EPP1.9, EPP1.7.

Onboard Serial Port 3

Select a matching address for the third serial port or disable it.

The choices: 3F8, 2F8, 3E8, 2E8, Diabled

Serial Port 3 use IRQ

If you don't disable serial Port 3, you must select corresponding interrupt for it.

The choices: IRQ3, IRQ4, IRQ10, IRQ11

Onboard Serial Port 4

Select a matching address for the forth serial port or disable it.

The choices: 3F8, 2F8, 3E8, 2E8, Diabled

Serial Port 4 use IRQ

If you don't disable serial Port 4, you must select corresponding interrupt for it.

The choices: IRQ3, IRQ4, IRQ10, IRQ11

Onboard Legacy Audio

Enable to utilize onboard legacy audio function.

The choice: Enabled, Disabled.

Sound Blaster

Enable to utilize Sound Blaster function.

The choice: Enabled, Disabled.

SB I/O Base Address

Select a base I/O address for the Sound Blaster interface

The choice: 220H, 240H, 260H, 280H

SB IRQ Select

Select Interrupt for the Sound Blaster interface.

The choice: IRQ5, IRQ7, IRQ9, IRQ10

SB DMA Select

Select DMA mode for the Sound Blaster interface.

The choice: DMA0, DMA1, DMA2, DMA3

MPU-401

Select Enabled to configure the MPU-401 interface.

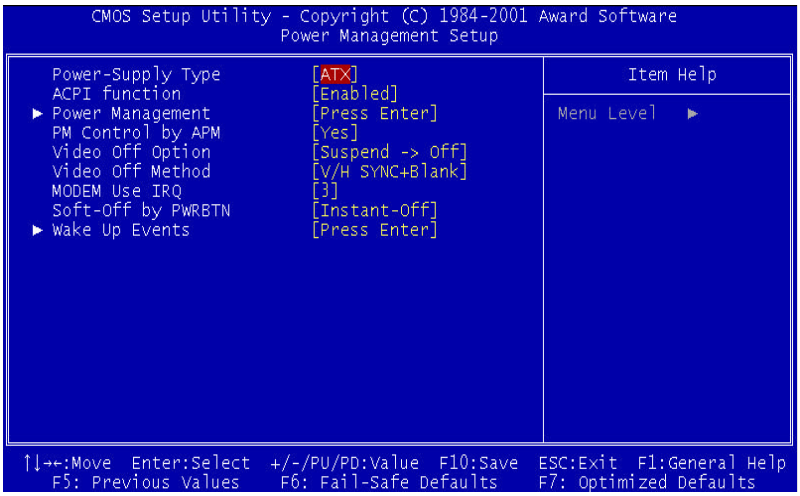
The choice: Enabled, Disabled.

MPU-401 I/O Address

Select a base I/O address for the MPU-401 interface.

The choice: 300-303H, 310-313H, 320-323H, 330-333H.

Power Management Setup



Power-Supply Type

PCM-6892 supports two kinds of different power supply type: AT or ATX. Please select the corresponding type of your board in this item. If AT type be chosen, this board will not support several power management functions such as "ACPI", "Modem ring in", and "Soft-off by PWRBTN"etc..

ACPI Function(only for ATX type)

ACPI (Advanced Configuration and Power Interface) is an open industry specification co-developed by Compaq, Intel, Microsoft, Phoenix, and Toshiba. It establishes industry-standard interfaces for OS-directed configuration and power management on laptops, desktops, and servers.

If you want to manage power consumption well, please "Enable" this item.

The choices: Enabled, Disabled.

Power Management(only for ATX type)

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

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

Power Management

Select **Max Saving** mode or **Min Saving** mode or define desired Doze Mode and Suspend Mode functions by **User Define.**

HDD Power Down

Disable this function or select from 1 to 15 minutes.

Doze Mode

Disable this function or select 1 min, 2 min, 4 min, 6 min, 8 min, 10 min, 20 min, 30 min, 40 min, 1 hour.

Suspend Mode

Disable this function or select 1 min, 2 min, 4 min, 6 min, 8 min, 10 min, 20 min, 30 min, 40 min, 1 hour.

PM Control by APM

If advanced power management is installed on your system, selecting Yes gives better power savings.

The choices: Yes, No.

Video Off Option

As the system moves from lesser to greater power-saving modes, select the mode in which you want the monitor to blank.

The choices: Suspend? off, All Modes? off, Always On

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 Support	Initial display power management signaling

Modem Use IRQ(only for ATX type)

Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

The choices: NA, 3, 4, 5, 7, 9, 10, 11.

Soft-Off by PWR-BTTN(only for ATX type)

If you select "Instant -Off", pushing the on/off button will instantly shut down the system. If you select " Delay 4 sec", you have to push the on/off button lasting for 4 secs to shut down the system. In this mode, one touch on the on/off button won't shut down the system but place it in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity or Resume by Ring activity.

The choices: Instant-Off, Delay 4 Sec.

Wake Up Events(only for ATX type)

You can turn On or Off monitoring of commonly used interrupt requests so they do not awaken the system from, or reset activity timers.

For example, if you have a modem on IRQ3, you can turn On IRQ3 as a wake-up event, so an interrupt from the modem can wake up the system. Or you may wish to turn Off IRQ12 (the PS/2) mouse as a wake-up event, so accidentally brushing the mouse does not awaken the system.

PCM-6892 offers several ways to awaken the system. Define each way as the wake-up interrupt requests or not.

VGA

The choices: ON, OFF

LPT & COM

The choices: LPT, COM, LPT/COM, NONE

HDD & FDD

The choices: ON, OFF

PCI Master

The choices: ON, OFF

Modem Ring Resume

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

The choices: Enabled, Disabled

RTC Alarm Resume

When Enabled, your can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.

The choices: Enabled, Disabled

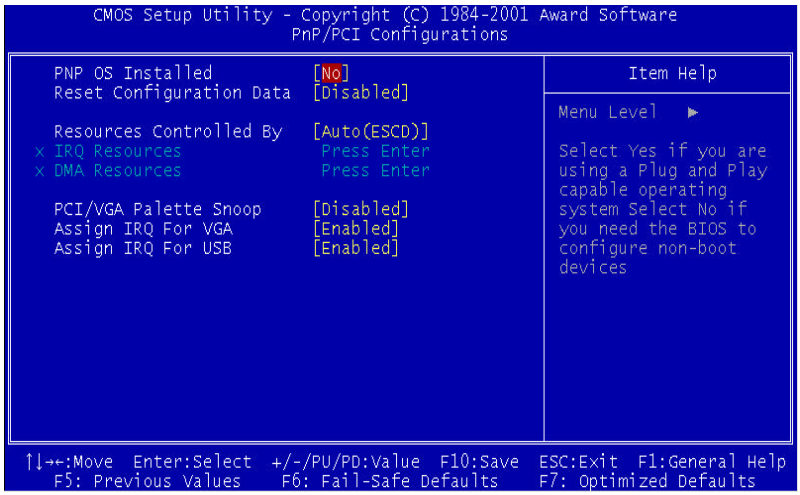
Primary INTR

The choices: ON, OFF

IRQs Activity Monitoring

Enable the following devices with the corresponding IRQ address to wake up the system: **IRQ3 (COM 2), IRQ4 (COM 1), IRQ5 (LPT 2), IRQ6 (Floppy Disk), IRQ7 (LPT 1), IRQ8(RTC Alarm), IRQ9(IRQ2 Redir), IRQ12(PS/2 Mouse), IRQ13(Coprocessor), and IRQ14(Hard Disk).**

PnP/PCI Configurations



PNP OS Installed

Select Yes if the system operating environment is Plug and Play aware, for example Windows 95.

Select No if you need the BIOS to configure non-boot devices.

The choices: No, Yes.

Reset Configuration Data

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

The choices: Enabled, Disabled

Resources Controlled By

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows 95. If you set this field to Manual, please choose specific resources by going into each of the sub menu that follows this field (a sub menu is proceeded by a ">")

The choices: Auto (ESCD), Manual.

IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt. There are two types for choice: Lagacy ISA and PCI/ISA PnP.

Legacy ISA: Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1)

PCI/ISA PnP: Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

DMA Resources

When resources are controlled manually, assign each DMA channel a type, depending on the type of device using the DMA channnel. There are two types for choice: Lagacy ISA and PCI/ISA PnP.

Legacy ISA: Devices compliant with the original PC AT bus specification, requiring a specific DMA channel

PCI/ISA PnP: Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

PCI/VGA Palette Snoop

Leave this field at Disabled.

The choices: Enabled, Disabled.

Assign IRQ For VGA

Enable to assign interrupt for VGA.

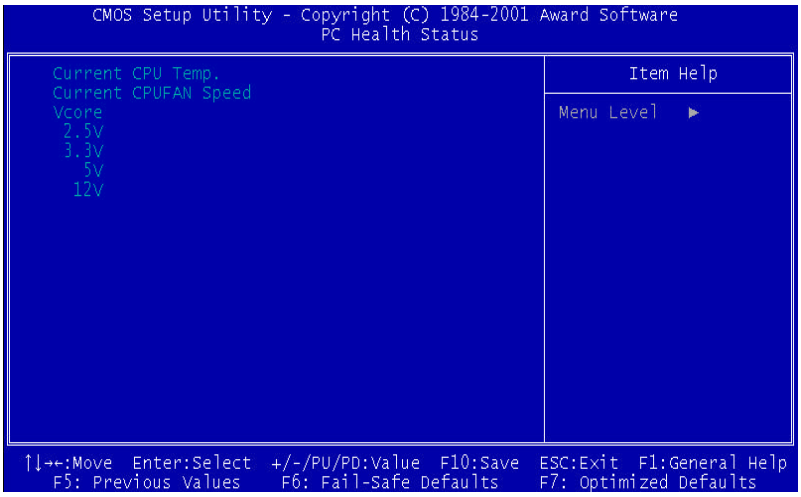
The choice: Enabled, Disabled

Assign IRQ For USB

Enable to assign interrupt for USB.

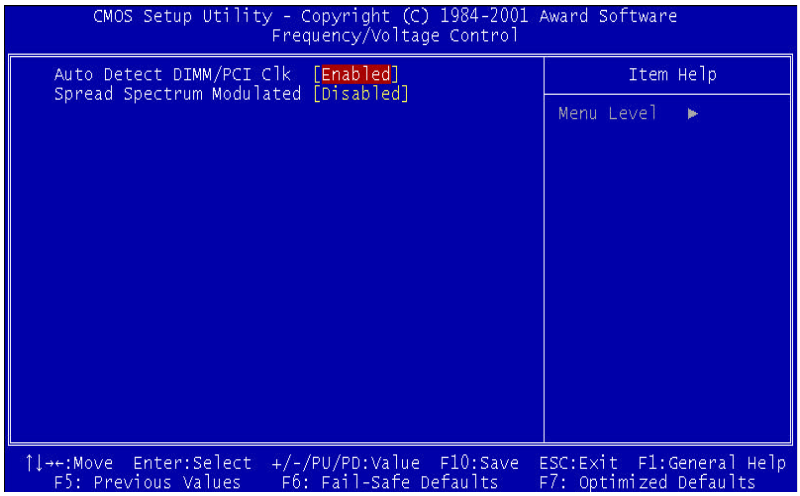
The choice: Enabled, Disabled

PC Health Status



Your system does not allow you to alter any of the setting in this menu. The system engineer has already designated the correct setting for PCM-6892.

Frequency/Voltage Control



Auto Detect DIMM/PCI CLK

This item allows you to enable/disable auto detect DIMM/PCI clock.

The choices: Enabled/Disabled

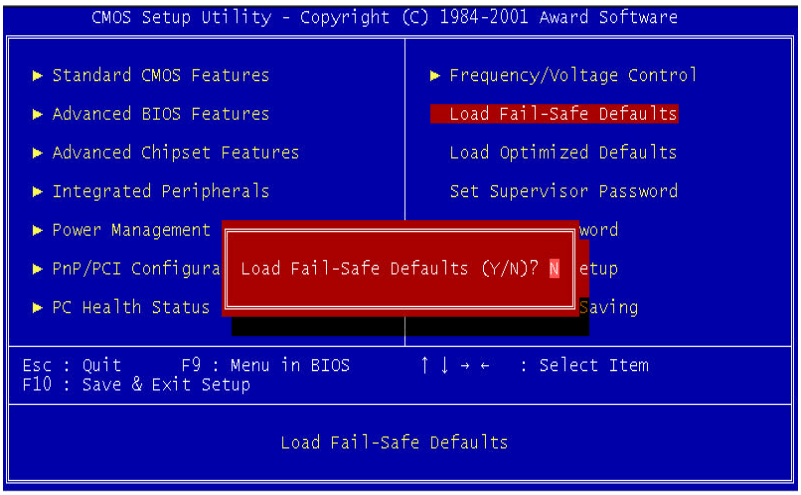
Spread Spectrum Modulated

This allows you to enable/disable the spread spectrum modulate.

When the system clock generator pulses, the extreme values of the pulse generate excess EMI. Enabling pulse spectrum spread modulation changes the extreme pulse spikes to flat curves thus reducing EMI.

The choices: Enabled, Disabled

Load Fail-Safe Defaults

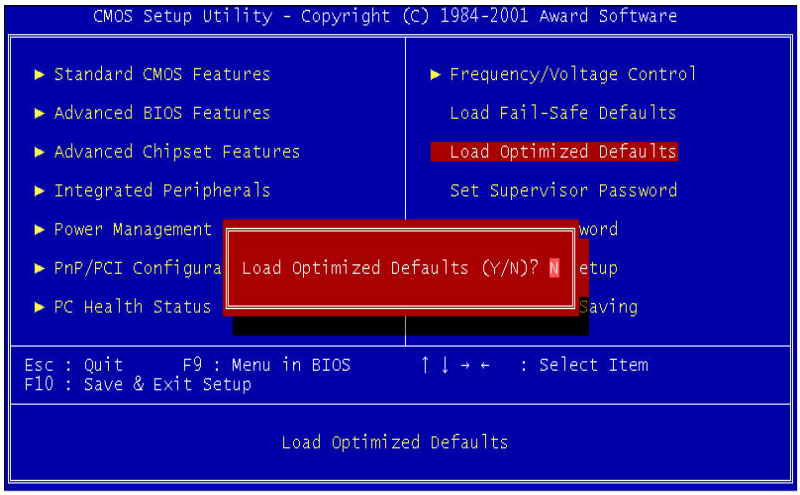


When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Default (Y/N)?

Pressing "Y" loads the BIOS default values for the most stable, minimal performance system operations.

Optimized Default

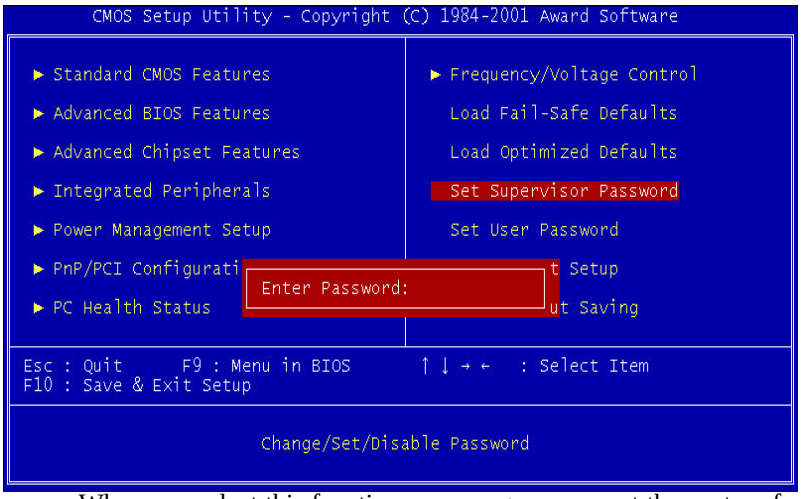


When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N)?

Pressing "Y" loads the default values that are factory settings for optimal performance system operations.

Set Supervisor Password



When you select this function, a message appears at the center of the screen:

Enter Password:

Type the password, up to eight characters, and press Enter. Typing a password clears any previously entered password from CMOS memory.

Now the message changes:

Comfirm Password:

Again, type the password and press Enter.

To abort the process at any time, press Esc.

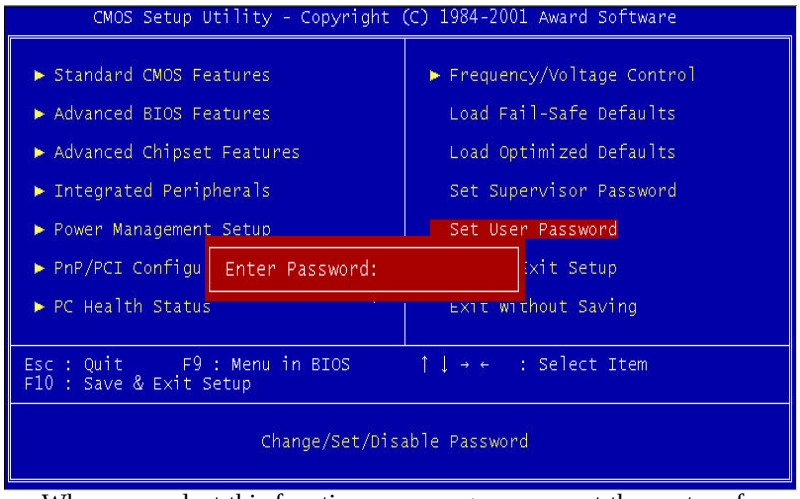
In the Security Option item in the BIOS Features Setup screen, select System or Setup:

System Enter a password each time the system boots and when ever you enter Setup.

Setup Enter a password when ever you enter Setup.

***NOTE**: To clear the password, simply press Enter when asked to enter a password. Then the password function is disabled.*

Set User Password



When you select this function, a message appears at the center of the screen:

Enter Password:

Type the password, up to eight characters, and press Enter. Typing a password clears any previously entered password from CMOS memory.

Now the message changes:

Comfirm Password:

Again, type the password and press Enter.

To abort the process at any time, press Esc.

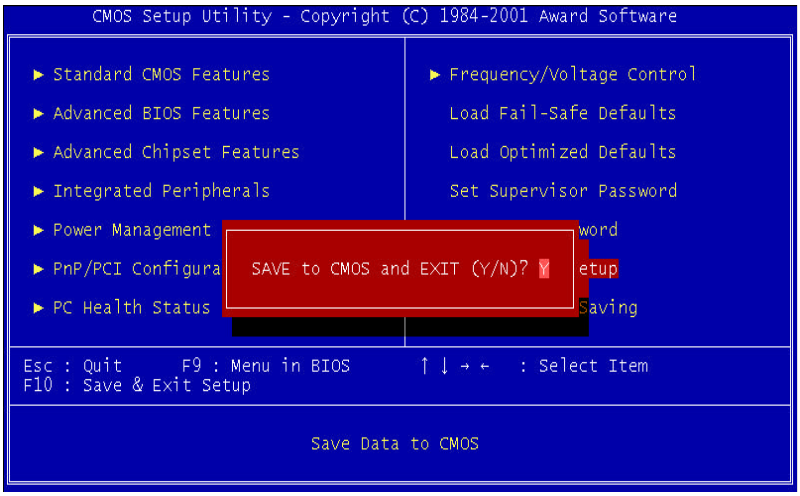
In the Security Option item in the BIOS Features Setup screen, select System or Setup:

System Enter a password each time the system boots and when ever you enter Setup.

Setup Enter a password when ever you enter Setup.

***NOTE**: To clear the password, simply press Enter when asked to enter a password. Then the password function is disabled.*

Save & Exit Setup

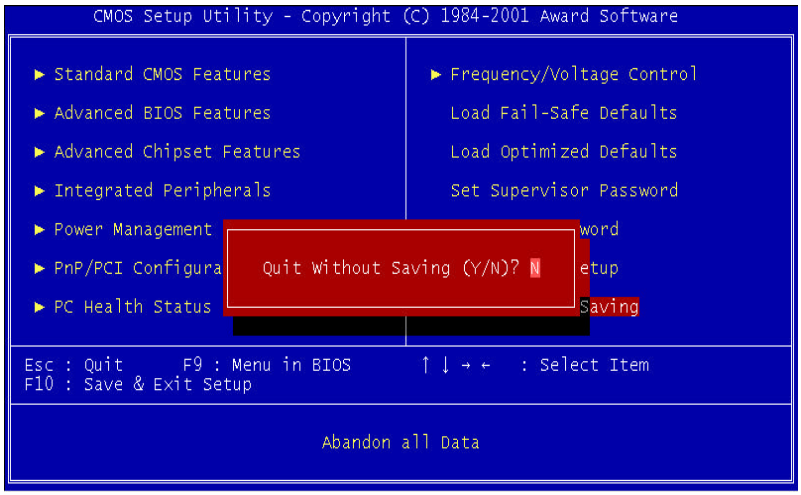


Pressing <Enter> on this item asks for confirmation:

Save to CMOS and Exit (Y/N)?

Pressing "Y" stores the selections made in the menus in CMOS, a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

Exit Without Saving



Pressing <Enter> on this item asks for confirmation:

Quit Without Saving (Y/N)?

This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

CHAPTER 4

Driver Installation

This PCM-6892 is equipped with an Audio,VGA and Dual LAN interfaces. This chapter provides instructions for installing the software drivers on these peripherals.

System Drivers Installation

The PCM-6892 comes with a CD Diskette which contains most of drives and utilities of your needs.
There are several installation ways depends on the driver package under different Operating System application. **We recommend that the system driver installation procedure must be performed first.**
If you utilize Windows NT series OS, you are strongly recommended to download the latest version Windows NT Service Pack from Microsoft website and install it before installing any driver.

Installation 1:

Applicable for Windows 9x/ME/2000/XP

1. Insert the **PCM-6892 CD Diskette** into the CD ROM Drive.

2. From the CD ROM, select the **Driver** folder to enter 4 in 1 folder and then double click on the **Setup.exe** icon. A driver installation screen will appear. Follow its instructions to complete the installation.

Installation process is completed and allows the system to reboot.

VGA Driver Installation

Windows 9x/ME/2000/XP

1. Insert the **PCM-6892 CD Diskette** into the CD ROM Drive.

2. From the CD ROM, select the **PCM-6892/Driver/VGA/Windows 9x_ME** folder to double click on the **Setup.exe** icon.

Notice:We take the VGA installation under Windows 98 for example here, please choose the corresponding folder depending on your OS.

A driver installation screen will appear, please follow the onscreen instructions to install the driver in sequence.

3. At last, click the **Finish** button.

Installation process is complete and allows the system to reboot.

Windows NT 4.0

1. Insert the **PCM-6892 CD Diskette** into the CD ROM Drive.

2. Start system with Windows NT 4.0 installed.

IMPORTANT: When the "Please select the operating system to start..." message is displayed, select "Windows NT Workstation Version 4.00 [VGA mode]".

3. From **Start**, select the **Settings group**, then click on the **Control Panel** icon.

4. In the **Control Panel**, double click on the **Display** icon.

5. In the **Settings** screen, click on the **Display Type...** button.

6. From the **Display Type** screen, and in the **Adapter Type** section, click on the **Change...** button.

7. In the **Change Display** screen, click on the **Have Disk...** button.

8. Key in the path: **cd-rom: \Driver\VGA\Windows NT 4.0**, then click on the **OK** button.

"**cd-rom**" : the drive letter of your CD-ROM drive

9. From the list of displayed S3 devices, select your S3 device.

10. From **Third-party Drivers**, click on the **Yes** button to proceed.

11. If a message appears stating the driver is already installed on the system, and asks if you want to use the current or new drivers, be sure to select the **New** button.

12. If prompted for the driver diskette a second time, click on the **Continue** button.

13. When the message **The drivers were successfully installed** is displayed, remove the display driver diskette, then click on the **OK** button.

14. Back at the **Display Type** window, click on the **Close** button.

15. Back at the **Display Properties** window, click on the **Close** button.

16. When you see the **System Settings Change** window, asking if you wish to restart your computer, click on the **Yes** window to reboot now.

NOTE: If installing Windows NT 4.0 with the S3 device currently installed in the system:

Proceed through the Windows NT installation as normal. The installation program will prompt the user to choose a display mode. Choose the **Cancel** button from the **Display Settings** screen to ignore this step for now. The installation will now finish. Once Windows NT has started for the first time, proceed to follow the steps outlined above to install the driver for your S3 device.

Linux

1. While installing Red Hat Linux 7.3, select the “ S3 Savage (generic)” or “ S3 Savage4 (generic)” in the X configuration and change the “ Video Card Ram” to the value set in BIOS. We recommend allocating at least 8 MB memory for the frame buffer.

2. After finishing the packages installation, select monitor type in Monitor Configuration. If your monitor does not appear on the list, select the “ Generic” and modify the horizontal and vertical range according to your monitor specification.

3. Next, you can test your configuration in the “ Custom Configuration” . Click “ Test Setting” to try out your configuration. If you cannot see anything, you might change the “ Color Depth” or “ Screen Resolution” . You can also choose whether you want to boot your system in text or graphics mode.

4. After you finish the installation, restart the system. Next time you will login with X-window if you choose “ Graphical” during installation. Or you will be presented with a command prompt. Then you can also type “ startx” to enter X-window.

5. Modify the display mode by the following steps:

(a) Type “ cd /etc/X11/” to change to this directory.

(b) Type “ vi XF86Config-4” and edit the configuration file. The Screen section shown next page combines a video card and monitor with the video modes to be used by a specific X-server. Modify the value of “ Modes” under the “ Display” subsection to “ 1024x768” or “ 640x480” if you want to set the screen resolution to “ 1024x768” or “ 640x480” , respectively. Modify the value both of “ DefaultDepth” and “ Depth” from 24 to 8 or 16 if you want to change the color depth to 8 or 16 bits, respectively.

Section “ Screen”

Identifier “ Screen 0”

Device “ S3 Savage (generic)”

Monitor “ Monitor 0”

DefaultDepth 24

Subsection “ Display”

Depth 24

Modes “ 800x600”

EndSubsection

EndSection

After you make and save all the changes to the “ XF86Config-4” file, press CTRL+ALT+BackSpace that restarts the X-server and lets the new settings take effect. If this does not work, type “ startx” in text mode or reboot the system.

(c) As to the “ Refresh rate” of each mode, it will auto detect and select the most suitable and the highest supported refresh rate to fit your monitor setting range.

Audio Driver Installation

Windows 9x/ME

1. Insert the **PCM-6892 CD Diskette** into the CD ROM Drive.

2. From the CD ROM, select the **Driver**/**Audio** folder to double click on the **Setup.exe** icon. A driver installation screen will appear.

3. Click on the **Next** button.

4. Click on the **Next** button. The system will ask you to insert Windows 98 CD Diskette and key in its path. Insert Windows 98 CD Diskette and click on the **OK** button to key in path.

Notice:We take the Audio installation under Windows 98 for example here, please insert the corresponding CD Diskette depending on your OS.

5. Click on the **Finish** button.

Installation process is completed and restart your computer.

Windows 2000/XP

1. Insert the **PCM-6892 CD Diskette** into the CD ROM Drive.

2. From the CD ROM, select the **Driver**/**Audio** folder to double click on the **Setup.exe** icon. A driver installation screen will appear.

3. Click on the **Next** button.

4. Click on the **Next** button.

5. Click on the **Finish** button and restart your computer.

Windows NT 4.0

1. Insert the **PCM-6892 CD Diskette** into the CD ROM Drive.

2. From the CD ROM, select the **Driver**/**Audio** folder to double click on the **Setup.exe** icon.

3. Click on the **Next** button.

4. Select **Install Driver** and click on the **Next** button.

5. Setup procedure is completed. Click on the **Finish** button to restart your computer.

Linux

1. Login as a super user.

2. Change directory according to the Linux version, e.g..

mcd a:/linux/redhat

for RedHat

3. Copy compressed file according to the Linux version to a certain directory, e.g..

mkdir ./viaudio

mcopy a:68audio.rht72.gz ./viaudio

for RedHat 7.2

4. Uncompress the compressed file by using tar command, e.g.

tar xzvf 68audio.rht72.gz

for RedHat 7.2 and

5. Change directory to the relative directory to do the installation.

./vinstall

or

sh vinstall

For RedHat 7.2, this program will copy some files, e.g.

/lib/modules/2.4.7-10/sound/viaudio.o

and backup the original files as the following :

/etc/modules.conf to /etc/modules.conf.old

or

/etc/modules.conf to /etc/old.modules.conf

After the installation, the VIA Audio Linux driver should be loaded on the RedHat 7.2.

* Please turn on the USB Host Controller and USB 2 Host Controller in the BIOS setting first. Otherwise, the Audio function will not detect by LINUX 2.2.5 kernel. It is the LINUX 2.2.5 kernels' bug.

Ethernet Driver Installation

Windows 9x/ME

1. Insert the **PCM-6892 CD Diskette** into the CD ROM Drive.

2. From **Start**, select the **Settings**, then click on the **Control Panel** icon.

3. Double click on the **System** icon.

4. In the **Device Manager** tab, remove two **PCI Ethernet Controller** items marked with **?**

5. Click on the **Refresh** button and **Add New Hardware Wizard** will appear. Click on the **Next** button.

6. Select **Search for the best driver for your device.(Recommended)** and click on the **Next** button.

7. Select **Specify a location** and key in the path: **cd-rom: Driver\Ethernet\Windows 98**. Then click on the **Next** button.

"**cd-rom**" : the drive letter of your CD-ROM drive

Notice:We take the Ethernet installation under Windows 98 for example here, please select the corresponding folder depending on your OS.

8. The Wizard shows that Windows driver file search for the device: **Realtek RTL8139/810X Family PCI Fast Ethernet NIC**. Click on the **Next** button.

9. The system will ask you to insert Windows 98 CD Diskette. Click on the **OK** button to insert Diskette and key in path.

Notice:We take the Ethernet installation under Windows 98 for example here, please insert the corresponding CD Diskette depending on your OS.

10. Click on the **OK** button.

11. Click on the **Finish** button.

12. Click on the **Yes** button to restart your computer. The system will auto-dect the second Ethernet controller and complete its driver installation. Just Click on the **Yes** button to restart your computer again to allow dual ethernets to take effect.

Windows NT 4.0

1.Insert the **PCM-6892 CD Diskette** into the CD ROM Drive.

2. From **Start**, select the **Settings**, then click on the **Control Panel** icon.

3. Double click on the **Network** icon. A **Network Configuration** screen will appear and show: **Windows NT Networking is not installed. Do you want to install it now?** Click on the **Yes** button.

4. Select **Wired to the network** and click on the **Next** button.

5.Click on **Have Disk** button after you click on **Select From List** button. Key in the following path: **cd-rom: Driver\Ethernet\Windows NT 4.0**

"**cd-rom**" : the drive letter of your CD-ROM drive

6. A **Select OEM Option** screen appears and shows : **Realtek RTL 8139/810X Family PCI Fast Ethernet Adapter**. Click on the **OK** button.

7. Click on the **Next** button.

8. Click on the **Next** button.

9. Click on the **Next** button.

10. Click on the **Next** button. The system will ask you to insert Windows NT CD Diskette. Follow its instructions to complete the setup procedures.

11. Restart your computer to allow dual ethernets to take effect.

APPENDIX A

WatchDog Timer

Watchdog Timer

PCM-6892 contains a watchdog timer reset pin. (GP16)

All reference material can be found on the following pages.

```
=================================================**
** Title  : WatchDog Timer Setup Utility (for W83977 GP16)   **
** Company  : AAEON Technology Inc.                          **
** Compiler : Borland C ++ Version 3.0                       **
**=================================================*/

#include <dos.h>
#include <io.h>
#include <bios.h>
#include <stdio.h>
#include <stdlib.h>
#include <conio.h>

/* Set I/O Address : 370/371 or 3F0/3F1 */
#define IO_INDEX_PORT   0x370
#define IO_DATA_PORT    0x371

/* Set Watchdog reset pin : 12/13/16 */
#define watch_dog_output_GP 16

#define UNLOCK_DATA     0x87
#define LOCK_DATA       0xAA
#define DEVICE_REGISTER 0x07

void EnterConfigMode()
{
                outportb(IO_INDEX_PORT, UNLOCK_DATA);
                outportb(IO_INDEX_PORT, UNLOCK_DATA);
}

void ExitConfigMode()
{
                outportb(IO_INDEX_PORT, LOCK_DATA);
}
```

```
void SelectDevice(unsigned char device)
{
        outportb(IO_INDEX_PORT,DEVICE_REGISTER);
        outportb(IO_DATA_PORT, device);
}

unsigned char ReadAData(short int reg)
{
        outportb(IO_INDEX_PORT, reg);
        return (inportb(IO_DATA_PORT));
}

void WriteAData(unsigned char reg, unsigned char data)
{
        outportb(IO_INDEX_PORT, reg);
       outportb(IO_DATA_PORT, data);
}

void SetWatchDogTime(unsigned char time_val)
{
        EnterConfigMode();
        SelectDevice(8);
        //Set Register F2
        //Set Watch-Dog Timer 1~ 256
        WriteAData(0xF2, time_val);
        // set counter counts in second (or minute)
        // Register F4 Bit 6 = 0/1 (minutes/seconds)
        // For w83977EF only
        WriteAData(0xF4, 0x40);
        ExitConfigMode();
}
```

```
void init_w83977tf_aw_watchdog()
{
		short int value;

		//Enter W83977 Configure Mode
		EnterConfigMode();

		//Select Device 7
		SelectDevice(7);
		//Set Device Active
		WriteAData(0x30, 0x01);

		//caution:skip this step will be a mistake!!
		if (watch_dog_output_GP==12)
		{
			//Set Register E2 to define GP12
			WriteAData(0xE2, 0x0A);
		}
		else if(watch_dog_output_GP==13)
		{
			//Set Register E3 to define GP13
			WriteAData(0xE3, 0x0A);
		}
		else if(watch_dog_output_GP==16)
		{
			//Set Register E6 to define GP16
			WriteAData(0xE6, 0x0A);
		}

		//Select Device 8
		SelectDevice(8);
		//Set Register F3
		//keyboard and mouse interrupt reset Enable
		//When Watch-Dog Time-out occurs,Enable POWER LED
output
		WriteAData(0xF3, 0x0E);
```

```
                //caution:skip this step will be a mistake!!
                if (watch_dog_output_GP==12)
                {
                //Set Register 2A (PIN 57) Bit 7 = 0/1 (KBLOCK/GP12)
                //set to GP12 for WD Rst
                WriteAData(0x2A,ReadAData(0x2A)|0x80);
                }
                else if(watch_dog_output_GP==13)
                {
                //Set Register 2B (PIN 58) Bit 0 = 0/1 (KBLOCK/GP13)
                //set to GP13 for WD Rst
                WriteAData(0x2B,ReadAData(0x2B)|0x01);
                }
                else if(watch_dog_output_GP==16)
                {
                //Set Register 2C (PIN 119) Bit 5-4 = 01 (GP16)
                //set to GP16 for WD Rst
                WriteAData(0x2C,ReadAData(0x2C)|0x10);
                }

                //Exit W83977 Configure mode
                ExitConfigMode();
}

void main(int argc, char* argv[])
{
                int time_value=0;
                char *ptr;
                printf("\nWinBond 83977 WatchDog Timer Setup Utility
Version 1.0 \n" );
                printf("Copyright (c) 2000 AAEON Technology Inc.\n");
                printf("This version only for W83977 that using GP%d to
Reset System.\n",watch_dog_output_GP);
```

```
        if (argc == 1)
        {
                printf(   n\Syntax: WATCHDOG [time] \n" );
                printf(" time range : 1 ~ 256 \n\n" );
                return ;
        }
        if (argc > 1)
        {
                ptr = argv[1];
                time_value = atoi(ptr);
        }
        if (time_value > 0 && time_value < 256)
        {
        SetWatchDogTime((unsigned char) time_value);
        init_w83977tf_aw_watchdog();
        printf(    Watch Dog Timer set up : %d \n",time_value);
        }
}
```

APPENDIX B

Optional Extras

PCM-10489-6 Wiring Kit

The cable kit PCM-10489-6 includes the following cables:

Part Number	Cable Description	Termination Connector
1701400453	IDE Cable 3.5" UDMA-100	40 pin, 2.54mm, Female (45cm)
1701340601	FDD Cable	34 pin, 2.54mm, Female (60cm)
1701150150	CRT Cable	15 pin, 2.54mm, DSUB (15cm)
1700080180	TV-Out Cable	RCA + S terminal Connector
1700140510	Audio Cable	CD In, Line In/Out, Mic in
1700080204	K/B & Mouse Cable	8 pin, 2.54mm, Female (20cm)
1701260301	Parallel Port Cable	26 pin, 2.54mm, Female (30cm)
1701400180	Serial Port Cable	40 pin, 2.54mm, Female (18cm)
1701080160	RJ-45 Extend Cable	RJ-45 10/100-BASE-T (16cm)
1709100201	USB Cable	10 pin, 2.0mm, Female