

PCM-6894

**All-in-One Single Board Computer
supporting Tualatin/Pentium III/
Celeron Processor with LCD, LVDS,
TV-out, Audio, Dual Ethernet, CFD, &
PC/104 Connector.**

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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.

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AAEON warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two year 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-6894 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
- Latest BIOS (as of the CD-ROM was made)

The PCM-6894 requires several cables for operation. You can make them yourself or purchase an optional cable kit, PCM-10489-7.

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

Notice

Dear Customer,

Thank you for purchasing the PCM-6894 board. This user manual is designed to help you to get the most out of the PCM-6894, 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 latest version of the user manual, please visit our Web site at:

<http://www.aaeon.com.tw>

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General Information

This chapter gives background information on the PCM-6894.

Sections include:

- Board Introduction
- Board Features
- Board Specificaitons

Introduction

AAEON new compact size board PCM-6894 targets high-end multimedia and networking applications. This board is supported by Intel Celeron , Pentium III and Tualatin CPUs. Easy upgrading allows full utilization of Intel Development of even-higher speed CPUs. This is a perfect choice for embedded applications that require cost-effective high computing power communications Products whether video, voice, or data convergence over Internet Protocol network infrastructures.

The PCM-6894 features power management to minimize 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.

Onboard SMI Lynx3DM 722 display chip with embedded 4MB SGRAM comes with 128-bit 2D/3D Graphics Engine, built-in TV encoder for NTSC/PAL support, enhanced multi-display and hardware accelerated MPEG2/DVD playback. For advanced panel display, SMI Lynx3DM+ adds an integrated LVDS transmitter

Dual RTL 8139C PCI-bus 10/100Base-Tx Ethernet controllers onboard provide superior networking access ability. The Ethernet interface and Sound Blaster-compatible audio opens up worlds of possibilities for kiosks, gaming systems, POS systems, medical and education markets.

The onboard compact flash will offer a larger memory bank for data storage of all types. Compact Flash 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.

PCM-6894 also includes four high-speed serial ports (three RS-232, one RS-232/422/485), one multimode (ECP/EPP/SPP) parallel port, dual USB ports, 2 floppy drives, an UltraDMA/100 Enhanced IDE controller supporting up to 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.

The addition of PCI slot and PC/104 connector will allow a wide selection of accessory cards to be added to the PCM-6894 such as Ultra Wide 2 SCSI, fax modem, vehicle power supply, extra DiskOn-Chip, PCMCIA module, etc.

Features

- Supports Intel Tualatin/ Pentium III/ Celeron and compatible processors
- Onboard VT82C694T/VT82C686B chipset
- SMI Lynx3DM SM 722G4 LCD controller with built-in 4MB SGRAM supports 24-bit TFT Panels
- SM 722G4 integrated single channel LVDS function
- Two 10/100Base-T Fast Ethernet
- Integrated AC-97 2.2 Compatible 3D Audio
- Supports TV-Out function with RCA and S terminal header on board
- Supports Type II Compact Flash Memory

Specifications

CPU	Intel FC-370 Tualatin/Pentium III/Celeron CPU (with system bus frequencies of 66/100/133MHz)
CPU Socket	Intel socket 370
BIOS	Award 256KB Flash BIOS
Chipset	VIA Apollo Pro 133A, VT82C694T
I/O Chipset	VT82C686B. Winbond 83977EF(TF)-AW as 2nd SIO for COM3, COM4 port.
Memory	Onboard One 168-pin DIMM socket supports up to 512 MBbytes SDRAM (PC 100/133 support)
Enhanced IDE	Supports four IDE devices. Two 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)
Parallel 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(COM2) 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(4*2-1)-pin header supports PC/AT Keyboard and PS/2 mouse.

USB connectors	One 5x2-pin header onboard supports dual USB ports
Battery	Lithium battery for data retention
Watchdog Timer	Can generate a system reset. Software selectable time-out interval (32 sec.~254 min., 1 min./step)
DMA	7 DMA channels (8237 equivalent)
Interrupt	15 interrupt levels (8259 equivalent)
Power management	Supports ATX or ATpower supply. Supports PC97, LAN wake up and modem ring-in functions. I/O peripheral device support power saving and doze/standby/suspend modes. APM 1.2 compliant
Audio Interface	
Chipset	VIA VT82C686B, ALC201 codec
Audio Controller	AC97 ver. 2.0 compliant interface, Multi-stream Direct Sound and Direct Sound 3D acceleration.
Audio Interface	MIC in, line in, line out, CD audio in.

Flat Panel/CRT Interface

Chipset	SMI Lynx3DM SM 722, high performance 128-bit GUI, 3D engine
Display memory	4MB of SGRAM frame buffer on Lynx3DM SM 722G4
Display Type	Supports non-interlaced CRT and 24bit LVDS/TTL TFT LCD, can display both CRT and flat panel(DF-13 1.25V) simultaneously
Resolution	Up to 1024 X 768 @ 24bpp colors

TV output interface Onboard header supports both RCA jack and S terminal

Ethernet Interface

Chipset Dual RTL 8139C PCI-bus Ethernet controllers onboard

Ethernet interface Onboard dual 10/100Base-T RJ-45 connector

Expansion Interface

PC/104 Connector One 16-bit 104-pin connector onboard

PCI Slot One 32-bit PCI slot onboard

SDD Interface One type II Compact Flash Socket

Mechanical and Environmental

Power Supply voltage +5V, +12V, 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)

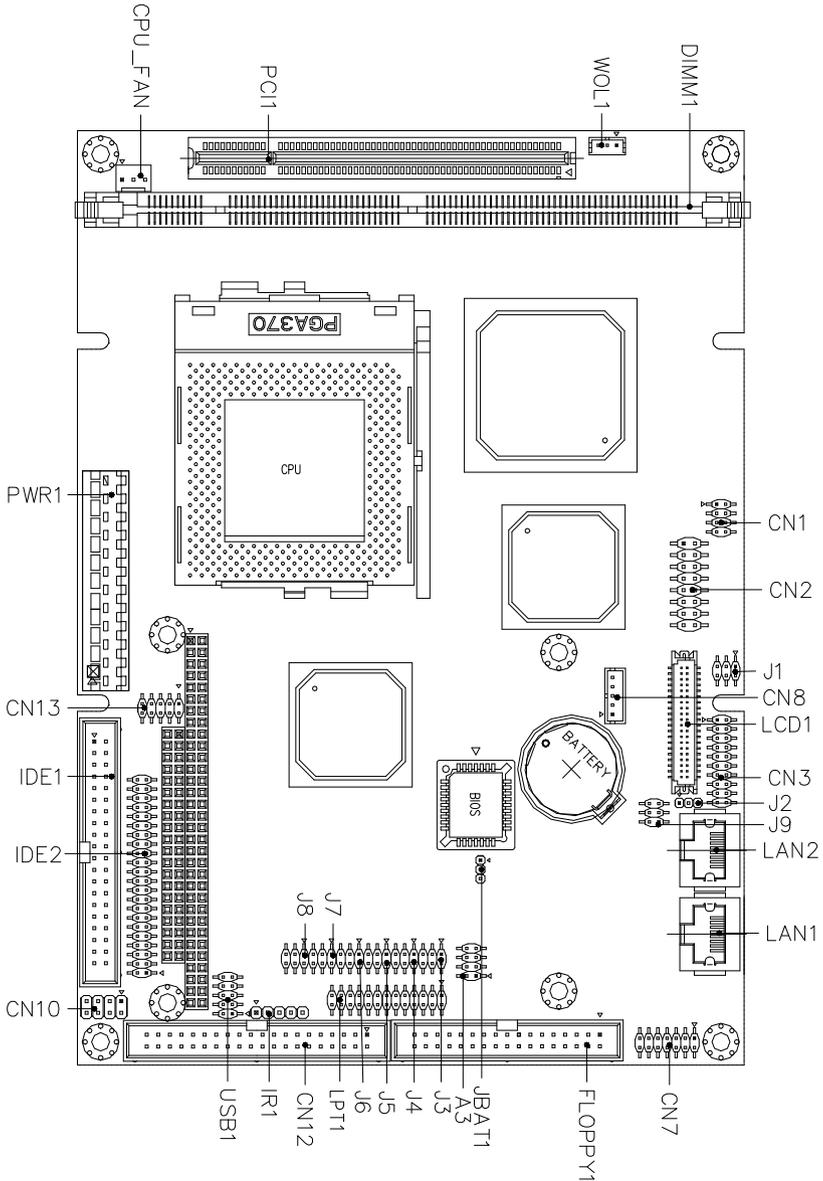
Weight 1.2 lb. (0.5Kg)

CHAPTER 2

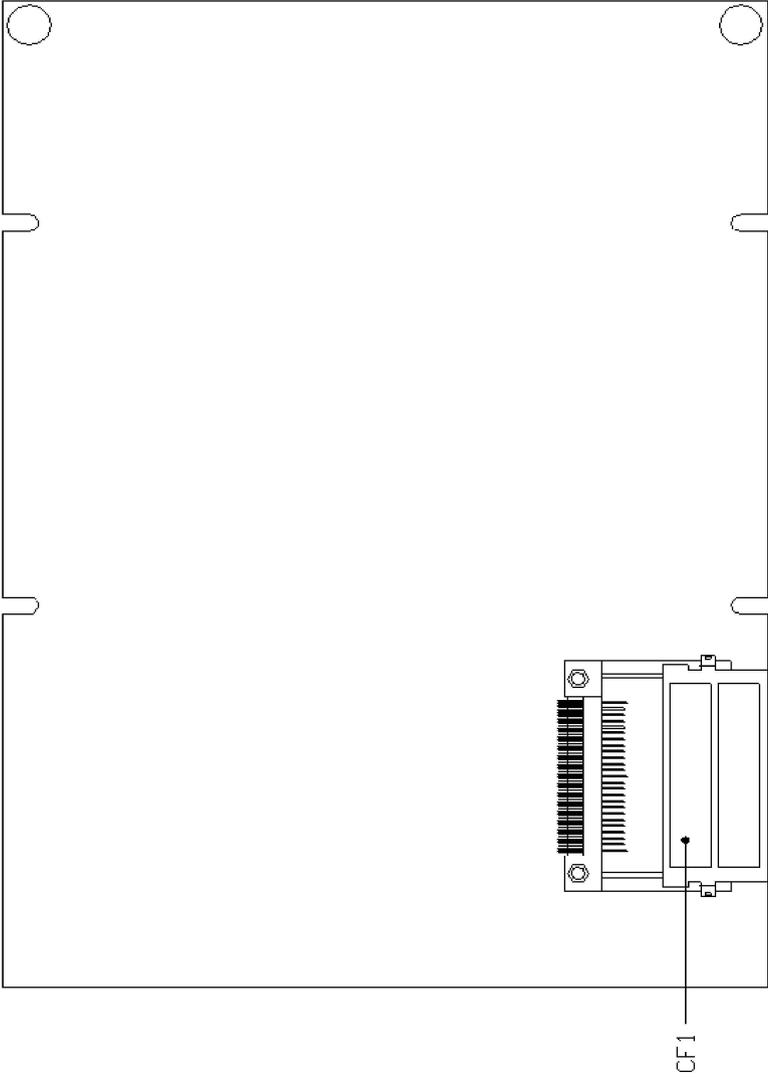
Installation

This chapter describes how to set up the board hardware, including instructions on setting jumpers and connecting peripherals, switches, and indicators.

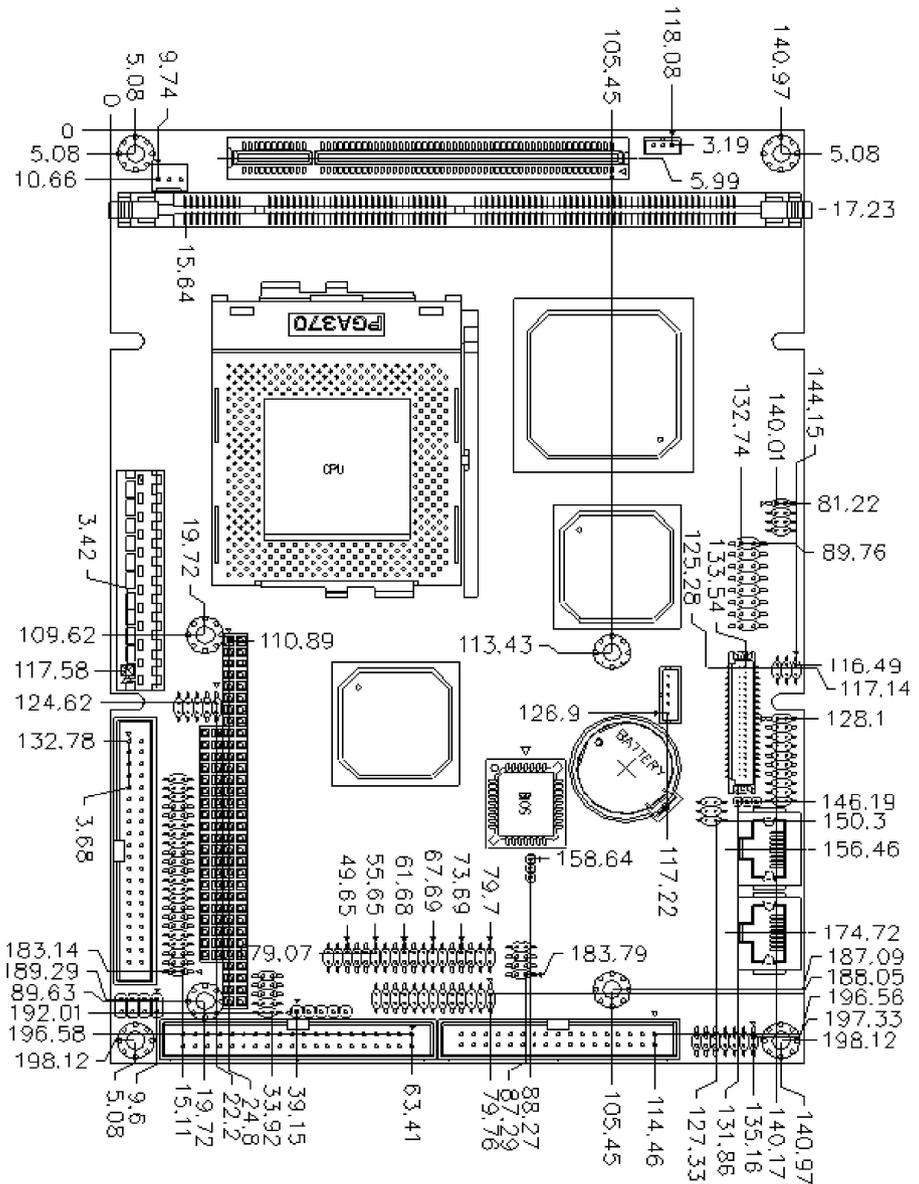
Locating Jumpers & Connectors



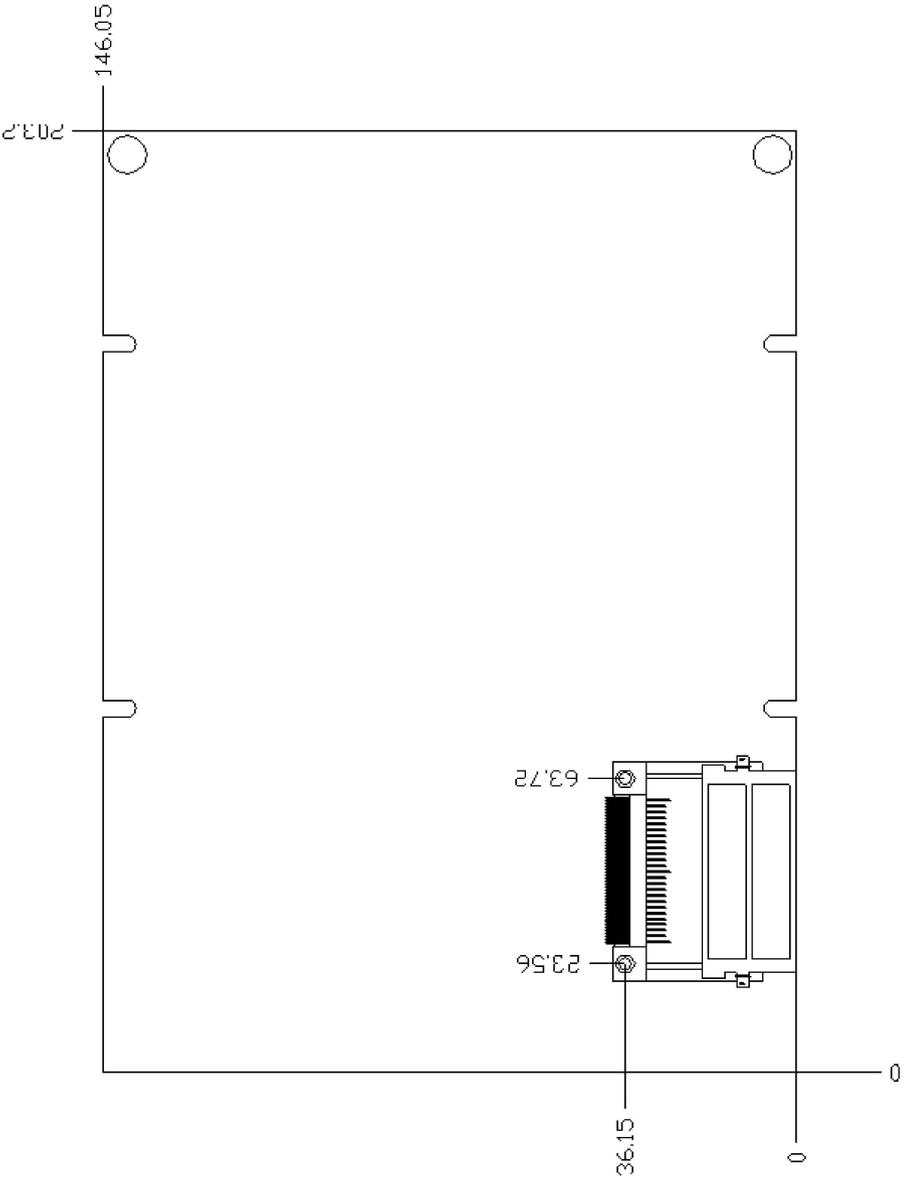
Locating Jumpers & Connectors



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
JBAT1	CMOS Status Setup
J1	Reserved
J2	LVDS Voltage Select
J3, J4 & J5	Serial Port 2 Status Setup
J6	Serial Port 3 RING Status Setup
J7	Serial Port 4 RING Status Setup
J8	Watchdog Timer Status Setup
J9	LAN Status Setup

Connectors

Label	Function
CN1	TV Output Connector
CN2	CRT Connector
CN3	LVDS Connector
CN4	10/100 Base-Tx Ethernet 1 Connector (LAN1)
CN5	10/100 Base-Tx Ethernet 2 Connector (LAN2)
CN6	Reserved
CN7	Audio Output Connector
CN8	Inverter Power Supply Connector for LCD
CN9	LAN1 & LAN2 Status Connector
CN10	Keyboard & PS/2 Mouse Connector
CN12	Serial Port 1/2/3/4 Connector
CN13	Front Panel Connector
IDE1	Primary Device Connector
IDE2	Secondary Device Connector
CF1	Compact Flash Connector
PWR1A	ATX Power Connector
PWR1B	AT Power Connector
CPU_FAN	CPU Fan Connector
LPT1	Printer Port Connector
PCI1	PCI Connector
DIMM1	168-pin DIMM Connector
WOL1	Wake On LAN Connector
USB1	USB Connector
IR1	IrDA Connector
LCD1	Primary LCD Connector

CMOS Status Setup (JBAT1)

You can use JBAT1 to clear the CMOS data if necessary. To reset the CMOS data, set JP2 to 2-3 closed for just a few seconds, and then move the jumper back to 1-2 closed.

*Protect (default)	Clear CMOS
1 	1 <input type="radio"/>
2 	2 
3 <input type="radio"/>	3 

* *default*

LVDS Voltage Select (J2)

+3.3V *	+5V
1 	1 <input type="radio"/>
2 	2 
3 <input type="radio"/>	3 

* *default*

Serial Port 2 Status Setup (J3, J4, and J5)

	RS-232 *	RS-422	RS-485
J3			
J4			
J5			

* default

Serial Port 3 Ring Status Setup (J6)

	+5V	+12V	Ring*

* default

Serial Port 4 Ring Status Setup (J7)

+5V	+12V	Ring*
1 <input checked="" type="checkbox"/> 2	1 <input type="checkbox"/> 2	1 <input type="checkbox"/> 2
3 <input type="checkbox"/> 4	3 <input checked="" type="checkbox"/> 4	3 <input type="checkbox"/> 4
5 <input type="checkbox"/> 6	5 <input type="checkbox"/> 6	5 <input checked="" type="checkbox"/> 6

* *default*

Watchdog Timer Status Setup (J8)

The PCM-6894 is equipped with a watchdog timer that resets the CPU or generates an interrupt if processing comes to a standstill for whatever reason. This feature ensures system reliability in industrial standalone, or unmanned environments.

Reset*	NMI	IRQ15
1 <input checked="" type="checkbox"/> 2	1 <input type="checkbox"/> 2	1 <input type="checkbox"/> 2
3 <input type="checkbox"/> 4	3 <input checked="" type="checkbox"/> 4	3 <input type="checkbox"/> 4
5 <input type="checkbox"/> 6	5 <input type="checkbox"/> 6	5 <input checked="" type="checkbox"/> 6

* *default*

LAN Status Setup (J9)

Pin1 to Pin3 of J9 can set up the status for LAN1, while Pin4 to Pin6 are able to enable or disable LAN2. Please check the following table for J9's jumper setting.

* Enabled	Disabled
	

** default*

* Enabled	Disabled
	

** default*

TV Output Connector (CN1)

PCM-6894 has an 8-pin connector to support TV output function. The definition is listed as below.

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

CRT Connector (CN2)

PCM-6894 can simultaneously support CRT and flat panel display. And the pin assignment of CRT connector is listed as below.

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

LVDS Connector (CN3)

When PCM-6894's power is applied, the control signal is low until the relevant flat panel signals are present. The configuration is done completely via the software utility. You don't need to set any jumper.

Pin	Signal	Pin	Signal
1	TX1+	2	TX1-
3	GND	4	GND
5	TXCLK+	6	TXCLK-
7	GND	8	VCC
9	VCC	10	VCC
11	TX2+	12	TX2-
13	GND	14	GND
15	TX0+	16	TX0-
17	TX3+	18	TX3-
19	ENBKL	20	GND

10/100 Base-Tx Ethernet 1/2 Connector (CN4,CN5)

PCM-6894 is outfitted with 2 standard RJ-45 LAN connectors. With support from Realtek 8139C chipset using either 10Mbps or 100Mbps are possible through its N-way auto-negotiation featured operation. Please refer to the pin definition listed below.

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

Audio Output Connector (CN7)

PCM-6894 comes with an integrated 14-pin flat audio cable connector which provides major audio signal connections with the board. Below is the pin definition for CN7.

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 RIGHT	12	LINE OUT LEFT
13	GND	14	GND

Inverter Power Supply Connector for LCD (CN8)

With an integrated 5-pin inverter power supply connector on board, PCM-6894 can provide DC +12V or +5V for LCD backlight module and the following is its pin assignment.

Pin	Signal
1	+12V
2	GND
3	ENBKL
4	VR
5	+5V

LAN1 & LAN2 Status Connector (CN9)

The LED can indicate whether LAN1 or LAN2 is active or not and the following is its pin assignment

Pin	Signal	Pin	Signal
1	5VSB	2	5VSB
3	LAN1 ACTIVE LED	4	LAN2 ACTIVE LED
5	5VSB	6	5VSB
7	LAN1 LINK LED	8	LAN2 LINK LED

1-3PIN	LAN1 ACTIVE LED
5-7PIN	LAN1 LINK LED
2-4PIN	LAN2 ACTIVE LED
6-8PIN	LAN2 LINK LED

Keyboard & PS/2 Mouse Connector (CN10)

PCM-6894 provides a connector to support both a keyboard and a PS/2 style mouse. In most cases, especially in embedded applications, a keyboard is not used. The standard PC/AT BIOS will report an error or fail during power-on-self-test (POST) after a reset if the keyboard is not present. The Advanced setup menu in BIOS allows you to select "Present" or "Absent" under the "System Keyboard" section. This allows no-keyboard operating in embedded system applications without the system halting under POST.

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

Serial Port 1/2/3/4 Connector (CN12)

The PCM-6894 offers three RS-232 serial ports and one RS-232/422/485 serial port to connect serial devices. Using the BIOS Peripheral Setup program, you can select the address for each port or disable it. Please check the following table for the pin assignment.

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	12	DSR2
13	RXD2	14	RTS2
15	TXD2	16	CTS2
17	DTR2	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.

Front Panel Connector (CN13)

Front Panel Connector (CN13)

1 ○ 2 **GND/Power On**

3 ○ ○ 4 **HDD LED / +5V**

5 ○ ○ 6 **SPEAKER / +5V**

7 ○ ○ 8 **PWR LED / GND**

9 ○ ○ 10 **RST-SW / GND**

ATX Power Connector (PWR1A)

If the version of your PCM-6894 supports ATX power supply function, you will have one ATX power connector (PWR1) on board. Please check the following table for its pin assignment:

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

AT Power Connector (PWR1B)

If the version of your PCM-6894 supports AT power supply function, you will have one AT power connector (PWR1B) on board. Please check the following table for its pin assignment:

Pin	Signal	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

CPU Fan Connector (CPU_FAN)

One 3-pin plug in and error free onboard connector is located accessibly for trouble-free connection and disconnection. And the pin definition is listed as below.

Pin	Signal
1	GND
2	+12V
3	SENSOR

Printer Port Connector (LPT1)

Normally, the printer port is used to connect the card to a printer. The PCM-6894 includes an onboard parallel port, accessed through the LPT1 connector, a 26-pin flat-cable connector.

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

Wake On LAN Connector (WOL1)

PCM-6894 have a 3-pin Wake-on-LAN connector near the PCI slot and you can check the Power Management Setup in the BIOS for this option. Below is its pin assignment.

Pin	Signal
1	5VSB
2	GND
3	WAKE UP

USB Connector (USB1)

USB (Universal Serial Bus) ports can provide complete function of "plug and play", "hot attach/detach" for up to 127 external devices. Moreover, the USB interface on PCM-6894 complies with USB specification Rev. 1.1 and can be disabled in the system BIOS setup.

Pin	Function	Pin	Function
1	5VSB	2	GND
3	USBDT0-	4	GND
5	USBDT0+	6	USBDT1+
7	GND	8	USBDT1-
9	GND	10	5VSB

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 Win95/98 Direct Cable connection, user can transfer files to or from laptops, notebooks, PDA, and printers. This connector supports HPSIR (115.2Kbps, 2 meters), ASK-IR (56Kbps) and Fast .

Please install infrared module onto IrDA connector, enable infrared function from BIOS setup, and make sure to have correct orientation when you plug onto IrDA connector.

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

LCD Connector (LCD1)

LCD1 is 40-pin, dual-in-line header used for flat panel displays.

When the power is applied, the control signal is low until the relevant flat panel signals are present. And the following is its pin assignment.

Pin	Signal	Pin	Signal
1	+5V	2	+5V
3	GND	4	GND
5	+3.3V	6	+3.3V
7	ENBKL	8	GND
9	BLUE0	10	BLUE1
11	BLUE2	12	BLUE3
13	BLUE4	14	BLUE5
15	BLUE6	16	BLUE7
17	GREEN0	18	GREEN1
19	GREEN2	20	GREEN3
21	GREEN4	22	GREEN5
23	GREEN6	24	GREEN7
25	RED0	26	RED1
27	RED2	28	RED3
29	RED4	30	RED5
31	RED6	32	RED7
33	GND	34	GND
35	CLOCK	36	VSYNC
37	DE	38	HSYNC
39	N.C.	40	ENAVEE

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 one of two ways:

1. By pressing Del immediately after switching the system on, or
2. By pressing Del or pressing Ctrl-Alt-Esc when the following message appears briefly at the bottom of the screen during POST:

TO ENTER SETUP BEFORE BOOT PRESS DEL KEY

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 help 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.

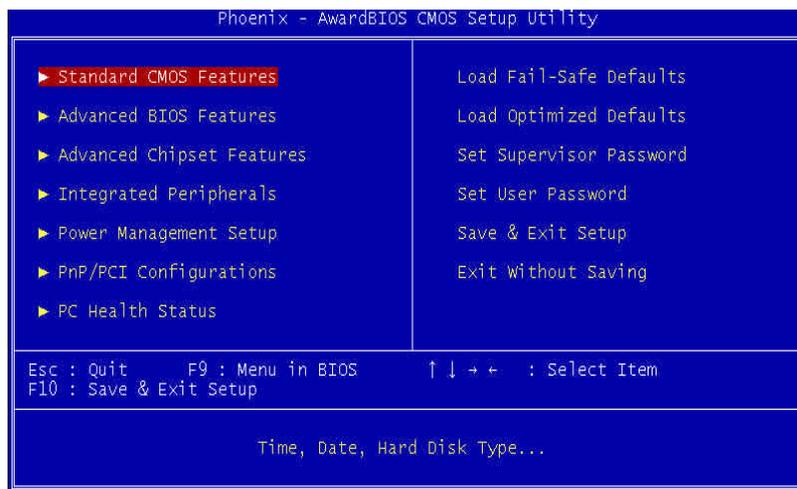
In Case of Problems

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, KB wake up, etc.)

PnP/PCI Configurations

This entry appears is 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/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 four 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

Select Display Device

PCM-6894 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-6894 single board computer.

The choices: LCD+CRT, and TV only

Panel Type

PCM-6894 can be used with various display panels. Please select the type of panel you are incorporating with your single board computer. Consult your panel manual for detail information.

The choices: 640x480 TFT, 640x480 DSTN, 800x600 TFT, 800x600 DSTN, 1024x768 TFT, 1024x768 DSTN, 1028x1024 TFT, 1600x1400 DSTN, 1600x1400 TFT.

Note: Your setting here must be the same with the display resolution setting in Windows. After installing VGA driver, you have to adjust the display resolution setting to the same mode here in BIOS.

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.

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.

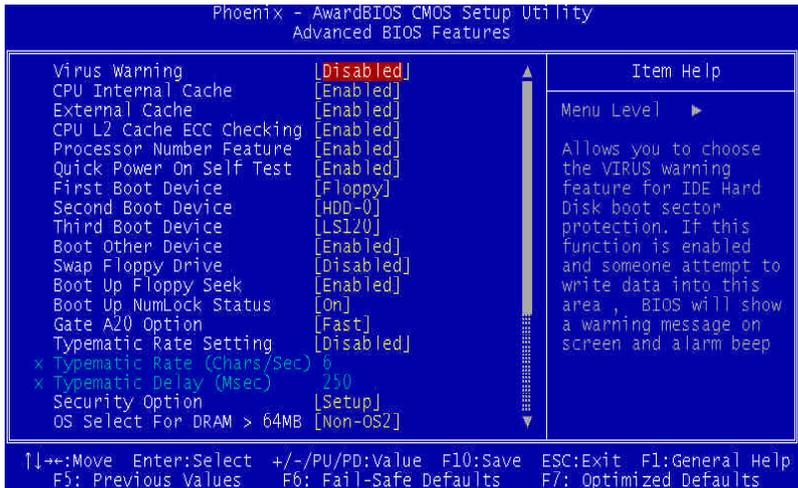
Extended Memory

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.

Processor Number Feature

Enbale this function to show the serial number of the processor adopted.

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, HDD3, SCSI, CDROM, ZIP100, LAN, Disabled.

Boot Other Device

If your boot device is not included in the following choices Floppy, LS120, HDD0, HDD1, HDD2, SCSI, CDROM, 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 HDD Controller field.

The choices: Yes.

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 improves 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.

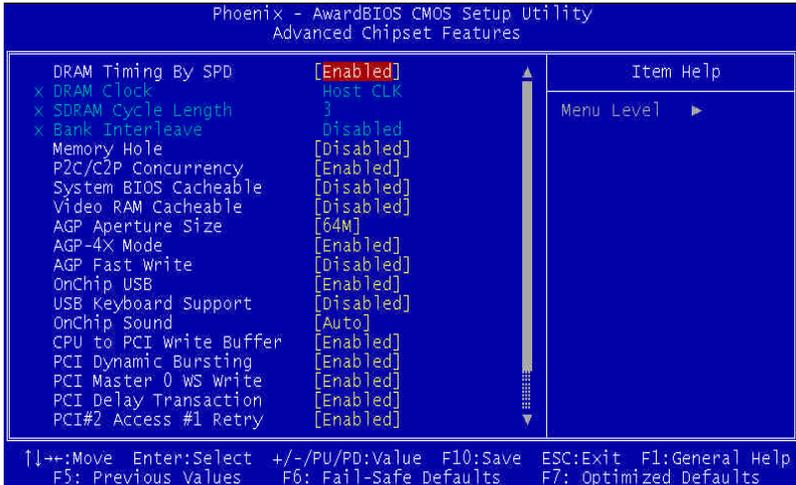
The choices: Enabled, Disabled.

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, 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 you 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.

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, 256M.

AGP-4X Mode

Enable 4X mode will enhance your system performance.

The choices: Enabled, Disabled.

AGP Fast Write

Enable this item to enhance AGP device writing speed.

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 1611 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.

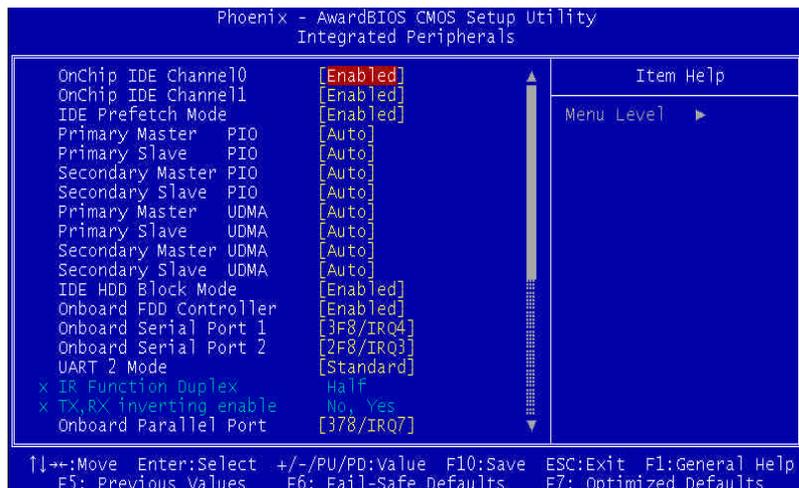
The choices: Enabled, Disabled.

Memory Parity/ECC Check

Select Enabled, or Disabled. When enabled, the BIOS enables memory checking when it detects the presence of ECC or parity DRAM

The choices: Enabled, Disabled.

Integrated Peripherals



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 four IDE 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

Primary/Secondary Master/Slave UDMA

Ultra DMA33/66 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your IDE Cable both support Ultra DMA 33/66 select Auto to enable BIOS support.

The choices: Auto, Disable.

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

Select an operating mode for the second serial port:

Standard: RS-232C serial port

HRSIR: IrDA-compliant serial infrared port

ASKIR: Amplitude shift keyed infrared port

If you select HRSIR or ASKIT, 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 setting 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, Disabled

Serial Port 3 use IRQ

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

The choices: IRQ3, IRQ4, IRQ5, IRQ9, IRQ10.

Onboard Serial Port 4

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

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

Serial Port 4 use IRQ

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

The choices: IRQ3, IRQ4, IRQ5, IRQ9, IRQ10.

Watch Dog Timer Select

You can enable the system watch-dog timer, a hardware timer that generates either an NMI or a reset when the software that it monitors does not respond as expected each time the watch dog polls it (select the time period in a separate field).

The choice: 10sec, 20sec, 30sec, 40sec, 1min, 2min, 4min, Disabled.

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.

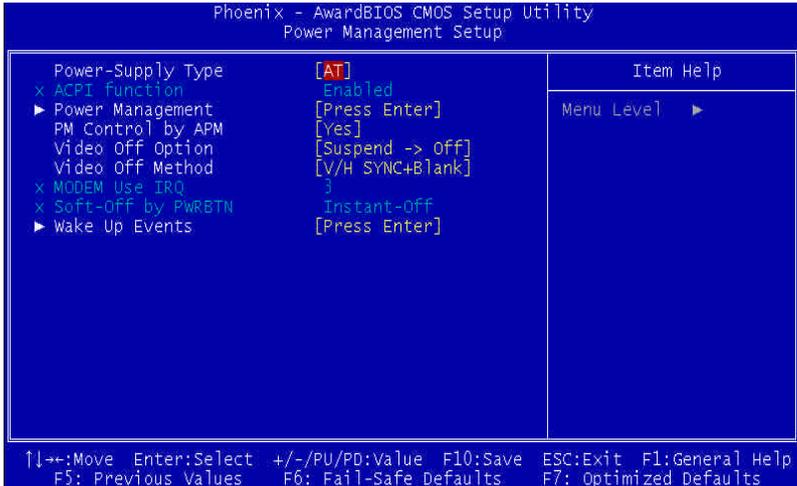
The choice: Enabled, Disabled.

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

We offer two version PCM-6894 of different power supply types: AT or ATX. Please select the corresponding type of your board in this item. AT type board doesn't support the following functions: "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, Doze and Standby modes.

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-6894 offers 7 ways to awaken the system. Define each way as the 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, you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.

The choices: Enabled, Disabled

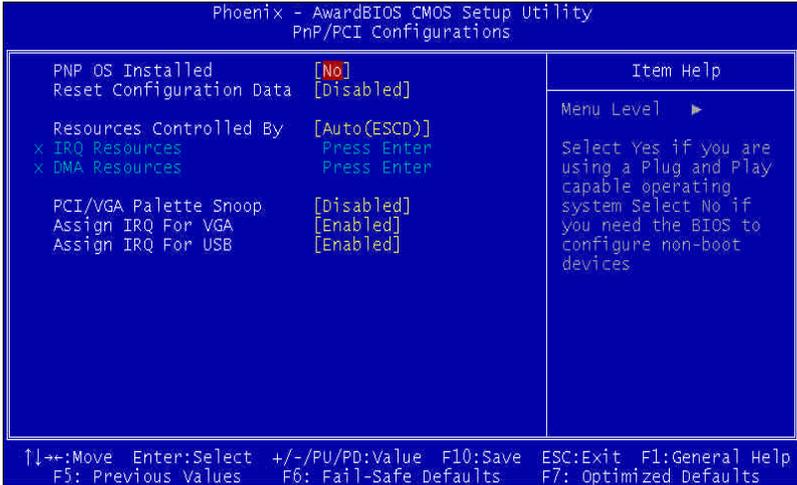
Primary INTR

The choices: ON, OFF

IRQs Activity Monitoring

Enable the following devices with the corresponding IRQ address to wake up the system: **IRQ3 (COM2), IRQ4 (COM1), 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: Legacy 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 channel. There are two types for choice: Legacy 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.

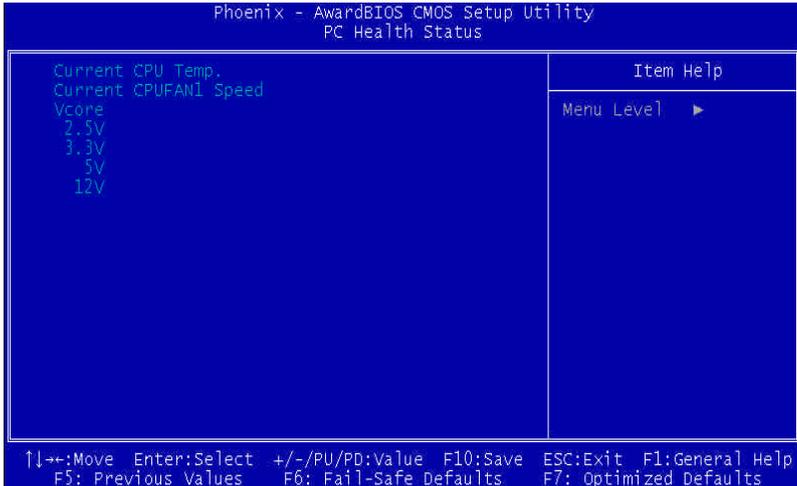
The choice: Enabled, Disabled

Assign IRQ For USB

Enable to assign interrupt for USB.

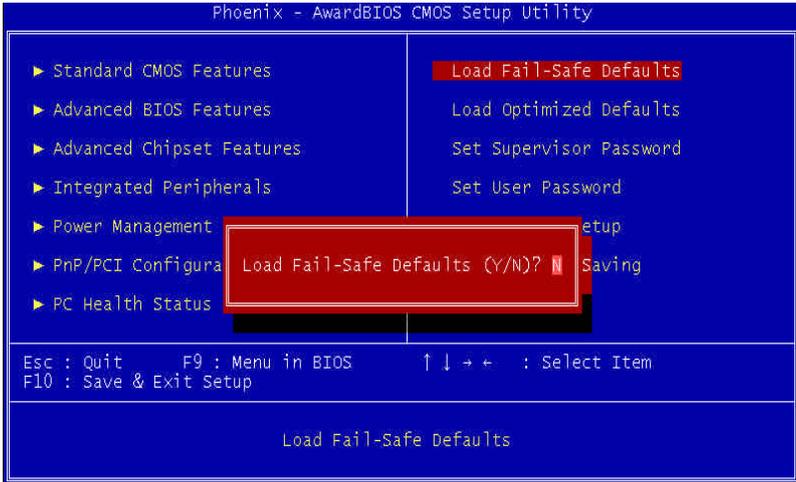
The choice: Enabled, Disabled

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-6894.

Load Fail-Safe Defaults

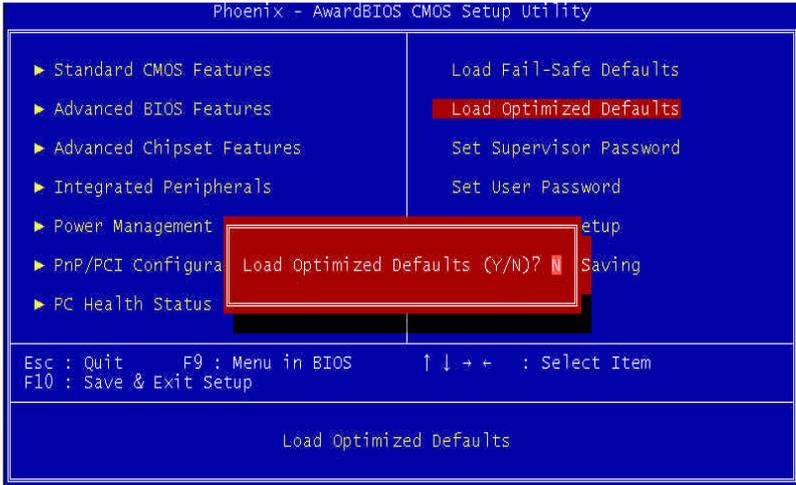


When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-SafeDefault (Y/N)?

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

Load Optimized Default

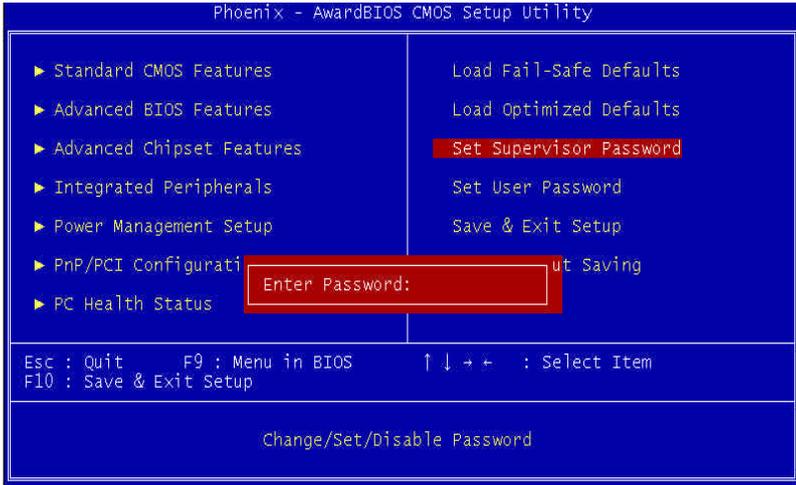


When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

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:

Confirm Password:

Again, type the password and press Enter.

To abort the process at any time, press Esc.

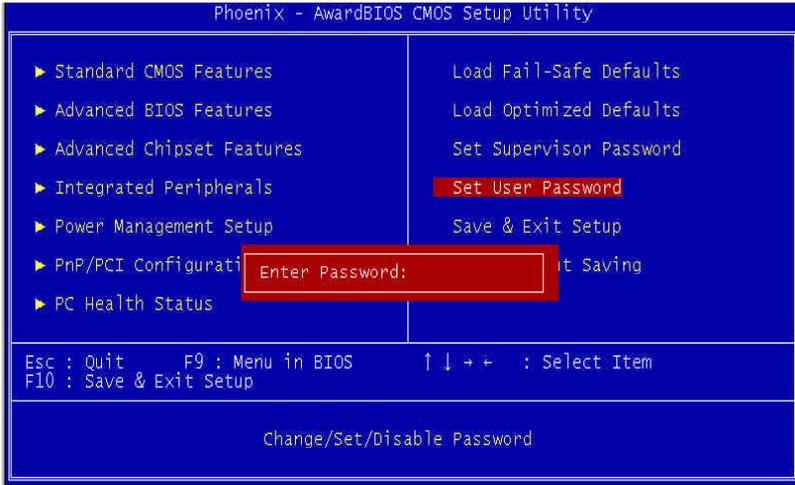
In the Security Option item in the BIOS Features Setup screen, select System or Setup:

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

Setup Enter a password whenever 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:

Confirm Password:

Again, type the password and press Enter.

To abort the process at any time, press Esc.

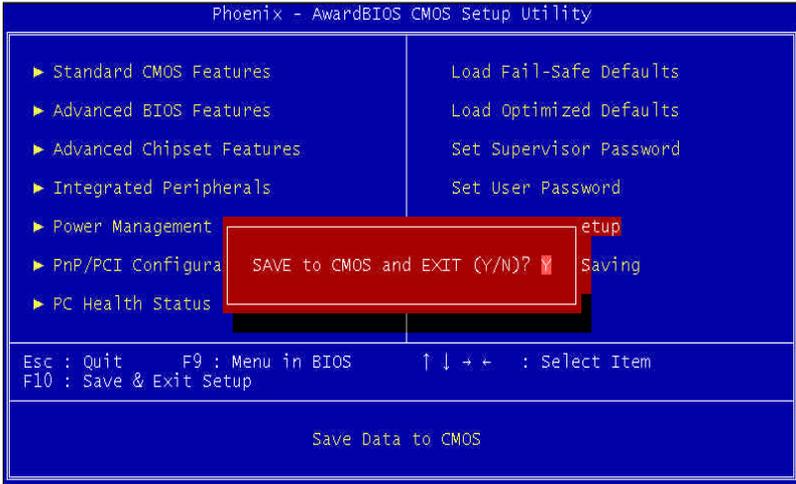
In the Security Option item in the BIOS Features Setup screen, select System or Setup:

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

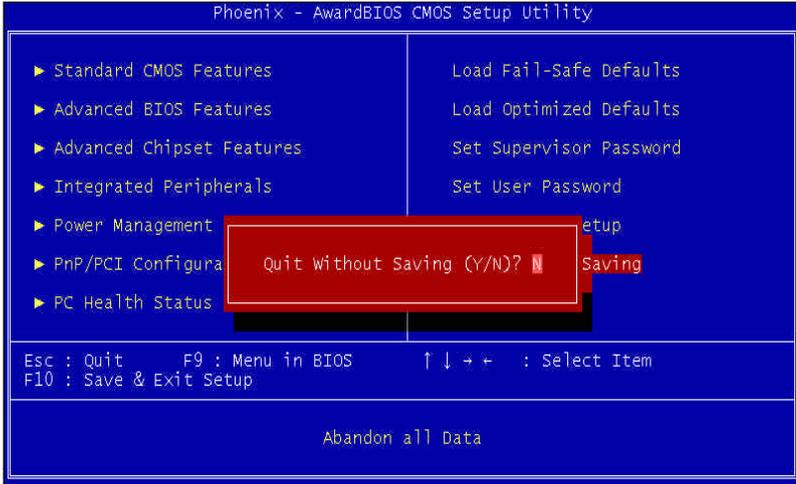


Pressing <Enter> on this item asks for confirmation:

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-6894 is equipped with an audio, VGA and Dual LAN interfaces. This chapter provides instructions for installing the software drivers on these peripherals.

System Driver Installation

The system driver installation procedure must be performed first. If you utilize Windows NT series OS, you will be strongly recommended to download the latest version Service Pack from Microsoft website and install it before install any driver.

1. Insert the **PCM-6894 CD Diskette** into the CD ROM Drive.
2. From the CD ROM, select the **PCM-6894/Driver/4in1** folder to 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 Series

1. Insert the **PCM-6894 CD Diskette** into the CD ROM Drive.
2. From the CD ROM, select the **PCM-6894/Driver/VGA/Windows 9x** 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 on the **Finish** button.

Installation process is complete and allows the system to reboot.

Linux

1. To make the driver executable, please type:

```
chmod +x XF86_SVGA
```

2. Driver Configuration

Xconfigurator ;run the X configuration utility

Select "Unlisted Card"

Select "SVGA Server".

Select your monitor.

Don't probe Screen Configuration.

Select amount of memory.

Select "No Clockchip Settings".

Skip Probe for Clocks.

Select desired resolutions.

Skip "Starting X".

```
startx ;start X-Windows
```

Audio Driver Installation

Windows 9x/ME

1. Insert the **PCM-6894 CD Diskette** into the CD ROM Drive.
2. From the CD ROM, select the **PCM-6894/Driver/Audio** folder to double click on the **Setup.exe** icon. A driver installation box 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.

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

5. A **Version Conflict** screen may appear. Click on the **Yes** button to keep all the files.
6. Click on the **Finish** button.

Installation process is completed and restart your computer.

Windows 2000/XP

1. Insert the **PCM-6894 CD Diskette** into the CD ROM Drive.
2. From the CD ROM, select the **PCM-6894/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.

Installation process is completed and restart your computer.

Windows NT 4.0

1. Insert the **PCM-6894 CD Diskette** into the CD ROM Drive.
2. From the CD ROM, select the **PCM-6894/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. Select **686A/686B/8231/8231A** and click on the **Next** button.
6. 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/viaaudio.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-6894 CD Diskette** into the CD ROM Drive.
2. From the CD ROM, select the **PCM-6894/Driver/Ethernet** folder to double click on the **Setup.exe** icon.
3. Click on the **Next** button.
4. Click on the **Ok** button to key in the following path: **cd-rom:\PCM-6894\Driver\Ethernet\Windows 98**

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

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

5. Click on the **Ok** button.
6. Click on the **Finish** button.
6. Click on the **Ok** button to restart your computer and allow the dual ethernets to take effect.

Windows NT 4.0

1. Insert the **PCM-6894 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** box 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 the **Have Disk** button then keyin the following path: **cd-rom:\PCM-6894\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 Fast Ethernet NIC**. 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 procedure.
11. Restart your computer to allow the dual ethernets to take effect.

APPENDIX

A

Watchdog Timer

Watchdog Timer

PCM-6894 contains a watchdog timer reset pin. (GP13)

All reference material can be found on the following pages.

```

=====**
** Title : WatchDog Timer Setup Utility (for W83977GP13) **
** 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 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_w83977f_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(  \nBond 83977 WatchDog Timer Setup Utility
Version 1.0 \n? ;
    printf(  \nCopyright (c) 2000 AAEON Technology Inc.\n? ;
    printf(  \nThis version only for W83977 that using GP%d to
Reset System.\n? watch_dog_output_GP);

```

```

if (argc == 1)
{
    printf( "\nSyntax: 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-10489-7 Wiring Kit

The cable kit PCM-10489-7 includes the following cables:

Part Number	Cable Description	Termination Connector
1701400453	IDE Cable 3.5" UDMA-100	40 pin, 2.54mm, Female (45cm)
1701440350	IDE Cable 2.5"	44 pin, 2.0mm, Female (35cm)
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)
1701260308	Parallel Port Cable	26 pin, 2.0mm, 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