PCM-6893

Socket 370 based Tualatin/
Pentium® III/Celeron®
Comopact Board
W/LCD, Ethernet, Audio, & CFD

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Packing List

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

- 1 PCM-6893 Compact board

- 1 Quick Installation Guide

- 1 CD-ROM for manual (in PDF format), drivers

- Jumper kit

- Short copper and support

The PCM-6893 requires several cables for operation. You can make them yourself or purchase an optional cable kit.

If any of these items should be missing or damaged, contact your distributor or sales representative immediately.

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Chapter

1

General Information

1.1 Introduction

Aaeon new compact size board PCM-6893 targets high-end multimedia and networking applications. Easy Upgrading allows you to take full advantage of Intel® Development of even-higher speed **Tualatin**, **Pentium® III** and **Celeron®** processors. This is a perfect choice for embedded applications that require cost-effective, high computing performance features.

This board offers two alternatives of power supply type: AT and ATX. You can select whichever suitable for your application. ATX power consumption. It complies with the ACPI standard and supports three types of power-saving features: Doze mode, Standby and Suspend modes. The board watchdog timer automatically resets the system or generates an interrupt in case the system stops due to a program bug or EMI.

The onboard Compact Flash will offer a larger memory bank for data storage of all types. CompactFlash requires a fraction of power used to drive floppy disk or CD-ROMs, also no battery is required to save the data when the computer powers down.

The PCM6893 comes with VIA 8606 Twister T North Bridge integrated AGP 4x 2D/3D graphics accelerator. With 36-bit dual channel LVDS interface and TTL signal, you can utilize this board to display CRT and up to 36-bit TFT LCD panels.

The onboard 10/100BaseTx Ethernet interface and Sound Blaster-compatible audio opens up worlds of possibilities for kiosks, gaming systems, POS systems, medical and educational products. The Fast Ethernet controller provides a tenfold increase in Network capability, and is fully compatible with traditional 10Mbps network facilities.

PCM-6893 also includes four high-speed serial ports (three RS-232, one RS-232/422/485), one multimode (ECP/EPP/SPP) parallel port, 2 floppy drives, four USB ports, an Ultra DMA/33 enhanced IDE controller supporting up to two devices with data transfer rate up to 33MB 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.

The addition of PC/104 connector allows a wide selection of accessory cards to be added to the PCM-6893. Such accessories as Audio, fax modem, vehicle power supply, extra DiskOnChip, PCMCIA module, etc.

1.2 Features

- Supports socket 370 VIA C3 and Intel ® Celeron and Pentium ® III/ III-M(Tualatin) processors.

- High Speed AGP 4X for VGA display.

- VT8606 Integrated 2D/3D graphics accelerator supports up to 36-bit DSTN/TFT flat panel.

- VT8606 Integrated 2D/3D graphics accelerator, Integrate 36 bit dual-channel LVDS Interface.

- VIA VT1621 Support NTSC/PAL TV OUT format.

- One 10/100Base-T Fast Ethernet.

- Supports H/W status monitoring.

- ALC AC97 ver. 2.2 SoundBlaster compliant Interface.

- Supports CompactFlash memory storage.

- Four USB Ports.

- Digital I/O

1.3 Specifications

System

- CPU: Socket 370 based VIA C3 and Intel ® Celeron and Pentium ®III /III(Tualatin) Processors to 1.4GHz

- Memory: SDRAM DIMM Socket x 1, Max 512MB (PC-100/133 supported)

- Socket: 370 Pin Socket

- Chipset: VIA Twister-T VT8606T

- Chipset I/O: VIA 82686B/Winbond W83977TF

- BIOS: Award 2 Mb FLASH BIOS

- Audio: ALC201A Codec AC97, Mic in, Line in, Line out

- SSD: One 32 Pin DIP socket supports M-systems Disk On Chip 2000 Series up to 144MB

- CF: One CF Type II socket supports Type I/II

- Watch dog timer: Can generate a system Reset, IRQ 15 or NMI. Software selectable time-out interval (1sec~255 sec, 1sec/step)

- DMA: 7 DMA channels (8237 equivalent)

- PCI: PCI Ver. 2.2 compliant interface

One Standard 120Pin PCI connector

- Power Management: Supports PC97,APM 1.2 ACPI compliant

- Interrupt: 15 interrupt levels (8259 equivalent)

- Ethernet: Realtek8139DL Fast Ethernet c controllers. IEEE 802.3 10BASE-T/100BASE-TX compliant physical layer interface. One RJ-45 connector

- Expansion Interface: PC/104 x 1 PCI slot x 1

- Battery: Lithium battery for data retention, DIP Type.

- Power supply voltage: Standard AT/ATX Type, +5V and +12V.

- Operating temperature: 32 to 140 ° F (0 to 60° C)

- Board size/Weight: 8" (L) x 5.75" (W) (203 mm x 146 mm)

Display

PCM-6893

- Chipset: VIA VT8606

- Memory size: Share memory up to 32MB

- CRT: Resolution 1280 X 1024 X 32 at 85Hz.Box Header 2x8.pitch 2.54mm

- TV out: Support NTSC/PAL TV OUT Format,Pin Header 2x4.picth 2.0mm

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Compact Board	PCM-6893

- LVDS: Integrate 36 bit Dual-channel LVDS Interface.One Pin Header 2x10,pitch 2.0mm.One Pin Header 2x9,pitch 2.0mm

- LCD: Integrate 36 bit DSTN/TFT flat panel Interface. One DF-13 40Pin. One DF-13 20Pin

I/O

- Digital I/O: Support 4 in / out digital I/O each with TTL level interface.Pin Header 2x5.pitch 2.0mm

- IR interface: Supports One IrDA Tx/Rx header Pin Header 1x5.pitch 2.54mm

- IDE interface: 1 IDE connectors support up to 2 IDE devices, also support Ultra33 with data transfer rate up to 33MB/s ,Box Header 2x22.pitch is 2.0mm.

- Audio Interface: AC97 Ver. 2.2 compliant interface MIC-IN,LINE-OUT,LINE-IN Box Header 2x7.pitch 2.54mm

- Serial Interface: Three RS-232 and One RS-232/422/485 Serial Ports Pin Header 2x20.pitch is 2.54mm

- Parallel Port: One bi-directional parallel port.

Support SPP,ECP,and EPP modes
Box Header 2x13,pitch is 2.54mm

- FLOPPY: Support up to two floppy disk
  drives,5,25" (360KB and 1.2MB)
  and /or 3.5" (720KB, 1.44MB, and
  2.88M),Pin Header 2x17 pitch is
  2.54mm

- USB: Compliant with USB 1.1 Two Pin
  Headers 2x4,pitch 2.54mm Support
  4 USB ports

- KB/Mouse: Support PS/2 keyboard and
  mouse.Pin Header 2x4-1,pitch
  2.54mm

Chapter

2

Quick Installation Guide

Chapter 2 Quick Installation Guide

2.1 Safety Precautions

Warning!

Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

Caution!

Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis

2.2 Location of Connectors and Jumpers

Locating connectors and jumpers (component side)

WOL1
PCI1
DIMM1
J1
J2
CN 3
LVDS2
LVDS1
CN4
CN1
JBAT1
PWR1
CD_IN1
CN2

S3-VIA
VIA
BATTERY
BIOS
PGA370

LAN1
VGA1
CN6
CN5
LPT1
FDC1
J3

FAN1
USB1
SLOT1
USB2
IR1
CN8
CN9
IDE1
J4
J5
J6
J7
J8
J9
CN7
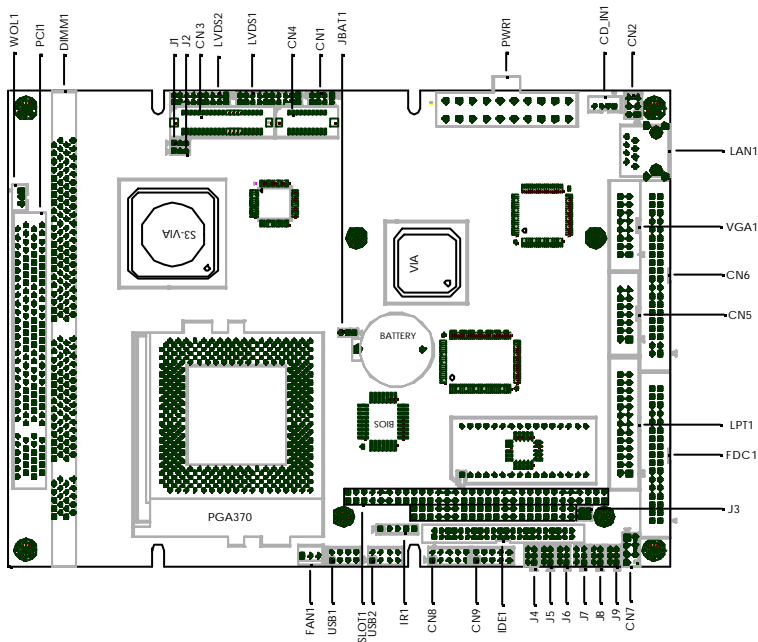
Locating connector (solder side)

CF1
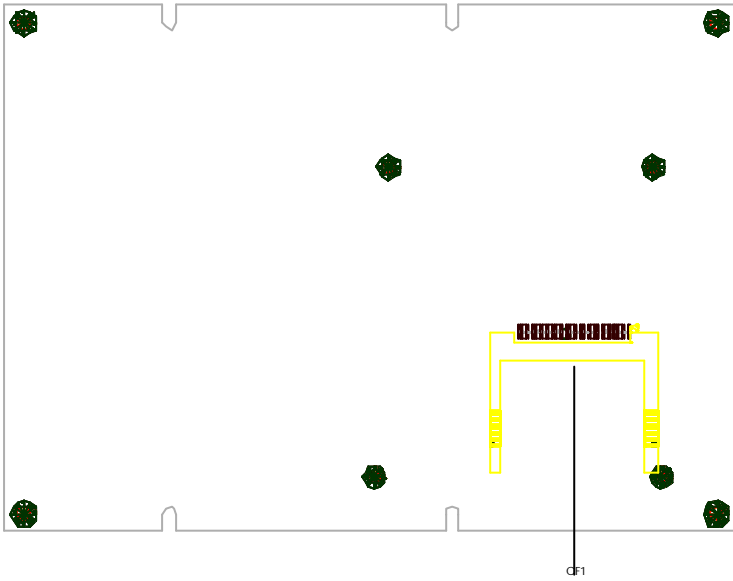
2.3 Mechanical Drawing

Mechanical drawing (component side)
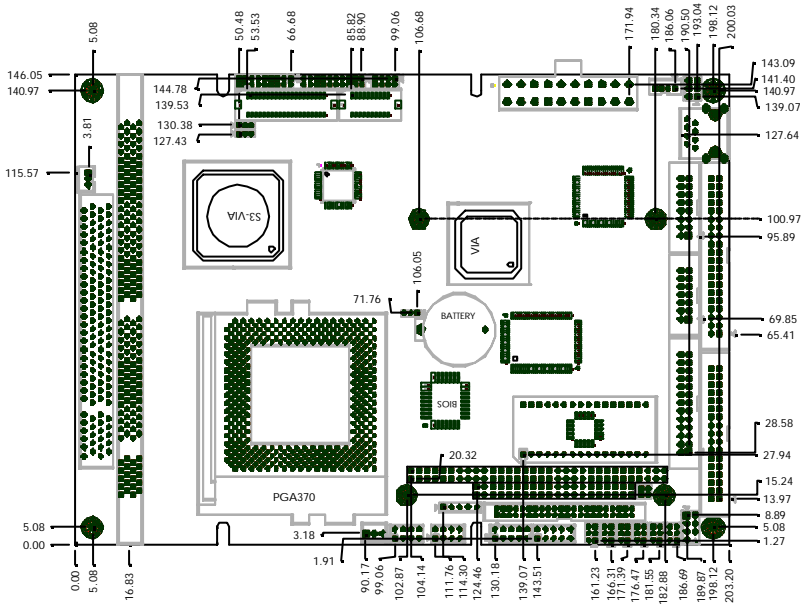
Mechanical Drawing (solder side)
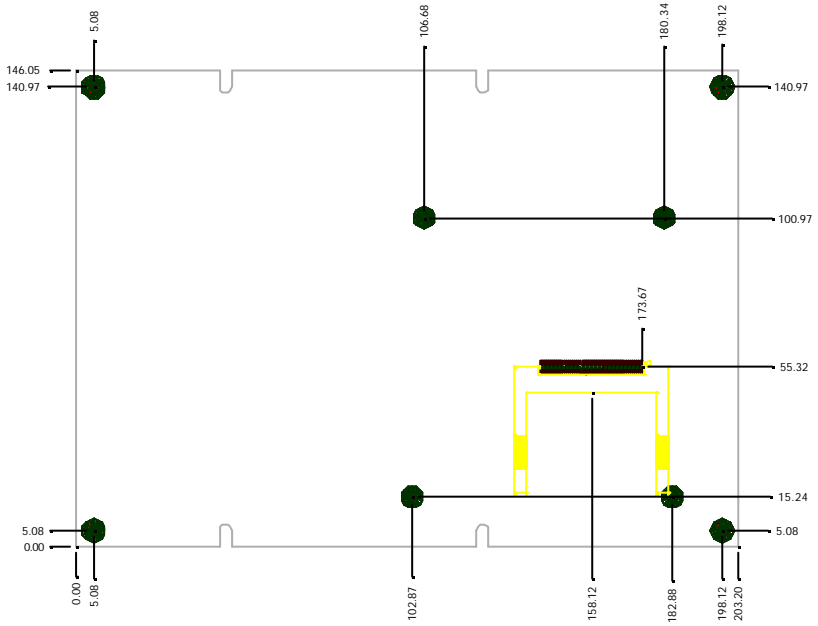
2.4 List of Jumpers

The board has a number of jumpers that allow you to configure your system to suit your application.

The table below shows the function of each of the jumpers of the board:

Jumpers

Label	Function
J1	LVDS Voltage Select
J2	LCD SHIFT CLOCK Select
J3	DOC ADDRESS Select
J4	WDT Status Setup
J5	Serial Port 3 Ring Status Setup
J6	Serial Port 4 Ring Status Setup
J7	Serial Port 2 Status Setup
J8	Serial Port 2 Status Setup
J9	Serial Port 2 Status Setup
JBAT1	CMOS Status Setup

2.5 List of Connectors

The board has a number of connectors that allow you to configure your system to suit your application.

The table below shows the function of each of the connectors of the board:

Connectors

Label	Function
CN1	TV Output Connector
CN2	LAN1 Status Connector
CN3	Primary LCD Panel Connector
CN4	Secondary LCD Panel Connector
CN5	Audio Output Connector
CN6	Serial Port 1 / 2 / 3 / 4 Connector
CN7	Keyboard / PS2 Mouse Connector
CN8	GPIO Connector
CN9	Front Panel Connector
VGA1	CRT Connector
LVDS1	LVDS Connector
LVDS2	LVDS Connector
LAN1	10/100 Base-Tx Ethernet 1 Connector
IDE1	Primary Device Connector
CF1	Compact Flash Connector
PWR1	ATX Power Connector
PWR2	AT Power connector
FAN1	CPU Fan Connector
LPT1	Printer Port Connector
SOLT1	PC/104 Connector
WOL1	Wake On LAN Connector
FDC1	Floppy Connector

USB1	USB Connector
USB2	USB Connector
IR1	IrDA Connector

AT and ATX power connectors occupy the same location on the board. You may select either ATX or AT type Compact Board for your application.

2.6 Setting Jumpers

You configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper you connect the pins with the clip.

To "open" a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2 or 2 and 3.

Open   **Closed**   **Closed 2-3**
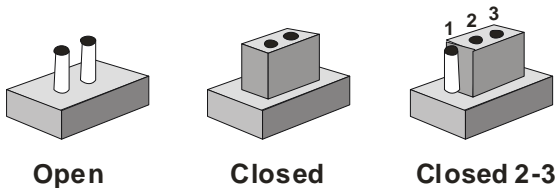
A pair of needle-nose pliers may be helpful when working with jumpers.

If you have any doubt about the best hardware configuration for your application, contact your local distributor or sales representative before you make any change.

Generally, you simply need a standard cable to make most connections.

2.7 LVDS Voltage Select (J1)

You can select the LVDS voltage situation by setting J1. The following chart shows the available options.

J1	Function
1-2	+5V
2-3	+3.3V *

* default setting

2.8 LCD SHIFT CLOCK Select (J2)

You can select the LVDS clock situation by setting J2. The following chart shows the available options.

J2	Function
1-2	SHCLK *
2-3	-SHCLK

* default setting

2.9 DOC ADDRESS Select (J3)

J3	ADDRESS
1-2(Open) 3-4(Open)	D400 *
1-2(Open) 3-4(Close)	D800
1-2(Close) 3-4(Open)	DC00
1-2(Close) 3-4(Close)	DISABLE

* default setting

2.10 WDT Status Setup (J4)

J4	Function
1-2	Reset *
3-4	MNI
5-6	IRQ15

* default setting

2.11 Serial Port 3 RING Status Setup (J5)

J5	Function
1-2	+5V
3-4	+12V
5-6	RING *

* default setting

2.12 Serial Port 4 RING Status Setup (J6)

J6	Function
1-2	+5V
3-4	+12V
5-6	RING *

* default setting

2.13 Serial Port 2 Status Setup (J7)

The port 2 can be selected as RS-232, RS-422 or RS-485 by setting both J8 and J9. The following chart shows the jumper setting.

J7	Function
1-3.2-4	RS-232 *
3-5.4-6	RS-422
3-5.4-6	RS-485

* default setting

2.14 Serial Port 2 Status Setup (J8)

J8	Function
1-3.2-4	RS-232 *
3-5.4-6	RS-422
3-5.4-6	RS-485

* default setting

2.15 Serial Port 2 Status Setup (J9)

J9	Function
1-2	RS-232 *
3-4	RS-422
5-6	RS-485

* default setting

2.16 COMS Status Setup (JBAT1)

JBAT1	Function
1-2	Normal *
2-3	Clear CMOS

* default setting

> *Warning:*
> *To avoid damaging the computer, always turn off the power supply*
> *before setting " Clear CMOS." Before turning on the power*
> *supply, set the jumper back to "Protected"*

2.17 TV Output Connector (CN1)

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

2.18 LAN1 Status Connector (CN2)

The PCM-6893 supports three sets of LED connector for external

LED indicators.

Ethernet active signal LED

Flashing Tx or Rx LEDs indicate that the PCM-6893 is transmitting
or receiving data.

Ethernet link signal LED

A continuously lit LED indicates good linkage between the PCM-6893 and its supporting hub.

Ethernet speed signal LED

Flashing LED indicates the transfer speed (10Base-T or 100Base-Tx) of the network.

Pin	Signal	Pin	Signal
1	ACTIVE LED	2	VCC5SBY
3	SPEED LED	4	VCC5SBY
5	FULL LED	6	VCC5SBY

2.19 Primary LCD Panel Connector (CN3)

Pin	Signal	Pin	Signal
1	+5V	2	+5V
3	GND	4	GND
5	+3.3V	6	+3.3V
7	ENVDD	8	GND
9	N.C	10	N.C
11	O_BLUE0	12	O_BLUE1
13	O_BLUE2	14	O_BLUE3
15	O_BLUE4	16	O_BLUE5
17	N.C	18	N.C
19	O_GREEN0	20	O_GREEN1
21	O_GREEN2	22	O_GREEN3
23	O_GREEN4	24	O_GREEN5
25	N.C	26	N.C
27	O_RED0	28	O_RED1
29	O_RED2	30	O_RED3

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31	O_RED4	32	O_RED5
33	GND	34	GND
35	SHFCLK	36	VFLM
37	DE	38	VLP
39	N.C	40	ENAVEE

2.20 Secondary LCD Panel Connector (CN4)

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

2.21 Audio Output Connector (CN5)

The PCM-6893 provides all major audio signals on a 14-pin flat-cable connector, CN5. Attach the Mic In, Line In, and Audio Out to the corresponding pins as shown in the following table.

Pin	Signal	Pin	Signal
1	MIC IN	2	MIC BIAS
3	GND	4	GND
5	LINE IN LEFT	6	CD IN LEFT

Compact Board		PCM-6893	
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

2.22 Serial Port 1 / 2 / 3 / 4 Connector (CN6)

Pin	Signal	Pi	Signal
1	DCD1	2	DSR1
3	RXD1	4	RTS1
5	TXD1	6	CTS1
7	DTR1	8	RI1
9	GND	10	N.C
11	DCD2/422TXD-/485 DATA-	12	DSR2
13	RXD2/422RXD+	14	RTS2
15	TXD2/422TXD+/485 DATA+	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
29	GND	30	N.C
31	DCD4	32	DSR4
33	RXD4	34	RTS4
35	TXD4	36	CTS4
37	DTR4	38	RI4
39	GND	40	N.C

2.23 Keyboard PS/2 Mouse Connector (CN7)

The PCM-6893 board provides a pin head er keyboard/Mouse connector, which supports both a keyboard and a PS/2 style mouse.

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

2.24 GPIO Connector (CN8)

PCM-6893 offers 4-pair of digital I/O functions. With the input and output consisting of the following: Input 100H; GPI14 [bit4], GPI15 [bit5], GPI16 [bit6], GPI17 [bit7] and Output 108H; GPO20 [bit0], GPO21 [bit1], GPO22 [bit2], GPO23 [bit3]. The pin definitions are illustrated below:

Pin	Signal	Pin	Signal
1	Digital IN1	2	Digital IN2
3	Digital IN3	4	Digital IN4
5	Digital OUT1	6	Digital OUT2
7	Digital OUT3	8	Digital OUT4
9	+5V	10	GND

2.25 Front Panel Connector (CN9)

Pin	Signal	PIN	Signal
1	GND	2	PWR-ON
3	HDD LED	4	+5V

Compact Board		PCM-6893	
5	SPEAKER	6	+5V
7	PWR LED	8	GND
9	RST-SW	10	GND

2.26 CRT Display Connector (VGA1)

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

2.27 LVDS Connector (LVDS1)

Pin	Signal	Pin	Signal
1	TX1OUT1	2	TX1OUT1#
3	GND	4	GND
5	TX1CLK	6	TX1CLK#
7	GND	8	VCC
9	VCC	10	VCC
11	TX1OUT2	12	TX2OUT2#
13	GND	14	GND
15	TX1OUT0	16	TX1OUT0#
17	N.C	18	N.C

19	ENBKL	20	N.C

2.28 LVDS Connector (LVDS2)

Pin	Signal	Pin	Signal
1	TX2OUT1	2	TX2OUT1#
3	GND	4	GND
5	TX2CLK	6	TX2CLK#
7	GND	8	VCC
9	VCC	10	VCC
11	TX2OUT2	12	TX2OUT2#
13	GND	14	GND
15	TX2OUT0	16	TX2OUT0#
17	N.C	18	N.C

2.29 10/100Base-Tx Ethernet Connector (LAN1)

This 10/100Base-Tx Ethernet connector is a standard RJ-45 connector. The onboard REALTEL 8139C Fast Ethernet controller supports 10Mb/s and 100 Mb/s N-way auto-negotiation operations.

Pin	Signal	Pin	Signal
1	TX+	2	TX-
3	RX+	4	N.C
5	N.C	6	RX-
7	N.C	8	N.C

2.30 Primary Device Connector Standard (IDE1)

You can attach up to two Enhanced Integrated Device Electronics hard disk drives to IDE1. The IDE controller of PCM-6893 uses a PCI local bus interface. This advanced interface supports faster data transfer.

Connecting the hard drive

Wire number 1 on the cable is normally red or blue, and the other wires are usually gray.

1.   Connect one end of the cable to IDE1. Make sure that the red wire corresponds to pin 1 on the connector

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 drives. (See your hard drive's documentation for the location of the connector).

Connect a second drive with another connector on the cable as described above.

Pin	Signal	Pin	Signal
1	IDERST	2	GND
3	PDD7	4	PDD8
5	PDD6	6	PDD9
7	PDD5	8	PDD10
9	PDD4	10	PDD11
11	PDD3	12	PDD12
13	PDD2	14	PDD13
15	PDD1	16	PDD14
17	PDD0	18	PDD15
19	GND	20	N.C.
21	DDREQA	22	GND
23	DIOWA	24	GND
25	DIORA	26	GND
27	HDRDYA	28	GND

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29	DDACKA	30	GND
31	IRQ14	32	N.C.
33	PDA1	34	UDMA DETECT
35	PDA0	36	PDA2
37	PDCS1	38	PDCS3
39	HDLED	40	GND
41	VCC5	42	VCC5
43	GND	44	N.C

2.31 Compact Flash Connector Standard (CF1)

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	VCC5
12	GND	37	IRQ15
13	VCC5	38	VCC5
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	VCC5
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

2.32 ATX Power Connectors (PWR1)

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

2.33 AT Power Connector (PWR2)

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

2.34 CPU Fan Connector (FAN1)

You can attach one cooler on the CPU and the chassis respectively to diffuse heat more efficiently. The pin assignments of the one-fan connectors are identical. See the following table for details.

Pin	Signal
1	GND
2	+12V
3	SENSOR

2.35 Printer Port Connector (LPT1)

Normally, the parallel port is used to connect the board to a printer. The PCM-6893 includes a multi-mode (ECP/EPP/SPP) parallel port. It is accessed via LPT1 with a 26-pin flat-cable connector.

You will need an adapter cable if you use a traditional DB-25 connector. The adopter cable should have a 26-pin connector on one end and a DB-25 connector on the other end.

Pin	Signal	Pin	Signal
1	LPT_STB	2	AUTOFD
3	LPT_D0	4	ERROR
5	LPT_D1	6	INIT
7	LPT_D2	8	SLCTIN
9	LPT_D3	10	GND
11	LPT_D4	12	GND
13	LPT_D5	14	GND
15	LPT_D6	16	GND
17	LPT_D7	18	GND
19	ACK	20	GND
21	BUSY	22	GND
23	PE	24	GND

25	SLCT	26	GND

2.36 Wake On Lan / Ring Connector (WOL1)

Pin	Signal
1	5VSB
2	GND
3	WAKE UP

2.37 Floppy Connector Standard

With support of Standard types of floppy, you can simply adopt any of the combinations of 5.25" (360 KB and 1.2 MB) and/or 3.5" (720 KB, 1.44 MB, and 2.88 MB) drives onto the mainboard.

A 34-pin daisy-chain drive connector cable is required for a dual-drive system. On one end of the cable is a 34-pin flat-cable connector. On the other end are two sets of floppy disk drive connectors. 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). Wire number 1 on the cable is normally red or blue, and the other wires are usually gray.

Connecting the floppy drive

1.   Plug the 34-pin flat-cable connector into FDC1. Make sure that the red or blue wire corresponds to pin 1 on the 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 A: drive. The set in the middle connects to B: drive.

3.   If you are connecting a 5.25" floppy drive, line up the slot in the printed circuit board with the blocked-off part of the cable connector.

If you are connecting a 3.5" floppy drive, you may have trouble determining which pin is pin number 1. Look for a number printed on the circuit board indicating pin number 1. Also, the connector on the floppy drive connector may have a slot. When the slot is up, pin number 1 should be on the right.
Check the documentation that came with the drive for more information.

Pin	Signal	Pin	Signal
1	GND	2	Drive Density Select 0
3	GND	4	N.C.
5	GND	6	Drive Density Select 1
7	GND	8	Index
9	GND	10	Motor Control 0
11	GND	12	Drive Select 1
13	GND	14	Drive Select 0
15	GND	16	Motor Control 1
17	GND	18	Direction
19	GND	20	Step
21	GND	22	Write DATA
23	GND	24	Write GATE
25	GND	26	TRACK0
27	GND	28	Write Protect
29	GND	30	Read Data
31	GND	32	Head Select
33	GND	34	Disk Change

2.38 USB Connector (USB1/USB2)

The PCM-6893 board provides four USB (Universal Serial Bus) interfaces supporting up to 4 USB ports. The USB interfaces comply with USB specification rev. 1.1 and are fuse protected.

The USB interfaces are accessed through two 10-pin flat-cable connectors, USB1 & USB2. The adapter cable has a 10-pin connector on one end and two USB connectors on the bracket on the other end.

USB1 Connector (USB1)

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

USB2 Connector (USB2)

Pin	Signal	Pin	Signal
1	5VSB	2	GND
3	USB DT2-	4	USB DT3+
5	USB DT2+	6	USB DT3-
7	GND	8	5VSB

2.39 IrDA Connector (IR1)

The IrDA connector (IR1) can be configured to support wireless infrared module, with this module and application software such as laplink or Win95 Direct Cable connection, user can transfer files to or from laptops, notebooks, PDA and printers. Install infrared module onto IrDA connector and enable infrared function from BIOS setup. Make sure to have correct orientation when you plug onto IrDA connector IR1.

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

Chapter

3

Award BIOS Setup

3.1 System test and initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors. Non-fatal error messages usually appear on the screen along with the following instructions:

Press <F1> to RESUME

Write down the message and press the F1 key to continue the boot up sequence.

System configuration verification

These routines check the current system configuration against the values stored in the CMOS memory. If they do not match, the program outputs an error message. You will then need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

1. You are starting your system for the first time

2. You have changed the hardware attached to your system

3. The CMOS memory has lost power and the configuration information has been erased.

The PCM-6893 CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

3.2 Award BIOS setup

Awards BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

Entering setup

Power on the computer and press <Del> immediately. This will allow you to enter Setup.

```
     CMOS Setup Utility - Copyright (C) 1984-2001 Award Software

  ▶ Standard CMOS Features          Load Fail-Safe Defaults

  ▶ Advanced BIOS Features          Load Optimized Defaults

  ▶ Advanced Chipset Features       Set Supervisor Password

  ▶ Integrated Peripherals          Set User Password

  ▶ Power Management Setup           Save & Exit Setup

  ▶ PnP/PCI Configurations          Exit Without Saving

  ▶ PC Health Status


  Esc : Quit      F9 : Menu in BIOS     ↑ ↓ → ←   : Select Item
  F10 : Save & Exit Setup

                  Time, Date, Hard Disk Type...
```

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, KB wake up, etc.)

PnP/PCI Configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

This menu allows you to set the shutdown temperature for your system.

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 Password

Use this menu to set Supervisor Passwords.

Set User Password

Use this menu to set 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.

3.3 Standard CMOS Features

When you choose the Standard CMOS Features option from the
INITIAL SETUP SCREEN menu, the screen shown below is
displayed. This standard Setup Menu allows users to configure
system components such as date, time, hard disk drive, floppy drive
and display. Once a field is highlighted, on-line help information is
displayed in the right box of the Menu screen. The **LCD&CRT,
Panel, TV Mode**, won' t be shown in the bios of PCM-6893.

PCM-6893
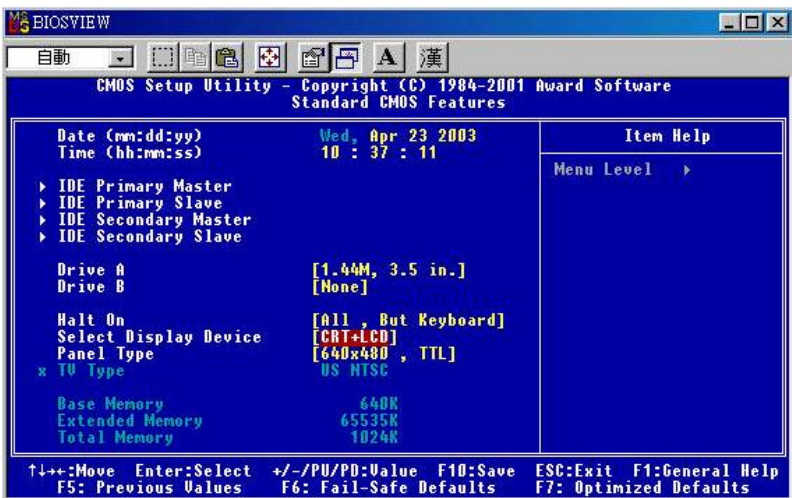
3.4 Advanced BIOS Features

By choosing the Advanced BIOS Features option from the INITIAL SETUP SCREEN menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the PCM-6893.
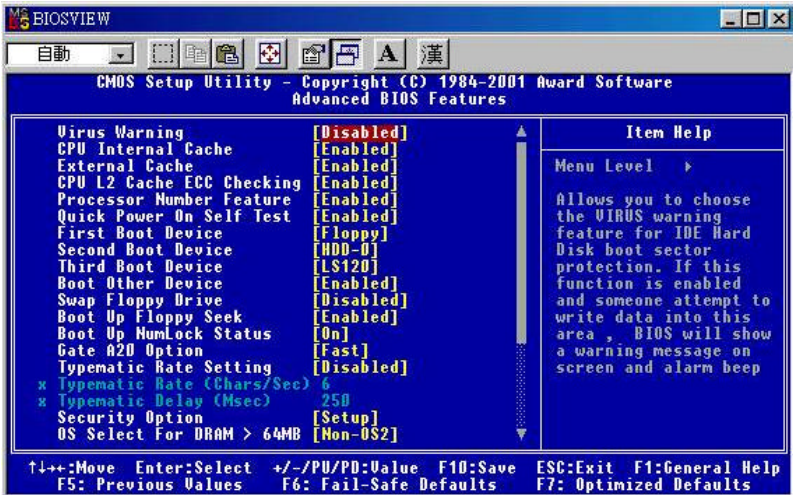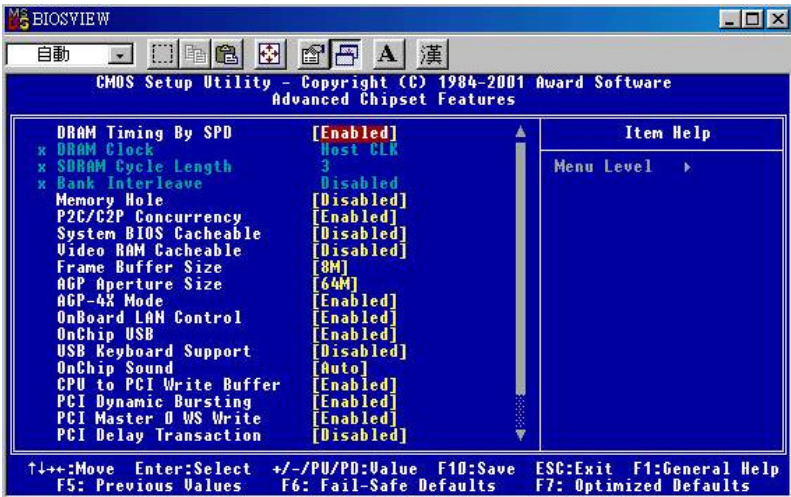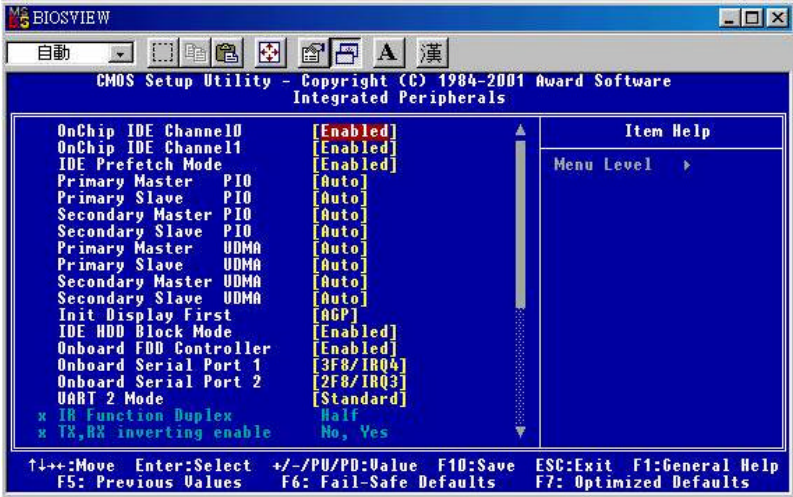
PCM-6893

3.5 Advanced Chipset Features

By choosing the Advanced Chipset Features option from the INITIAL SETUP SCREEN menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the PCM-6893.
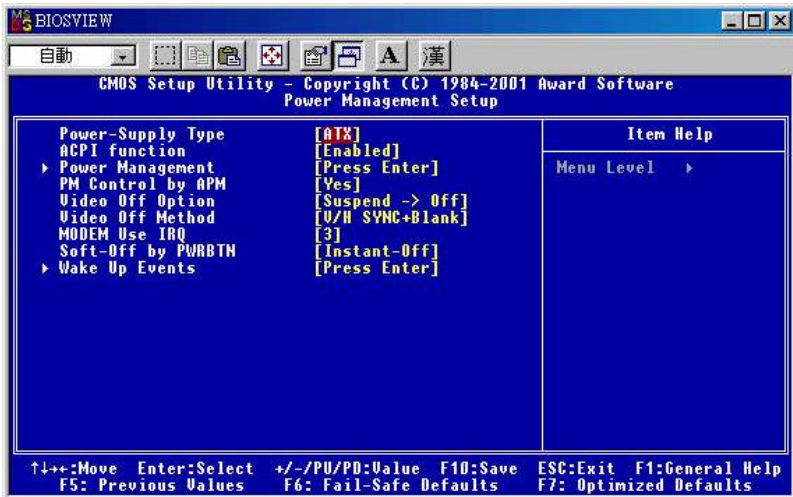
PCM-6893

3.6 Integrated Peripherals

By choosing the Integrated Peripherals from the INITIAL SETUP SCREEN menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the PCM-6893.

PCM-6893

3.7 Power Management Setup

By choosing the Power Management Setup from the INITIAL
SETUP SCREEN menu, the screen below is displayed. This sample
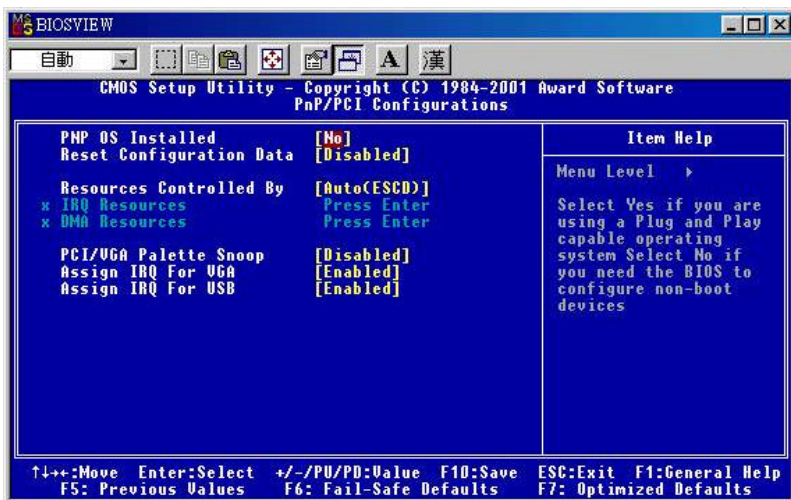screen contains the manufacturer's default values for the PCM-6893.

PCM-6893

3.8 PnP/PCI Configurations

By choosing the PnP/PCI configurations from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the PCM-6893.

PCM-6893

3.9 PC Health Status

By choosing the PC Health Status from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the PCM-6893.
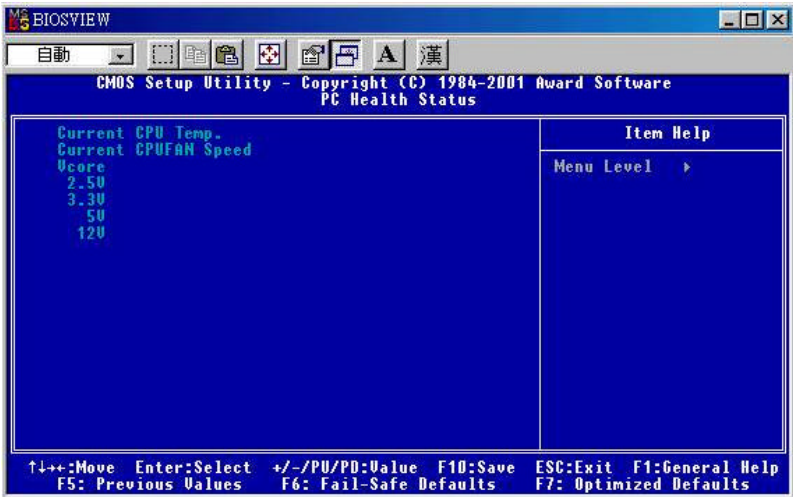
PCM-6893

3.10 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.

3.11 Load Optimized Defaults

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 manufacturer's settings for optimal performance system operations.

3.12 Set Supervisor Password

You can set supervisor password. The supervisor password allows unrestricted access to enter and change the options of the setup menus.

To abort the process at any time, press Esc.

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

3.13 Set User Password

You can set User Password. The setup user password only allows entry to the program, but not modify options.

To abort the process at any time, press Esc.

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

3.14 Save & Exit setup

If you select this option and press <Enter>, the values entered in the setup utilities will be recorded in the chipset's CMOS memory. The microprocessor will check this every time you turnon your system and compare this to what it finds as it checks the system. This record is required for the system to operate.

3.15 Exit without saving

Selecting this option and pressing <Enter> lets you exit the Setup program without recording any new values or changing old ones.

Chapter

4

Driver Installation

PCM-6893 comes with a CD-ROM which contains most of drivers and utilities your will need.

There is 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.

4.1 Installation 1:

Applicable for Windows 98/2000/XP

1. Insert the PCM-6893 CD-ROM into the CD-ROM Drive.

2. From the CD-ROM, select the desired component Driver folder; select the desired Operation System folder to double click on the Setup.exe icon. A driver installation screen will appear.
    (Notice: take VGA driver installation under Windows 98 for example, choose the corresponding folder depending on your OS)

3. A driver installation screen will appear, please follow the onscreen instructions to install the driver in sequence and click on the Next button.
    (Notice: In some cases the system will ask you to insert Windows 98 CD ROM and key in its path. Then click on the OK button to key in path.)

4. Click on the **Finish** button to finish installation process. And allow the system to reboot.

4.2 Installation 2:

Applicable for Windows 98/2000/XP

1. Insert the **PCM-6893 CD-ROM** into the CD-ROM Drive.

2. Click on **Start** button, select the **Settings**, and then click on the **Control Panel** icon.

3. Double click on the **Add/Remove Hardware** icon and **Add New Hardware Wizard** will appear. Click on the **Next** button.

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

5. Select **Specify a location,** click on **Have Disk** button then key in the CD-ROM path and specify component drivers and OS folders. Then click on the **Next** button.

6. The Wizard shows that Windows driver file search for the device. Click on the **Next** button.

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

8. Click on the **OK** button.

9. Click on the **Finish** button to finish installation process. And allow the system to reboot.

Appendix

A

Programming the

Watchdog Timer

A.1 Watchdog timer of PCM-6893

PCM-6893 utilizes W83977 chipset as its watchdog timer controller. Below are the procedures to complete its configuration PCM-6893 contains a watchdog timer reset pin. (GP13) All reference material can be found on the following pages.

A.2 WatchDog timer Setup Utility (for W83977 GP13)

```
#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 13
#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( inBond 83977 WatchDog Timer Setup Utility . w
Version 1.0 \n? ;
printf( opyright (c) 2000 AAEON Technology Inc.\n? ; . C
printf( his version only for W83977 that using GP%d to . T
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( atch Dog Timer set up : %d \n? time_value); . W

}

}
```