PCM-9572F

EBX Pentium® III SBC with CPU, LCD, Ethernet, Audio, DIO and PC/104-Plus

User's Manual

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This manual is for the PCM-9572F

1st Edition Printed in Taiwan Apr. 2001

Packing list

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

- 1 PCM-9572F all-in-one single board computer
- 1 CD disk for utility and drivers
- 1 startup manual
- 1 Power cable

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

Please refer to Appendix E, Section E.1 for the optional interface wiring kit.

Model No. List Description

PCM-9572F-L4A1	W/PIII-500 and 4MB VGA memory
PCM-9572F-L8A1	W/PIII-500 and 8 MB VGA memory
PCM-9572F-J4A1	W/Celeron-400 and 4MB VGA memory

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CHAPTER 1

General Information

This chapter gives background information on the PCM-9572F.

Sections include:

- Introduction
- Features
- Specifications
- Board layout and dimensions

1.1 Introduction

The PCM-9572F is an Intel low-power Pentium® MMX ™ 266 MHz processor single board computer (SBC) with audio controller, a PCI SVGA controller, a PCI 10/100Base-T Ethernet interface, and one PC/104-*Plus* expansion connector. The PCM-9572F's design is based on the EBX form factor that provides support for PC/104 and PC/104-*Plus* module expansion. The EBX form factor also provides a convenient connector layout for easy assembly, more efficient cable connections and better overall embedded system integration. When using an Intel® Pentium® MMX processor, the PCM-9572F achieves outstanding performance that surpasses most SBCs in its class. This compact (only 5.75" x 8") unit offers all the functions of a single board industrial computer, but still fits in the space of a 5.25" floppy drive.

On-board features include 8 Digital I/O, four serial ports (three RS-232, one RS-232/422/485), two multi-mode parallel (ECP/EPP/SPP) port, two USB (Universal Serial Bus) ports, a floppy drive controller, and a keyboard/PS/2 mouse interface. The built-in high-speed PCI IDE controller supports both PIO and UDMA/33 bus master modes. Up to two IDE devices can be connected, including large hard disks, CD-ROM drives, and tape backup drives.

The PCM-9572F features power management to minimize power consumption. It complies with the "Green Function" standard and supports Doze, Standby and Suspend modes. In addition, the board's watchdog timer can automatically reset the system or generate an interrupt if the system stops due to a program bug or EMI.

Highly integrated multimedia SBC

The PCM-9572 F is a highly integrated multimedia SBC that combines audio, video, and network functions on a single computer board the size of a 5.25" floppy drive. It provides 16-bit half-duplex, 8-bit full-duplex, integrated 3D audio, and up to

1024 x 768 resolution @ 16.8 M colors with 4 MB display memory. Major on-board devices adopt PCI technology, to achieve outstanding computing performance when used with Intel® Pentium® processors. The PCM-9572F also supports TV-out that supports NTSC/PAL format and video-in function for multimedia applications.

1.2 Features

- Embedded Intel® low-power Pentium® III-500 and Celeron-400 processor
- EBX form factor which supports PC/104-*Plus*
- Support dual 18/24 bit TFT LCD or up to one 48 bit TFT LCD panels, with up to 1024 x 768 resolution
- Supports dual display function under Windows 98 and Windows NT, Windows 2000
- 100/10Base-T Ethernet interface, IEEE 802.3U compatible
- Supports wake-on-Lan with ATX power supply
- AC97/PCI audio function
- TV-out function supports NTSC and PAL formats
- 4 serial ports (three RS-232 and one RS-232/422/485)
- USB interface complies with USB Rev. 1.10
- 62-level Watchdog timer by system reset or IRQ
- Features system overheat temperature control
- 8-bit TTL digital input, 6-bit TTL digital output and 2 bit high driver digital output.
- 2 IDE channels for HDD and CD-ROM

1.3 Specifications

1.3.1 Standard EBX SBC functions

- **CPU:** Pentium III-500 MHz (PCM-9572F-L4A1 or Celeron 400 MHz processor (PCM-9572F-J4A1)
- **BIOS:** AWARD 256KB Flash BIOS, supports Plug & Play, APM, Ethernet boot ROM, boot from CD-ROM, LS-120
- **Chipset:** Intel 440BX
- **Green function:** APM 1.1 compliant
- **2nd level cache:** 128 KB or 256 KB on the processor
- **RAM:** One 168-pin DIMM socket accepts 32 ~ 256 MB SDRAM
- **Enhanced IDE interface:** 2 enhanced IDE channels support up to 4 IDE devices. PIO Mode3 or Mode4, UDMA/33 transfer
- **FDD interface:** Supports up to two FDDs (360 KB / 720 KB / 1.2 MB / 1.44 MB / 2.88 MB)
- **Infrared:** One 115 Kbps infrared port, IrDA compliant
- **SSD:** Supports CompactFlash cards. Supports M-systems DOC©2000
- **Parallel port:** Two parallel port, supports SPP/EPP/ECP parallel mode
- **Serial port:** Four serial ports with three RS-232 (COM1, 3, 4) and one RS-232/422/485 (COM2). All ports with 16C550 compatible UARTs and with +5 V/ +12 V power by jumper select.
- **Watchdog timer:** 62-level interval from 1 to 62 seconds. Generates system reset or IRQ11. Jumperless selection and software enabled/disabled

- **Keyboard/mouse connector:** 6-pin box header connector for keyboard and PS/2 mouse
- **USB interface:** Two USB connectors with fuse protection. Compliant with USB Spec. Rev. 1.10
- **PC/104-*Plus*:** EBX form factor supports PC/104-Plus for ISA and PCI bus expansion.

1.3.2 PCI SVGA/flat panel interface

- **Chipset:** SMI Lynx 721 with 418 MB memory
- **Display memory:** 4 MB or 8 MB on the Lynx 721 chip
- **Display type:** Simultaneously supports CRT and flat panel displays. Also supports up to 48-bit TFT LCD panels, 64-bit graphics acceleration
- **Display resolution:** Flat panel display up to 800 x 600 @ 24 bpp, 1024 x 768 @ 24 bpp. CRT monitors up to 1024 x 768 @ 24 bpp, 1280 x 1024 @ 24 bpp
- **Dual display:** Supports dual 18/24 bit TFT LCD or CRT and LCD display under Windows 98/ Windows ME/ Windows NT/ Windows 2000

1.3.3 Digital I/O

- **8 TTL-level digital input control**
- **6 TTL-level digital input control and 2 open collector opto-isolated digital output control or 2 TTL-level digital output control**
- **Isolated output voltage: Open collector 5 to 40 Vdc**
- **Isolated output sink current: 50 mA max.**

1.3.4 Audio function

- **Chipset:** ESS ES 1989
- **Audio controller:** AC97 Ver. 2.0 compliant interface, Multistream Direst Sound and Direct Sound 3D acceleration
- **Stereo sound:** 8-bit full-duplex
- **Audio interface:** Microphone in, Line in, CD audio in; Line out, Speaker L, Speaker R
- **Power:** Accepts +12 V source for improved audio quality

1.3.5 TV-out

- **Chipset:** SMI Lynx 721
- Supports NTSC, NTSC=EIA (Japan) and PAL TV formats
- Provides Composite video and S-video outputs via RCA (composite) connector and S-video connetor
- Supports 640 x 480 and 800 x 600 input resolutions
- Supports Windows© 95/98 and Windows NT drivers
- Over-scan, under-scan and position adjustable
- Auto-detection of TV presence met Interface

1.3.6 PCI bus Ethernet interface

- **Chipset:** REALTEK RTL8139 Ethernet controller
- **Ethernet interface:** IEEE 802.3U compatible 100/10Base-T interface. Includes software drivers and boot ROM
- **Wake-on-Lan:** Supports wake-on-Lan function with ATX power control

1.3.7 Mechanical and environmental

•**Dimensions (L x W):** EBX form factor, 203 x 146 mm (8" x 5.75")

- **Power supply voltage:** +5 V ±5%
- **Power requirements:** Max 4.5 A @ +5 V, typical 3.8 A @ 5 V, (with 64 MB DRAM, Pentium® III 500 MHz CPU)
  3.1 A @ 5 V (with 64 MB DRAM, Celeron 400 MHz CPU)
- **Operating temperature:** 0 ~ 60° C
- **Weight:** 0.85 kg (weight of total package)

1.4 Board layout and dimensions

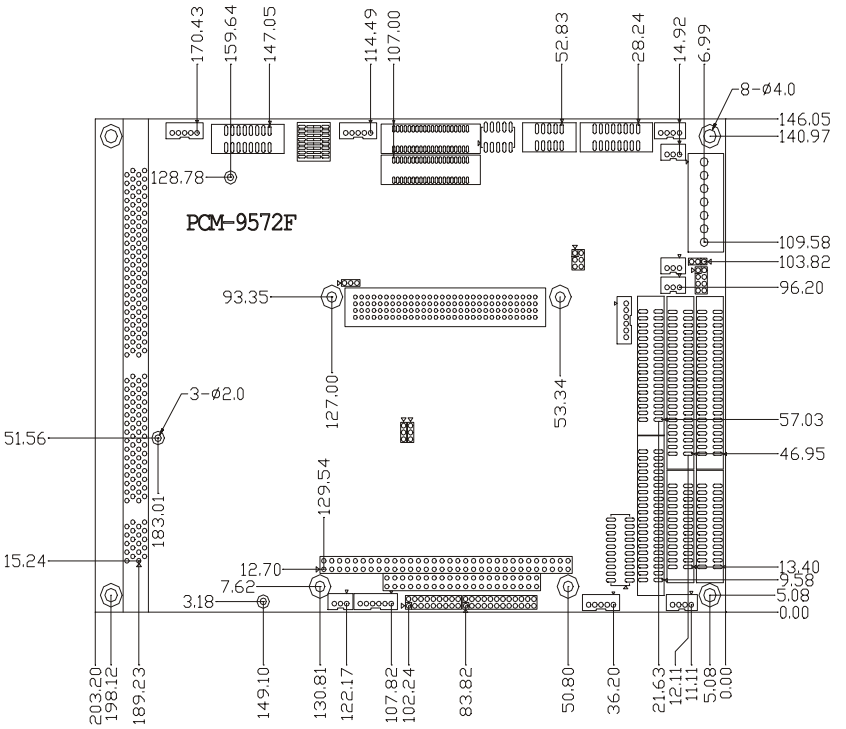


Figure 1-1: PCM-9572F dimensions

CHAPTER 2

Installation

This chapter tells how to set up the PCM-9572F hardware. It includes instructions on setting jumpers, and connecting peripherals, switches and indicators. Be sure to read all the safety precautions before you begin the installation procedure.

2.1 Jumpers

The PCM-9572F has a number of jumpers that allow you to configure your system to suit your application. The table below lists the function of each of the board's jumpers.

Table 2-1: Jumpers

Label	Function
J1	ATX power on function select
J2	LAN controller power select (Rev A101only)
J3	COM2 RS-232/422/485 setting
J4	COM port RI pin setting
J5	Watchdog timer action
J6	Front panel connector
J7	CMOS clear
J8	Reserve
SW2	Panel type select

2.2 Connectors

On-board connectors link the PCM-9572F 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	Main power connector
CN2	ATX feature connector
CN3	Peripheral power connector
CN4	CRT display connector
CN5	Flat panel connector (1 ST 24 BIT)
CN7	Backlight connector
CN8	Ethernet connector
CN9	Audio connector
CN10	CD Audio input connector
CN11	Floppy drive connector
CN12	Parallel port connector (LPT1)
CN13	IR connector
CN14	COM-port connector
CN15	Parallel port connector (LPT2)
CN16	IDE hard drive connector (primary)
CN17	IDE hard drive connector (secondary)
CN18	CFC connector
CN19	Reserved
CN20	2 Digital output (isolated)
CN21	8 Digital I/O
CN22	Keyboard and PS/2 mouse connector
CN23	USB channel 1,2 connector
CN25	PC/104 plus (ISA + PCI) expansion
CN26	TV-out connector
CN27	Ext. flat panel display connector (2nd 24 bit)
Fan1	CPU fan power connector
Fan2	System fan power connector

2.3 Locating jumpers

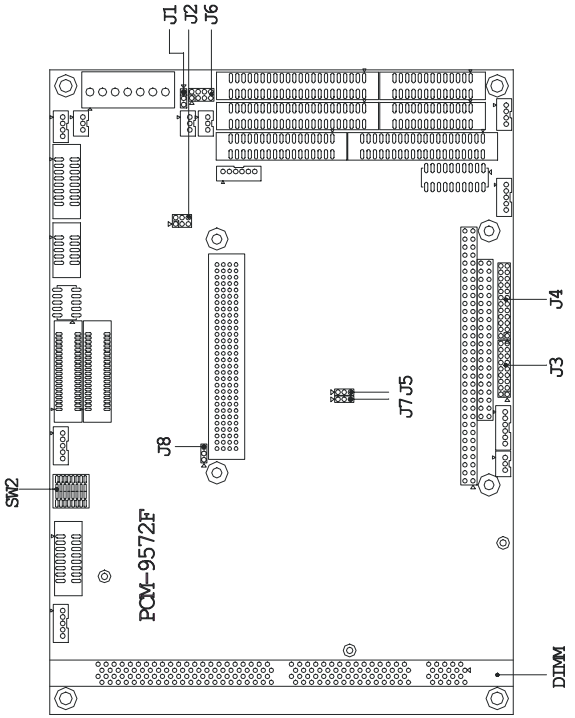


Figure 2-1: Locating jumpers

2.4 Locating connectors

2.4.1 Component side

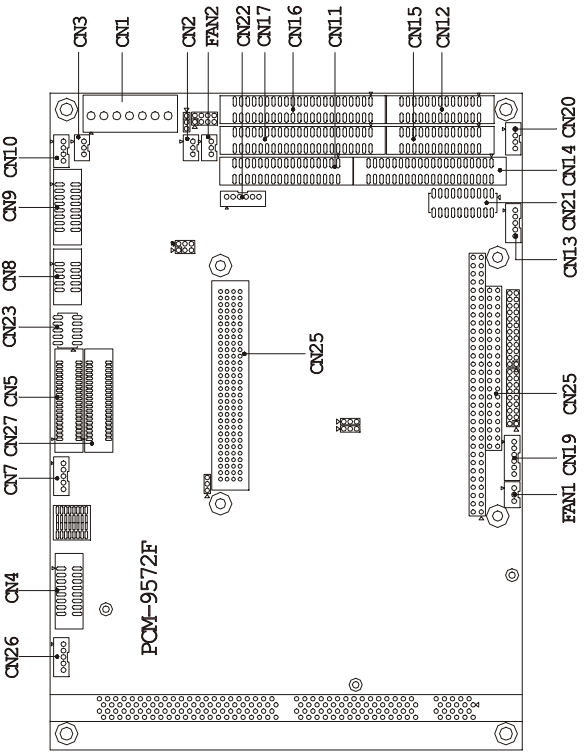


Figure 2-2: Locating connectors (component side)

2.4.2 Solder side

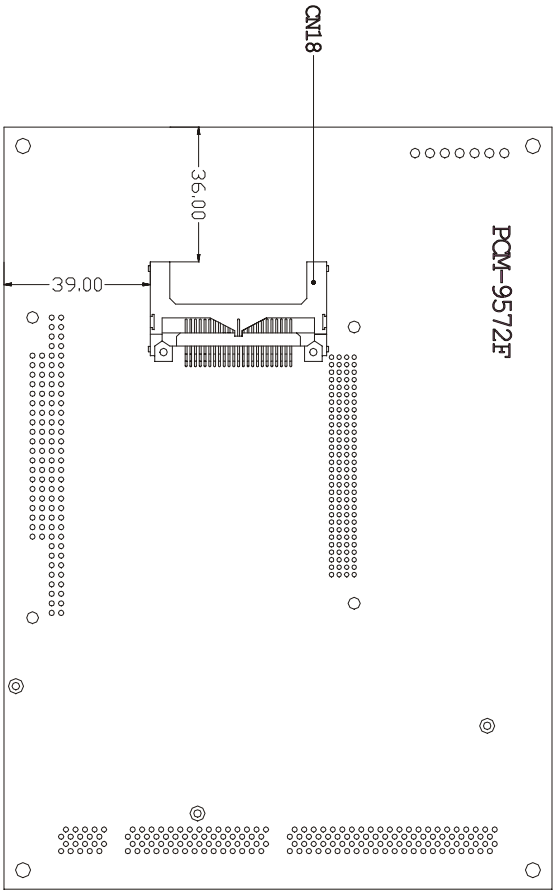
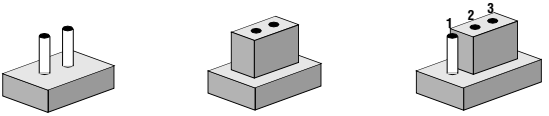


Figure 2-3: Locating connectors (solder side)

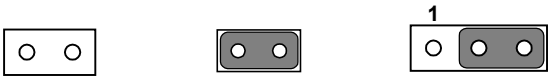
2.5 Setting jumpers

You configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper, connect the pins with the clip. To "open" a jumper, remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either pins 1 and 2 or 2 and 3.



Open *Closed* *Closed 2-3*

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



Open *Closed* *Closed 2-3*

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

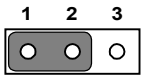
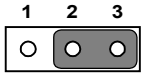
If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

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

2.6 CMOS clear (J7)

Warning: To avoid damaging the computer, always turn off the power supply before setting "Clear CMOS." Before turning on the power supply, set the jumper back to "3.0 V Battery On."

Table 2-3: CMOS clear (J7)

	*3.0 V Battery on	Clear CMOS
J7		

* default setting

2.7 Installing system memory (DIMMs)

You are able to install memory ranging from 32 to 256 MB of DIMM onto your PCM-9572F card. The card provides one 168-pin DIMM socket, which accepts 32, 64, 128 or 256 MB 3.3 V power level synchronous DIMMs.

2.7.1 Installing DIMMs

The procedure for installing 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. DIMM modiles have different pin contacts on each side, and therefore have a higher pin density.

1. Make sure that the two handles of the DIMM socket are in the "open" position. i.e. The handles remain leaning outward.
2. Slowly slide the DIMM module along the plastic guides on both ends of the socket.
3. Press the DIMM 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.

2.8 IDE, CDROM hard drive connector (CN16, CN17)

The PCM-9572F provides 2 IDE channels which you can attach up to four Enhanced Integrated Device Electronics hard disk

drives or CDROM to the PCM-9572F's internal controller. The PCM-9550F/FM's IDE controller uses a PCI interface. This advanced IDE controller supports faster data transfer, PID mode 3, mode 4 and UDMA/33.

2.8.1 Connecting the hard drive

Connecting drives is done in a daisy-chain fashion. 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 flat-cable 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 CN16 or CN17. 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).
2. 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.)

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

2.9 Solid State Disk

The PCM-9550F/FM provides a CompactFlash™ card socket and DiskOnChip socket for Solid state disk solutions.

2.9.1 CompactFlash (CN18)

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

master and one as the slave by using jumpers on the drives. If you

2.10 Floppy drive connector (CN11)

You can attach up to two floppy drives to the PCM-9550F/FM's on-board controller. You can use any combination of 5.25" (360 KB and 1.2 MB) and/or 3.5" (720 KB, 1.44 MB, and 2.88 MB) drives.

A 34-pin daisy-chain drive connector cable is required for a dual-drive system. On one end of the cable is a 34-pin flat-cable connector. On the other end are two sets of floppy disk drive connectors. Each set consists of a 34-pin flat-cable connector (usually used for 3.5" drives) and a printed-circuit board connector (usually used for 5.25" drives).

2.10.1 Connecting the floppy drive

1. Plug the 34-pin flat-cable connector into CN19. Make sure that the red wire corresponds to pin one on the connector.
2. Attach the appropriate connector on the other end of the cable to the floppy drive(s). You can use only one connector in the set. The set on the end (after the twist in the cable) connects to the A: drive. The set in the middle connects to the B: drive.
3. If you are connecting a 5.25" floppy drive, line up the slot in

the printed circuit board with the blocked-off part of the cable connector.

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

If you desire, connect the B: drive to the connectors in the middle of the cable as described above.

In case you need to make your own cable, you can find the pin assignments for the board’s connector in Appendix C.

2.11 Parallel port connector (CN12, CN15)

Normally, the parallel port is used to connect the card to a printer. The PCM-9572F includes a multi-mode (ECP/EPP/SPP) parallel port accessed via CN12 or CN15, and a 26-pin flat-cable connector. You will need an adapter cable if you use a traditional DB-25 connector. The adapter cable has a 26-pin connector on one end, and a DB-25 connector on the other.

The parallel port is designated as LPT1, and can be disabled or changed to LPT2 or LPT3 in the system BIOS setup.

The parallel port interrupt channel is designated to be IRQ7.

You can select ECP/EPP DMA channel via BIOS setup.

2.12 Keyboard and PS/2 mouse connector (CN22)

The PCM-9572F 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-9572F'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.

2.13 Front panel connector (J6)

Next, you may want to install external switches to monitor and control the PCM-9572F. These features are optional: install them only if you need them. The front panel connector (J6) is an 8-pin male, dual in-line header. It provides connections for a speaker, hard disk access indicator, watchdog output, and an input switch for resetting the card.

2.13.1 Speaker

The PCM-9572F can drive an 8 ohm speaker at 0.5 watts. Make sure that alternatives to this specification do not overload the card.

2.13.2 LED interface

The front panel LED indicator for hard disk access is an active low signal (24 mA sink rate).

2.13.3 Watchdog output

When the PCM-9572F's watchdog timer times out, the front panel pin 6 will output an active low pulse signal (25mA sink rate for 1 second).

2.13.4 Reset switch

If you install a reset switch, it should be an open single pole switch. Momentarily pressing the switch will activate a reset. The switch should be rated for 10 mA, 5 V.

If you need to make your own cable, you can find the pin assignments for the board's connector in Appendix C.

2.14 Power connectors (CN3, CN1, FAN1, FAN2)

2.14.1 Peripheral power connector, -5 V, -12 V (CN3)

Supplies secondary power to devices that require -5 V and -12 V.

2.14.2 Main power connector, +5 V, +12 V (CN1)

Supplies main power to the PCM-9572F/L (+5 V), and to devices that require +12 V.

2.14.3 CPU Fan power supply connector (FAN1)

Provides power supply to CPU cooling fan. Only present when +5 V and +12 V power is supplied to the board.

2.14.4 System Fan power supply connector (FAN2)

Provides power supply to system fan. Only present when +5 V and +12 V power is supplied to the board.

2.15.1 ATX power control connector (J1, CN2)

2.15.1 ATX, AT power select

Table 2-4. ATX, AT power select (J1)

* Default Setting

2.15.2 ATX feature connector (CN2) and soft power switch connector (J1)

The PCM-9572F can support an advanced soft power switch function, if an ATX power supply is used. To enable the soft power switch function:

1. Get the specially designed ATX-to-EBX power cable (PCM-9572F optional item, part no. 1703200100)
2. Connect the 3-pin plug of the cable to CN2 (ATX feature connector).

3. Connect the power on/off button to J1. (A momentary type of button should be used.)

Important: Make sure that the ATX power supply can take at least a 10 mA load on the 5 V standby lead (5VSB). If not, you may have difficulty powering on your system.

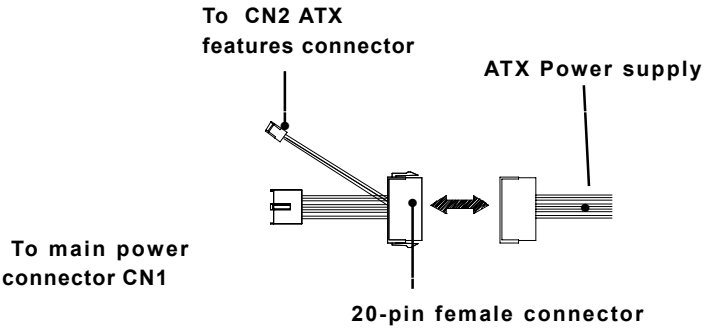


Figure 2-4: Wiring for ATX soft power switch function

2.16 IR connector (CN13)

This connector supports the optional wireless infrared transmitting and receiving module. This module mounts on the system case. You must configure the setting through BIOS setup.

2.17 Audio interfaces (CN9, CN10)

The PCM-9572F is equipped with a high-quality audio interface, which provides 16-bit CD-quality recording and playback as well as OPL3 compatible FM music. It is supported by all major operating systems.

2.17.1 Audio connector (CN9)

The PCM-9572F provides all major audio signals on a 16-pin flat-cable connector, CN9. These audio signals include Microphone in (mono), Line in (stereo), Line out (stereo), and Speaker out (stereo). If you use traditional telephone jack connectors for these audio signals, you will need an adapter cable.

2.17.2 CD audio input connector (CN10)

Any CD-ROM drive can provide analog audio signal output when used as a music CD player. The CN10 on PCM-9572F is a connector to input CD audio signals into the audio controller. The audio cable of your CD-ROM drive will be used to connect to CN10.

2.18 COM port connector (CN14)

The PCM-9572F provides four serial ports (COM1, 3, 4: RS-232; COM2: RS-232/422/485) in one COM port connector. The COM port connector is a 40-pin, dual-inline, male header. 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 C.

2.18.1 COM2 RS-232/422/485 setting (J3)

COM2 can be configured to operate in RS-232, RS-422, or RS-485 mode. This is done via J3.

Table 2-5: J3: COM2 RS-232/422/485 select

	RS-232*	RS-422	RS-485
1-2	Open	Open	Closed
3-4	Open	Closed	Open
5-6	Closed	Open	Open
7-9	Closed	Open	Open
8-10	Closed	Open	Open

9-11	**Open**	**Closed**	**Closed**
10-12	**Open**	**Closed**	**Closed**
13-15	**Closed**	**Open**	**Open**
14-16	**Closed**	**Open**	**Open**
15-17	**Open**	**Closed**	**Closed**
16-18	**Open**	**Closed**	**Closed**

2.18.2 Share IRQ

The IRQ and the address range for COM1, 2, 3, 4 default are fixed. However, if you wish to disable the port or change these parameters later you can do this in the system BIOS setup. The table below shows the settings for the PCM-9572F's serial ports.

Table 2-6: Serial port default settings

Port	Address range	Interrupt
COM1	3F8 ~ 3FF	IRQ4
COM2	2F8 ~ 2FF	IRQ3
COM3	3E8 ~ 3EF	IRQ10
COM4	2E8 ~ 2EF	IRQ5

COM1-4 can share one IRQ that can be selected by BIOS setup for IRQ3, IRQ4, IRQ5 or IRQ10 under Windows® 98 and Windows® NT.

2.18.3 COM port RI pin setting (J4)

COM1 to COM4 can supply +5 V or +12 V power to the serial devices via the RI pin of the COM port connector. The outputs of the COM3 and COM4 RI pins are selected by setting J4.

Table 2-7: J4: COM1-4 RI settings

Pins	Com port	RI	Power setting
1-2	COM1	RI pin	+5 V
3-4	COM1	RI pin	+12 V
5-6	COM1	RI pin	R I*
7-8	COM2	RI pin	+5 V
9-10	COM2	RI pin	+12 V
11-12	COM2	RI pin	R I*
13-14	COM3	RI pin	+5 V
15-16	COM3	RI pin	+12 V
17-18	COM3	RI pin	R I*
19-20	COM4	RI pin	+5 V
21-22	COM4	RI pin	+12 V
23-24	COM4	RI pin	R I*

2.19 VGA/LCD interface connections

The PCM-9572F's PCI SVGA interface can drive conventional CRT displays and is capable of driving a wide range of flat panel displays, including electroluminescent (EL), gas plasma, passive LCD and active LCD displays. The board has two connectors to support these displays, one for standard CRT VGA monitors and one for flat panel displays.

2.19.1 CRT display connector (CN4)

CN4 is a 16-pin, dual-inline header used for conventional CRT displays. A simple one-to-one adapter can be used to match CN1 to a standard 15-pin D-SUB connector commonly used for VGA.

Pin assignments for CRT display connector CN18 are detailed in Appendix C.

2.19.2 Flat panel display connector (CN5)

CN5 consists of a 40-pin connector which can support a 24-bit LCD panel. It is Hirose's product no. DF13A-40DP-1.25 V

The PCM-9572F provides a bias control signal on CN5 that can be used to control the LCD bias voltage. It is recommended that the LCD bias voltage not be applied to the panel until the logic supply voltage (+5 V or +3.3 V) and panel video signals are stable. Under normal operation, the control signal (ENAVEE) is active high. When the PCM-9572F's power is applied, the control signal is low until just after the relevant flat panel signals are present. CN5 can connect up to 24 bit TFT LCD.

2.19.3 Extension flat panel connector (CN27)

CN27 consists of a 40-pin connecotr which is Hirose's product no. DF13A-40DP-1.25V. The PCM-9572F supports a 48-bit LCD panel which must be connected to both the CN15 (40-pin) and the CN27 (40-pin). The pin assignments for both CN5 and the CN27 can be found in Appendix C

2.19.4 Dual TFT LCD panel connection

The PCM-9572F uses the SMI 721 VGA/LCD chip that supports dual TFT LCD display. Users can connect to both the 18 bit TFT LCD with CN5 and the 24 bit TFT LCD with CN27. These two TFT LCD displays operate under Windows® 98.

2.19.5 Panel type selection (SW2)

SW2 is a 8 segment DIP switch for DSTN/TFT panel type and resolution function.

Table 2-8: SW2: Panel type select

Sw 2-1			
SW 2-1 status	**TFT/DSTN select**		
ON	TFT*		
OFF	DSTN		
SW 2-2			
SW 2-2 status	**FPCLK select**		
ON	FPCLK Normal*		
OFF	FPCLK Inverted		
SW 2- 3, 4			
SW 2-3,4 status	**Resolution select**		
SW 2-3	SW2-4	Result	
ON	ON	640 x 480	
OFF*	ON	800 x 600*	
ON	OFF	1024 x 768	
OFF	OFF	1280 x 1024	
SW 2- 5, 6, 7			
SW2-5,6,7	**TFT Type Select**		
SW2-5	**SW2-6**	**SW2-7**	**Type of TFT**
ON	ON	ON	9-bit TFT
OFF	ON	ON	12-bit TFT
ON	OFF	ON	18-bit TFT
OFF	OFF	ON	24-bit TFT*
ON	ON	OFF	12x2 bit TFT
OFF	ON	OFF	Analog TFT
ON	OFF	OFF	18x2 bit TFT

* Default setting

2.19.6 LCD power setting

The PCM 9572F's PCI SVGA interface supports 5 V and 3.3 V LCD displays that provide V_{dd} 5 V signal on CN5 and CN27

2.20 Video Out (TV-out) interfaces (CN26)

The PCM-9572F board provides Video-out (TV-out) (CN26). They consist of a 5-pin wafer box header header respectively. Output supports compiosite video and S-video connectors via an optional cable kit. Its Video-out generators use both NTSC and PAL format.

To set up your video interface:

1. Run the appropriate installation software program, located in the utility disk.

2.21 Ethernet configuration

The PCM-9572F 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.

The medium type can be configured via the RSET8139.EXE program included on the utility disk. (See Chapter 3 for detailed information.)

2.21.1 100Base-T connector (CN8)

10/100Base-T connects to the PCM-9572F via an adapter cable to a 10-pin polarized header (CN8).

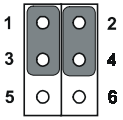
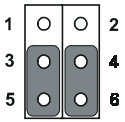
2.21.2 Network boot

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 included in the system BIOS, which is on the utility CD disc.

2.21.3 LAN controller power select (J2)

Table 2-9: LAN controller power select (J2)

3.3 V*	Standby 3.3 V
	

* default setting

Note: *PCM-9572F supports Wake-on-LAN. For Wake-on LAN, J6 has to be set to the Standby 3.3 V position*

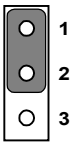
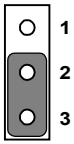
2.22 Watchdog timer configuration

An on-board watchdog timer reduces the chance of disruptions which EMP (electro-magnetic pulse) interference can cause. This is an invaluable protective device for standalone or unmanned applications. Setup involves one jumper and running the control software (refer to Appendix A).

2.22.1 Watchdog timer action (J5)

When the watchdog timer activates (CPU processing has come to a halt), it can reset the system or generate an interrupt on IRQ11. This can be set via setting J11 as shown below:

Table 2-10: Watchdog timer action (J5)

	*System reset	IRQ11
J5		

* default setting

2.23 USB connectors (CN23)

The PCM-9572F board provides two USB (Universal Serial Bus) ports which gives complete plug and play, and hot attach/detach for up to 127 external devices. The USB interfaces comply with USB specification Rev. 1.1, and are fuse protected.

The USB interface is accessed through one 5-pin flat-cable connector, CN23. You will need an adapter cable if you use a standard USB connector. The adapter cable has a 5-pin connector on one end and an USB connector on the other.

The USB interfaces can be disabled in the system BIOS setup.

2.24 Digital I/O (CN21, CN20: 8 Outputs, 8 Inputs)

The PCM-9572F has eight digital outputs and eight digital inputs (TTL level). The digital outputs support 8 TTL level or 2 opto-isolated open collector (CN20) and 6 TTL level output. You can configure the digital I/O to control the opening of the cash drawer and to sense the closing of the cash drawer. The following explains how the digital I/O is controlled via software programming.

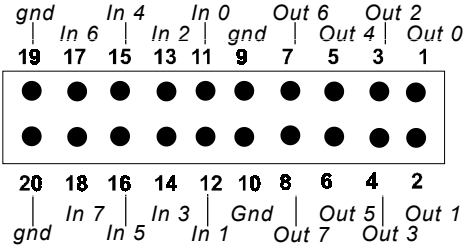


Figure 2-5: CN 21 Digital Input/Output

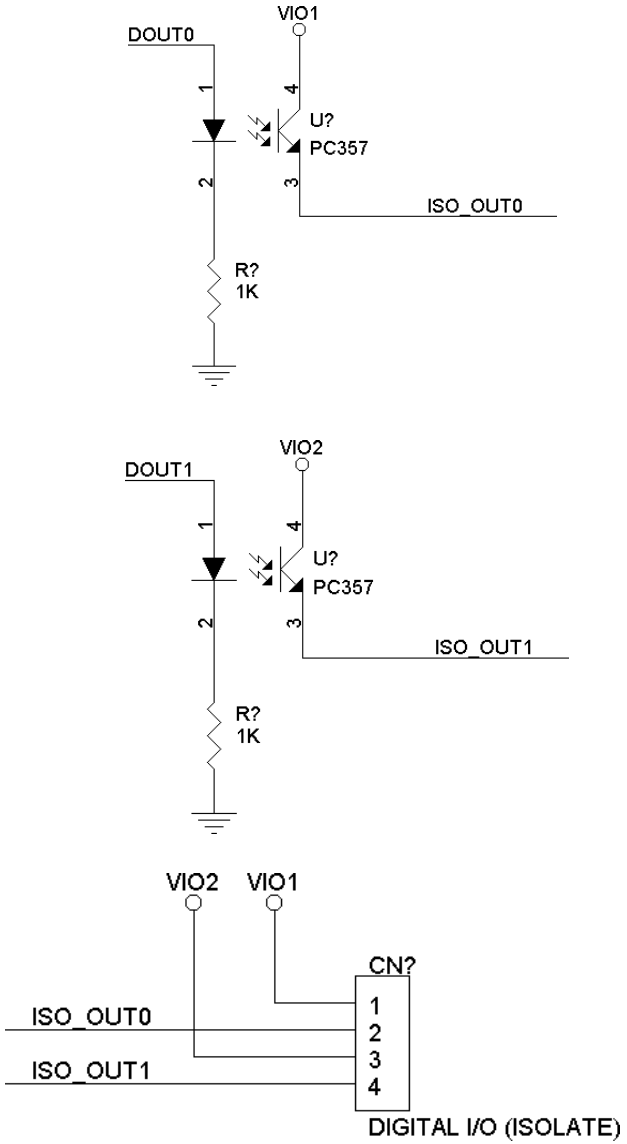


Figure 2-6: Digital opto Isolated output block diagram

2.24.1 Digital output programming

Table 2-11 Digital output programming

Output	Address	Bit
Out 0	550	0
Out 1	550	1
Out 2	550	2
Out 3	550	3
Out 4	550	4
Out 5	550	5
Out 6	550	6
Out 7	550	7

2.24.2 Digital Input programming

Table 2-12: Digital input programming

Input	Address	Bit
In-0	550	0
In-1	550	1
In-2	550	2
In-3	550	3
In-4	550	4
In-5	550	5
In-6	550	6
In-7	550	7

Note: The INPUT signal must be TTL compatible.

2.24.3 Isolated Digital Output (CN20)

The PCM-9572F supports 2 isolated digital output via CN20. The pin assignment as follows:

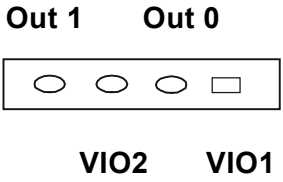


Figure 2-7: CN20 Isolated Digital Input/Output

CHAPTER 3

Software Configuration

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

Sections include:

- Introduction
- Connections for four standard LCDs
- Ethernet interface configuration

3.1 Introduction

The PCM-9572F system BIOS and custom drivers are located in a 256 Kbyte, Flash ROM device, designated U18. 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.

3.2 Connections for five standard LCDs

3.2.1 Connections to Sharp LM64183P, LM64P89 (640 x 480 DSTN MONO LCD)

Table 3-1: Connections to Sharp LM64183P & LM64P89

LM64183/64P89		PCM-9572F CN5	
Pin	**Name**	**Pin**	**Name**
CN1-1	S	36	FLM
CN1-2	CP1	38	LP
CN1-3	CP2	35	SHFCLK
CN1-4	DISP	5	+5 V
CN1-5	VDD	6	+5 V
CN1-6	VSS	3	GND
CN1-7	VEE	-	External power*
CN1-8	DU0	12	P3
CN1-9	DU1	11	P2
CN1-10	DU2	10	P1
CN1-11	DU3	9	P0
CN1-12	DL0	16	P7
CN1-13	DL1	15	P6
CN1-14	DL2	14	P5
CN1-15	DL3	13	P4

* LM64183P -17 V LM64P89 -20 V

Note: Standard BIOS supports TFT and DSTN LCD panels.

3.2.2 Connections to PLANAR EL (640 x 480 AD4 EL)

Table 3-2: Connections to PLANAR EL

PLANAR 640 x 480 AD4 Pin	Name	PCM-9572F CN5 Pin	Name
1	GND	3	GND
2	DO	21	P12
3	GND	3	GND
4	D1	22	P13
5	GND	3	GND
6	D2	23	P14
7	NC	—	—
8	D3	24	P15
9	NC	—	—
10	D4	17	P8
11	NC	—	—
12	D5	18	P9
13	NC	—	—
14	D6	19	P10
15	GND	4	GND
16	D7	20	P11
17	GND	4	GND
18	VCLK	42	ASHFCLK
19	GND	4	GND
20	/BLANK	—	—
21	GND	8	GND
22	HS	37	M
23	NC	—	—
24	VS	36	FLM
25	NC	—	—
26	SELFTST	39	GND
27	COLMAP	39	GND
28	ENABLE	—	—
29	RESERVED	—	—
30	/LOWPOW	—	—
31,32	NC	—	—
33	RESERVED	—	—
34	NC	—	—

3.2.3 Connections to Toshiba LTM10C042 (640 x 480 TFT color LCD)

Table 3-3: Connections to Toshiba LTM10DC042

LTM10C042		PCM-9572F CN5	
Pin	**Name**	**Pin**	**Name**
1	GND	3	GND
2	CLK	35	SHFCLK
3	GND	4	GND
4	R0	27	P18
5	R1	28	P19
6	R2	29	P20
7	GND	8	GND
8	R3	30	P21
9	R4	31	P22
10	R5	32	P23
11	GND	33	GND
12	G0	19	P10
13	G1	20	P11
14	G2	21	P12
15	GND	33	GND
16	G3	22	P13
17	G4	23	P14
18	G5	24	P15
19	GND	34	GND
20	ENAB	37	M
21	GND	34	GND
22	B0	11	P2
23	B1	12	P3
24	B2	13	P4
25	GND	39	GND
26	B3	14	P5
27	B4	15	P6
28	B5	16	P7
29	GND	39	GND
30	VDD	5	+5 V
31,32	VDD	6	+5 V

3.2.4 Connections to Sharp LM64C142 (640 x 480 DSTN color LCD)

Table 3-4: Connections to Sharp LM64C142

LM64C142		PCM-9572F CN5	
Pin	**Name**	**Pin**	**Name**
CN1-1	YD	36	FLM
CN1-2	LP	38	LP
CN1-3	XCX	35	SHFCLK
CN1-4	DISP	5	+5 V
CN1-5	VDD	6	+5 V
CN1-6	VSS	3	GND
CN1-7	VEE	—	+27*
CN1-8	DU0	20	P11
CN1-9	DU1	19	P10
CN1-10	DU2	18	P9
CN1-11	DU3	17	P8
CN1-12	DU4	12	P3
CN1-13	DU5	11	P2
CN1-14	DU6	10	P1
CN1-15	DU7	9	P0
CN2-1	VSS	4	GND
CN2-2	DL0	24	P15
CN2-3	DL1	23	P14
CN2-4	DL2	22	P13
CN2-5	DL3	21	P12
CN2-6	DL4	16	P7
CN2-7	DL5	15	P6
CN2-8	DL6	14	P5
CN2-9	DL7	13	P4
CN2-10	VSS	8	GND

3.2.5 Connections to Toshiba LTM12C275A (800 x 600 TFT color LCD)

Table 3-5: Connections to Toshiba LTM12C2775A

LTM12C275A Pin	Name	PCM-9572F CN5 Pin	Name
1	GND	3	GND
2	NCLK	35	SHFCLK
3	NC	-	NC
4	NC	-	NC
5	GND	4	GND
6	R0	27	P18
7	R1	28	P19
8	R2	29	P20
9	R3	30	P21
10	R4	31	P22
11	R5	32	P23
12	GND	8	GND
13	G0	19	P10
14	G1	20	P11
15	G2	21	P12
16	G3	22	P13
17	G4	23	P14
18	G5	24	P15
19	GND	33	GND
20	B0	11	P2
21	B1	12	P3
22	B2	13	P4
23	B3	14	P5
24	B4	15	P6
25	B5	16	P7
26	ENAB	37	M/DE
27	GND	34	GND
28	VCC	5	+5 V
29	VCC	6	+5 V
30	GND	39	GND

3.3 Ethernet software configuration

The PCM-9572F's on-board Ethernet interface supports all major network operating systems. To configure the medium type, to view the current configuration, or to run diagnostics, do the following:

1. Power the PCM-9572F on. Make sure that the RSET8139.EXE file is located in the working drive.
2. At the prompt, type RSET8139.EXE and press <Enter>. The Ethernet configuration program will then be displayed.
3. This simple screen shows all the available options for the Ethernet interface. Just highlight the option you wish to change by using the Up and Down keys. To change a selected item, press <Enter>, and a screen will appear with the available options. Highlight your option and press <Enter>. Each highlighted option has a helpful message guide displayed at the bottom of the screen for additional information.
4. After you have made your selections and are sure this is the configuration you want, press ESC. A prompt will appear asking if you want to save the configuration. Press Y if you want to save.

The Ethernet Setup Menu also offers three very useful diagnostic functions. These are:

1. Run EEPROM Test
2. Run Diagnostics on Board
3. Run Diagnostics on Network

Each option has its own display screen that shows the format and result of any diagnostic tests undertaken.

Note: For Ethernet installation, please see Chapter 8.

CHAPTER 4

Award BIOS Setup

This chapter describes how to set BIOS configuration data.

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 don't 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-9572F's 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 <Del> immediately. This will allow you to enter Setup.

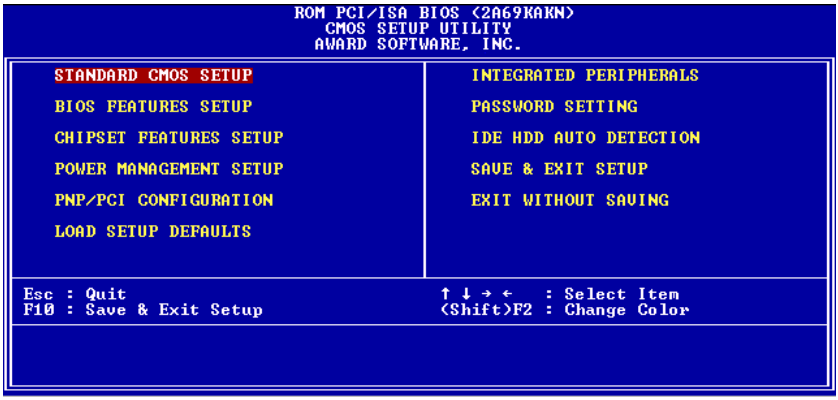


Figure 4-1: Setup program initial screen

4.2.2 Standard CMOS setup

When you choose the STANDARD CMOS SETUP 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.

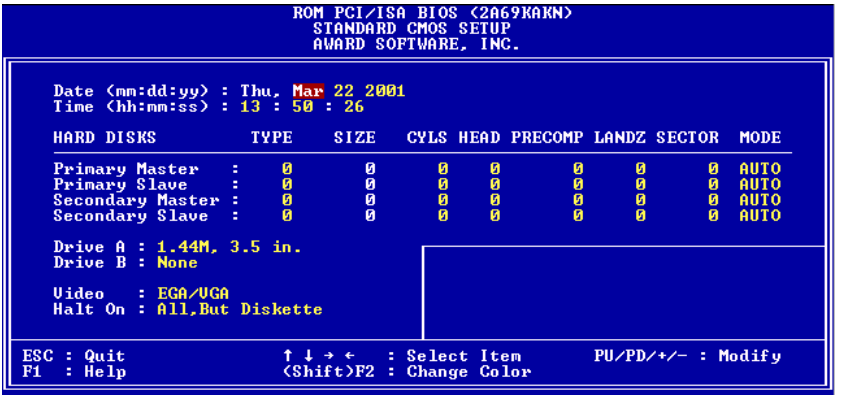


Figure 4-2: CMOS setup screen

4.2.3 BIOS features setup

By choosing the 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-9572F.

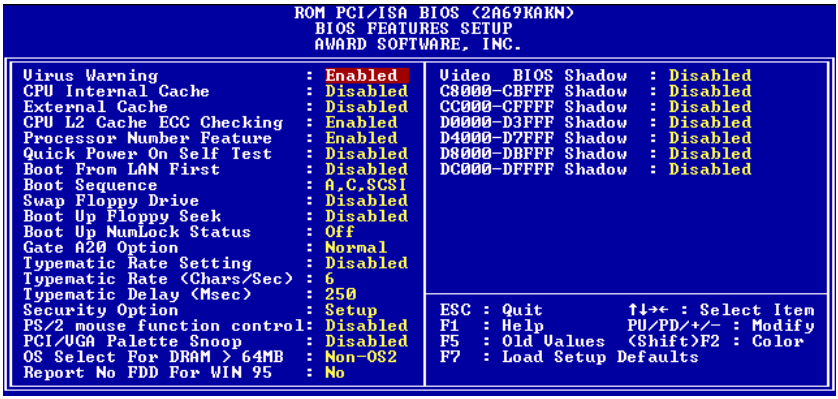


Figure 4-3: BIOS features setup

4.2.4 Chipset features setup

By choosing the CHIPSET 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-9572F.

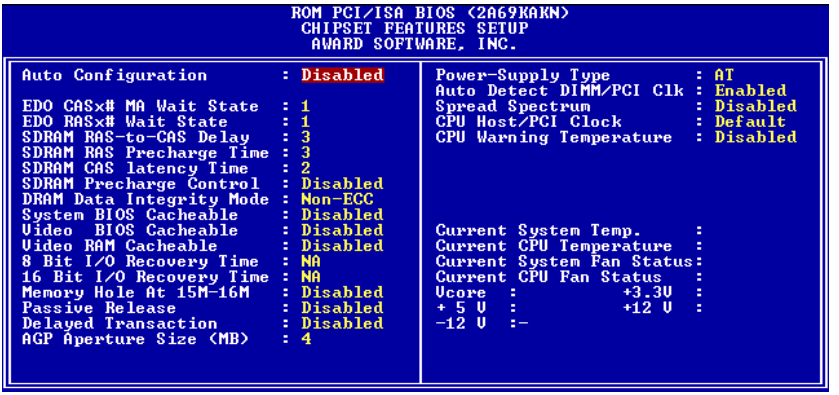


Figure 4-4: Chipset features setup

4.2.5 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-9572F.

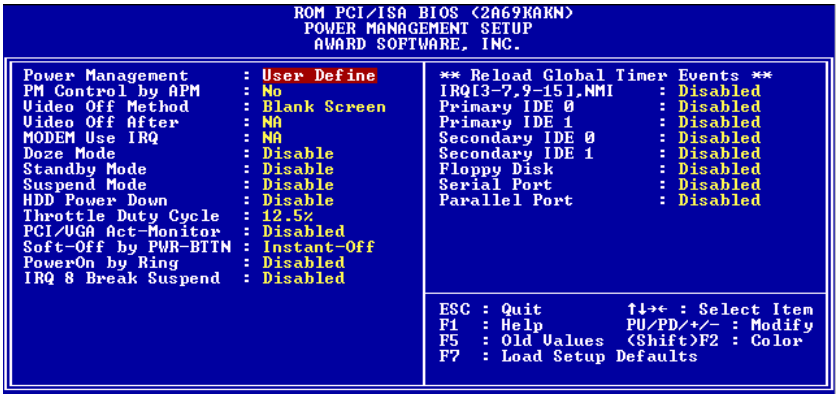


Figure 4-5: Power management setup

4.2.6 PnP/PCI configuration

By choosing the PnP/PCI CONFIGURATION option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the PCM-9572F.

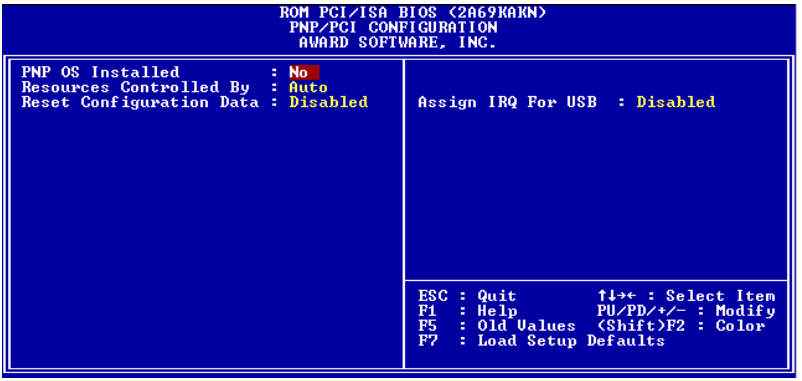


Figure 4-6: PnP/PCI configuration

4.2.7 Integrated peripherals

By choosing the INTEGRATED PERIPHERALS option from the INITIAL SETUP SCREEN menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the PCM-9572F. The PANEL TYPE by default supports an 18-bit 640 x 480 TFT LCD panel display.

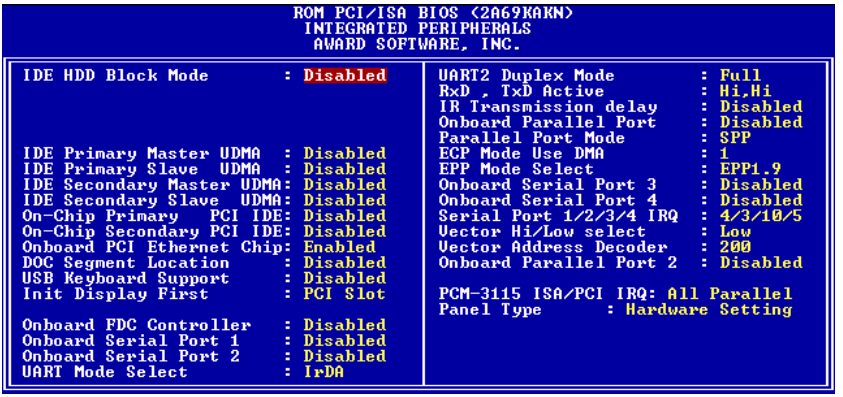


Figure 4-7: Integrated peripherals

4.2.8 Load BIOS defaults

LOAD BIOS DEFAULTS loads the default system values directly from ROM. If the stored record created by the Setup program becomes corrupted (and therefore unusable), these defaults will load automatically when you turn the PCM-9572F on.

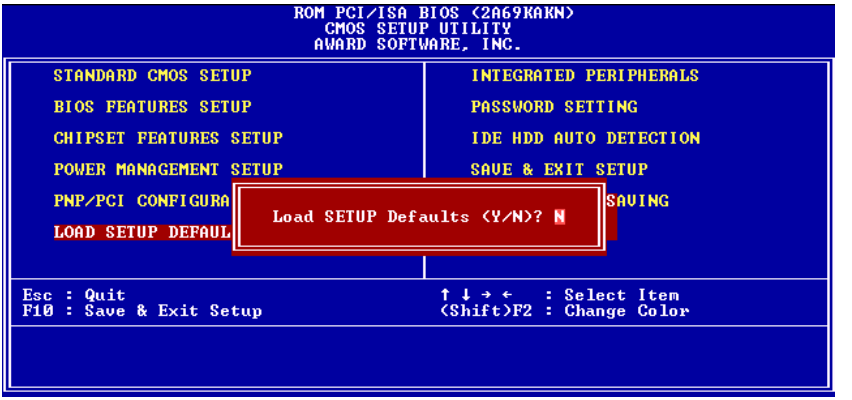


Figure 4-8: Load BIOS defaults

4.2.9 Change password

To change the password, choose the PASSWORD SETTING option form the Setup main menu and press <Enter>.

1. If the CMOS is bad or this option has never been used, a default password is stored in the ROM. The screen will display the following messages:

   Enter Password:

   Press <Enter>.

2. If the CMOS is good or this option has been used to change the default password, the user is asked for the password stored in the CMOS. The screen will display the following message:

   Confirm Password:

   Enter the current password and press <Enter>.

3. After pressing <Enter> (ROM password) or the current password (user-defined), you can change the password stored in the CMOS. The password can be at most eight (8) characters long.

Remember - to enable this feature, you must first select either Setup or System in the BIOS FEATURES SETUP.

4.2.10 Auto detect hard disk

The IDE HDD AUTO DETECTION utility can automatically detect the IDE hard disk installed in your system. You can use it to self-detect and/or correct the hard disk type configuration.

4.2.11 Save & exit setup

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

4.2.12 Exit without saving

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

CHAPTER 5

PCI SVGA Setup

- Introduction
- Installation of SVGA Driver
  - for Windows 95/98/ME
  - for Windows NT/2000
- Further Information

5.1 Introduction

The PCM-9572F has an onboard AGP flat panel/VGA interface. The specifications and features are described as follows:

5.1.1 Chipset

The PCM-9572F uses a LynxEM SMI 710/721 chipset from Silicon Motion Inc. for its AGP/SVGA controller. It supports many popular LCD, EL, and gas plasma flat panel displays and conventional analog CRT monitors. The SMI 710 VGA BIOS supports monochrome LCD, EL, color TFT and STN 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

With onboard 4/8 MB display memory, the VGA controller can drive CRT displays or color panel displays with resolutions up to 1024 x 768 at 16 M colors.

5.1.3 Display types

CRT and panel displays can be used simultaneously. The PCM-9572F 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 Silicon Motion Inc. or our sales representative for detailed information.

5.1.4 Dual/simultaneous display

The PCM-9572F uses a SMI Lynx 710/721 LCD controller that is capable of providing multiple views and simultaneous display with mixed video and graphics on a flat panel and CRT.

To set up dual display under Windows 98, Windows ME, Windows NT, follow these steps:

1. Select “Windows98”, “Control panel”, “Display”, “Settings”.
2. Select “1” for current display, or “2” for second display.
3. Enable “Extend my Windows desktop onto this monitor”.
4. Click “OK”.

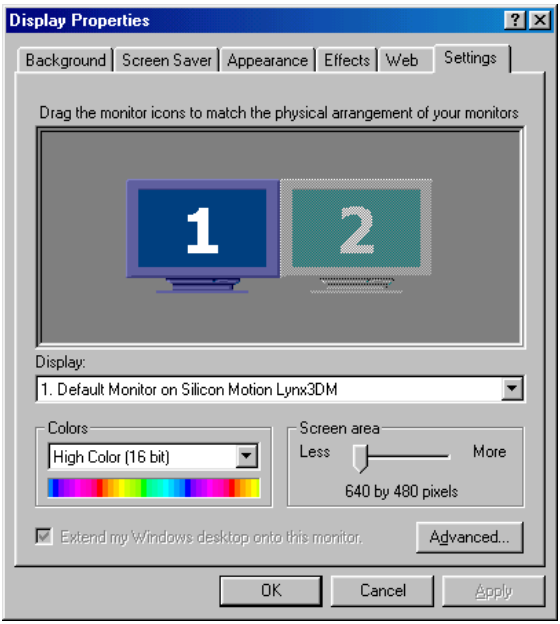


Figure 5-1: Selecting display settings

5.2 Installation of 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 you are using within your PCM-9572F.

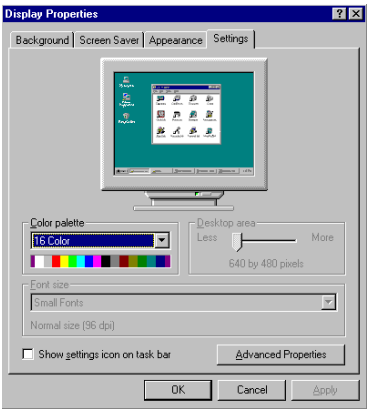
Important: The following windows illustrations are examples only. You must follow the flow chart instructions and pay attention to the instructions which then appear on your screen.

Note 1: The CD-ROM drive is designated as "D" throughout this chapter.

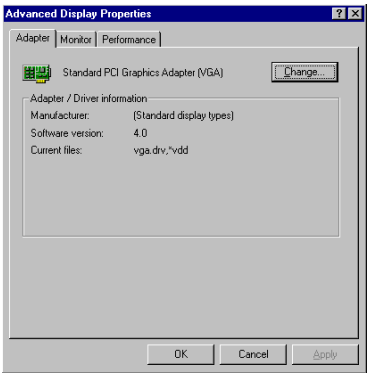
Note 2: <Enter> means pressing the "Enter" key on the keyboard.

5.2.1 Installation for Windows 95

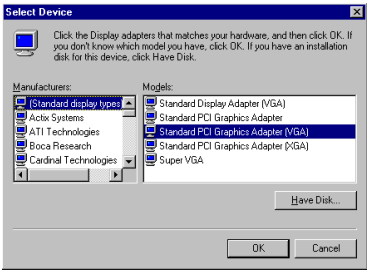
1. a. Select "Start", "Settings", "Control Panel", "Display", "Settings".
   b. Press the "Advanced Properties".

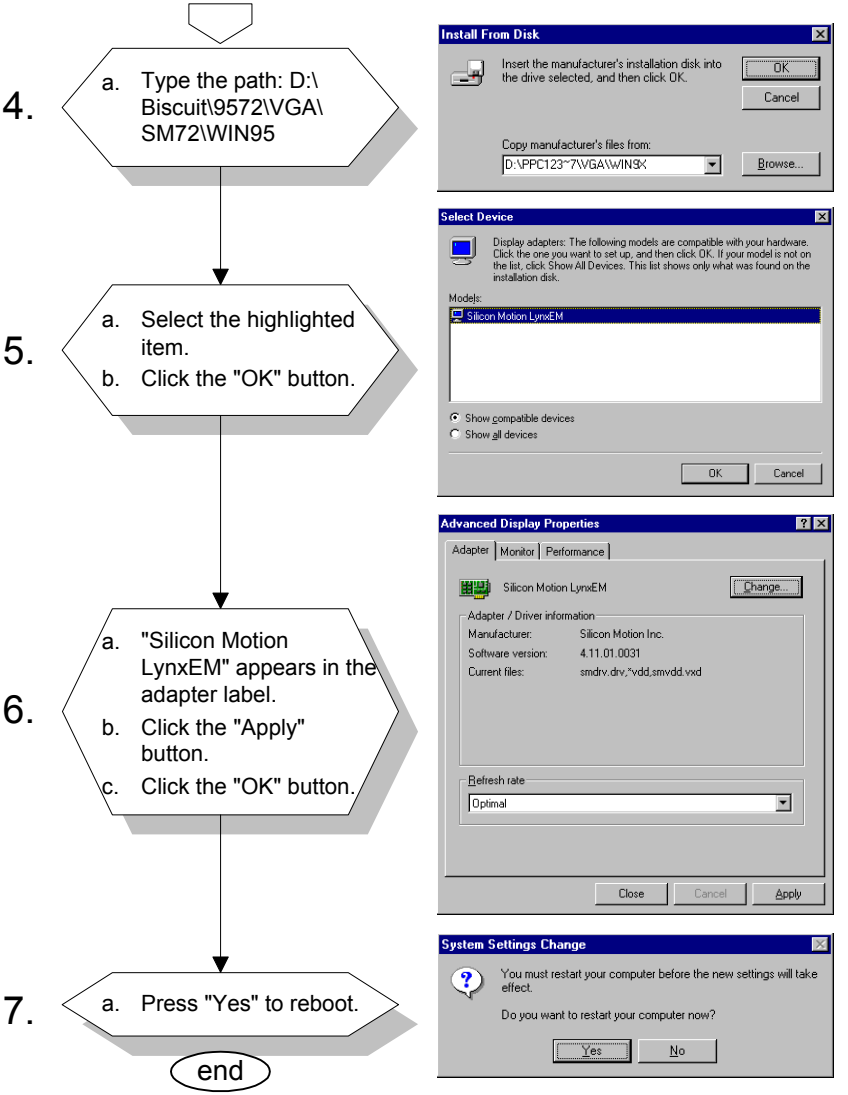


2. a. Choose the "Adapter" label.
   b. Press the "Change..." button.

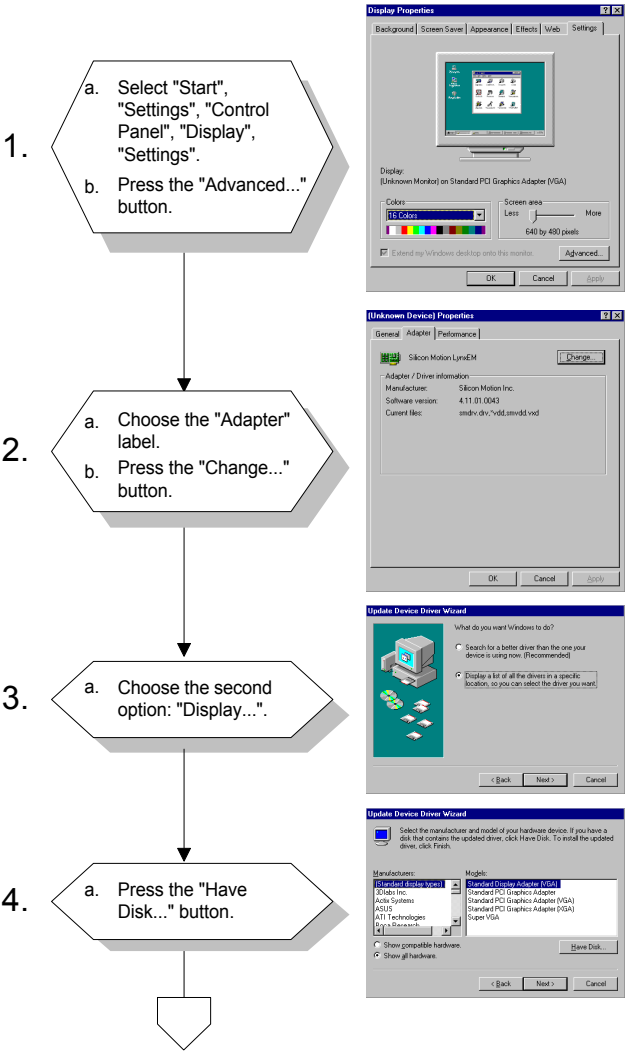


3. a. Press the "Have Disk" button.



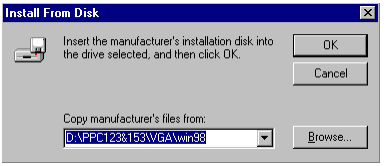

4.
a. Type the path: D:\ Biscuit\9572\VGA\ SM72\WIN95
Install From Disk
Insert the manufacturer's installation disk into the drive selected, and then click OK.
OK
Cancel
Copy manufacturer's files from:
D:\PPC123~7\VGA\WIN9X
Browse...
5.
a. Select the highlighted item.
b. Click the "OK" button.
Select Device
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.
Models:
Silicon Motion LynxEM
Show compatible devices
Show all devices
OK
Cancel
6.
a. "Silicon Motion LynxEM" appears in the adapter label.
b. Click the "Apply" button.
c. Click the "OK" button.
Advanced Display Properties
Adapter
Monitor
Performance
Silicon Motion LynxEM
Change...
Adapter / Driver information
Manufacturer: Silicon Motion Inc.
Software version: 4.11.01.0031
Current files: smdrv.drv,*vdd,smvdd.vxd
Refresh rate
Optimal
Close
Cancel
Apply
7.
a. Press "Yes" to reboot.
System Settings Change
You must restart your computer before the new settings will take effect.
Do you want to restart your computer now?
Yes
No
end

5.2.2 Installation for Windows 98/ME



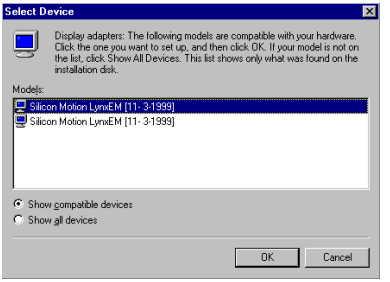
5.

a. Insert the disc into the CD-ROM drive.
b. Type the path "D:\Biscuit\9572\VGA\Win98&ME"
c. Press "OK".



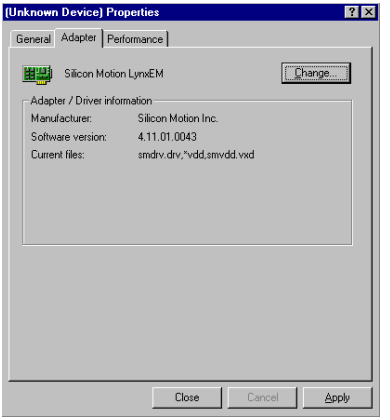
6.

a. Select the highlighted item.
b. Click the "OK" button.



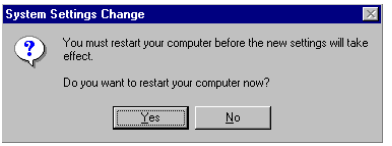
7.

a. "Silicon Motion LynxEM" appears in the adapter label.
b. Click the "Apply" button.



8.

a. Press "Yes" to reboot.



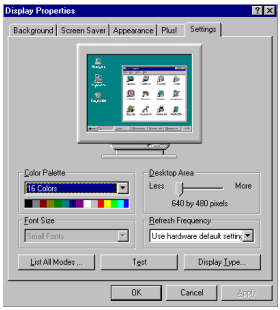
end

5.2.3 Installation for Windows NT/2000

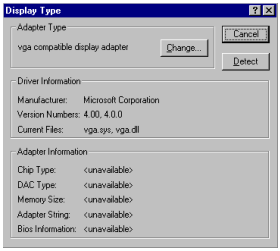
Note: *Service Pack X (X = 3, 4, 5, 6, ...) must be installed first before you install the Windows NT VGA driver.*

1. a. Select "Start", "Settings", "Control Panel".
   b. Double click the "Display" icon.

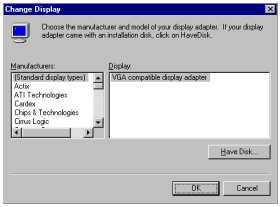
2. a. Choose the "Settings" label.
   b. Press the "Display Type" button.

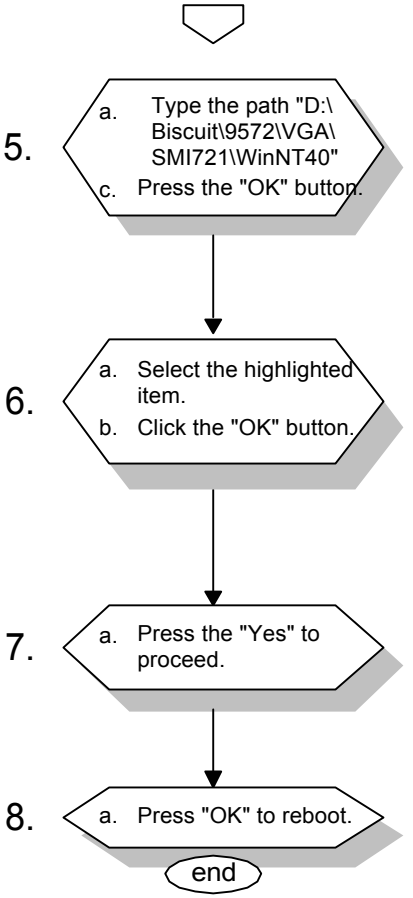


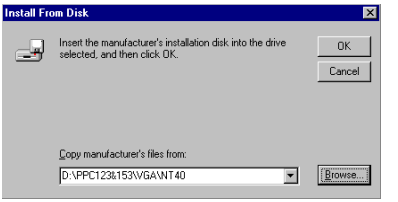
3. a. Press the "Change..." button.

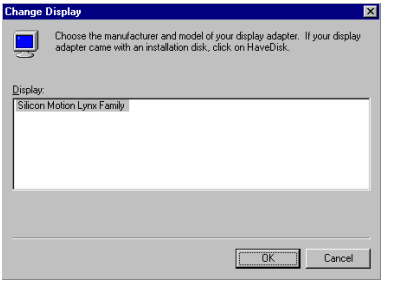


4. a. Click the "Have Disk..." button.

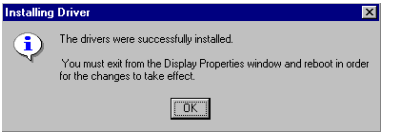



5.
a. Type the path "D:\ Biscuit\9572\VGA\ SMI721\WinNT40"
c. Press the "OK" button.
6.
a. Select the highlighted item.
b. Click the "OK" button.
7.
a. Press the "Yes" to proceed.
8.
a. Press "OK" to reboot.
end


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:\PPC123&153\VGA\NT40
Browse...


Change Display
Choose the manufacturer and model of your display adapter. If your display adapter came with an installation disk, click on HaveDisk.
Display:
Silicon Motion Lynx Family
OK
Cancel


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
No


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

5.3 Further Information

For further information about the AGP/SVGA installation in your PCM-9572F, including driver updates, troubleshooting guides and FAQ lists, visit the following web resources:

Silicon Motion Website: **www.siliconmotion.com**

CHAPTER 6

Audio

- Introduction
- Installation of audio driver for Windows 95/98/NT

6.1 Introduction

The PCM-9592F on-board audio interface provides high-quality stereo sound and FM music synthesis (ESFM) by using the ES1373 audio controller from Creative Technology Ltd. The audio interface can record, compress, and play back voice, sound, and music with a built-in mixer control. The PCM-9572F's on-board audio interface also supports the Plug and Play (PnP) standard and provides PnP configuration for audio, FM, and MPU-104 logical devices. It is compatible with AC97 version 2.0, voice, and music functions. The ESFM synthesizer is register compatible with the OPL3 and has extended capabilities.

6.2 Installation of audio driver

Before installing the audio driver, please take note of the procedures detailed below. You must know which operating system you are using in your PCM-9572F, and then refer to the corresponding installation flow chart. Just follow the steps in the flow chart. You can quickly and successfully complete the installation, even though you are not familiar with instructions for Windows.

Note: The CD-ROM drive is designated as "D" throughout this chapter.

Note: The PCM-9572F Audio driver is the same as PCM-9574. Users can reference it on the CD.

Note: 1. In step 1, for Windows 98, the path is:

'D:/Biscuit/9572F(9574)/audio/Win98/setup.exe.

2. In step 1 for Windows 2000, the path is:

D:/Biscuit/9572F(9574)/audio/win2k/setup.exe.

3. In step 1, for Windows NT, the path is:

D:/Biscuit/9572F(9574)/audio/winnt/setup.exe.

6.2.1 Installation for Windows 95/98/NT

1. a. Select "Start", "Run"

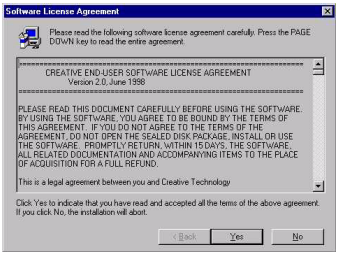
   b. Type the correct path"

   D:\Biscuit\9572F\Audio\Win95\

   c. Click the "OK" button

2. a. Click "Yes" to accept the agreement

   b. On the next page, read the Readme file then click "Next"



3. a. Click "Next" to continue

   b. Follow the procedure which appears on your screen

4. After installation, select "Yes" and click "Finish" to restart the computer

CHAPTER 7

PCI Bus Ethernet Interface

This chapter provides information on Ethernet configuration.

- Introduction
- Installation of Ethernet driver for Windows 95/98/NT
- Further information

7.1 Introduction

The PCA-9572F 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 100Base-T and 10Base-T compatible. The medium type can be configured via the RSET8139.exe program included on the utility disk.

The Ethernet port provides a standard RJ-45 jack via an optional wiring kit. 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.

7.2 Installation of Ethernet driver

Before installing the Ethernet driver, note the procedures below. You must know which operating system you are using in your PCA-9572F, 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. You must follow the flow chart instructions and pay attention to the instructions which then appear on your screen.

7.2.1 Installation for MS-DOS and Windows 3.1

If you want to set up your Ethernet connection under the MS-DOS or Windows 3.1 environment, you should first check your server system model. For example, MS-NT, IBM-LAN server, and so on.

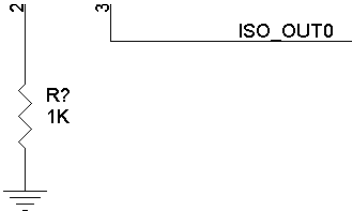
Then choose the correct driver to install in your panel PC.

The installation procedures for various servers can be found on CD-ROM, the correct path being:
D:\Biscuit\9550F\LAN\8139C\wfw311

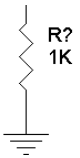
7.2.2 Installation for Windows 95/98

1.a. Select “Start”, “Settings”, “Control Panel”

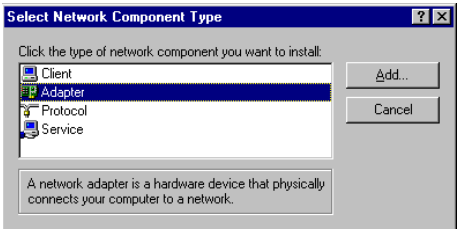
b. Double click “Network”



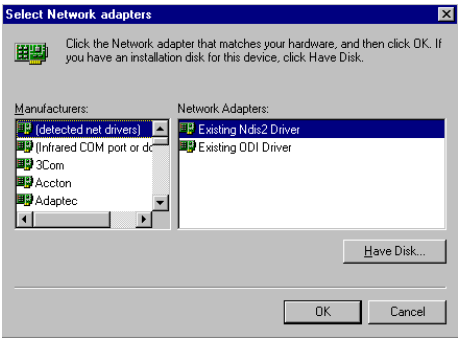
2. Click "Add" and prepare to install network functions



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



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



5.a. Insert the Utility CD ROM

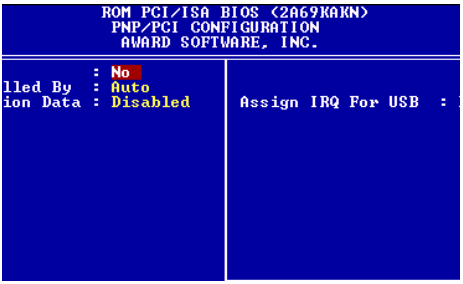
b. Fill in the correct path

D:\Biscuit\9572F\LAN\8139C\WIN98

c. Click "OK"

6.a. Choose the "Realtek RTL8139(A/B/C/8130) PCI Fast Ethernet".

b. Click "OK"



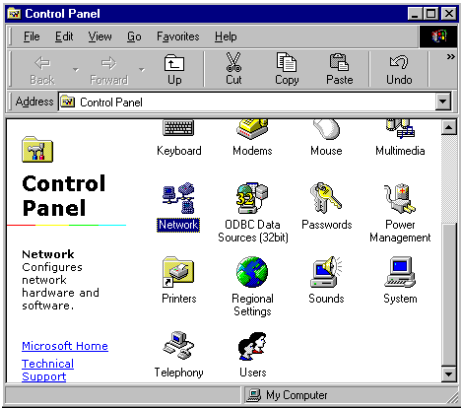
7.a. Make sure the configurations of the relative items are set correctly.

b. Click "OK" to reboot.

7.2.3 Installation for Windows NT

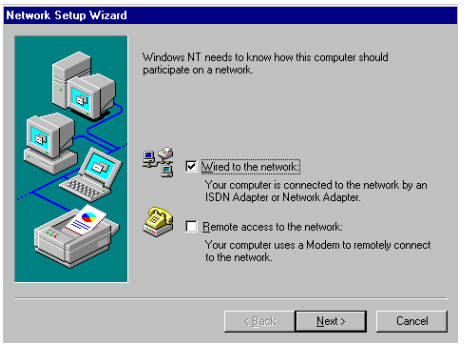
1.a. Select “Start”, “Settings”, “Control Panel”

b. Double click “Network”

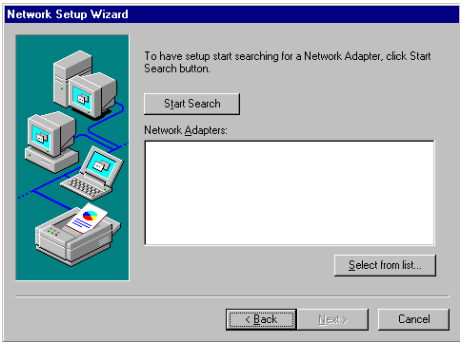


2.a. Choose the type of network

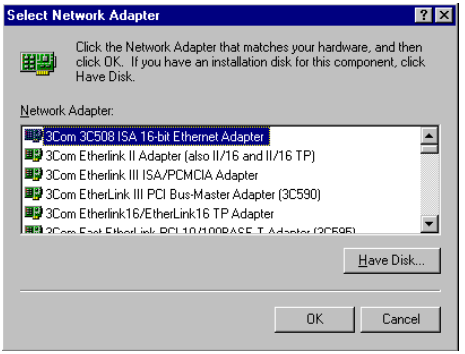
b. Click "next"



3. Click "Select from list..."



4. Click "Have Disk"

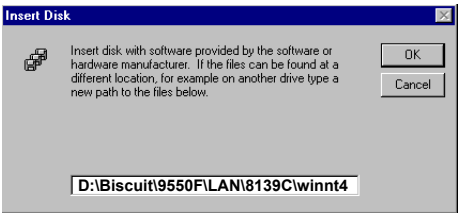


5.a. Insert the Utility CD ROM

b. Fill in the correct path

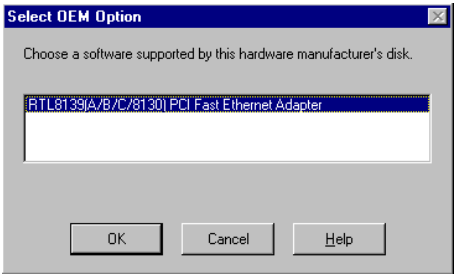
D:\Biscuit\9572F\LAN\8139C\winnt4

c. Click "OK"

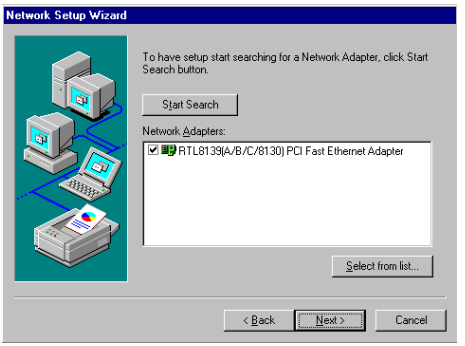


6.a. Choose the highlighted item

b. Click "OK"

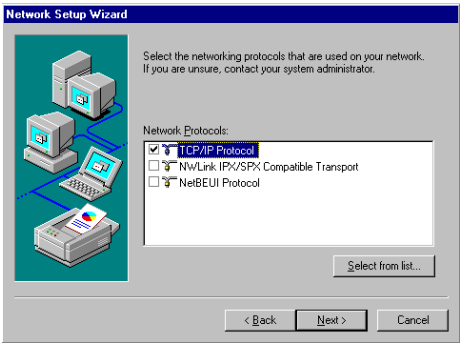


7. Click "Next" to continue setup



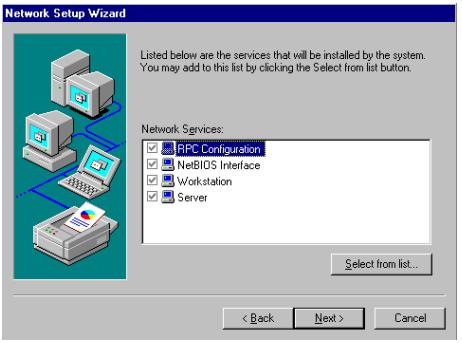
8.a. Choose the networking protocols

b. Click "Next"

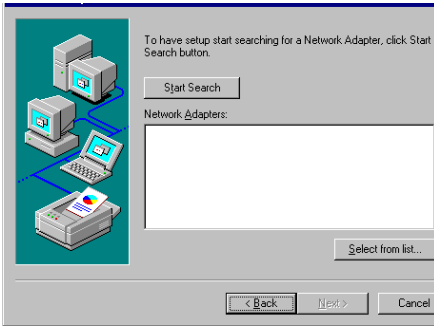


9.a. Choose the Network Services

b. Click "Next"



10. Click "Next" to continue setup



11. Click "Next" to start the network

7.3 Further information

Realtek website: **www.realtek.com.tw**

Intel website: **www.intel.com**

APPENDIX A

Programming the Watchdog Timer

The PCM-9572F 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.

A.1 Programming the watchdog timer

In order to program the watchdog timer, you must write a program which writes I/O port address 443 (hex). The output data is a value of time interval. The value range is from 01 (hex) to 3E (hex), and the related time interval is 1 sec. to 62 sec.

Data	Time Interval
01	1 sec.
02	2 sec.
03	3 sec.
04	4 sec.
	.
	.
	.
3E	62 sec.

After data entry, your program must refresh the watchdog timer by rewriting the I/O port 443 (hex) while simultaneously setting it. When you want to disable the watchdog timer, your program should read I/O port 443 (hex).

The following example shows how you might program the watchdog timer in BASIC:

```
10      REM Watchdog timer example program
20      OUT &H443, data  REM Start and restart the
        watchdog
30      GOSUB 1000  REM Your application task #1
40      OUT &H443, data  REM Reset the timer
50      GOSUB 2000  REM Your application task #2
60      OUT &H443, data  REM Reset the timer
70      X=INP (&H443)  REM Disable the watchdog
        timer
80      END

1000    REM  Subroutine #1, your application task
  .
  .
  .
1070    RETURN
2000    REM  Subroutine #2, your application task
  .
  .
  .
2090    RETURN
```

APPENDIX B

Installing PC/104-Plus Modules

This appendix gives instructions for installing PC/104- Plus modules.

B.1 Installing PC/104 modules

The PCM-9572F's PC/104 connectors give you the flexibility to attach PC/104+ modules.

Installing these modules on the PCM-9572F is quick and simple. The following steps show how to mount the PC/104+ modules:

1. Remove the PCM-9572F from your system, paying particular attention to the safety instructions already mentioned above.
2. Make any jumper or link changes required to the CPU card now. Once the PC/104+ module is mounted, you may have difficulty in accessing these.
3. Normal PC/104+ modules have male connectors and mount directly onto the main card. (Refer to the diagram on the following page.)
4. Mount the PC/104+ module onto the CPU card by pressing the module firmly but carefully onto the mounting connectors.
5. Secure the PC/104+ module onto the CPU card using the four mounting spacers and screws.

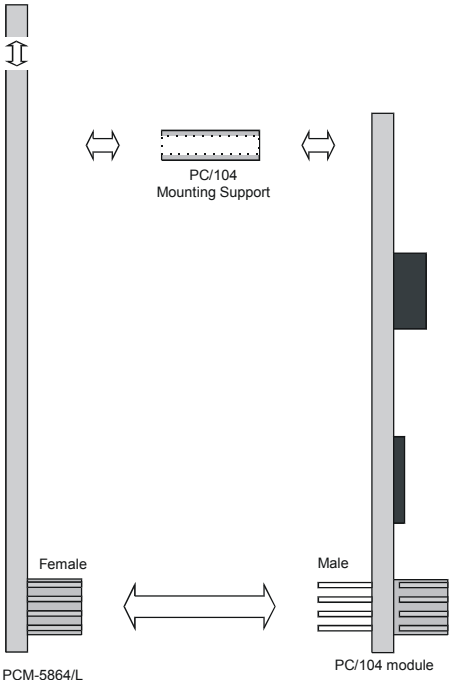


Figure B-1: PC/104+ module mounting diagram

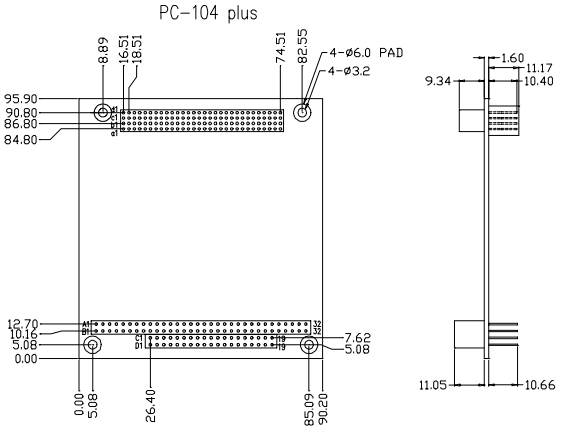


Figure B-2: PC/104+ module dimensions (mm) (±0.1)

APPENDIX C

Pin Assignments

This appendix contains information of a detailed or specialized nature. It includes:

- CPU fan power connector
- System fan power connector
- Ethernet 10/100Base-T connector
- Audio connector
- CD audio input connector
- Main power connector
- Keyboard and PS/2 mouse connector
- Floppy disk drive connector
- PC/104 connectors
- IDE (1st and 2nd) HDD connector
- Parallel port connector (LPT1, LPT 2)
- Front panel connector
- USB connector
- Backlight connector
- IR connector
- CRT display connector
- Video-out connector
- Flat panel connector
- Ext. flat panel connector
- LCD signal mapping
- Peripheral power connector
- 8 digital I/O
- 2 digital outputs
- COM port connector
- CompactFlash card connector
- ATX power feature connector

C.1 CPU fan power connector (FAN1)

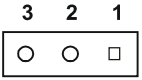


Table C-1: CPU fan power connector (CN24)

Pin	Signal
1	GND
2	+ 5 V
3	Sensor signal

C.2 System fan power connector (FAN2)

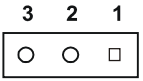


Table C-2: System fan power connector (FAN2)

Pin	Signal
1	GND
2	VCC (+5 V)
3	Sensor signal

C.3 Ethernet 10/100Base-T connector (CN8)

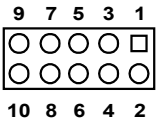


Table C-3: Ethernet 10/100Base-T connector (CN8)

Pin	Signal
1	V_{cc}
2	CRS LED
3	RCV+
4	RCV-
5	BNC LED
6	GND
7	N/C
8	GND
9	XMT+
10	XMT-

C.4 Audio connector (CN9)

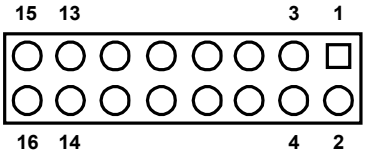


Table C-4: Audio connector (CN9)

Pin	Signal	Pin	Signal
1	SPEAKER OUT R+	2	SPEAKER OUT R-
3	SPEAKER OUT L+	4	SPEAKER OUT L-
5	LINE OUT R	6	LINE OUT L
7	GND	8	GND
9	LINE IN R	10	LINE IN L
11	GND	12	GND
13	NC	14	NC
15	MIC IN	16	GND

C.5 CD audio input connector (CN10)

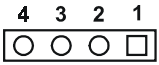


Table C-5: Aux line-in connector (CN11)

Pin	**Signal**
1	CD Audio L
2	GND
3	GND
4	CD Audio R

C.6 Main power connector (CN1)

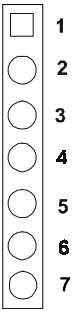


Table C-6: Main power connector (CN1)

Pin	
1	+5 V
2	GND
3	GND
4	+12 V
5	N.C.
6	GND
7	+5 V

C.7 Keyboard and PS/2 mouse connector (CN22)

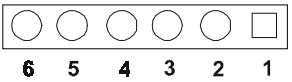


Table C-7: Keyboard and mouse connector (CN22)

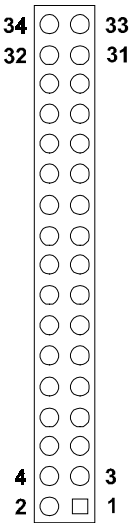
Pin	Signal
1	KB CLOCK
2	KB DATA
3	MS CLOCK
4	GND
5	+5V (KB VCC)
6	MS DATA

C.8 Floppy disk drive connector (CN11)

Table C-8: Floppy disk drive connector (CN11)

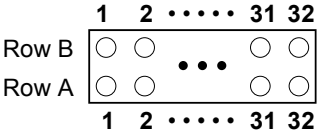
Pin	Signal	Pin	Signal
1	GND	2	DENSITY SELECT*
3	GND	4	N/C
5	GND	6	DRIVE TYPE
7	GND	8	INDEX*
9	GND	10	MOTOR 0*
11	GND	12	DRIVE SELECT 1*
13	GND	14	DRIVE SELECT 0*
14	GND	16	MOTOR 1*
17	GND	18	DIRECTION*
19	GND	20	STEP*
21	GND	22	WRITE DATA*
23	GND	24	WRITE GATE*
25	GND	26	TRACK 0*
27	GND	28	WRITE PROTECT*
29	GND	30	READ DATA*
31	GND	32	HEAD SELECT*
33	GND	34	DISK CHANGE*

*low active



C.9 PC/104+ connectors (CN25)

CN25 (ISA bus long side)



CN25 (ISA bus short side)

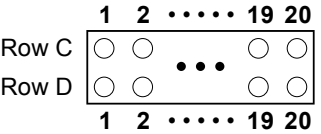
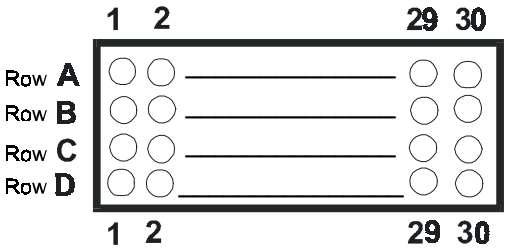


Table C-9: PC/104+ connectors (CN25)

Pin Number	Signal (CN25) RowA	RowB	Signal (CN25) RowC	RowD
1	IOCHCHK*	GND	GND	GND
2	SD7	RESET	SBHE*	MEMCS16*
3	SD6	+5 V	LA23	IOCS16*
4	SD5	IRQ9	LA22	IRQ10
5	SD4	-5V	LA21	IRQ11
6	SD3	DRQ2	LA20	IRQ12
7	SD2	-12V	LA19	IRQ15
8	SD1	ENDXFR*	LA18	IRQ14
9	SD0	+12V	LA17	DACKO*
10	IOCHRDY	(KEY)	MEMR*	DRQ0
11	AEN	SMEMW*	MEMW*	DACK5*
12	SA19	SMEMR*	SD8	DRQ5
13	SA18	IOW*	SD9	DACK6*
14	SA17	IOR*	SD10	DRQ6
15	SA16	DACK3*	SD11	DACK7*

PC/104+ connectors (cont.)

Pin number	Signal (CN25) RowA	RowB	Signal (CN25) RowC	RowD`
16	SA15	DRQ3	SD12	DRQ7
17	SA14	DACK1*	SD13	+5V
* low active				
18	SA13	DRQ1	SD14	MASTER*
19	SA12	REFRESH*	SD15	0V
20	SA11	SYSCLK	(KEY)	0V
21	SA10	IRQ7	----	----
22	SA9	IRQ6	----	----
23	SA8	IRQ5	----	----
24	SA7	IRQ4	----	----
25	SA6	IRQ3	----	----
26	SA5	DACK2*	----	----
27	SA4	TC	----	----
28	SA3	BALE	----	----
29	SA2	+5V	----	----
30	SA1	OSC	----	----
31	SA0	0V	----	----
32	0V	0V	----	----



CN25: PC/104-Plus connector (PCI bus)

Table C-10: PC/104+ Bus signal assignments (CN25)

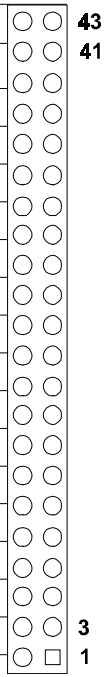
Pin Number	Signal (CN25) RowA	RowB	RowC	Signal (CN25) RowD
1	GND/5V/KEY	RESERVED	+5	AD00
2	VI/O	AD02	AD01	+5V
3	AD05	GND	AD04	AD03
4	C/BE0*	AD07	GND	AD06
5	GND	AD09	AD08	GND
6	AD11	VI/O	AD10	M66EN
7	AD14	AD13	GND	AD12
8	+3.3V	C/BE1*	AD15	+3.3V
9	SERR*	GND	SB0*	PAR
10	GND	PERR*	+3.3V	SDONE
11	STOP*	+3.3V	LOCK*	GND
12	+3.3V	TRDY*	GND	DEVSEL*
13	FRAME*	GND	IRDY*	+3.3V
14	GND	AD16	+3.3V	C/BE2*
15	AD18	+3.3V	AD17	GND
16	AD21	AD20	GND	AD19
17	+3.3V	AD23	AD22	+3.3V
18	IDSELO	GND	IDSEL1	IDSEL2
19	AD24	C/BE3*	VI/O	IDSEL3
20	GND	AD26	AD25	GND
21	AD29	+5V	AD28	AD27
22	+5V	AD30	GND	AD31
23	REQ0*	GND	REQ1*	VI/O
24	GND	REQ2*	+5V	GNT0*
25	GNT1*	VI/O	GNT2*	GND
26	+5V	CLK0	GND	CLK1
27	CLK2	+5V	CLK3	GND
28	GND	INTD*	+5V	RST*
29	+12V	INTA*	INTB*	INTC*
30	-12V	Reserved	Reserved	GND/3.3V KEY

* low active

C.10 IDE HDD connector (CN16, CN17)

Table C-11: IDE HDD connector (CN16, CN17)

Pin	Signal	Pin	Signal
1	IDE RESET*	2	GND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	SIGNAL GND	20	N/C
21	HDD 0	22	GND
23	IO WRITE	24	GND
25	IO READ	26	GND
27	HD READY	28	N/C
29	HDACK 0*	30	GND
31	IRQ14	32	N/C
33	ADDR 1	34	N/C
35	ADDR 0	36	ADDR 2
37	HARD DISK SELECT 0*	38	HARD DISK SELECT 1*
39	IDE ACTIVE*	40	GND
41	VCC	42	VCC
43	GND	44	N/C



* low active

C.11 Parallel port connector (CN12, CN15)

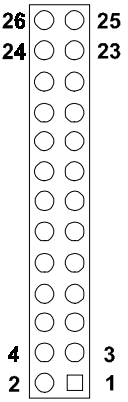


Table C-12: Parallel port connector (CN21, CN22)

Pin	Signal	Pin	Signal
1	STROBE*	2	AUTOFD*
3	D0	4	ERR
5	D1	6	INIT*
7	D2	8	SLCTINI*
9	D3	10	GND
11	D4	12	GND
13	D5	14	GND
15	D6	16	GND
17	D7	18	GND
19	ACK*	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SLCT	26	N/C

* low active

C.12 Front panel connector (CN13)

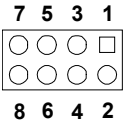


Table C-13: Front panel connector (CN13)

Pin	Signal
1	HDD LED- (HARD DISK ACTIVE)
2	HDD LED+ (V_{cc})
3	SPEAKER+
4	SPEAKER- (GND)
5	GND
6	WATCHDOG OUTPUT*
7	RESET SWITCH- (GND)
8	RESET SWITCH+

* low active

C.13 USB connector (CN23)

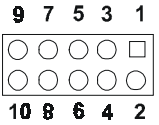


Table C-14: USB connector (CN23)

Pin	Signal	Pin	Signal
1	+5 V	2	+5 V
3	UV-	4	UV-
5	UV+	6	UV+
7	GND	8	GND
9	Chassis GND	10	N/C

C.14 LCD inverter backlight connector (CN7)

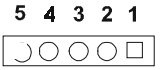


Table C-15: LCD inverter connector (CN7)

Pin	**Signal**
1	+12 V
2	GND
3	ENABKL
4	Reserve (VBR)
5	+ 5 V

C.15 IR connector (CN13)

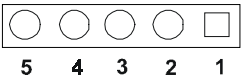


Table C-16: IR connector (CN13)

Pin	Signal
1	V_{cc}
2	FIR REceive
3	IR REceive
4	GND
5	FIR/IR Transmit

C.16 CRT display connector (CN4)

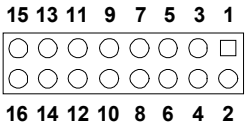


Table C-17: CRT display connector (CN4)

Pin	Signal	Pin	Signal
1	RED	9	VGA G
2	VGA DT	10	VGA H
3	GREEN	11	VGA G
4	VGA G	12	VGA V
5	BLUE	13	VGA G
6	VGA CK	14	N/C
7	N/C	15	VGA G
8	N/C	16	N/C

C.17 TV (Video) out connector (CN26)

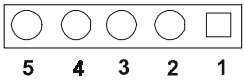


Table C-18: Video in/out connector (CN2)

Pin	Signal
1	Luminance out (brightness)
2	Cromiance out (color)
3	GND
4	GND
5	Composite video out

C.18 1st 24-bit flat panel connector (CN5)

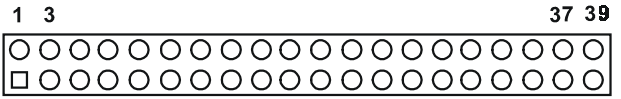


Table C-19: Flat panel display connector (CN5)

Pin	Signal	Pin	Signal
1	VDDSAFE5	2	VDDSAFE5
3	GND	4	GND
5	VDDSAFE3	6	VDDSAFE3
7	Vcon	8	GND
9	P0	10	P1
11	P2	12	P3
13	P4	14	P5
15	P6	16	P7
17	P8	18	P9
19	P10	20	P11
21	P12	22	P13
23	P14	24	P15
25	P16	26	P17
27	P18	28	P19
29	P20	30	P21
31	P22	32	P23
33	GND	34	GND
35	SHFCLK	36	FLM
37	M/DE	38	LP
39	ENABKL	40	ENAVEE

Note: The model number of the CN5 socket is DF13A-40DP-1.25V (Hirose Electric Co., Ltd.)

C.19 Extended flat panel 2nd 24-bit LCD display connector (CN27)

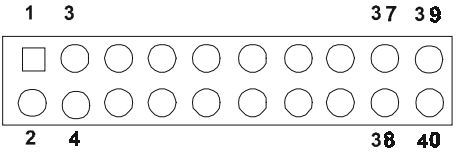


Table C-20: Flat panel display connector (CN3)

Pin	Signal	Pin	Signal
1	VDDSAFE5	2	VDDSAFE5
3	GND	4	GND
5	VDDSAFE3	6	VDDSAFE3
7	Vcon	8	GND
9	P24	10	P25
11	P26	12	P27
13	P28	14	P29
15	P30	16	P31
17	P32	18	P33
19	P34	20	P35
21	P36	22	P37
23	P38	24	P39
25	P40	26	P41
27	P42	28	P43
29	P44	30	P45
31	P46	32	P47
33	GND	34	GND
35	SHFCLK	36	FLM
37	M/DE	38	LP
39	ENABKL	40	ENAVEE

Note: The model number of the CN27 socket is DF13A-20DP-1.25V (Hirose Electric Co., Ltd.)

C.20 LCD signal mapping

Table C-21: LCD signal mapping

Pin Name	LCD				
	16-bit DSTN	18-bit TFT	24-bit TFT	36-bit TFT	48-bit TFT
PD0	LD0	B0	B0	BA0	BA0
PD1	LD1	B1	B1	BA1	BA1
PD2	LD2	B2	B2	BA2	BA2
PD3	LD3	B3	B3	BA3	BA3
PD4	LD4	B4	B4	BB0	BB0
PD5	LD5	B5	B5	BB1	BB1
PD6	LD6	N/A	B6	BB2	BB2
PD7	LD7	N/A	B7	BB3	BB3
PD8	N/A	G0	G0	GA0	GA0
PD9	N/A	G1	G1	GA1	GA1
PD10	N/A	G2	G2	GA2	GA2
PD11	N/A	G3	G3	GA3	GA3
PD12	UD0	G4	G4	GB0	GB0
PD13	UD1	G5	G5	GB1	GB1
PD14	UD2	N/A	G6	GB2	GB2
PD15	UD3	N/A	G7	GB3	GB3
PD16	UD4	R0	R0	RA0	RA0
PD17	UD5	R1	R1	RA1	RA1
PD18	UD6	R2	R2	RA2	RA2
PD19	UD7	R3	R3	RA3	RA3
PD20		R4	R4	RB0	RB0
PD21		R5	R5	RB1	RB1
PD22			R6	RB2	RB2
PD23			R7	RB3	RB3
PD24				BA4	BA4
PD25				BA5	BA5
PD26				BB4	BB4
PD27				BB5	BB5
PD28				GA4	GA4
PD29				GA5	GA5
PD30				GB4	GB4
PD31				GB5	GB5
PD32				RA4	RA4
PD33				RA5	RA5
PD34				RB4	RB4
PD35				RB5	RB5
PD36					BA6
PD37					BA7
PD38					BB6
PD39					BB7
PD40					GA6
PD41					GA7
PD42					GB6
PD43					GB7
PD44					RA6
PD45					RA7
PD46					RB6
PD47					RB7

C.21 Peripheral power connector (CN3)

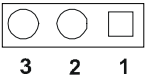


Table C-22: Peripheral power connector (CN3)

Pin	Function
1	-5 V
2	GND
3	-12 V

C.22 Digital I/O (CN21)

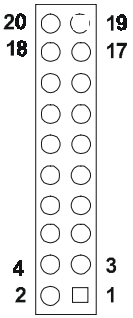


Table C-23: Digital I/O (CN21)

Pin	Pin
1 DO0	2 DO1
3 DO2	4 DO3
5 DO4	6 DO5
7 DO6	8 DO7
9 GND	10 GND
11 DI0	12 DI1
13 DI2	14 DI3
15 DI4	16 DI5
17 DI6	18 DI7
19 GND	20 GND

C.23 Isolated 2 Digital Out (CN20)

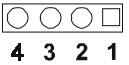


Table C-24: Isolated Digital Out (CN20)

Pin	Pin
1. VIO0	3. VIO1
2. DO0	4. DO1

C.24 COM port connector (CN14)

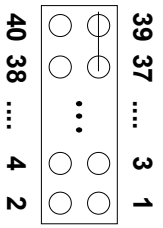


Table C-25: COM port connector (CN14)

Pin	Signal	Pin	Signal
1	RLSD1	2	DSR1
3	RX1	4	RTS1
5	TX1	6	CTS1
7	DTR1	8	RI1
9	GND	10	NC
11	RLSD2	12	DSR2
13	RX2	14	RTS2
15	TX2	16	CTS2
17	DTR2	18	RI2
19	GND	20	NC

21	RLSD3	22	DSR3
23	RX3	24	RTS3
25	TX3	26	CTS3
27	DTR3	28	RI3
29	GND	30	NC
31	RLSD4	32	DSR4
33	RX4	34	RTS4
35	TX4	36	CTS4
37	DTR4	38	RI4
39	GND	40	NC

C.25 CompactFlash™ card connector (CN18)

Table C-26: CompactFlash Card Connector (CN18)

Pin	Signal	Pin	Signal
1	GND	2	D03
3	D04	4	D05
5	D06	6	D07
7	*CS0	8	A10
9	*ATA SEL	10	A09
11	A08	12	A07
13	+5 V	14	A06
15	A05	16	A04
17	A03	18	A02
19	A01	20	A00
21	D00	22	D01
23	D02	24	-IOCS16

25	*CD2	26	-CD1
27	D11	28	D12
29	D13	30	D14
31	D15	32	-CS1
33	*VS1	34	-IORD
35	*IOWR	36	-WE
37	INTRQ	38	+5 V
39	*CSEL	40	-VS2
41	*RESER	42	IORDY
43	*INPACK	44	-REG
45	*DASP	46	-PDIAG
47	D08	48	D09
49	D10	50	GND

* low active

C.26 ATX power feature connector (CN2)

Table C-27: ATX power feature connector (CN2)

Pin	Signal
1	5VSB (Stand by voltage)
2	GND
3	PS. ON#

APPENDIX D

System Assignments

This appendix contains information of a detailed or specialized nature. It includes:

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

D.1 System I/O ports

Table D-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
200-207	Reserved (Game I/O)
278-27F	Parallel printer port 2 (LPT 3)
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
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)

D.2 1st MB memory map

Table D-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 occupy about 16 KB)

* E0000 - EFFFF is reserved for BIOS POST

D.3 DMA channel assignments

Table D-3: DMA channel assignments

Channel	Function
0	Available
1	Available (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)

D.4 Interrupt assignments

Table D-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/LPT2
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

APPENDIX E

Optional Extras for the PCM-9572F

E.1 PCM-10586-5V00 cable kit for PCM-9572F

The PCM-9572F require several cables for normal operation. You can make them yourself or purchase an optional cable kit assembly, which includes the following:

PCM-10586-5V00 cable kit for PCM-9572 F			
Part No.	Cable Description	PCM-9572F Connector	Terminating Connector
1701440350	2.5" and 1.8" IDE	CN17	44-pin, 2mm, female IDC (350mm)
1701440500	3.5" IDE	CN16	
1701340603	Dual Floppy, 3.5" and 5.25" (34p)	CN11	34-pin Dual Floppy
1701260250	Parallel Port	CN12/15	25-pin female DSUB
1701100202	Network, 10-Base-T	CN8	RJ45 8-pin modular jack
1701160101	VGA CRT	CN4	2x8 pin header (2mm) 15-pin DSUB
1700000190	Keyboard and PS/2 mouse	CN22	6-pin wafer box
1703030300	Peripheral power (-5V and -12V)	CN3	(3-conductor)
1701400181	COM 1-4 cable	CN14	40-pin, 9-pin male DSUB x4
1700160160	Audio Cable	CN9	F3.5mm 16-pin, five female phone jacks
1703050306	RCA Jack, S-video cable	CN 26	1 x 5 wafer box, S-video RCA Jack

E.2 Optional LCD cables for 9.4" MONO, 10.4" TFT LCD panel (CN14)

Optional LCD cables for 9.4" MONO, 10.4" TFT LCD panel

Part no.	Cable description	Panel type
1700090501	Cable DF9 (2 mm) 50 cm	Toshiba LTM10C042
1700090403	Cable DF9 (2 mm) 40 cm	Sharp LM64183P Sharp LM64P89
1703440151	Wire 30P/44P 15 cm	Toshiba LTM12C275A

Note: The above LCD cable have links via 24-bit LCD cable adaptor (E.6) to connect to PCM-9572F

E.3 Optional USB cable (CN16)

Optional USB cable (2-channel) Part no: 1703100261

E.4 ATX Power Control Cable (CN5)

part no.:1703200100

E.5 Optional PC/104+ to PCI Module

PCM-200-00A1 PC/104+ to PCI Module

E.6 Optional 24 bit LCD cable adaptor

This converts the Hirose “DF20A” type connector to a 20 x 2- pin header. It supports 3.3 V or 5 V via pins 5 and 6.

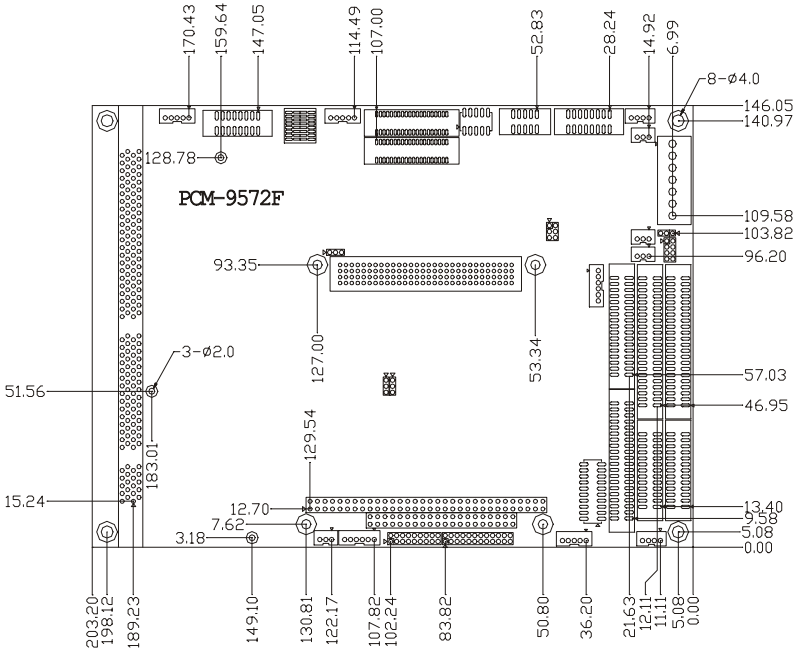
part no: 9681000041 (for 5 V LCD panel)

part no: 9681000040 (for 3.3 V LCD panel)

APPENDIX F

Mechanical Drawings

F.1 Component side



F.2 Solder side