PCM-3375

VIA Mark SBC with CFC, USB, LAN, LPT, COM, PC/104 CPU

User Manual

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This manual is for the PCM-3375.

Part No. 2006337501

Ist Edition Jun. 2006

Packing List

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

- 1 PCM-3375 all-in-one single board computer
- 1 CD disk for utility and drivers
- 1 startup manual
- 1 PS/2 Keyboard & Mouse cable (p/n: 1700060202)
- 2 Serial port cables (p/n: 1700100250)
- 1 Y-cable external cable (p/n: 1703060053)
- 1 Parallel cable (p/n: 1700260250)
- 1 26-34 pin FDD cable converter (p/n: 9681000044)
- 1 Floppy cable for 3.5" FDD only (p/n: 1701340700)
- 1 FDD flat cable (p/n: 1906000001)
- 1 VGA cable (p/n: 1701160150)
- 1 LAN cable (p/n: 1701100202)

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

Model No. List	Description
PCM-3375F-L0A1E	PC104 SBC w/VIA Mark 533, LVDS,
	2COM, 2USB, LAN, RoHS

FCC

This device complies with the requirements in part 15 of the FCC rules: Operation is subject to the following two conditions:

 This device may not cause harmful interference, and
This device must accept any interference received, including interference that may cause undesired operation

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this device in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense. The user is advised that any equipment changes or modifications not expressly approved by the party responsible for compliance would void the compliance to FCC regulations and therefore, the user's authority to operate the equipment.

Caution!



There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Achtung!

Additional Information and Assistance

1. Visit the distributator website at **www.emacinc.com** where you can find the latest information about the product.

2. Contact your distributor, sales representative, or customer service representitive for technical support if you need additional assistance. Please have the following information ready before you call:

- Product name and serial number
- Description of your peripheral attachments
- Description of your software (operating system, version, application software, etc.)
- A complete description of the problem
- The exact wording of any error messages

PCM-3375 User Manual

Contents

Chapter	1	General Information	2
-	1.1	Introduction	2
	1.2	Features	2
	1.3	Specifications	2
	1.4	Board lavout: dimensions	4
		Figure 1.1:Board layout: dimension (component side)4
		Figure 1.2:Board layout: dimension (solder side)	5
Chapter	2	Installation	8
•	2.1	Jumpers	8
		Table 2.1: Jumpers	8
	2.2	Connectors	9
		Table 2.2:Connectors	9
	2.3	Locating Connectors	10
		Figure 2.1:Jumper & Connector (component side)	10
		Figure 2.2: Jumper & Connector (solder side)	10
	2.4	Setting Jumpers	11
	2.5	Installing SO-DIMMs	11
	2.6	IDE, CDROM hard drive connector (CN7)	12
		2.6.1 Connecting the hard drive	12
	2.7	Solid State Disk	13
		2.7.1 CompactFlash (CN18)	13
	2.8	Keyboard and PS/2 mouse connector (CN14)	13
	2.9	Power connectors (CN12)	13
		2.9.1 AT power connector, +5V (CN12)	13
	2.10	COM port connector (CN17)	13
	2.11	CRT/LVDS/TTL interface connections (CN10, CN6, CN	13)
			13
		2.11.1 CRT display connector (CN10)	14
		2.11.2 LVDS connector (CN6)	14
		2.11.3 LVDS Power Select (J2)	14
	2 12	Ethernet configuration (CN1)	14
	2.12	LISD compositors (CN2)	14
	2.13	USB connectors (CN2)	14
Chapter	3	Software Configuration	.18
	3.1	Introduction	18
Chapter	4	Award BIOS Setup	.20
-	4.1	System test and initialization	20
		4.1.1 System configuration verification	20
	4.2	Award BIOS setup	21

		4.2.1	Entering setup	21
			Figure 4.1:BIOS setup program initial screen	21
		4.2.2	Standard CMOS Features setup	22
			Figure 4.2:CMOS Features setup	22
		4.2.3	Advanced BIOS Features setup	
			Figure 4.3: Advanced BIOS Features setup	
		4.2.4	Advanced Chipset Features setup	
			Figure 4.4: Advanced Chipset Features setup	
		4.2.5	Integrated Peripherals	
			Figure 4.5:Integrated Peripherals	
		4.2.6	Power Management Setup	
			Figure 4.6:Power Management Setup	
		4.2.7	PnP/PCI Configurations	
			Figure 4.7:PnP/PCI Configurations	
		4.2.8	Load Optimized Defaults	
		4.2.9	Set Password	
			Figure 4.8:To Establish Password	
		4.2.10	Save & Exit Setup	30
		4.2.11	Exit Without Saving	30
			Figure 4.9:Exit Without Saving	30
Chapter	5	AGP	4X Setup	32
	5.1	Introd	uction	32
		5.1.1	Chipset	32
		5.1.2	Display memory	32
		5.1.3	Display types	32
		5.1.4	Dual/Simultaneous Display	33
			Figure 5.1:Selecting Display Settings	33
	5.2	Install	ation of the SVGA Driver	34
		5.2.1	Installation for Windows 95	34
		5.2.2	Installation for Windows 98/Me	38
		5.2.3	Installation for Windows NT	43
		5.2.4	Installation for Windows 2000	48
		5.2.5	Installation for Windows XP	53
	5.3	Furthe	er Information	59
Chapter	6	Ethe	rnet Interface	62
-	6.1	Introd	uction	62
	62	Install	ation of Ethernet driver	62
	0	621	Installation for Windows 98	62
		6.2.2	Installation for Windows 2000	66
	6.3	Furthe	er information	
Appendix	x A	Prog	ramming Watchdog Timer	74
-ppenuiz	A 1	Watch	idog programming	74
A 1º	- D	D : 4		-
Appendix	хΒ	rın A	Assignments	/ð

B.1	LAN Connector (CN1)	
	Table B.1: LAN Connector (CN1)	
B.2	USB 1/2 Connector (CN2)	
	Table B.2: USB 1/2 Connector (CN2)	
B.3	FPD Connector (TTL) (CN3)	79
	Table B.3:FPD Connector (TTL) (CN3)	
B.4	RS422/485 Connector (CN4)	80
	Table B.4:RS422/485 Connector (CN4)	80
B.5	COM1 RS232 Connector (CN5)	80
	Table B.5: COM1 RS232 Connector (CN5)	80
B.6	FPD Connector (LVDS) (CN6)	81
	Table B.6: FPD Connector (LVDS)(CN6)	
B.7	Primary IDE Connector (CN7)	82
	Table B.7: Primary IDE Connector (CN7)	
B.8	COM2 RS232 Connector (CN8)	83
	Table B.8: COM2 RS232 Connector (CN8)	
B.9	VGA Connector (CN10)	83
	Table B.9:VGA Connector (CN10)	
B.10	LPT Connector (CN11)	84
	Table B.10:LPT Connector (CN11)	
B.11	Power input Connector (CN12)	
	Table B.11:Power input Connector (CN12)	
B.12	SM-BUS Connector (CN13)	85
	Table B.12:SM-BUS Connector (CN13)	
B.13	KB_MS Connector (CN14)	85
	Table B.13:KB_MS Connector (CN14)	
B.14	System FAN Connector (CN15)	85
	Table B.14:System FAN Connector (CN15)	
B.15	Multi-function Connector (CN16)	
5.4.6	Table B.15:Multi-function Connector (CN16)	
B.16	FDD Connector (CN17)	
B. (-	Table B.16:FDD Connector (CN17)	
B.17	CompactFlash Connector (CN18)	
D 10	Table B.17:CompactFlash Connector (CN18)	
B.18	Battery Connector (CN20)	
	Table B.18:Battery Connector (CN20)	89
Appendix C	System Assignments	92
C.1	System I/O Ports	
	Table C.1:System I/O Ports	
C.2	1st MB memory map	
	Table C.2:1st MB memory map	
C.3	DMA channel assignments	
	Table C.3:DMA channel assignments	

C.4	Interrupt assignments	94
	Table C.4:Interrupt assignments	94
Appendix D	Mechanical Drawings	.96
D.1	Mechanical Drawings	96
	Figure D.1:PCM-3375 Mech Drawing (component s	ide)
		96
	Figure D.2:PCM-3375 Mech Drawing (solder side).	96

CHAPTER

General Information

This chapter gives background information on the PCM-3375.

Sections include:

- Introduction
- Features
- Specifications
- Board layout and dimensions

Chapter 1 General Information

1.1 Introduction

The PCM-3375 is a solid, general purpose single board computer (SBC) to satisfy various industrial and multimedia applications. With onboard VIA Mark 533MHz CPU, support 10/100 Base-T LAN and 1 x EIDE, 1 x FDD, 1 x RS-232 and 1 x RS-232/422/485 port, 1 x parallel port, 1 x KB/ MS,2 x USB 1.1, also support up to 512MB SDRAM, 1 x 24bit TTL LCD panel and 2 channel 18-bit LVDS, CRT display function and ISA interface.

PCM-3375 also be a costive choice for customer, which with a similar I/ O layout for PCM-3350. PCM-3375 will be the best choice to replace PCM-3350.

1.2 Features

- Embedded VIA Mark 533MHz processor
- Memory up to 512 MB SDRAM
- Support 10/100Base-T Ethernet
- Support 2 port Host USB1.1
- Support dual display CRT + LVDS, CRT + TTL

1.3 Specifications

Standard SBC Functions

- CPU: Embedded VIA Mark 533MHz processor
- BIOS: Award 256 KB Flash memory
- System memory: 144 pin SO-DIMM socket, support up to 512 MB SDRAM.
- System chipset: VIA VT8606
- 2nd cache memory: 64KB
- Enhanced IDE interface: 1 Enhanced IDE interface 1st Interface supports 2 IDE devices (1. Master 2. Slave) 1 is for IDE device, the other one is for CompactFlash PIO mode 3, 4 with Bus Mastering up to 33MB/sec
- Serial ports: One serial RS-232 port, one serial RS-232/422/485 port

- Parallel port: One parallel port, supports SPP/EPP/ECP mode
- Keyboard/mouse connector: Wafer Box 6pin connector
- Power management: APM 1.2 compliant
- Watchdog timer: 62-level timer intervals
- USB: Two USB 1.1 compliant host ports
- Expansion: Supports PC/104 ISA module connector

Solid State Disk

• Supports one 50-pin socket for CFC type I, (Type II for optional)

VGA/LCD Interface

- Chipset: VIA "Mark" CoreFusion processor
- Memory Size: 8/16/32 MB frame buffer shares the system memory
- Display mode: CRT Modes: up to 1600 x 1200 x 16bpp
- LCD mode: Support 1 channel 24-bit LCD Panel (TTL signal)
- LVDS: Support 2 channel 18-bit LVDS LCD panel

Ethernet interface

- Chipset:
- Intel 82551ER
- Ethernet interface:
- IEEE 802.3u 10/100BASE-T Fast Ethernet compatible

Mechanical and Environmental

- Dimensions: (L x W)96 x 90 mm (3.8" x 3.5")complain with PC/104
- **Power supply Voltage:**AT, +5V +/-5%, +12V +/-5% (+5V only, +12 V optional for PC104 add on card and LCD inverter)
- Power Requirement:

Max:1.94A@+5V

Average:2.06A@+5V (Mark 533MHz SDRAM

256 MB)

- Operating temperature:0 ~ 60° C (32~140° F)
- **Operating Humidity:**0% ~ 95% Relative Humidity, noncondensing
- Weight: 0.11 kg (0.24Ib)(with heatsink)



Figure 1.1: Board layout: dimension (component side)



Figure 1.2: Board layout: dimension (solder side)

PCM-3375 User Manual



Installation

This chapter explains the setup procedures of PCM-3375 hardware, including instructions on setting jumpers and connecting peripherals, switches and indicators. Be sure to read all safety precautions before you begin the installation procedure.

Chapter 2 Installation

2.1 Jumpers

The PCM-3375 has a number of jumpers that allow you to configure your system to suit your application. The table below lists the functions of the various jumpers.

Table 2.1: Jumpers		
Label	Function	
J1	Clear CMOS	
J2	LVDS Panel Power Select	

2.2 Connectors

On-board connectors link the PCM-3375 to external devices such as hard disk drives, a keyboard, or floppy drives. The table below lists the function of each of the board's connectors.

Table 2.2	: Connectors
Label	Function
CN1	LAN Connector
CN2	USB 1/2 Connector
CN3	FPD Connector (TTL)
CN4	RS-422/485 Connector (share with COM2)
CN5	COM1 RS232 Connector
CN6	FPD Connector (LVDS)
CN7	Primary IDE Connector
CN8	COM2 RS232 Connector
CN9	PC104 Connector
CN10	VGA Connector
CN11	LPT Connector
CN12	Power input Connector
CN13	SM-BUS Connector
CN14	KB_MS Connector
CN15	System FAN Connector
CN16	Multi-function Connector
CN17	FDD Connector
CN18	CFC Connector
CN19	Memory Connector
CN20	Battery Connector

2.3 Locating Connectors



Figure 2.1: Jumper & Connector (component side)



Figure 2.2: Jumper & Connector (solder side)

2.4 Setting Jumpers

You may configure your card to match the needs of your application by setting jumpers. A jumper is a metal bridge used to close an electric circuit. 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





The jumper settings are schematically depicted in this manual as follows:



A pair of needle-nose pliers may be helpful when working with jumpers.

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

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

2.5 Installing SO-DIMMs

The procedure for installing SO-DIMMs is described below. Please follow these steps carefully. The number of pins are different on either side of the breaks, so the module can only fit in one way. SO-DIMMs modules have different pin contacts on each side, and therefore have a higher pin density.

- 1. Make sure that the two handles of the SO-DIMMs socket are in the "open" position. i.e. The handles remain leaning outward.
- 2. Slowly slide the SO-DIMMs module along the plastic guides on both ends of the socket.
- 3. Press the SO-DIMMs module right down into the socket, until you hear a click. This is when the two handles have automatically locked the memory module into the correct position of the socket.

To **remove** the memory module, just push both handles outward, and the module will be ejected from the socket.

2.6 IDE, CDROM hard drive connector (CN7)

The PCM-3375 provides 1 IDE channels which you can attach up to two Enhanced Integrated Device Electronics hard disk drives or CDROM to the PCM-3375's internal controller. The PCM-3375's IDE controller uses a PCI interface. This advanced IDE controller supports faster data transfer, PIO mode 3, mode 4 and UDMA/33.

2.6.1 Connecting the hard drive

It requires one of two cables (not included in this package), depending on the drive size. 1.8" and 2.5" drives need a 1 x 44-pin to 2 x 44-pin flatcable connector. 3.5" drives use a 1 x 44-pin to 2 x 40-pin connector.

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

- 1. Connect one end of the cable to CN5. Make sure that the red (or blue) wire corresponds to pin 1 on the connector, which is labeled on the board (on the right side).
- Plug the other end of the cable into the Enhanced IDE hard drive, with pin 1 on the cable corresponding to pin 1 on the hard drive. (See your hard drive's documentation for the location of the connector.)

If desired, connect a second drive as described above.

Unlike floppy drives, IDE hard drives can connect to either end of the cable. If you install two drives, you will need to set one as the master and one as the slave by using jumpers on the drives. If you install only one drive, set it as the master.

2.7 Solid State Disk

The PCM-3375 provides a CompactFlash[™] card socket for Solid state disk solutions.

2.7.1 CompactFlash (CN18)

The CompactFlash card shares a secondary IDE channel which can be enabled/disabled via the BIOS settings.

2.8 Keyboard and PS/2 mouse connector (CN14)

The PCM-3375 board provides a keyboard connector that supports both a keyboard and a PS/2 style mouse. In most cases, especially in embedded applications, a keyboard is not used. If the keyboard is not present, the standard PC/AT BIOS will report an error or fail during power-on self-test (POST) after a reset. The PCM-3375's BIOS standard setup menu allows you to select "All, But Keyboard" under the "Halt On" selection. This allows no-keyboard operation in embedded system applications, without the system halting under POST.

2.9 Power connectors (CN12)

2.9.1 AT power connector, +5V (CN12)

Supplies main power to the PCM-3375, +5V + -5%, +12V + -5% (5V only, 12V optional for PC104 add on card and LCD inverter)

2.10 COM port connector (CN17)

The PCM-3375 provides one RS-232 serial port and one RS-232/422/485 serial port. It provides connections for serial devices (a mouse, etc.) or a communication network. You can find the pin assignments for the COM port connector in Appendix B.

2.11 CRT/LVDS/TTL interface connections (CN10, CN6, CN3)

The PCM-3375's VGA interface can drive conventional CRT displays and is capable of driving a wide range of LVDS/TTL flat panel displays. The board has three connectors to support these displays: one is for standard CRT VGA monitors, another is for LVDS type LCD panel and the other is for TTL LCD panel.

2.11.1 CRT display connector (CN10)

CN10 is a standard 16-pin (2x8) box header connector commonly used for the CRT VGA monitor only. Pin assignments appear in the appendix.

2.11.2 LVDS connector (CN6)

The PCM-3375 uses the VIA Mark CoreFusion processor that supports single- or dual-channel LVDS panel up to SXGA panel resolution with frequency range from 25MHz to 112MHz.

The PCM-3375 supports single or dual-channel LVDS panels up to UXGA panel resolution with frequency range from 25MHz to 112MHz. The display mode can be 2 channel (2 x 18bit) LVDS LCD panel displays.

2.11.3 LVDS Power Select (J2)

Default setting for LVDS power is +5V, if user want to select either 3.3V or 5V, please choose J1.

Table 2.3: LVI	DS Power Select (J2)
Pin	Signal
1-2*	5V
2-3	3.3V

*: Default

2.12 Ethernet configuration (CN1)

The PCM-3375 is equipped with a high performance 32-bit PCI-bus Ethernet interface which is fully compliant with IEEE 802.3U 10/ 100Mbps CSMA/CD standards. It is supported by all major network operating systems.

2.13 USB connectors (CN2)

The PCM-3375 board provides two USB (Universal Serial Bus) 1.1 ports. This gives complete Plug and Play, and hot attach/detach for up to 127 external devices. You will need an USB cable if you use USB connectors. The USB interfaces can be disabled in the system BIOS setup.

PCM-3375 User Manual

CHAPTER 3

Software Configuration

This chapter details the software configuration information. It shows you how to configure the card to match your application requirements. The AWARD System BIOS is covered in Chapter 4.

Sections include:

- Introduction
- Connections for standard LCDs

Chapter 3 Software Configuration

3.1 Introduction

The PCM-3375 system BIOS and custom drivers are located in a 512 Kb, Flash ROM device. A single Flash chip holds the system BIOS, VGA BIOS and network Boot ROM image. The display can be configured via CMOS settings. This method minimizes the number of chips and difficulty of configuration. To set different types of LCD panels, please choose "panel type" from the "integrated peripherals" menu in CMOS setup.



Award BIOS Setup

This chapter describes how to set BIOS configuration data.

Chapter 4 Award BIOS Setup

4.1 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 bootup sequence.

4.1.1 System configuration verification

These routines check the current system configuration against the values stored in the board's 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-3375 Series' CMOS memory has an integral lithium battery backup. The battery backup should last ten years in normal service, but when it finally runs down, you will need to replace the complete unit.

4.2 Award BIOS setup

Award's 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.

4.2.1 Entering setup

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



Figure 4.1: BIOS setup program initial screen

4.2.2 Standard CMOS Features setup

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 left bottom of the Menu screen.

Date (nn:dd:yy) Time (bb:nn:ss)	Fel. Jan 10 2003 0 : 41 : 49	Iten Help
	1.0	Menu Level >
DIDE Frimary Master	L Nonej	144 145 14 15
P IDE Frinary Slave	L nonej	Change the day, nonth
FIDE Secondary naster	L nonej	year and century
F IDE Secondary Slave	t nonej	
Drive A	[None]	
Drive B	[None]	
Video	[EGA/UGA]	
Halt On	[All , But Keyboard]	
Base Menory	540K	
Extended Memory	113664K	
Total Memory	114688K	

Figure 4.2: CMOS Features setup

4.2.3 Advanced BIOS Features setup

By choosing the Advanced BIOS Features Setup option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the PCM-3375 Series.

Phoenix -	AwardBIOS CM	IS Setup Uti	lity
A	Awarced BIOS	Teatures	
Uirus Warning CPU Internal Cache External Cache CPU 12 Cache ECC Checking Quick Power In Self Test First Boot Bevice Second Boot Bevice Third Boot Bevice	(Disabled) (Enabled) (Enabled) (Enabled) (Enabled) (HDD-0) (HDD-0) (Disabled)	İ	Iten Help Nenu Level > Allous you to choose the URUS uarning feature for IDE Hard Disk hoot sector
Bot Other Device	(Disabled)		protection. If this
Swap Floppy Drive	(Disabled)		function is enabled
Bot Up Floppy Sek	(Disabled)		and someone attempt to
Bot Up Henlock Status	(On)		write data into this
Gate A20 Option	(Fast)		area , BIOS will show
Typenatic Bate Setting	(Disabled)		a warning message on
x Typenatic Bate (Chars/Sec) 6		screen and alarn beep
x Typenatic Delay (fisec) Security Option OS Select For DBAN > 64MD Video BIOS Shadow	250 [Setup] [Non-OS2] [Enabled]		rec.r.14 F1-Cananal Hells
T4++:Nove Enter:Select +/-	/PU/PD:Value	F10:Save	Defaults
F5:Previous Value	s	F7: Setup	

Figure 4.3: Advanced BIOS Features setup

4.2.4 Advanced Chipset Features setup

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-3375 Series.

DBAM Tining By SPD	(Enabled)	iten Help
r panel creat ve phat creat respirat cycle Length Y Davk Istericave Menory Hole Y2C/C22 Concurrency System BIOS Cacheable Video BM Cacheable Prane Buffer Size A67 Apertare Size A67 Apertare Size A67 Af Mode A67 Priving Control A67 Arising Control A67 Arising Davice Panel Tupe Dubard Lan OcChy USB USB Reyberd Support CTU to FCI Write Buffer	J Disabled	Meni Level 🔥

Figure 4.4: Advanced Chipset Features setup

4.2.5 Integrated Peripherals

Choosing the Integrated Peripherals option from the Initial Setup Screen menu should produce the screen below. Here we see the manufacturer's default values for the PCM-3375 Series.

InChin IDE Channell	(Enabled)	Iten Help
aChip IDE Channell	[Enabled]	
DE Prefetch Mode	[Enabled]	fens Level 🔸
rinary Master PID	(Auto)	
rinary Slave PIO	[Auto]	
econdary Master PIO	[Auto]	
econdary Slave PIO	[Auto]	
rinary Master UDMA	[Auto]	
rinary Slave UDMA	[Auto]	
econdary Master UDMA	[Auto]	
econdary Slave UDMA	[Auto]	
nit Display First	[PCI Slot]	
DE HOD Block Node	[Enabled]	
Inboard FBD Controller	[Enabled]	
Inboard Serial Port 1	[3F8/1RQ4]	
Inboard Serial Port 2	[2F8/1R03]	
UART 2 Node	[Standard]	
COM2 Mode Select	[R\$232]	
R Function Duplex		

Figure 4.5: Integrated Peripherals

4.2.6 Power Management Setup

By choosing the Power Management Setup option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the PCM-3375 Series.

Phoenix - AwardBlOS CAOS Setup Utility Power Management Setup		
Prover Management	(Press Enter)	iten Help
Ph Costrol Ng HRM Viceo UY Option Uiceo UY Active MOZEN Use IAQ Soft-UT N VietaQ > Wake Up Events	(er) (Surped -) (ff) (Ad STRC-link) () (Instant-Off) (Frees Enter)	ffem Leiel →
14++:Move Enter:Select FS:Previous Ve	+/-/PU/PD:Value F10:Sau lues F7: Se	e ESC:Exit F1:General Hely tup Defaults

Figure 4.6: Power Management Setup
4.2.7 PnP/PCI Configurations

By choosing the PnP/PCI Configurations option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the PCM-3375 Series.

PMP 05 Installed		iten Help
Rent Configuration Just Resources Controlled By 1 JU Resources 1 JUN Resources PCLAUSE Tailette Shoop Assign 100 For Via Assign 100 For Via	(Acto(ESCD)) Tress Enter Tress Enter Tress Enter (Disabled) (Enabled) (Enabled)	Mean Level > Select Hes IF yes an Utily a Fing and Fin capable operating you need the Bins to cealingure non-boot desices
14+-flore Enter:Select +	/80/83:44.000 F18:5	ave ESC:Exit 71:Several III

Figure 4.7: PnP/PCI Configurations

4.2.8 Load Optimized Defaults

Load Optimized Defaults loads the default system values directly from ROM. If the stored record created by the Setup program should ever become corrupted (and therefore unusable), these defaults will load automatically when you turn the PCM-3375 Series system on.

4.2.9 Set Password

Note To enable this feature, you should first go to the Advanced BIOS Features menu, choose the Security Option, and select either Setup or System, depending on which aspect you want password protected. Setup requires a password only to enter Setup. System requires the password either to enter Setup or to boot the system.

A password may be at most 8 characters long.

To Establish Password

- 1. Choose the Set Password option from the CMOS Setup Utility main menu and press <Enter>.
- 2. When you see "Enter Password," enter the desired password and press <Enter>.
- 3. At the "Confirm Password" prompt, retype the desired password, then press <Enter>

4. Select Save to CMOS and EXIT, type <Y>, then <Enter>.



Figure 4.8: To Establish Password

To Change Password

- 1. Choose the Set Password option from the CMOS Setup Utility main menu and press <Enter>.
- 2. When you see "Enter Password," enter the existing password and press <Enter>.
- 3. You will see "Confirm Password." Type it again, and press <Enter>.
- 4. Select Set Password again, and at the "Enter Password" prompt, enter the new password and press <Enter>.
- 5. At the "Confirm Password" prompt, retype the new password, and press <Enter>.
- 6. Select Save to CMOS and EXIT, type <Y>, then <Enter>.

To Disable Password

- 1. Choose the Set Password option from the CMOS Setup Utility main menu and press <Enter>.
- 2. When you see "Enter Password," enter the existing password and press <Enter>.
- 3. You will see "Confirm Password." Type it again, and press <Enter>.

- 4. Select Set Password again, and at the "Enter Password" prompt, don't enter anything; just press <Enter>.
- 5. At the "Confirm Password" prompt, again don't type in anything; just press <Enter>.
- 6. Select Save to CMOS and EXIT, type <Y>, then <Enter>.

4.2.10 Save & Exit Setup

If you select this option and press <Y> then <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 turn your system on and use the settings to configure the system. This record is required for the system to operate.

4.2.11 Exit Without Saving

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



Figure 4.9: Exit Without Saving

CHAPTER

AGP 4X Setup

The PCM-3375 3375 features an onboard AGP 4X flat panel/VGA interface. This chapter provides instructions for installing and operating the software drivers on the included display driver diskette.

Chapter 5 AGP 4X Setup

5.1 Introduction

The PCM-3375 has an onboard AGP flat panel/VGA interface. The specifications and features are described as follows:

5.1.1 Chipset

The PCM-3375 uses a VIA Twister 8606T chipset from VIA Technology Inc. for its AGP/SVGA controller. It supports many popular LCD, and LVDS LCD displays and conventional analog CRT monitors. The VIA8606T VGA BIOS supports color TFT and DSTN LCD flat panel displays. In addition, it also supports interlaced and non-interlaced analog monitors (color and monochrome VGA) in high-resolution modes while

maintaining complete IBM VGA compatibility. Digital monitors

(i.e. MDA, CGA, and EGA) are NOT supported. Multiple frequency

(multisync) monitors are handled as if they were analog monitors.

5.1.2 Display memory

The Twister chip can support 8/16/32MB frame buffer shared with system memory; the VGA controller can drive CRT displays or color panel displays with resolutions up to 1280×1024 at 16 M colors.

5.1.3 Display types

CRT and panel displays can be used simultaneously. The PCM-3375 can be set in one of three configurations: on a CRT, on a flat panel display, or on both simultaneously. The system is initially set to simultaneous display mode. If you want to enable the CRT display only or the flat panel display only, please contact VIA Technology Inc., or our sales representative for detailed information.

5.1.4 Dual/Simultaneous Display

The PCM-3375 uses a VIA Twister VT8606T LCD controller that is capable of providing simultaneous dual view display of the same content on a flat panel and CRT.

To set up dual view (simultaneus mode) under Windows 9x, Windows ME, Windows NT/2000/XP, follow these steps:

Step 1. Open the Control panel, and select "Display", "Settings".

Step 2. Select " CRT+LCD " or " CRT+TV " for dual view

Step 3. Click "OK".

efault Monitor and	1 53 Graphics Twis	ter + 53Hotke	y Properties <mark>?</mark> 🗙
General Color Management	Adapter N	Monitor 🔰 🛃 S3Gamma Plu	Troubleshooting s 1 😼 S3Info Plus
-			1.00.49-1220
Display Devices:			
		CD	
Device Settings;			
No settin	gs for this device.		GRAPHICS Sofree Lies
	OK	Cancel	Apply

Figure 5.1: Selecting Display Settings

5.2 Installation of the SVGA Driver

Complete the following steps to install the SVGA driver. Follow the procedures in the flow chart that apply to the operating system that you are using within your PCM-3375.

Notes: 1. The windows illustrations in this chapter are intended as examples only. Please follow the listed steps, and pay attention to the instructions which appear on your screen.

2. For convenience, the CD-ROM drive is designated as "D" throughout this chapter.

5.2.1 Installation for Windows 95

1. Select "Start", "Settings", "Control Panel", "Display", "Settings", and "Advanced Properties".

Display Properties					
Background Screen Saver Appearance Plus! Settings					
Color Palette					
16 Colors More More					
640 by 480 pixels					
Eont Size Refresh Frequency					
Small Fonts Use hardware default setting					
List All Modes Test Display Ivpe					
OK Cancel Apply					

2. Choose the "Adapter" tab, then press the "Change..." button.

Advanced Display Prop	erties		? ×	
Adapter Monitor Performance				
Adapter / Driver inform Manufacturer: Software version: Current files:	Graphics Adapter (VGA nation (Standard display typ 4.0 vga.drv,*vdd)	hange	
	ОК	Cancel	Apply	

3. Press the "Have Disk" button.



4. Type in the path: D:\vga\VT8606\Win9x_Me

Install Fr	Install From Disk 🛛 🗙				
_	Insert the manufacturer's installation disk into the drive selected, and then click OK.	OK Cancel			
	Copy manufacturer's files from: D:\vga\VT8606\Win9x_Me	Browse			

5. Select the highlighted item, and click the "OK" button.

Select De	evice X
	Display adapters: The following models are compatible with your hardware. Click the one you want to set up, and then click OK. If your model is not on the list, click Show All Devices. This list shows only what was found on the installation disk.
Mode <u>l</u> s:	
S3 Grap	nics Twister
Show	compatible devices
C Show	<u>a</u> ll devices
	OK Cancel

6. "S3 GraphicsTwister" appears under the adapter tab. Click the "Apply" button, then the "OK" button.

Advanced Display Properties	(
Adapter Monitor Performance	1
S3 Graphics Twister	
Adapter / Driver information	l
Manufacturer: VIA	l
Software version:	l
Current files:	l
	l
	l
	l
	l
_ <u>B</u> efresh rate	l
Optimal	l
	l
	l
Close Cancel Apply	

7. Press "Yes" to reboot.



5.2.2 Installation for Windows 98/Me

1. Select "Start", "Settings", "Control Panel", "Display", and "Settings," then press the "Advanced..." button.

Display Properties
Background Screen Saver Appearance Effects Web Settings
Display: NEC C900 on SiS 6326
Colors Screen area High Color (16 bit) Less 800 by 600 pixels Extend my Windows desktop onto this monitor.
OK Cancel Apply

2. Select "Adapter," then "Change."

SiS 6326 Properties		? ×
Color Management General	Adapter Modes	Reamma Correction
🗮 🔡 SiS 6326		Change
Adapter / Driver info	rmation	
Manufacturer:	SiS	
Chip type:	6326 AGP Rev H0	
DAC type:	Internal	
Memory:	8 MB	
Features:	DirectDraw 1.00	
Software version:	4.0	
Current files:	sis6326m.drv,*vdd,sis6	326m.vxd,dd326_32.dl
<u> </u>		
75 Hz		•
	OK	Cancel Apply

3. Press "Next," then "Display a list...."

Update Device Driver Wizard				
	What do you want Windows to do?			
	 Search for a better driver than the one your device is using now. (Recommended) 			
	Display a list of all the drivers in a specific location, so you can select the driver you want.			
🌯 🍣				
*				
	(Rook Mouth) Concol			
	K Dack Next > Cancel			

4. Press the "Have disk..." button.

Lindate.	Device Driver Wiggard		
opuater	Device Driver Wizalu		
	Select the manufacturer and model of your hardware device. If you have a disk that contains the updated driver, click Have Disk. To install the updated driver, click Finish.		
Mo <u>d</u> els:			
 Show Show 	w <u>c</u> ompatible hardware. <u>H</u> ave Disk w <u>a</u> ll hardware.		
	< <u>B</u> ack Next > Cancel		

 Insert the CD into the CD-ROM drive. Type in the path D:\vga\VT8606\Win9x_Me Then press "OK"

Install Fr	×	
9	Insert the manufacturer's installation disk into the drive selected, and then click OK.	OK Cancel
	Copy manufacturer's files from: D:\vga\VT8606\Win9x_Me	<u>B</u> rowse

6. Select the highlighted item, then click "OK."

Select De	evice X
	Click the Display adapters that matches your hardware, and then click DK. If you don't know which model you have, click DK. This list shows only what was found on the installation disk.
Mode <u>l</u> s:	
S3 Grap	hics Twister
	OK Cancel

7. "S3 Graphics Twister"appears under the adapter tab. Click the "Apply" button.

S3 Graphics Twist	er Properties			? ×
General	Adapter	Monito	u	Performance
S3 Graph	nics Twister			Change
Adapter / Driver	information			
Manufacturer:	VIA			
Chip type:				
DAC type:				
Memory:				
Features:				
Software version	1:			
Current files:				
<u> </u>				
75 Hz				▼
		ок	Cance	el <u>A</u> pply

8. Press "Yes" to reboot.



5.2.3 Installation for Windows NT

- Note: Service Pack X (X = 3, 4, 5, 6,...) must be installed first, before you install the Windows NT VGA driver.
- 1. Select "Start", "Settings", "Control Panel" and double click the "Display" icon.



2. Choose the "Settings" tab, and press the "Display Type" button.

Display Properties	? ×
Background Screen Saver Appearan	ce Plust Settings
Color Palette	Desktop Area Less More
Eont Size Small Fonts List All Modes	640 by 480 pixels <u>Befresh Frequency</u> Use hardware default setting t Display Iype
OK	Cancel Apply

3. Press the "Change..." button.

Display Properties
Background Screen Saver Appearance Plus! Settings
Display Type ? 🗙
Adapter Type
vga compatible display adapter <u>Change</u>
Driver Information
Manufacturer: Microsoft Corporation
Version Numbers: 4.00, 4.0.0
Current Files: vga.sys, vga.dll
Adapter Information
Chip Type: <unavailable></unavailable>
DAC Type: <unavailable></unavailable>
Memory Size: <unavailable></unavailable>
Adapter String: <unavailable></unavailable>
Bios Information: <unavailable></unavailable>
List All Modes I est Uisplay Lype
OK Cancel Apply

4. Click the "Have Disk..." button.

Change Display	×
Choose the manufa adapter came with a	cturer and model of your display adapter. If your display an installation disk, click on HaveDisk.
Manufacturers:	Display:
[Standard display types] Actix ATI Technologies Cardex Chips & Technologies Cirrus Logic	VGA compatible display adapter
	Have Disk
	OK Cancel

 Type the path: D:\vga\VT8606\Win NT Press the "OK" button.

Install Fro	om Disk	×
_	Insert the manufacturer's installation disk into the drive selected, and then click OK.	OK Cancel
	Copy manufacturer's files from: D:\vga\VT8606\Win NT	Browse

6. Select the highlighted item, and click the "OK" button.

Change D	isplay 🔀
	Choose the manufacturer and model of your display adapter. If your display adapter came with an installation disk, click on HaveDisk.
<u>D</u> isplay:	
S3 Grap	hics Twister
	OK Cancel

7. Press "Yes" to proceed.

Third-party Drivers.			
?	You are about to install a third-party driver.		
~	This driver was written by the hardware vendor, and is only provided here as a convenience. For any problem with this driver, please contact the hardware vendor.		
	Do you wish to proceed ?		
	Yes		

8. Press "OK" to reboot.

Installing	Driver X
•	The drivers were successfully installed. You must exit from the Display Properties window and reboot in order for the changes to take effect.

5.2.4 Installation for Windows 2000

1. Select "System", "Settings", "Control Panel" and double click the "system" icon.



2. Choose the "Video Controller (VGA Compatible)" button.



3. Choose the "Drive" button, press "Update Driver..." button.

Video Con	troller (¥GA Com	patible) Properties	? ×
General	Driver Resource	\$	
	Video Controller (V	/GA Compatible)	
	Driver Provider:	Unknown	
	Driver Date:	Not available	
	Driver Version:	Not available	
	Digital Signer:	Not digitally signed	
Digital Signer: Not digitally signed No driver files are required or have been loaded for this device. To uninstall the driver files for this device, click Uninstall. To update the driver files for this device, click Update Driver.			
	Driver Details	Uninstall Update Driver	
		OK Cance	:

4. Choose "Display a list of...", then press "Next" button.

ograde Device Driver Wizard		
Install Hardware Device Drivers A device driver is a software program that enables a hardware device to work with an operating system.	Ð	
This wizard upgrades drivers for the following hardware device:		
Video Controller (VGA Compatible)		
Upgrading to a newer version of a device driver may add functionality to or improve t performance of this device.	he	
What do you want the wizard to do?		
O Search for a suitable driver for my device (recommended)		
 Display a list of the known drivers for this device so that I can choose a speci driver 	fic	
< Back Next > C	ancel	

5. Choose "Display adapters", press "Next" button.

Jpgrade Device Driver Wizard Hardware Type What type of hardware do you want to install?	
Select a hardware type, and then click Next.	
Hardware types:	
Batteries	_
DE ATA/ATAPI controllers	
ILEE I 394 Bus host controllers	
wig imaging devices	
A Memoru technologu driver	
W Multi-port serial adapters	_
	-
Z Back Nevt >	Cancel
C Back INEXC /	

6. Click the "Have Disk" button.

Jpgrade Device Driver Wizard
Select a Device Driver Which driver do you want to install for this device?
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Manufacturers: Models:
3Dfx Interactive, Inc. 3Dfx Interactive, Inc. Banshee 3Dlas Inc. Ltd. 3dix Interactive, Inc. Banshee Accel Graphics 3dix Interactive, Inc. Voodoo3 Actix Appian Graphics
Have Disk
< Back Next > Cancel

7. Type the path D:\vga\VT8606\Win2000 press the "OK" button.

Install Fro	om Disk	×
_	Insert the manufacturer's installation disk into the drive selected, and then click OK.	OK Cancel
	Copy manufacturer's files from: D:\vga\VT8606\Win2000	Browse

8. Press "Finish" to reboot.

Upgrade Device Driver Wizar	d
Upgrade Device Driver Wizar	d Completing the Upgrade Device Driver Wizard S3 Graphics Twister + S3Hotkey Windows has finished installing the software for this device.
	To close this wizard, click Finish.

5.2.5 Installation for Windows XP

1. Select "System", "Settings", "Control Panel" and double click the "system" icon.



2. Choose "Hardware" and "Device Manager", press "OK" button.

System He	store	Automatic Updates		Remote
General	Computer Name		ardware	Advanced
Add Hardwa	re Wizard			
Add Hardwa	e Add Hardware W	izard helps vou	install hard	ware.
×				
			مربية المعرفين	ra) (finand
		<u> </u>	voo Harowa	re wizard
Device Man	ager			
The The	Deline			en e
	ie Device Manager	lists all the hard	dware devic	es installed
Dia d	your computer. Us pour computer. Us	lists all the hard the Device M ce.	iware devic anager to c	es installed hange the
i on pro	your computer. Use	lists all the hard the Device M ce.	Iware devic anager to c	es installed hange the
i on pro	e Device Manager your computer. Usi operties of any devir Driver Signing	lists all the hard e the Device M ce.	dware devic anager to c Device M	es installed hange the anager
Hardware Pr	e Device Manager your computer. Usi operties of any devi Driver Signing	lists all the hard a the Device M ce.	dware devic anager to c Device M	es installed hange the anager
Hardware Pr	e Device Manager your computer. Us pperties of any devi Driver Signing ofiles ardware profiles prov	lists all the hard a the Device M ce.	dware devic anager to c Device M ou to set up	es installed hange the anager
Hardware Pr	e Device Manager your computer. Us Driver Signing ofiles irdware profiles prov ferent hardware com	lists all the harr a the Device M ce.	dware devic anager to c Device M. ou to set up	es installed hange the anager
Hardware Pr	e Device Manager your computer. Us poperties of any devi Driver Signing ofiles ardware profiles prov ferent hardware cor	lists all the har the Device M pe. vide a way for y figurations.	Jware devic anager to c Device M ou to set up	es installed hange the anager and store
Hardware Pr	your computer. Us pperties of any devi Driver Signing ofiles ardware profiles prov ferent hardware cor	lists all the hara the Device M ce. ride a way for y figurations.	Jware devic anager to c Device M ou to set up Hardware	es installed hange the anager o and store Profiles
Hardware Pr	your computer. Us pperties of any devi Driver Signing ofiles ardware profiles prov ferent hardware cor	lists all the har a the Device M se. ride a way for y figurations.	dware devic anager to c Device M ou to set up Hardware	es installed hange the anager o and store Profiles

3. Choose "Video Controller (VGA Compatible), press "OK" button.



4. Choose "Driver", "Update Driver", press "OK" button.

Video Co	ntrolle	r (VGA Co	mpatible) Properties 🛛 🔹 🔀
General	Driver	Resources	
2	Video	Controller (VG	iA Compatible)
	Driver	Provider:	Unknown
	Driver	Date:	Not available
	Driver	Version:	Not available
	Digital	Signer:	Not digitally signed
Driv	er Detail:	5 To	o view details about the driver files.
Upd	ate Drive	r To	update the driver for this device.
Roll	Back Dri	ver lfi ba	he device fails after updating the driver, roll ck to the previously installed driver.
	Jninstall	To) uninstall the driver (Advanced).
			OK Cancel

5. Choose "Install from a list....", press "Next".

Hardware Update Wizard	
	Welcome to the Hardware Update Wizard
	This wizard helps you install software for:
LUTE S	Video Controller (VGA Compatible)
	If your hardware came with an installation CD or floppy disk, insert it now.
A Real Property in the local division of the	What do you want the wizard to do?
	 Install the software automatically (Recommended)
State States	 Install from a list or specific location (Advanced)
Contraction of the second	Click Next to continue.
	Kext Next Cancel

6. Choose "Don't search. I will....", press "Next" button.

Please ch	oose your search and ir	stallation options	s.	EXT.
⊖ Sea	ch for the best driver in thes	e locations.		
Use path	the check boxes below to lir s and removable media. The	nit or expand the def best driver found wi	iault search, wł ill be installed.	nich includes local
	Search removable media (floppy, CD-ROM)		
	Include this location in the	search:		
	E:\ENGLISH\WINXP\HC	IMEN	*	Browse
💿 Don	t s <mark>earch. I will choose the d</mark> i	iver to install.		
Cho the c	ise this option to select the o Iriver you choose will be the	levice driver from a l best match for your l	ist. Windows o hardware.	loes not guarantee t
		< Back	Next 2	Cancel

7. Choose "Display adapters", press "Next" button.

lardware Update Wizard	
Hardware Type.	A
Select a hardware type, and then click Next.	
Common hardware types:	
S Computer	~
Disk drives	
Display adapters	
UVD/CD-ROM drives	
Floppy disk controllers	
S Floppy disk drives	
Human Interface Devices	
EEE 1294 4 compatible printers	
A Back	Next> Cancel

8. Type the path D:\vga\VT8606\WinXP then press "OK" button.



9. Choose "S3 Graphics Twister + S3 Hotkey" then press "Next" button.

Hardware Update Wizard
Select the device driver you want to install for this hardware.
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Model
S3 Graphics Twister + S3Hotkey
This driver is digitally signed. <u>Tell me why driver signing is important</u>
< Back Next> Cancel

10. Press "Finish" to reboot.



5.3 Further Information

For further information about the AGP/VGA installation in your PCM-3375, including driver updates, troubleshooting guides and FAQ lists, visit the following web resources:

VIA website: www.via.com.tw

EMAC website: www.emacinc.com

PCM-3375 User Manual

CHAPTER 6

Ethernet Interface

This chapter provides information on Ethernet configuration.

Sections include:

- Introduction
- Installation of Ethernet drivers for Windows 98/2000/NT
- Further information

Chapter 6 Ethernet Interface

6.1 Introduction

The PCM-3375 is equipped with a high performance 32-bit Ethernet chipset which is fully compliant with IEEE 802.3 100 Mbps CSMA/CD standards. It is supported by major network operating systems. It is also both 1000Base-T and 100Base-T compatible. The network boot feature can be utilized by incorporating the boot ROM image files for the appropriate network operating system. The boot ROM BIOS files are combined with system BIOS, which can be enabled/disabled in the BIOS setup.

6.2 Installation of Ethernet driver

Before installing the Ethernet driver, note the procedures below. You must know which operating system you are using in your PCM-3375 Series, and then refer to the corresponding installation flow chart. Then just follow the steps described in the flow chart. You will quickly and successfully complete the installation, even if you are not familiar with instructions for MS-DOS or Windows.

Note: The windows illustrations in this chapter are examples only. Follow the steps and pay attention to the instructions which appear on your screen.

6.2.1 Installation for Windows 98

1. a. Select "Start", "Settings". "Control Panel".
b. Double click "Network".



2. a. Click "Add New Hardware" and prepare to install network functions.

This wizard installs the software for a new hardware device. Before continuing, close any open programs. To begin installing the software for your new device, click Next.
< <u>B</u> ack Next> Cancel

3. a. Select the "Adapter" item to add the Ethernet card.



4. a. Click "Have Disk" to install the driver.

Select Dev	vice	×
	Click the Network ad If you don't know wh disk for this device, c	apters that matches your hardware, and then click OK. ich model you have, click OK. If you have an installation lick Have Disk.
Manufactu	rers:	Mo <u>d</u> els:
(detected	net drivers) 🛛 🔼	Existing Ndis2 Driver
(Infrared C	OM port or dongh	Existing ODI Driver
3Com		
Accton		
Adaptec	•	
1	•	
		Have Disk
		OK Cancel

- 5. a. Insert the CD into the D: drive
 - b. Fill in "E:\3_LAN\82551ER\W9X&W2K"
 - c. Click "OK"



6. a. Choose the "Choose the "Intel(R) GD82559ER PCI Adapter" item.

b. Click "Next".

	Click the Network adapters that matches your hardware, and then click DK. If you don't know which model you have, click DK. This list shows only what was found on the installation disk.
Mode <u>l</u> s:	
Intel 825	i5x-based PCI Ethernet Adapter (10/100)
Intel(R)	GD82559ER PCI Adapter
Intel(R) I	PRO/100+ PCI Adapter
	Have Disk
	<u></u>

7. a. Make sure the configurations of relative items are set correctly.b. Click "Finish" to reboot.



6.2.2 Installation for Windows 2000

1.

a. Select "Start", "Settings". "Control Panel".

b. Double click "Network".



2. Click "Add new hardware wizard" and prepare to install network function

Add/Rem	ove Hardware Wizard
Choos W	e a Hardware Task nich hardware task do you want to perform?
Se	lect the hardware task you want to perform, and then click Next.
۰	Add/Troubleshoot a device Choose this option if you are adding a new device to your computer or are having problems getting a device working.
C	Uninstall/Unplug a device Choose this option to uninstall a device or to prepare the computer to unplug a device.
	< <u>B</u> ack Next > Cancel

3. Choose Hardware Device "Ethernet Controller"

Which hardware device do you want to tr	publeshoot?	Ž
The following hardware is already installed with one of these devices, select the devi	on your computer. If you ce, and then click Next. it is not shown below, sel	are having problems
device, and then click Next.		
Add a new device		
Ethernet Controller		
🔜 ACPI Fixed Feature Button		
📃 Intel(r) 82802 Firmware Hub Device		
Programmable interrupt controller		
🔜 System timer		
Direct memory access controller		<u> </u>

Upgrade Device Driver Wizard	
Install Hardware Device Drivers A device driver is a software program that en an operating system.	nables a hardware device to work with
This wizard upgrades drivers for the following) hardware device:
Ethernet Controller	
Upgrading to a newer version of a device driv performance of this device.	ver may add functionality to or improve the
What do you want the wizard to do?	
Search for a suitable driver for my devi	rice (recommended)
 Display a list of the known drivers for t driver 	this device so that I can choose a specific
	<back next=""> Cancel</back>

rdware Type What type of hardware do you want to install?		
Select a hardware type, and then click Next.		
Hardware types:		
Intel(R) Unified Graphics Drivers		
Memory technology driver		
Modems 🖉		
Multi-port serial adapters		
I Network adapters		
IPNT Apm/Legacy Support		
	_	
	<u> </u>	

- 4. Insert the CD into D: drive
 - a. Fill in the Find the LAN chipset folder at the directory of PCM-3375 win2000 folder from CD ROM drive
 - b. Click "OK".



5. Choose the "Intel(R) GD82559ER PCI Adapter" item

Click "Next"

Sele \	ct Network Adapter Which network adapter do you want to insta	11?		ENT.
9	Click the Network Adapter that matches yo installation disk for this component, click H	our hardware, I Iave Disk.	then click OK	If you have an
etwork htel 8:	< Adapter: 255x-based PCI Ethernet Adapter (10/100)			
ntel(R ntel(R	GD82559ER PCI Adapter) PR0/100+ PCI Adapter			
				Have Disk

grade Devi	e Driver Wizard			
Start Devi The de	ce Driver Installation vice driver will be installed v	with the default settin	ngs.	E.
The wiz	ard is ready to install the dri	iver for the following	hardware device	e:
田田	Intel(R) GD82559ER PCI	Adapter		
				_

6 a. Make sure the configurations of relative items are set correctly

b. Click "OK"



6.3 Further information

Intel website:www.intel.comEMAC website:www.emacinc.com

PCM-3375 User Manual

A

Appendix

Programming the Watchdog Timer

The PCM-3375 is equipped with a watchdog timer that resets the CPU or generates an interrupt if processing comes to a standstill for any reason. This feature ensures system reliability in industrial standalone or unmanned environments.

Appendix A Programming Watchdog Timer

A.1 Watchdog programming

Below is a sample of programming code for controlling the Watchdog Timer function.

.....

Enter the extended function mode, interruptible double-write |

MOV DX.2EH MOV AL,87H OUT DX,AL OUT DX.AL _____ Configure logical device 8, configuration register CRF6 MOV DX.2EH MOV AL,07H; point to Logical Device Number Reg. OUT DX.AL MOV DX,2FH MOV AL,08H ; select logical device 8 OUT DX,AL; MOV DX,2EH MOV AL,30H ;Set watch dog activate or inactivate OUT DX,AL MOV DX,2FH MOV AL,01H ; 01:activate 00:inactivate OUT DX,AL; MOV DX.2EH MOV AL, F5H ; Setting counter unit is second OUT DX,AL

PCM-3375 User Manual

MOV AL,AAH OUT DX,AL

PCM-3375 User Manual

B

Appendix

Pin Assignments

This appendix provides specialized information regarding:

- LAN Connector
- USB 1/2 Connector
- FPD Connector (TTL)
- RS422/485 Connector (share with COM2)
- COM1 RS232 Connector
- FPD Connector (LVDS)
- Primary IDE Connector
- COM2 RS232 Connector
- VGA Connector
- LPT Connector
- Power input Connector
- SM-BUS Connector
- KB_MS Connector
- System FAN Connector
- Multi-function Connector
- FDD Connector
- CompactFlash Connector
- Battery Connector

Appendix B Pin Assignments

B.1 LAN Connector (CN1)

2	4	6	8	10
Ο	0	0	0	0
	0	0	0	0
1	3	5	7	9

Table B.1: LAN Connector (CN1)				
Pin	Signal	Pin	Signal	
1	VCC_LAN	2	ACT_LED	
3	Rx+	4	Rx-	
5	LINK_LED	6	TEMPLANE	
7	NC	8	RTEMPLANE	
9	Tx+	10	Tx-	

B.2 USB 1/2 Connector (CN2)

Table B.2: USB 1/2 Connector (CN2)						
Pin	Signal	Pin	Signal			
1	VCC_USB1	2	VCC_USB2			
3	USB1N	4	USB2N			
5	USB1P	6	USB2P			
7	GND	8	GND			
9	GND					

B.3 FPD Connector (TTL) (CN3)

	1 3		37 39					
□0000000000000000000000000000000000000								
	000000000000000000000000000000000000000							
:	38 40							
Table B.3: FPD Connector (TTL) (CN3)								
Pin	Signal	Pin	Signal					
1	VCC_LCD	2	VCC_LCD					
3	GND	4	GND					
5	VCC3_LCD	6	VCC3_LCD					
7	NC	8	GND					
9	FP_z_D0	10	FP_z_D1					
11	FP_z_D2	12	FP_z_D3					
13	FP_z_D4	14	FP_z_D5					
15	FP_z_D6	16	FP_z_D7					
17	FP_z_D8	18	FP_z_D9					
19	FP_z_D10	20	FP_z_D11					
21	FP_z_D12	22	FP_z_D13					
23	FP_z_D14	24	FP_z_D15					
25	FP_z_D16	26	FP_z_D17					
27	FP_z_D18	28	FP_z_D19					
29	FP_z_D20	30	FP_z_D21					
31	FP_z_D22	32	FP_z_D23					
33	GND	34	GND					
35	FP_z_CLK	36	FP_z_VS					
37	FP_z_DE	38	FP_z_HS					
39	NC	40	FP_ENVEE					

4	3	2	1
0	0	0	

Table B.4: RS422/485 Connector (CN4)					
Pin	Signal				
1	RXD485-				
2	RXD485+				
3	TXD485+				
4	TXD485-				

B.5 COM1 RS232 Connector (CN5)

2	4	6	8	10
Ο	0	0	0	0
	0	0	0	0
1	3	5	7	9

Table B.5: COM1 RS232 Connector (CN5)					
Pin	Signal	Pin	Signal		
1	DCDA#	2	DSRA#		
3	RXA	4	RTSA#		
5	TXA	6	CTSA#		
7	DTRA#	8	RIA#		
9	GND	10	GND		

B.6 FPD Connector (LVDS) (CN6)

	2 4		18 20				
	00	000	00000				
		000	00000				
	1 3		17 19				
Table B.6: FPD Connector (LVDS)(CN6)							
Pin	Signal	Pin	Signal				
1	GND	2	GND				
3	LVDS0_D0+	4	LVDS1_D0+				
5	LVDS0_D0-	6	LVDS1_D0-				
7	LVDS0_D1+	8	LVDS1_D1+				
9	LVDS0_D1-	10	LVDS1_D1-				
11	LVDS0_D2+	12	LVDS1_D2+				
13	LVDS0_D2-	14	LVDS1_D2-				
15	LVDS0_CLK+	16	LVDS1_CLK+				
17	LVDS0_CLK-	18	LVDS1_CLK-				
19	VCC_LVDS	20	VCC_LVDS				

B.7 Primary IDE Connector (CN7)

2	4															42	44
	0	00	0	0 (00	00	00	0	00	20	00	0	0	00	С	0	0
0	Ο	00	Ο	0 (ОC	00	SО	Ο	00	C	00	Ο	Ο	00	С	Ο	Ο
1	3															41	43

Table B.7: Primary IDE Connector (CN7)

Pin	Signal	Pin	Signal
1	PIDERS#	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	NC
21	PDDREQX	22	GND
23	PDIOWX#	24	GND
25	PDIORX#	26	GND
27	PDRDYX	28	GND
29	PDDACKX#	30	GND
31	IIRQ14	32	NC
33	PDA1	34	NC
35	PDA0	36	PDA2
37	CS0P#	38	CS1P#
39	PIDEACT#	40	GND
41	VCC	42	VCC
43	GND	44	NC

2	4	6	8	10
0	0	0	0	0
	0	0	0	o
1	3	5	7	9

Table B.8: COM2 RS232 Connector (CN8)					
Pin	Signal	Pin	Signal		
1	DCDB#	2	DSRB#		
3	RXB	4	RTSB#		
5	ТХВ	6	CTSB#		
7	DTRB#	8	RIB#		
9	GND	10	GND		

#: Low Active

B.9 VGA Connector (CN10)

2	4		14 16
Ο	0	000	000
	0	000	000
1	3		13 15

Table B.9: VGA Connector (CN10)				
Pin	Signal	Pin	Signal	
1	VGA_z_R	2	VCC_VGA	
3	VGA_z_G	4	GND	
5	VGA_z_B	6	NC	
7	NC	8	VGA_v_DDAT	
9	GND	10	VGA_v_HS	
11	GND	12	VGA_v_VS	
13	GND	14	VGA_v_DCLK	
15	GND	16	GND	

B.10 LPT Connector (CN11)

Tabl	Table B.10: LPT Connector (CN11)			
Pin	Signal	Pin	Signal	
1	STB_O	2	PRN_AFD#	
3	LPD0_O	4	PRN_ERR#	1 🗆 🔿 2
5	LPD1_0	6	PRN_INIT#	3 0 0 4
7	LPD2_O	8	PRN_SLIN#	
9	LPD3_O	10	GND	
11	LPD4_O	12	GND	
13	LPD5_O	14	GND	
15	LPD6_O	16	GND	
17	LPD7_O	18	GND	
19	PRN_ACK#	20	GND	
21	PRN_BUSY	22	GND	- 23 0 0 24
23	PRN_PE	24	GND	25 0 24

#: Low Active

B.11 Power input Connector (CN12)

4	3	2	1
Ο	0	0	

Table B.11: Power input Connector (CN12)			
Pin	Signal		
1	+12V		
2	GND		
3	GND		
4	+5V		

4	3	2	1
0	0	0	

Table B.12: SM-BUS Connector (CN13)			
Pin	Signal		
1	GND		
2	SMB_DATA		
3	SMB_CLK		
4	VCC3		

B.13 KB_MS Connector (CN14)

6	5	4	3	2	1
0	0	0	0	0	

Table	Table B.13: KB_MS Connector (CN14)		
Pin	Signal		
1	КСК		
2	KDT		
3	MCK		
4	GND		
5	VCCKB		
6	MDT		

B.14 System FAN Connector (CN15)

3	2	1	
0	0		

Table B.14: System FAN Connector (CN15)			
Pin	Signal		
1	FANSPEED		
2	VCC		
3	GND		

Table B.15: Multi-function Connector (CN16)				
Pin	Signal	Pin	Signal	
1	V-5V	2	GND	
3	V-12V	4	SWIN_RST#	
5	GND	6	NC	
7	WDG_OUT#	8	SWIN_RST#	
9	VCC	10	IRRX	
11	IRTX	12	GND	
13	V12_INVERTER	14	GND	
15	ENABLE	16	VBR	
17	VCC	18	VCC	
19	DIO0	20	DIO1	
21	DIO2	22	DIO3	
23	DIO4	24	DIO5	
25	DIO6	26	DIO7	
27	GND			

B.15 Multi-function Connector (CN16)

B.16 FDD Connector (CN17)

	14 15		25 26
	0000000	0000	000
	000000	0000	000
	1 2		12 13
Table B	8.16: FDD Connector (CNI	17)	
Pin	Signal	Pin	Signal
1	GND	2	INDEX#
3	GND	4	DSA#
5	GND	6	DSKCHG#
7	NC	8	NC
9	NC	10	MOA#
11	NC	12	DIR#
13	NC	14	STEP#
15	GND	16	WD#
17	GND	18	WE#
19	GND	20	TRACK0#
21	GND	22	WP#
23	GND	24	RDATA#
25	GND	26	HEAD#

Table B.17: CompactFlash Connector (CN18)				
Pin	Signal	Pin	Signal	
1	GND	26	GND	
2	SDD3	27	SDD11	
3	SDD4	28	SDD12	
4	SDD5	29	SDD13	
5	SDD6	30	SDD14	
6	SDD7	31	SDD15	
7	SDCS1#	32	SDCS3#	
8	GND	33	NC	
9	GND	34	SDIOR#	
10	GND	35	SDIOW#	
11	GND	36	VCC	
12	GND	37	IIRQ15	
13	VCC	38	VCC	
14	GND	39	GND	
15	GND	40	NC	
16	GND	41	SIDERST#	
17	GND	42	SDRDY	
18	SDA2	43	SDDREQ	
19	SDA1	44	SDDACK#	
20	SDA0	45	SDDACT#	
21	SDD0	46	PDIAG#	
22	SDD1	47	SDD8	
23	SDD2	48	SDD9	
24	NC	49	SDD10	
25	GND	50	GND	

B.17 CompactFlash Connector (CN18)

	0
1	2

Table B.18: Battery Connector (CN20)		
Pin	Signal	
1	VBAT	
2	GND	

PCM-3375 User Manual

С

Appendix

System Assignments

This Appendix contains information of a detailed nature: It includes:

- System I/O ports
- 1st MB memory map
- DMA channel assignments
- Interrupt assignments

Appendix C System Assignments

C.1 System I/O Ports

Table C.1: System I/O Ports		
Addr. range (Hex)	Device	
000-01F	DMA controller	
020-021	Interrupt controller 1, master	
040-05F	8254 timer	
060-06F	8042 (keyboard controller)	
070-07F	Real-time clock, non-maskable interrupt (NMI) mask	
080-09F	DMA page register	
0A0-0BF	Interrupt controller 2	
0C0-0DF	DMA controller	
0F0	Clear math co-processor	
0F1	Reset math co-processor	
0F8-0FF	Math co-processor	
1F0-1F8	Fixed disk	
170- 178	Fixed disk (2nd IDE)	
200-207	Reserved (Game I/O)	
278-27F	Parallel printer port 2 (LPT 3)	
2E8-2EF	Series port 4	
2F8-2FF	Serial port 2	
300-31F	Prototype card	
360-36F	Reserved	
378-37F	Parallel printer port 1 (LPT 2)	
380-38F	SDLC, bisynchronous 2	
3A0-3AF	Bisynchronous 1	
3B0-3BF	Monochrome display and printer adapter (LPT1)	
3C0-3CF	Reserved	
3D0-3DF	Color/graphics monitor adapter	
3E8-3EF	Series port 3	
3F0-3F7	Diskette controller	
3F8-3FF	Serial port 1	

* PNP audio I/O map range from 220 ~ 250H (16 bytes)
 MPU-401 select from 300 ~ 330H (2 bytes)

C.2 1st MB memory map

Table C.2: 1st MB memory map			
Addr. range (Hex)	Device		
F0000h - FFFFFh	System ROM		
*CC000h - EFFFFh	Unused (reserved for Ethernet ROM)		
C0000h - CBFFFh	Expansion ROM (for VGA BIOS)		
B8000h - BFFFFh	CGA/EGA/VGA text		
B0000h - B7FFFh	Unused		
A0000h - AFFFFh	EGA/VGA graphics		
00000h - 9FFFFh	Base memory		

* If Ethernet boot ROM is disabled (Ethernet ROM occupies about 16 KB)

* E0000 - EFFFF is reserved for BIOS POST

C.3 DMA channel assignments

Table C.3: DMA channel assignments		
Channel	Function	
0	Available	
1	Reserved (audio)	
2	Floppy disk (8-bit transfer)	
3	Available (parallel port)	
4	Cascade for DMA controller 1	
5	Available	
6	Available	
7	Available	

* Audio DMA select 1, 3, or 5

** Parallel port DMA select 1 (LPT2) or 3 (LPT1)

C.4 Interrupt assignments

Table C.4: Interrupt assignments		
Interrupt#	Interrupt source	
IRQ 0	Interval timer	
IRQ 1	Keyboard	
IRQ 2	Interrupt from controller 2 (cascade)	
IRQ 3	COM2	
IRQ 4	COM1	
IRQ 5	COM4	
IRQ 6	FDD	
IRQ 7	LPT1	
IRQ 8	RTC	
IRQ 9	Reserved (audio)	
IRQ 10	COM3	
IRQ 11	Reserved for watchdog timer	
IRQ 12	PS/2 mouse	
IRQ 13	INT from co-processor	
IRQ 14	Primary IDE	
IRQ 15	Secondary IDE for CFC	

* Ethernet interface IRQ select: 9, 11, 15

* PNP audio IRQ select: 9, 11, 15

* PNP USB IRQ select: 9, 11, 15

* PNP ACPI IRQ select: 9, 11, 15



Mechanical Drawings

Appendix D Mechanical Drawings

D.1 Mechanical Drawings



Figure D.1: PCM-3375 Mech Drawing (component side)



Figure D.2: PCM-3375 Mech Drawing (solder side)

PCM-3375 User Manual