

ICOP-1910/1920

**PC/104 One Slot PCMCIA with Extension
PC/104 Two Slots PCMCIA**

User' s Manual

(Version 2.1)

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Table of Contents

Chapter 0 Startup

0.1	Packing List	1
0.2	Specifications	2
0.3	Component Location	3

Chapter 1 Introduction

1.1	Features	5
1.2	General Specifications	7
1.3	Introduction of ICOP-1910	8
1.4	Introduction of ICOP-1920	9

Chapter 2 Hardware Installation

2.1	Jumper Settings	10
2.1.1	ICOP-1910 /1920	12
2.2	Connectors	13
2.2.1	ICOP-1910	13

Chapter 3 Software Installation

3.1	Introduction	14
3.2	Installing CardSoft for DOS	15
3.3	Installation Guide of CardSoft & FFS	16
3.4	Installing CardWizard for Windows 3.1/3.11	17
3.5	Installing CardWizard-NT for Windows NT	20

Warranty

Chapter 0

Startup

0.1 Packing List

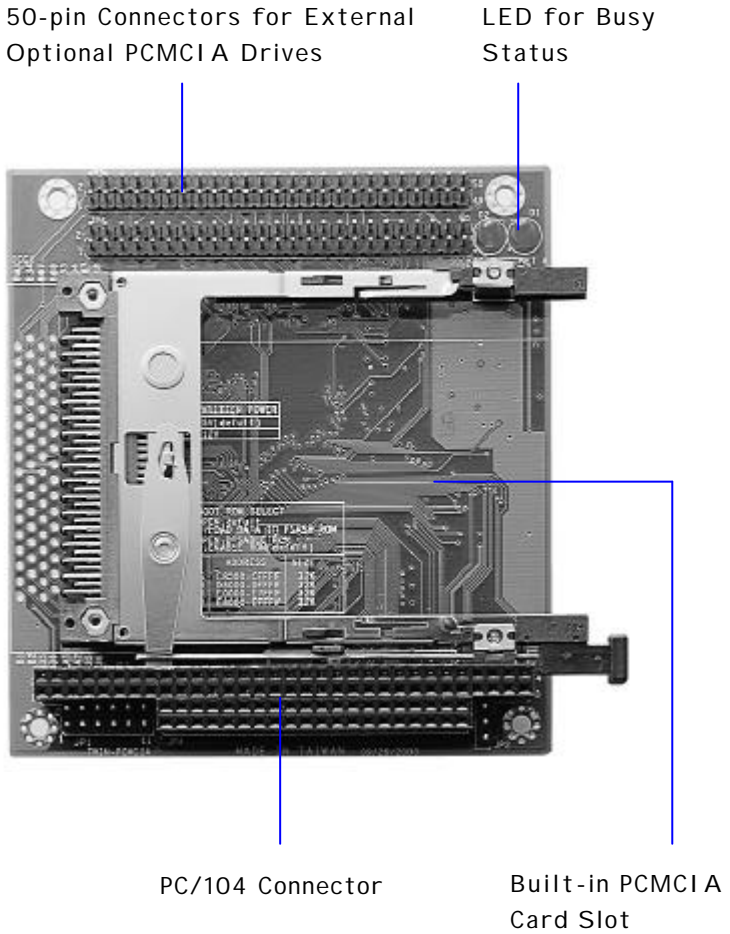
Product Name	Function	Package
ICOP-1910	One Slot PCMCIA with Extension	<ul style="list-style-type: none">● ICOP-1910 PC/104 One Slot PCMCIA Board● Spacer and Screw
ICOP-1920	Two Slots PCMCIA	<ul style="list-style-type: none">● ICOP-1920 PC/104 Two Slots PCMCIA Board● Spacer and Screw

0.2 Specifications

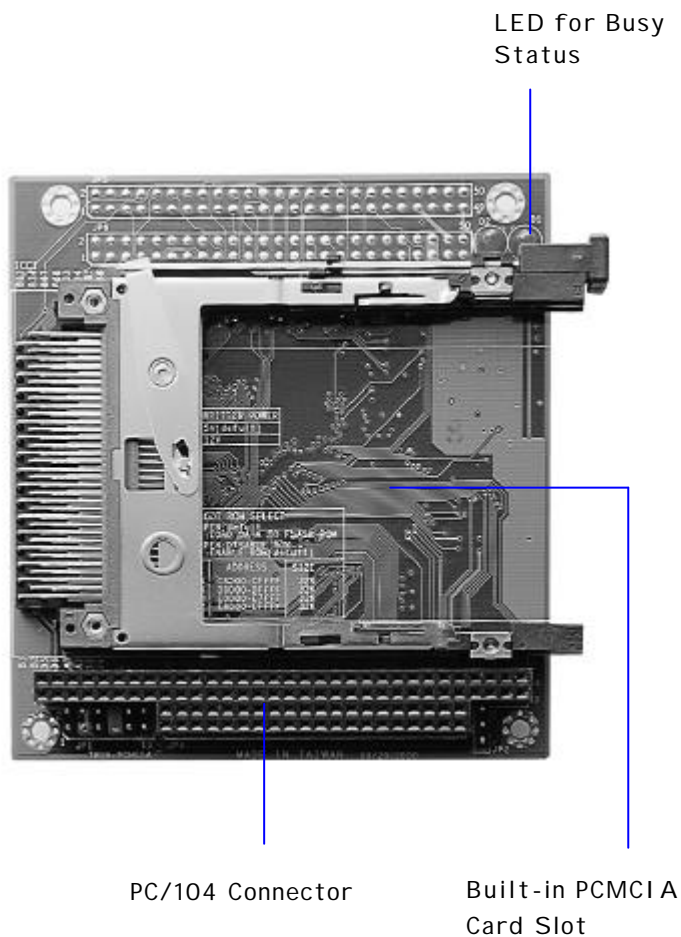
Features	ICOP-1910	ICOP-1920
Chipset	OMEGA 82C772G	
PCMCIA Slot	1	2
PCMCIA Type	I / II / III	
Boot ROM	Yes	
Extension Connector	2	0
Power Requirement	+5V @0.7A	
Board Weight	100 g	
Board Size	90mm X 96 mm	
Operating Temperature	0 ~ +70°C	

0.3 Component Location

ICOP-1910



ICOP-1920



Chapter 1

Introduction

1.1 Features

- OMEGA 82C722G single-chip PCMCIA host adapter
- Complies with PCMCIA 2.1 and JEIDA 4.1
- Cirrus Logic CL-PD6722 and Intel 82365SL-compatible register set. ExCA-compatible. Cirrus Logic CL-PD6722 pin compatible.
- Programmable DMA steering for peripheral cards that require DMA transfer capability
- Write-FIFO for higher performance
- Static design and intelligent power management for lowest power consumption
- Five programmable memory windows and two programmable I/O windows per socket
- Direct connection to ISA bus and PCMCIA socket. ATA disk interface support
- Programmable card access cycle timing
- Dual-socket interface; 208-pin PQFP

General Description

The OMEGA 82C722G is single-chip PCMCIA host adapter device for controlling two PCMCIA sockets. It is optimized for use in small-size computers, where reduced form-factor and low power consumption are critical. The 82C722G also supports desktop computer application requiring a PCMCIA card drive with up to four sockets.

The OMEGA 82C722G supports DMA extensions for peripheral cards (such as sound card and SCSI cards) that require DMA transfer capability for higher performance. The OMEGA 82C722G may be cascaded without the need for additional chips. A built-in transceiver buffer eliminated the need for external TTL glue logic in buffering signals to or from the interface.

The OMEGA 82C722G's energy-efficient mixed-voltage technology can reduce system power consumption by more than 50 percent. It requires no external buffering. Power control logic includes Suspend Mode, which stops the internal clock and Low Power Dynamic Mode, which automatically halts PCMCIA bus transactions, stops distribution of the internal clock, and

powers off non-essential internal circuitry. The OMEGA 82C722G also supports a programmable activity counter to control power consumption in each socket. High performance features include write cache, programmable timing for faster accessing of I/O and memory cards, 8-bit or 16-bit automatic bus sizing, and DMA support.

1.2 General Specifications

System requirements

- PC/AT compatible computer with minimum 640 KB RAM
- MS-DOS 5.0 or newer
- Microsoft Windows 3.0 or newer

Power consumption (typical)

- Voltage: 5 V
- Operating voltage: 350 mA
- Flash voltage: 450 mA

Address Setting

- I/O address: 3E0 - 3E1 Hex
- ROM address: C8000 – CFFFF Hex (32 KB)
D8000 - DFFFF Hex (32 KB)
E0000 - E7FFF Hex (32 KB)
E8000 - EFFFF Hex (32 KB)

Memory address: software adjustable, 16 KB mapping for each socket from D0000 - DFFFF.Hex

Environmental specifications

- Operating temperature: 0° C to 70° C
- Storage temperature: -20° C to 85° C
- Relative humidity: 90%

Dimensions

- PC-104 controller card: 96 (L) x 90 (W) x 15 (H) mm
- Internal drive: standard 3.5" FDD form factor

1.3 Introduction of ICOP-1910

The ICOP-1910 model consists of a PC/104 (16-bit) interface module with one built-in PCMCIA card slot. The PC/104 interface module can be stacked with other PC/104 modules, mounted on a custom carrier board or stacked directly on a CPU card. The PCMCIA slot is built into the interface board. The ICOP-1910 also features two 50-pin connectors to interface with optional PCMCIA drives that fit in a 3.5" FDD bay. The ICOP-1910 model is ideal for users who require both an inaccessible PCMCIA drive and an interface with a second PCMCIA drive that is mounted in a computer's FDD bay. The PCMCIA slot on the ICOP-1910 provides full support for all Type I, Type II and Type III PCMCIA memory, I/O and ATA hard disk cards, etc.

ICOP-1910 Specifications

- Complies with PCMCIA v. 2.10 and JEIDA v.4.1
- Accepts Type I/II/III PCMCIA cards
- 16-bit data bus
- Supports secondary PCMCIA drives through two 50-pin connectors (optional)
- Programmable 32 KB PLCC-type boot Flash BIOS
- Busy status LED
- Single +5 V (@ 70 mA) power supply
- Supports reading/writing Flash cards using FTL and TFFS
- Supports bootable function from linear Flash, ATA hard disk drive, ATA Flash cards and SRAM cards.

1.4 Introduction of ICOP-1920

The ICOP-1920 model consists of a PC/104 (16-bit) interface module with two built-in PCMCIA card slots. The PC/104 interface module can be stacked with other PC/104 modules, mounted on a custom carrier board or stacked directly on a CPU card. Two PCMCIA slots are built into the interface board. The ICOP-1920 is ideal for users who require two PCMCIA interface slots where easy accessibility to the PCMCIA slots is not required. The PCMCIA slots on the ICOP-1920 provides full support for all Type I, Type II and Type III PCMCIA memory, I/O and ATA hard disk cards, etc.

ICOP-1920 2 Slots Specifications

- Complies with PCMCIA v. 2.10 and JEIDA v.4.1
- Accepts Type I/II/III PCMCIA cards
- 16-bit data bus
- Supports two PCMCIA drives
- Programmable 32 KB PLCC-type boot Flash BIOS
- Busy status LED
- Single +5 V (@ 70 mA) power supply
- Supports reading/writing Flash cards using FTL and TFFS
- Supports bootable function from linear Flash, ATA hard disk drive, ATA Flash cards and SRAM cards..

2.1.1 ICOP-1910/1920

JP1 Boot ROM Select Table

Pin Close	Description
1-2	Load data to Flash ROM
3-4	Boot ROM Enable (*)
5-6	Set ROM address as Hex C8000-CFFFF (32k)
7-8	Set ROM address as Hex D8000-DFFFF (32k)
9-10	Set ROM address as Hex E0000-C7FFF (32k)
11-12	Set ROM address as Hex E8000-EFFFF (32k)

JP2 Voltage for Data to Flash ROM

Pin Close	Description
1-2	+5v (*)
2-3	+12v

2.2 Connectors

2.2.1 ICOP-1910

- JP5** 50-pin connector for external optional PCMCIA drive
- JP6** 50-pin connector for external optional PCMCIA drive

Chapter 3

Software Installation

3.1 Introduction

Your ICOP-1910/1920 PCMCIA series may need one of following software packages from SystemSoft Corporation:

- Cardsoft for DOS 5.0 or higher
- CardWizard for Windows 3.1 or higher & FTL
- CardWizard-NT for Windows NT

All softwares are available for purchase separately.

Please note this chapter is referred to be a “Quick Start” guide to installing SystemSoft PCMCIA card software. All of the programs provide extensive documentation, and we recommend that you consult the on-line documentation and README files for detailed information about using the Cardsoft / CardWizard software.

Before you can use any PCMCIA card with your ICOP-1910/1920 unit, you must install the software provided. All PCMCIA cards require certain device drivers to be installed before you can use them and you should not attempt to use any type of PCMCIA card before the software has been correctly installed.

Because the original PC configuration did not include support for PCMCIA devices, your system will not be able to recognize such devices before the software has been installed. The SystemSoft Cardsoft / CardWizard PCMCIA software provides all the drivers necessary to allow you to use SRAM and Flash memory cards and Type II and Type III I/O devices including modems, fax/ modems, LAN cards and ATA hard disk drives, etc..

The software includes automatic installation programs which will make the necessary modifications to your CONFIG.SYS file to allow you to access your ICOP-1910/1920 PCMCIA card slots. Please follow the instructions in this chapter carefully in order to ensure that the software is correctly installed.

3.2 Installing CardSoft for DOS

Installing the CardSoft for DOS on your hard disk drive is a simple procedure thanks to the automatic installation program provided with CardSoft. To install the CardSoft PCMCIA drivers proceed as follows:

1. Insert the 3.5" CardSoft software diskette into the A: floppy disk drive.
2. Make the A: drive the current drive by typing A: at the DOS prompt.
3. At the DOS prompt, type:

```
A>INSTALL
```

The installation program will start and guide you through the installation procedure. The installation program will ask you information regarding your system.

Note that CardSoft must always be copied to the C: hard disk drive and you may not specify a different drive.

The automatic installation program will copy the CardSoft PCMCIA driver files to the C: hard disk drive and amend the CONFIG.SYS file to ensure the ICOP-1910/1920 PCMCIA drivers are loaded at boot up.

That is all you have to do to install the ICOP-1910/1920 software, but before proceeding please read the next section on the CONFIG.SYS file to ensure that your CONFIG.SYS is correctly configured to enable the ICOP-1910/1920 drivers to be loaded..

3.3 Installation Guide of CardSoft & FFS

1. Install all cables to your ICOP-1910/1920 module
2. Insert CardSoft and FFS diskette into your floppy disk drive.
Type install
3. Insure that your config.sys file appears as follows:

```
DEVICE = C:\DOS\SETVER.EXE           (TYPE BY YOURSELF)
DEVICE = C:\DOS\HIMEM.SYS           (TYPE BY YOURSELF)
DOS = HIGH, UMB                     (TYPE BY YOURSELF)
DEVICE = C:\CARDSOFT\SSVADEM.EXE
DEVICE = C:\CARDSOFT\CS.EXE
DEVICE = C:\CARDSOFT\CSALLOC.EXE
DEVICE = C:\CARDSOFT\ATADRV.EXE
DEVICE = C:\CARDSOFT\MTAA.EXE
DEVICE = C:\CARDSOFT\MTAB.EXE
DEVICE = C:\CARDSOFT\MTI1.EXE
DEVICE = C:\CARDSOFT\MTI2P.EXE
DEVICE = C:\CARDSOFT\MTSRAM.EXE
DEVICE = C:\CARDSOFT\MTDDRV.EXE
DEVICE = C:\CARDSOFT\SSMFLSH.SYS
DEVICE = C:\CARDSOFT\CARDID.EXE
```

Note: Install original DOS software to insure proper operation

4. Note the following details regarding memory card installation (where IDE HDD = C):
 - a. SRAM cards are bootable, readable and writeable. Drive letter assignments are first slot F and second slot G
 - b. Flash cards are readable, writeable but not bootable. Drive letter assignments are first slot F, second slot G. Format your Flash card before initial reading/writing by executing MCFORMAT.EXE.
 - c. ATA HDD/ATA Flash cards are bootable, readable and writeable. Drive letter assignments are first slot D, second slot E.
 - d. When you use a PCMCIA drive with Boot ROM with ATA HDD or ATA Flash cards, boot the system from drive C if the capacity of the card is greater than 15 MB. Boot from drive A if the size of the PCMCIA card is less than 15 MB.
 - e. If the address of any PCMCIA I/O card (fax/modem, network card) conflicts with the port address of any other cards, execute CONFIG.EXE under c:\cardsoft to correct the situation.

3.4 Installing CardWizard for Windows 3.1/3.11

CardWizard is a utility that assists with PCMCIA configuration and automatically diagnoses and resolves the most common PCMCIA and system problems.

System Requirements

The following items are the minimum requirements for CardWizard:

- Windows 3.1/3.11
- DOS 5.0 or later
- 1 or more PCMCIA slots
- 32 KB of DOS memory
- 4 MB RAM
- 4 MB of hard drive storage space

Note: Before installing the CardWizard software, remove any PCMCIA cards that may be in the slots of your ICOP-1910/1920 Reader/Writer.

CardWizard Installation

The CardWizard installation must be done within Windows. CardWizard installs all DOS and Windows PCMCIA support in addition to the Windows CardWizard interface.

Insert the installation disk into the proper disk drive. For example, if drive A: is to be used:

From the Windows Program Manager:

1. choose Run from the file menu.
2. type: A:\SETUP.

From the Windows File Manager:

1. choose Run from the File menu.
2. type: A:\SETUP

or select the A: drive then double click on SETUP.EXE file.

CONFIG.SYS Menu Partitions

If you wish to customize the handling of the CONFIG.SYS partitions, it is recommended that you choose Custom Installation. Choosing Custom will allow you greater flexibility in how you setup your CONFIG.SYS file. The

Express Installation path will follow a pre-defined path as described in the next paragraph.

Express Setup

The Setup Utility will create a new menu item and menu section in the CONFIG.SYS file. Upon rebooting, you will be presented with a new option called "SystemSoft CardWizard." In the case that you are upgrading from a previous version of SystemSoft's PCMCIA software, the older software will be replaced with the newer CardWizard version and no new menu item will be created. The Setup Utility will de-install any other vendor's software it encounters.

Custom Installation

On a Custom Installation, the Setup Utility will present you with a screen that displays all of the different menus found in the CONFIG.SYS file. By clicking on the "Setup" button, you can inform the Setup Utility as to which menu sections you wish to install the drivers. Also, you can specify which cards you prefer to support in each menu..

Typical System File Modifications

Typical system file modifications are shown below:

CONFIG.SYS

```
DEVICEHIGH=C:\WINDOWS\EMM386.EXE NOEMS  
X=D000-D7FF  
DEVICEHIGH=C:\CARDWIZ\SSVADEM.EXE /SKT:2  
DEVICEHIGH=C:\CARDWIZ\CS.EXE /POLL:1  
DEVICE=C:\CARDWIZ\CSALLOC.EXE  
DEVICEHIGH=C:\CARDWIZ\ATADRV.EXE /S:2  
DEVICEHIGH=C:\CARDWIZ\MTI1.EXE  
DEVICEHIGH=C:\CARDWIZ\MTI2P.EXE  
DEVICEHIGH=C:\CARDWIZ\MTAA.EXE  
DEVICEHIGH=C:\CARDWIZ\MTAB.EXE  
DEVICEHIGH=C:\CARDWIZ\MTATM.EXE  
DEVICEHIGH=C:\CARDWIZ\MTHB2.EXE  
DEVICEHIGH=C:\CARDWIZ\MTDDR.V.EXE  
DEVICEHIGH=C:\CARDWIZ\MTSRAM.EXE  
DEVICEHIGH=C:\CARDWIZ\FTL.EXE  
DEVICEHIGH=C:\CARDWIZ\CARDID.EXE
```

SYSTEM.INI

```
[386Enh] {This is the only section changed}
```

```
EMMEXCLUDE=D000-D7FF
DEVICE=*VCD {This line is remarked, or commented, out}
DEVICE=C:\CARDWIZ\PCCARD.386
DEVICE=C:\CARDWIZ\SSVRDD.386
DEVICE=C:\CARDWIZ\SSVCD311.386 (Windows for Workgroups).
```

EMM386 Exclusions

The CardWizard Setup Utility looks for EMM386.EXE in the CONFIG.SYS file. If this driver is not in CONFIG.SYS, then the “EmmExclude=D000-D7FF” parameter is added in SYSTEM.INI to ensure that there are 32 KB of memory which can be used by CardWizard.

If EMM386 is installed in CONFIG.SYS, then the Setup Utility will check its memory exclusion range. If less than 32 KB are excluded, then the installation program will expand the exclusion range to 32 KB.

Notes About Your CardWizard Software

This version currently handles one Memory Manager (EMM386.EXE). It does not correct for memory conflicts that result from the presence of QEMM, 386MAX, or other memory managers.

CardWizard cannot correct problems for cards that require proprietary card services clients. It can, however, report any resource conflicts if the driver is installed properly. For example, if you have a PC card which has more than one function (i.e. Ethernet and Modem), you will need to load the additional driver which is provided with the card on top of the CardWizard software.

When running the CardWizard application in the minimized view format, there are two ways to maximize the window; you can double click on the icon with the mouse button; or you can use the <Alt>-<Space> key sequence. The icon will not maximize by using the <Enter> key..

3.5 Installing CardWizard-NT for Windows NT

This release of CardWizard-NT for Windows NT requires “Windows NT version 4.0 Golden” or a later release of Window NT version 4.0. You MUST have administrator privileges in order to install CardWizard-NT for Windows NT. From the Start Menu, the Explorer, or from a DOS prompt, run Setup.exe.

You will be presented with a list box of socket services to choose from. Select the Socket Services that is appropriate for your controller. Make sure that all other Socket Services are de-selected. For Intel 365 (and compatible) controllers, select the “SSIntel” option.

Note: The contents of the installation diskette can be copied to a directory on your hard disk, and setup can be run from this directory. We suggest if you do this that you create a new (empty) directory for this purpose. For example:

```
mkdir \WizInstall
cd \WizInstall
copy a:*. * .
setup [optional step]
```

Setup can also be run from a network drive.

How to Use CardWizard-NT

CardWizard-NT is SystemSoft’s PC card support application to increase ease of use and provide seamless integration for users to configure PC cards..

Introduction

SystemSoft’s CardWizard-NT is a Microsoft Windows NT application that creates a new standard for improving PC card ease of use. CardWizard-NT allows you to view PC card slots, trouble-shoot card configuration problems, resolve resource conflicts, receive notification of card activity and launch PC applications upon card insertion.

CardWizard-NT features an expert system that addresses advanced configuration issues. The expert system assumes the role of a computer-based technical support advisor. It will guide you through dialog boxes to diagnose and resolve many common PC compatibility problems.

CardWizard-NT for Windows NT supports hot-swapping of ATA PC cards and fax/modem cards. It also supports hot insertion (but not removal) of network PC cards. CardWizard-NT for Windows NT also currently supports boot timer insertion of SCSI PC cards. Boot time insertion requires that you

shut down your system, insert the PC card, then reboot your system.

CardWizard-NT for Windows NT also works with the PowerProfiler Power Management system.

Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster. Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party. Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.