Serial I/O Card™ and Ruggedized Serial I/O Card™

PC Card Serial Communications Port for Mobile Computers

User's Guide

SOCKET®

Limited Warranty

Socket Communications Incorporated (Socket) warrants this product against defects in material and workmanship, under normal use and service, for the following periods from the date of purchase:

PC Card: Lifetime (three years if not registered)
Non-removable Cable (R-I/O Card): Lifetime
Removable Cable (S-I/O Card): 90 days

Incompatibility is not a defect covered by Socket's warranty. During the warranty period, Socket will, at its option, repair or replace the defective product at no charge when furnished with proof of retail purchase, provided that you deliver the product to Socket or to an authorized Socket Service Center.

The returned product must be accompanied by a return material authorization (RMA) number issued by Socket or by Socket's Authorized Service Center. If you ship the product, you must use the original container or equivalent and you must pay the shipping charges to Socket. Socket will pay shipping charges back to any location in the contiguous United States. This warranty applies only to the original retail purchaser and is not transferable.

Socket may, at its option, replace or repair the product with new or reconditioned parts, or refund to Customer the purchase price paid for the defective product, and the returned product becomes Socket's property. Socket warrants the repaired or replaced products to be free from defects in material or workmanship for ninety (90) days after the return shipping date, or for the duration of the original warranty period, whichever is greater.

This warranty does not cover the replacement of products damaged by abuse, accident, misuse or misapplication, nor as a result of service or modification other than by Socket.

SOCKET IS NOT RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING DAMAGE TO PROPERTY AND, TO THE EXTENT PERMITTED BY LAW, DAMAGES FOR PERSONAL INJURY. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Some states do not allow limitation of implied warranties, or the exclusion or limitation of incidental or consequential damages, so that the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

This product may contain fully tested, recycled parts, warranted as if new.

For warranty information, phone (510) 744-2700.

May 1999 **Document # 6410-00074 D**

This manual has been prepared with the greatest care regarding its contents. However, in the event that it contains omissions, errors or any other misinformation, please feel free to contact SOCKET COMMUNICATIONS at:

Socket Communications
37400 Central Court
Newark, CA 94560

You are also welcome to call Socket Communications at (510) 744-2700, or you may FAX inquiries to (510) 744-2727. If you have technical questions, you can call Socket's technical support department at (510) 744-2720. Before calling Socket to request technical support for a Socket product you have purchased, please read Appendix B, "Troubleshooting." This will tell you what information you should have available so that your question can be answered quickly.

Other than the above, Socket Communications can assume no responsibility for anything resulting from the application of information contained in this manual.

Socket Communications requests that you refrain from any applications of the Serial I/O Card or Ruggedized Serial I/O Card that are not described in this manual. Socket Communications also requests that you refrain from disassembling the PC Card. Disassembly of this device will void the product warranty.

You can track new product releases, software updates and technical bulletins by visiting Socket's web page at http://www.socketcom.com

Regulatory Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. This equipment is also CE EN55022 compliant. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user may try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna of the radio or television.
- Increase the distance separating the equipment and the receiver.
- Connect the equipment to an outlet on a different branch circuit than that of the receiver.
- Consult the dealer or an experienced radio/TV technician for help.

The user may find the following booklet helpful:

How to Identify and Resolve Radio-TV Interference Problems

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402

Table of Contents

Quick Start

How to Avoid Reading the Manual

This manual covers the installation and use of the PC Card versions of the Socket® Serial I/O Card and the Socket® Ruggedized Serial I/O Card. The term "I/O Card" refers to both these products.

If you use **Windows 98**, the first time you insert the I/O Card you will see a screen titled **Add New Hardware Wizard**. Insert the Socket I/O Installation Disk and click **Next>.** On the next screen, click **Search for the best driver for your device** and click **Next>**. On the next screen, make sure **Floppy disk drives** is checked and click **Next>**. A screen should report the location of the IOSOCKET.INF driver. Click **Next>**. When you see a screen reporting that Windows has finished installing the software, click **Finish.**

With most versions of **Windows 95**, the first time you insert the I/O Card you will see a screen titled **Update Device Driver Wizard**. Insert the Socket I/O Installation Disk and click **Next>.** On the next screen, click **Other Locations...** and specify Drive A. Windows will report that it found the driver for the "Socket PCMCIA Serial Adapter." Click **Finish.**

With some versions of **Windows 95**, the first time you insert the I/O Card you will see a screen titled **New Hardware Found.** Insert the Socket I/O Installation Disk, make sure that **Driver from disk provided by hardware manufacturer** is selected, and click **OK.** On the **Install From Disk** screen, make sure your floppy drive is referenced in the **Copy manufacturer's files from:** box and click **OK**. Windows 95 will complete the installation.

If you use a **Windows CE** Handheld PC (H/PC), connect your desktop PC to your H/PC using the Serial Connection cable. Verify that your desktop PC can communicate with your H/PC. Insert the Socket I/O Installation Disk in your desktop PC, use Windows Explorer to navigate to the WIN-CE directory, and double click on SETUP. Follow the on-screen instructions. When you see the **Application Downloading Complete** screen, click **OK**.

Windows NT 4.0 recognizes the I/O Card automatically, but you must insert the card before you boot. If you insert the card while Windows NT is running, you must reboot. Current versions of Phoenix Card Executive and SystemSoft CardWizard allow you to hot swap the I/O Card.

If you have a **Windows 95** notebook and are using **DOS-based court reporting software**, you must run Socket's direct enabler software, ENABLEIO.EXE, after you have installed the I/O Card to run under Windows 95. You must be in DOS in order to install the ENABLEIO.EXE direct enabler. Refer to Appendix D, "Court Reporting," for instructions on how to install the I/O Card on a Windows 95 notebook so that you can run DOS-based court reporting software.

If you use **DOS**, **Windows 3.1** or **Windows for Workgroups** with a current version of Card Services, no special installation is required unless the I/O Card is assigned COM 3 or 4. In this case, refer to the Assigning Interrupts section in the README.TXT file on the Socket I/O Installation Disk.

If you have a notebook that runs DOS, Windows 3.1 or Windows for Workgroups and you choose to use Socket's direct enabler rather than Card Services software, you should run Socket's INSTALL program. This sets up Socket's ENABLEIO program, which operates without Card Services.

To install Socket's direct enabler software in DOS, Windows 3.1 or Windows for Workgroups:

1) Disable your computer's Card Services software if you have Card Services installed. Contact the manufacturer of your notebook to find out how to disable Card Services software.
2) Put the Socket I/O Installation Disk into your floppy drive (Drive A: in this example) and type: **`A:\INSTALL`**
3) Follow the instructions of the on-screen menus.

To activate the I/O Card after you have run INSTALL:

1) Insert your I/O Card into an available PC Card slot.
2) Type: **`STARTCOM`**
3) Your screen should display the number of the COM port used by the I/O Card. Make note of the COM port number so that you will know the address of any serial device you attach to the I/O Card.

The I/O Card should appear as a standard COM port to any DOS or Windows application. Socket's direct enabler is discussed in detail in the README.TXT file on the Socket I/O Installation Disk.

If you use **SCO UNIX**, you can purchase a PC Card driver kit that supports the I/O Card. To order this kit, call LynnSoft at 904-650-2266.

8 - Quick Start

Chapter 1 **Introduction**

How This Manual Is Organized

This manual is designed to help you install Socket's Serial I/O Card or Ruggedized Serial I/O Card. The expression "I/O Card" will refer to both of these products.

This chapter, "Introduction," explains where to find information about your card. This chapter also describes the key features of the Serial I/O Card and Ruggedized Serial I/O Card and identifies the parts included in your package.

Chapter 2, "Hardware Setup," covers the hardware installation procedure. This is where you find out how to attach the serial cable to your Serial I/O Card (the Ruggedized Serial I/O Card has a built-in cable), insert the card into your computer, and attach a serial peripheral.

Chapter 3, "Software Setup," covers software installation on a variety of computer platforms. It also briefly describes Socket's direct enabler for DOS, Windows 3.x and Windows for Workgroups.

Appendix A, "Specifications," provides technical specifications for the Serial I/O Card and Ruggedized I/O Card.

Appendix B, "Troubleshooting," gives advice for correcting the most common problems you may encounter while installing or using the I/O Card.

Appendix C, "Court Reporting," explains how to install the I/O Card on Windows 95 notebooks that use DOS-based court reporting software.

Appendix D, "Products," is a brief catalog of Socket's *Battery Friendly*™ family of plug-in cards for Handheld PCs, Palm-size PCs and notebooks.

The README.TXT file on the Socket I/O Installation Disk explains how to find and assign available interrupts when running the I/O Card as COM 3 or COM 4 under Windows 3.1 or Windows for Workgroups. This file also provides detailed information about Socket's direct enabler for DOS, Windows 3.x and Windows for Workgroups.

Socket's web site contains the latest version of Serial I/O Card User's Guide in Adobe Acrobat format. You may read or download this file by visiting *http://www.socketcom.com*.

Features

Thank you for purchasing the Socket Serial I/O Card or Ruggedized Serial I/O Card. The product allows users of PC Card (formerly PCMCIA) compatible computers to communicate with peripherals that use the industry-standard RS-232 interface. Common serial peripherals include modems, printers, writers for court reporting, bar code scanners, GPS receivers or digital cameras.

As part of Socket's family of *Battery Friendly*™ PC Cards, the I/O Card draws very little power from its host computer. This ability to conserve energy makes the I/O Card well suited for use with pocket computers and PDAs, including Windows CE-based Handheld PCs. Low power consumption extends battery life, allowing a mobile computer to operate longer without recharging or replacing batteries.

The Ruggedized Serial Card has a fixed cable that allows it to operate in harsh environments and tolerate high vibration.

Other features of the I/O Card include:

- Plug and Play and hot-swapping operation with most mobile computers
- 16550 type UART runs at up to 115 kbps for operation with fast modem
- Configurable to be COM 1, 2, 3 or 4
- Windows CE Port Configuration Utility lets you select whether to use the I/O Card with a modem or with another serial peripheral
- Compatibility with most mobile computers including Windows and DOS notebooks and Handheld PCs
- Extensive configuration options for running with DOS and with versions of Windows that do not have Card Services
- Direct enabler software for users of DOS, Windows 3.1 and Windows for Workgroups who want to save up to 128K of memory by removing Card and Socket Services
- Uses an industry standard DB-9 connector
- Certified by Microsoft to run with Windows 95, Windows 98 and Windows CE

What You Get in Your I/O Card Package

Your package should include either a Socket Serial I/O Card or a Ruggedized Serial I/O Card:

Serial I/O Card

Ruggedized Serial I/O Card

The Socket Serial I/O Card includes a removable interconnect cable with a male DB-9 connector at one end and a special PC Card connector at the other end.

The Ruggedized Serial I/O Card includes an integrated cable with a male DB-9 connector at the end. You cannot remove this cable. In other respects the products are identical.

Your I/O Card package should also include a 3.5-inch installation disk titled Socket I/O Installation Disk.

In addition, you should find a User's Guide (this document) and a registration/warranty Card.

Advanced Configuration Issues

Users of DOS, Windows 3.1 or Windows for Workgroups can find out details about assigning interrupts, using multiple I/O Cards and running Socket's direct enabler by referring to the README.TXT file on the Socket I/O Installation Disk.

Chapter 2 **Hardware Setup**

Overview

To connect the I/O Card to your computer, simply insert the serial I/O cable into the PC Card (if you have the Ruggedized Serial Card the cable is permanently attached) and insert the card into your computer's PC Card slot. You can then attach the DB-9 connector to your serial peripheral.

Connecting the Cable to Your PC Card

The standard Serial I/O Card has a removable cable with a DB-9 connector on one end and a flat connector on the other. Insert the flat part of the cable into the end of the Serial I/O Card near the Socket logo.

The cable has a metallic strip on one end of the flat connector. This should be on the bottom of the cable when you insert it. The connector is keyed, so you will not be able to plug it in upside down. To remove the cable, depress the side tabs and pull it straight out.

The cable connector should make a positive click when it is correctly inserted into the Serial I/O Card.

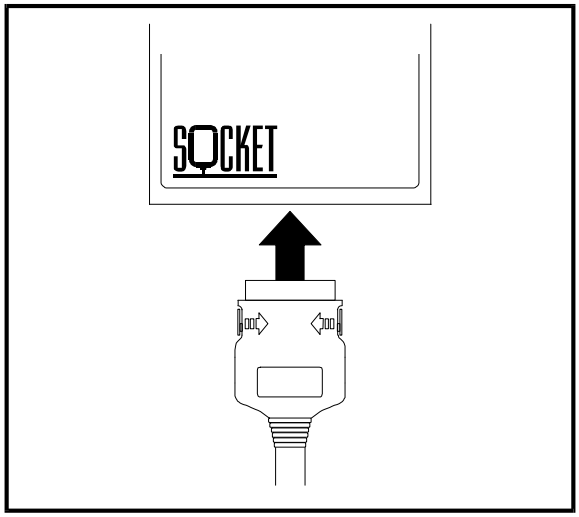


Figure 2-1: *Connecting the cable to your Serial I/O Card*

Connecting the I/O Card to Your Computer

Plug the I/O Card into an available PC Card socket on your computer. These sockets are sometimes labeled “PC CARD,” “IC CARD,” or “PCMCIA.” You do not have to turn off power to your PC to install the I/O Card.

When inserting the I/O Card, be sure that the top side is up. The top side has a colorful label.

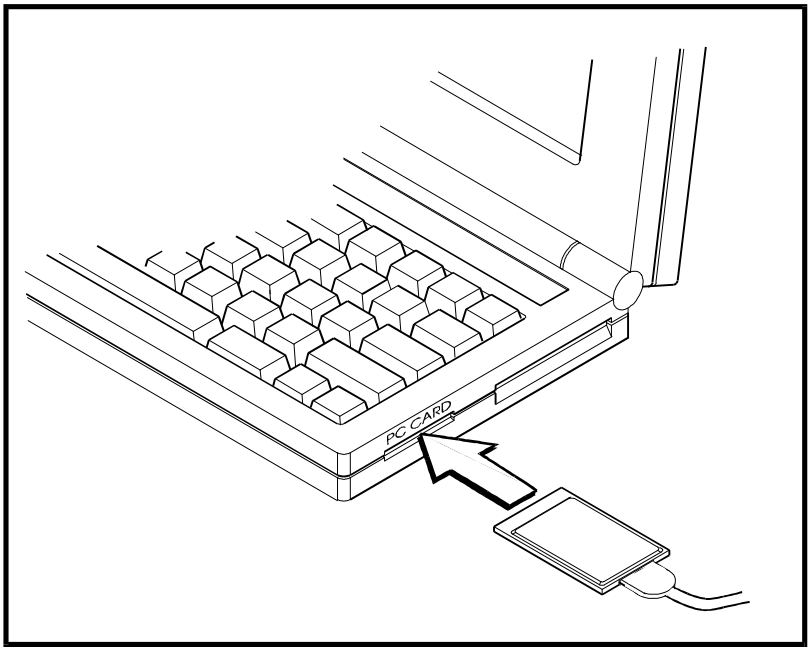


Figure 2-2: *Inserting the I/O Card into the PC Card socket*

The I/O Card should fit easily into place. If you encounter resistance, make sure that the PC Card is aligned correct-side up. Do not force the card into the PC Card socket. Some notebooks have upside-down PC Card slots. These will be prominently marked, and you should insert the I/O Card accordingly.

Warning: Do not remove the I/O Card from the PC Card socket by pulling on the cable. Always use the EJECT button near your computer's PC Card socket to release the I/O Card from the socket, and always hold the card by its case.

Chapter 3 **Software Setup**

Overview

Socket I/O Cards work with most host computers that have an available PC Card slot. Some hosts recognize the I/O Card automatically; others require a simple installation procedure.

Windows 98

If you use **Windows 98**, the first time you insert the I/O Card you will see a screen titled **Add New Hardware Wizard**:

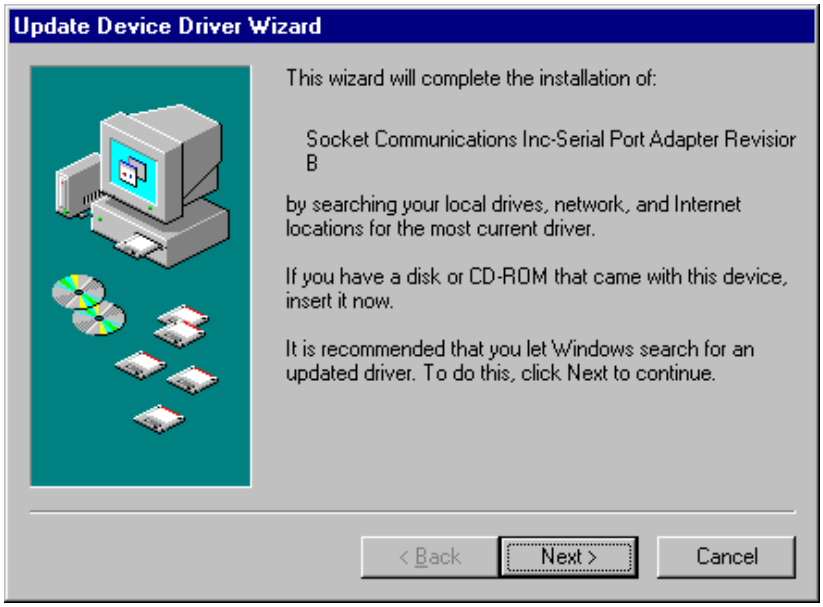
Insert the Socket I/O Installation Disk into your floppy drive and click **Next>.**

On the next screen, click **Search for the best driver for your device** and click **Next>**. On the next screen, check the box marked **Floppy disk drives** and click **Next>**.

A screen should display the name **Socket PCMCIA Serial Adapter** and report that **Windows is now ready to install the best driver for this device**. This screen should also show the location of the IOSOCKET.INF driver. Click **Next>**. When you see a screen saying **Windows has finished installing the software**, click **Finish.**

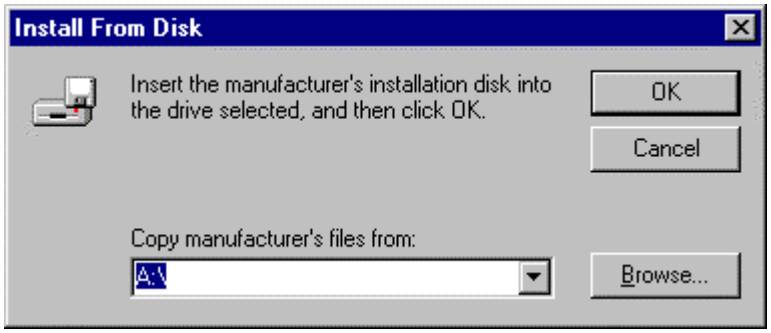
Windows 95

With most versions of Windows 95, the first time you insert the I/O Card you will see the **Update Device Driver Wizard** screen:



Insert the Socket I/O Installation Disk into Drive A: and click **Next>.** On the next screen, click **Other Locations...** and specify Drive A. When Windows reports that it found the driver for the "Socket PCMCIA Serial Adapter" click **Finish.** That's all there is to it!

With some versions of Windows 95, the first time you insert the I/O Card you will see the **New Hardware Found** window. Make sure that **Driver from disk provided by hardware manufacturer** is selected, and click **OK.** You will see the **Install From Disk** screen:



Insert the Socket I/O Installation Disk into drive A: and click **OK**. The installation will complete automatically.

16 - Software Setup

Windows CE

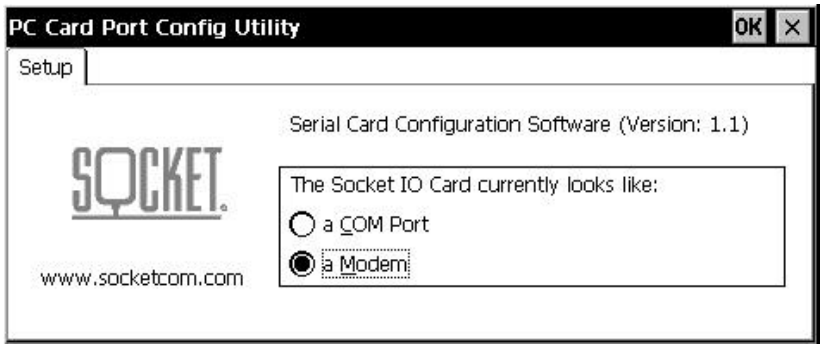
If you use a Windows CE Handheld PC (H/PC), connect your desktop PC with your H/PC using the Serial Connection cable. Make sure the HPC Explorer program has been installed on your desktop PC and verify that your desktop PC can communicate with your H/PC.

Insert the Socket I/O Installation Disk in your desktop PC, use Windows Explorer to navigate to the installation disk's WIN-CE directory, and double click on SETUP. This will update the registry on your H/PC.

If your AC power adapter is not connected to your H/PC, Windows CE may display a warning that ends in the question: **Do you want to use this PC card on battery power?** Tap **Yes**. The I/O Card draws very little power from your H/PC and should not significantly reduce your H/PC's battery life as long as you remove or unlock the I/O Card when you are not using it.

If a program that requires the I/O Card does not recognize the COM port, try using the Port Config Utility. Select **Start/Settings/Control Panel**. Double tap or click the **PC Card Port Config Utility** icon:

You should see the configuration utility's **Setup** screen:



Change the option on the **Setup** screen from **a Modem** to **a COM Port**.

The **CF Card Port Config Utility** icon is for the CompactFlash CF+ version of the I/O Card.

For most serial peripherals and applications you will not have to use the Port Config Utility.

Windows NT 4.0

Windows NT 4.0 recognizes the I/O Card automatically, but you must insert the card before you boot. If you insert the card while Windows NT is running, you must reboot. Current versions of Phoenix Card Executive and SystemSoft CardWizard allow you to hot swap the I/O Card.

Windows for Workgroups or Windows 3.1

If you use Windows 3.1 or Windows for Workgroups with a current version of Card Services, no special installation is required unless the I/O Card is assigned COM 3 or 4. In this case, refer to the discussion on "Assigning Interrupts" in the README.TXT file on the Socket I/O Installation Disk. To use Socket's direct enabler with these operating systems, see the discussion of the "The Direct Enabler" in the README.TXT file on the Socket I/O Installation Disk.

MS-DOS

If you use MS-DOS with a current version of Card Services, no special installation is required unless the I/O Card is assigned COM 3 or 4. In this case, refer to the discussion on "Assigning Interrupts" in the README.TXT file on the Socket I/O Installation Disk. This file also explains how to use Socket's direct enabler with MS-DOS.

SCO UNIX

If you use SCO UNIX, you can purchase a PC Card driver kit that supports the Serial I/O Card. To order this kit, call Lynnsoft at 904-650-2266.

Using the Direct Enabler

When you run the I/O Card installation program, several files are copied into a directory called SOCKETIO. These files are ENABLEIO.EXE, STARTCOM.BAT and SOCKETIO.INI. ENABLEIO.EXE is a direct point enabling program that can **only** be used with the Socket Serial I/O Card or Socket Ruggedized Serial I/O Card. This software cannot be run with any other PCMCIA card. It also cannot be run if Card Services is loaded.

Use ENABLEIO.EXE to enable the I/O Card if:

- Card Services is not available on your Windows 3.1, Windows for Workgroups or MS-DOS computer.
- You have DOS applications that require a large amount of base memory, and you are not planning on using other PCMCIA cards. By not running Card Services you can save about 90K.

Note: The direct enabler does not support hot swapping. It must be rerun each time the I/O Card is removed and re-inserted and after rebooting.

Running ENABLEIO from CONFIG.SYS

If you are short on base memory you can run the enabler from CONFIG.SYS. It must be run before any memory manager so that the driver enables the I/O Card and then releases all memory for other uses, saving approximately 4K of memory. To enable the I/O Card from CONFIG.SYS, you must reboot your computer each time the I/O Card is inserted into the PC Card slot.

At the C:> prompt type:

c:\ >**edit config.sys**

Add the following line as the first line in the CONFIG.SYS file:

device=c:\socketio\enableio.exe file=c:\socketio\socketio.ini

Running ENABLEIO from a Batch File

If memory is not a major issue, you may optionally run the enabler at any time from a batch file. Running the enabler from a batch file is more convenient, but requires the permanent allocation of 4K of base memory.

Check the memory exclusion on your emm386 line in your CONFIG.SYS file. It should have the following memory exclusion:

device=c:\dos\emm386.exe noems x=d400-d4ff

Make sure the card is inserted in the computer before running the direct enabler. Type:

c:\socketio>**startcom**

This batch file runs the following command:

c:\socketio\enableio.exe file=c:\socketio\socketio.ini

When the enabler is run either way, the I/O Card is initialized as a COM port. If the card is initialized as COM 2 you do not need to do any further configuring. If the card is initialized as COM 3 or COM 4 you will need to add an interrupt (IRQ) specification in the SOCKETIO.INI file. There is no utility to check what interrupts are available, so you will need to use an educated guess or try calling the computer manufacturer to find out the exact available resources on your notebook.

To specify an interrupt for COM 3 or COM 4 you should edit the SOCKETIO.INI file as follows:

c:\socketio>**edit socketio.ini**

Find the [SOCKETIO] section of the file. It should resemble:

```
[SOCKETIO]
  Host = PCIC
  Socket = 0
  Com = 0
  MemBase = 0xD4000
  MemSize = 0x1000
```

To specify an interrupt for COM 3 or COM 4, you should add a new line after the line "Com = 0." To specify IRQ 9, for example, the new line should say:

```
Ireq = 9
```

The "Socket = 1" line specifies what slot the card is in. In most computers the bottom slot is 0 and the top slot is 1. The default installation adds Socket=0 to the SOCKETIO.INI file. When you run the enabler, if you get an error message that says "Card Not Found In Socket," you need to change the number after "Socket =" to the correct setting. Sometimes the slots are swapped.

Making Windows 3.x Settings Match DOS

If you are running Windows 3.x and you have correctly configured your I/O card within DOS, you must also make sure that the IRQs match in Windows 3.x. In order to do this you should:

1. Run Windows 3.x
2. Go to the **Control Panel** within the **Main** Group
3. Double-click on **Ports**
4. Double-click on **COM 3** (or **COM 4**)
5. Single-click on **Advanced**
6. Change **Interrupt Request Line** to match the IRQ chosen in the SOCKETIO.INI file.
7. Once you change the **Interrupt Request Line**, Windows 3.x will prompt you to restart. You must do this or the change will not take effect.

Appendix A **Specifications**

General

Physical Characteristics:

I/O PC Card:	3.37 x 2.13 x 0.197 in (85.6 x 54.0 x 5.0 mm)
I/O Card Weight:	1 oz (28.4 gm) with no cable 2.5 oz (70.9 gm) with fixed cable
Interconnect Cable	
Standard I/O Card:	13 in (330 mm) long removable
Ruggedized I/O Card:	16 in (406 mm) long fixed
Serial Connector:	9-Pin D Shell Male
Removable Cable Weight:	1.1 oz (31.2 gm)

Environmental Conditions:

Operating Temperature:	0°C to +55°C
Storage Temperature:	-20°C to +65°C
Relative Humidity:	10% to 90% non-condensing

Power Consumption (supplied by host):

Minimum:	5 mA (25 mW)
Typical:	13 mA (65 mW)
Maximum:	16 mA (96 mW)

Interface Standards:

I/O PC Card Interface:	PCMCIA Release 2.0, Type II JEIDA 4.1 Compliant
Serial Communications:	Asynchronous RS-232; 16550 type UART

Software Included:

PC Card Global Enabler
Auto Installation Utility
Windows 95 .INF
Windows CE Setup Program and Port Configuration Utility

Media:	3.5 in DOS media

Host Controllers Supported:

ASCII, Cirrus Logic, Databook, Intel, Sharp, Texas Instruments, Toshiba, all Windows CE-based Handheld PCs

Operating System Support:

Windows 98, Windows 95, Windows 3.X, Windows for Workgroups, Windows CE V1.x and V2.x, Windows NT 3.5 and 4.0, DOS, OS/2 Warp!, Solaris, SCO UNIX, other UNIX platforms

Emulation: Standard COM port (1 through 4)

Programmable Characteristics:

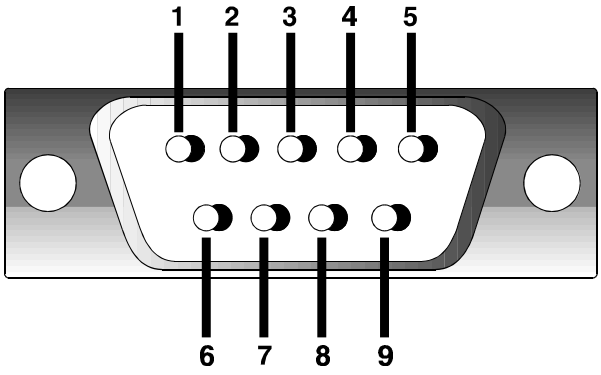
Character length: 5-, 6-, 7- or 8-bit

Parity: Even, odd or none

Baud rate generation: 115.2K baud
(Up to 230.4K baud in DOS only, with custom software)

Pin Assignments for DB-9 Connector:

Pin Number	Function
1	Data Carrier Detect
2	Receive Data
3	Transmit Data
4	Data Transmit Ready
5	Ground
6	Data Set Ready
7	Request to Send
8	Clear to Send
9	Ring Indicator



22 - Appendix A: Specifications

Appendix B **Troubleshooting**

Common Problems

The port associated with the Serial I/O Card should operate the same as a conventional Windows COM port. This chapter will help you resolve problems you may encounter with the Serial I/O Card.

My Computer Doesn't See the I/O Card

If the Serial I/O Card is not recognized by your computer, the most common reason is that it is not seated properly in the physical PC Card socket. If your computer does not acknowledge the I/O Card, make sure the card is properly connected by removing it from the PC Card slot and re-inserting it.

Some Windows CE Handheld PCs have a special latch that must be closed before a PC Card can be recognized.

I Have an Interrupt Conflict

The most common problem encountered using the I/O Card with Windows 3.x or Windows for Workgroups is an interrupt conflict with another device. For a discussion of ways to avoid this problem, refer to the section on "Assigning Interrupts" in the README.TXT file on the Socket I/O Installation Disk.

When and How Do I Use the Direct Enabler?

If you use Socket's direct enabler with DOS, Windows 3.x or Windows for Workgroups, make sure you exclude the proper high memory window in your CONFIG.SYS file. For information about Socket's direct enabler, refer to the README.TXT file on your SOCKET I/O Installation Disk or visit Socket's web page at http://www.socketcom.com.

I Can't Make Hot Swapping Work

Hot Swapping is the ability to remove a PC Card and reinsert it without being required to run initialization software for the PC Card. Some environments, such as Windows NT, do not support hot swapping. This means that if you remove the I/O Card and re-insert it you have to reboot the system. This is also the case when you use Socket's direct enabler under DOS, Windows for Workgroups or Windows 3.x.

I Have a COM Port Address Conflict

If your DOS or Windows software requires you to run the I/O Card at a specific COM port, and if that port conflicts with one of your computer's existing serial ports, you must disable or re-address your computer's serial port. This is usually an option in your mobile computer's setup program.

If you use the I/O Card on a Windows 95 notebook but run DOS-based software that requires you to use Socket's direct enabler, you should make sure the resources assigned to the I/O Card by Windows 95 are the same ones that are assigned by the direct enabler. The technique for doing this is described in Appendix D: "Court Reporting."

How Do I Use the Card for Court Reporting

If you are using the I/O Card on a Windows 95 notebook with DOS-based court reporting software, refer to Appendix D: "Court Reporting."

If You Give Up

If you encounter difficulties you can contact Socket's technical support department. Before you contact Socket, make sure that you have the following information available:

- The serial number of your I/O Card
- The manufacturer and model of your notebook
- The operating system installed on your notebook
- The name and version number of the software you are trying to use with your I/O Card
- How you know your I/O Card is not properly installed and what you did to try to correct the problem

You can contact Socket the following ways:

- Visit Socket's web site at **www.socketcom.com**
- E-mail questions to **techsupport@socketcom.com**
- Phone Socket technical support department at **510-744-2720**
- Send a question by fax to **510-744-2727**

Appendix C **Court Reporting**

Overview

Some court reporting software is based on MS-DOS, not Windows 9x. In this case, you may still be able to run the program from Windows. If your court reporting software restarts your system in MS-DOS mode, you must install the I/O Card in MS-DOS in addition to Windows. Also, if you can not use the I/O Card in Windows, try removing and reinserting the card. If you are still unsuccessful, you must install the card in MS-DOS. This is usually simple, but it can be more complicated if conventional resources are unavailable on your notebook. This appendix will first explain the basic setup procedure that applies to most users and will then describe the advanced setup procedure for resolving resource conflicts.

The Basic Setup Procedure

For most users, the following procedure is all that is required for setting up your I/O Card to work with MS-DOS court reporting software on a Windows 9x notebook. In a few cases, you will have to take additional steps. All users should follow this basic procedure:

1. Insert the I/O Card in your notebook and remove other PCMCIA cards
2. Install the I/O Card to work with Window 98 or Windows 95
3. Boot MS-DOS
4. From MS-DOS, run Socket's INSTALL program
5. Reboot MS-DOS and run STARTCOM to verify that the I/O Card has been installed properly for MS-DOS
6. If STARTCOM reports errors, follow the advanced setup procedure

1. Insert the I/O Card in your notebook and remove any fax/modem card

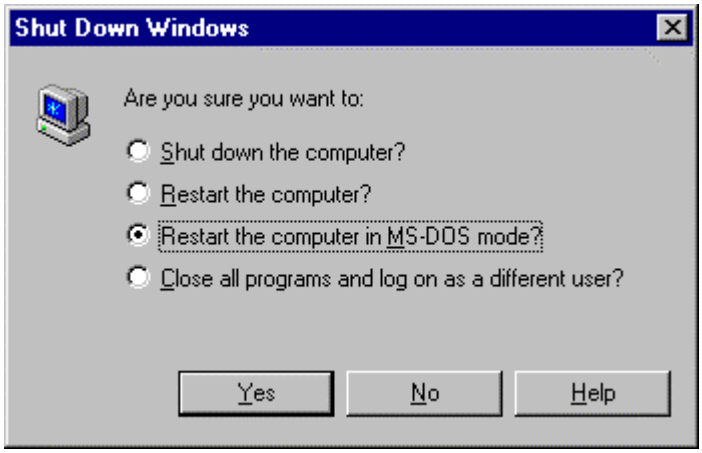
Insert the I/O Card in your notebook's bottom PCMCIA slot and remove any PCMCIA card that may be in the top slot. Also, disable your notebook's infrared port if it is active (contact your notebook's manufacturer to find out how to do this). After you have finished this setup procedure and are able to run your court reporting software, you can try using the I/O Card along with a second PCMCIA device such as a fax/modem card.

2. Install the I/O Card to work with Window 98 or Windows 95

If you use **Windows 98**, the first time you insert the I/O Card you will see a screen titled **Add New Hardware Wizard**. Insert the Socket I/O Installation Disk and click **Next>.** On the next screen, click **Search for the best driver for your device** and click **Next>**. On the next screen, make sure **Floppy disk drives** is checked and click **Next>**. A screen should report the location of the IOSOCKET.INF driver. Click **Next>**. When you see a screen reporting that Windows has finished installing the software, click **Finish.**

For instructions on how to install the I/O Card under Windows 95, refer to the "Quick Start" chapter at the beginning of this manual.

3. Boot MS-DOS
Keep the I/O Card inserted in your notebook and close all Windows applications. Click the Windows **Start** button and then click **Shut Down...** You will see the **Shut Down Windows** screen:



Make sure that **Restart the computer in MS-DOS mode?** is selected and click **Yes**. Your notebook will reboot into the MS-DOS environment.

Note: To install the I/O Card so that it works with MS-DOS, you must use the **Shut Down Windows** screen. Do not run the **MS-DOS prompt** utility from your desktop or from the **Start/Programs** menu.

4. From MS-DOS, run Socket's INSTALL program
When you see the `C:\WINDOWS>` prompt, you are in the MS-DOS environment rather than Windows. With the Socket I/O Installation Disk inserted in your floppy drive, type:

`a:\install` <ENTER>

A few seconds after you press ENTER you will see a screen that begins with `Welcome to the Socket IO installation program!` Press the ENTER key. When asked to select your computer, press ENTER. Continue to press ENTER in response to every question.

26 - Appendix C: Court Reporting

When you see the message `Installation is complete` followed by the **`A:\>`** prompt, remove the installation disk and turn off your notebook.

5. Reboot MS-DOS and run STARTCOM
Turn your notebook back on and boot MS-DOS as described in Step 3. At the `C:\Windows>` prompt, type:

`startcom` <ENTER>

You should see the message:

```
Scanning c:\socketio\socketio.ini
Card initialized as COM2
Socket IO enabled
```

In most cases, this means that the I/O Card can now be accessed by your court reporting software as COM2. If you see the message:

```
Card not found in socket
```

put the I/O Card in the other PCMCIA slot and run STARTCOM again.

If you can run STARTCOM without receiving an error message, the I/O Card is probably set up properly to run with your court reporting software. Refer to the section *Advanced Setup Procedures* at the end of this chapter if STARTCOM reports either of the following errors:

```
Wrong Host or HostBase:
```

or

```
COM port conflict with existing ComX device
```

The “X” in the error message above will be replaced by the Com port assigned to the I/O Card. You should also refer to the section *Advanced Setup Procedures* at the end of this chapter if you need to provide your court reporting software with information about the I/O Card’s COM port or Interrupt Request.

Automating I/O Card Initialization Under DOS

To find out how to cause MS-DOS to initialize the I/O Card automatically whenever you reboot your notebook, refer to the sections *Running ENABLEIO from CONFIG.SYS* and *Running ENABLEIO from a Batch File* in Chapter 3: “Software Setup.”

Advanced Setup Procedure

The basic setup procedure will work under most circumstances. If your court reporting software cannot communicate with your I/O Card, the card may have conflicted with another device on your notebook, causing Windows to assign the I/O Card special resources. These resources may include the I/O Card's COM number (COM stands for "communications port"), IRQ or IREQ number (IRQ and IREQ stand for "interrupt request"), or Host Base Address.

It is not important that you understand the technical meaning of these resource names, but it is important that Windows and Socket's INSTALL program for DOS assign identical resources to the I/O Card. You may also be required to know the I/O Card's assigned COM and IRQ numbers in order to complete the installation of your court reporter software.

Follow these steps to identify and eliminate resource conflicts:
1. Record the resource settings that Windows assigned to the I/O Card
2. Edit the SOCKETIO.INI file and add the resource settings you recorded
3. Make sure that STARTCOM runs without reporting an error

Before you begin this procedure, make sure you have completed the basic setup procedure described in the previous section. In other words, you should have installed the I/O Card both for Windows and for DOS.

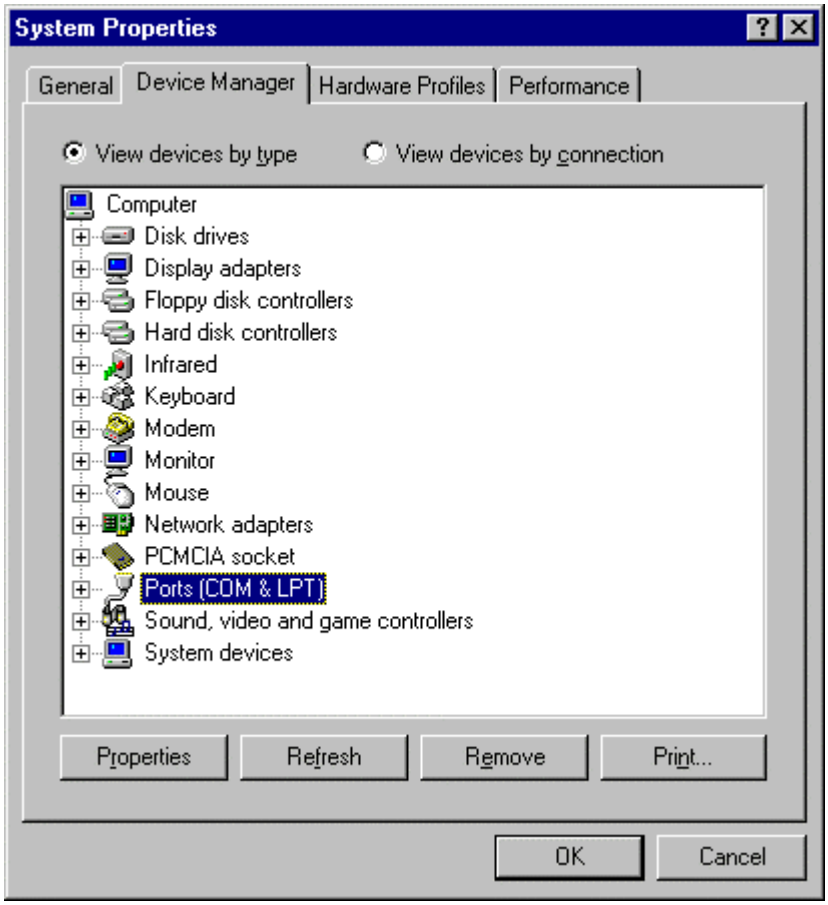
Step 1: Record the settings that Windows assigned to the I/O Card
Once you have installed the I/O Card, Windows will assign the card a COM number, an IRQ number, and a Host Base address. You have to determine what these numbers and addresses are in order to verify that Windows and the direct enabler for DOS are using the same resources.

With Windows running, insert your I/O Card into a PC Card slot in your Windows notebook. Click the Windows **Start** button, click **Settings**, and then click **Control Panel**.

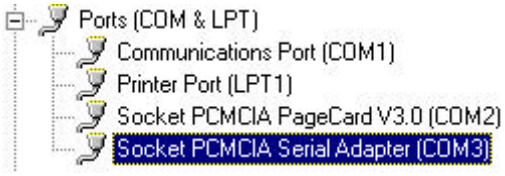
Find the System icon on the Control Panel screen:

Double click on the **System** icon and you will see the **System Properties** screen. Click on the **Device Manager** tab at the top of the **System Properties** screen.

You will see the list of devices currently running on your notebook.

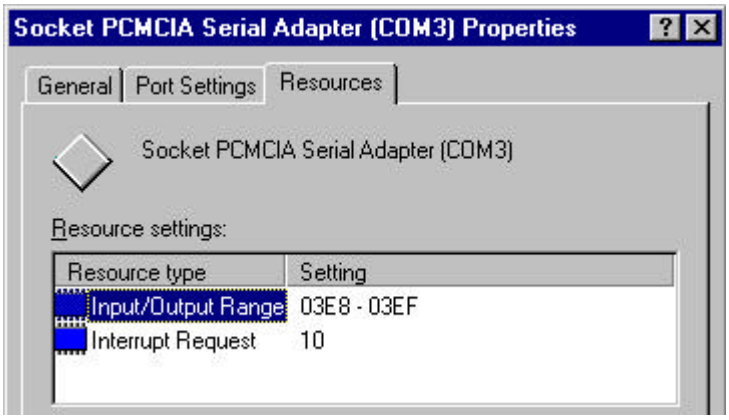


Click the ⊞ icon on the left of the line **Ports (COM & LPT).** You will see a detailed list of ports:



Write down the COM number associated with the line that begins **Socket PCMCIA Serial Adapter**... In the example, the COM number is 3. This means that Windows has assigned the I/O Card the port called COM3. Click on the line that says **Socket PCMCIA Serial Adapter (COMx)** so that it is highlighted and then click the **Properties** button.

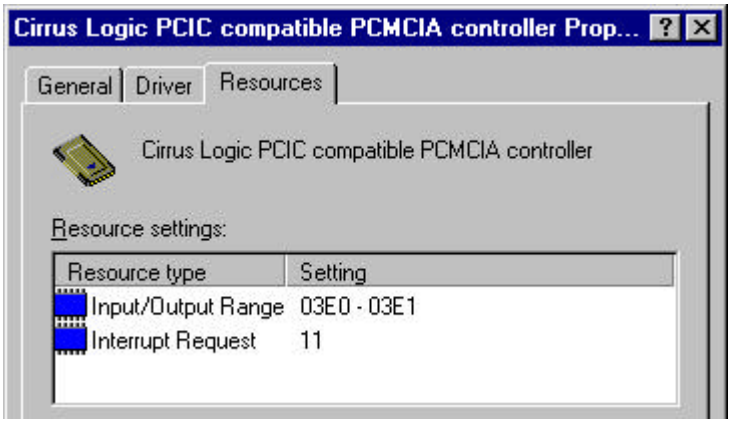
You will see the **Socket PCMCIA Serial Adapter Properties** screen. Click on the **Resources** tab at the top of this screen. You will see a screen showing the resources Windows has assigned to the I/O Card:



Write down the Interrupt Request number (10 in our example). Click the **Cancel** button to return to the **System Properties** screen.

Click the ⊞ icon on the left of the line that says **PCMCIA Socket:**

Click on the line that identifies your PCMCIA controller so it is highlighted. Click the **Properties** button. You will see the properties screen for your PCMCIA controller. Click the **Resources** tab at the top of the screen:



Record the first four digits of the input/output Range (03E0) in our example).

30 - Appendix C: Court Reporting

NOTE: If you find a Memory Range assigned to the PCMCIA Socket line in Device Manager, you will need to add a line to your CONFIG.SYS file to turn on the I/O Card. This will automatically enable the card when you boot up and you will no longer need to run STARTCOM.BAT.

Shutdown and restart your notebook in DOS mode. Select **Start/Shutdown** and select **Restart in MS-DOS mode**. This will take you to a **C:\WINDOWS>** prompt. Type **CD** <ENTER>. Type: **EDIT CONFIG.SYS** <ENTER>. Add this line as the **first** line in the CONFIG.SYS file:

```
device=c:\socketio\enableio.exe file=c:\socketio\socketio.ini
```

Save and exit the CONFIG.SYS file. Shut down and restart the computer for the change to take effect.

Step 2: Edit the SOCKETIO.INI file and add the settings from Step 1
At this point, you should have recorded the I/O Card's COM number and Interrupt Request number plus your PCMCIA controller's HostBase Address. Keep the I/O Card inserted in your notebook and close all Windows applications. Click the Windows **Start** button and then click **Shut Down...** You will see the **Shut Down Windows** screen. Make sure that **Restart the computer in MS-DOS mode?** is selected and click **Yes**. Your notebook will reboot into the DOS environment.

When you see the **C:\WINDOWS>** prompt on your screen, you are in the DOS environment rather than Windows.

Type: **CD\SOCKETIO** <ENTER>

If you installed Socket's direct enabler according to the instructions in the previous section, you should see the **C:\SOCKETIO>** prompt.

Edit the SOCKETIO.INI file. Type: **EDIT SOCKETIO.INI** <ENTER>

The file should resemble this:

```
[SOCKETIO]
  Host = PCIC
  Socket = 0
  Com = 0
  MemBase=0xD4000
  MemSize=0x1000
```

Find the line that says **COM=0**. If the COM port number you recorded in the previous step is COM2, do not change this line. If the COM port number you recorded is COM3 or COM4, modify this line to say either

COM = 3 or **COM = 4**

so that it matches what you recorded.

If the COM port number is 3 or 4, insert a new line underneath the `Com =` line and indicate the Interrupt Request number. In our example, the Interrupt Request was 10, so you would insert the line:

`IREQ = 10`

If the HostBase Address you recorded for your PCMCIA controller is *not* 03E0 (if, for example, it is FCFC) then insert a new line above the `MemBase =` line and indicate the HostBase Address preceded by "**`0x`**" (make sure to use the number 0 and not the letter O):

`HostBase = 0xFCFC`

Failure to do this will cause the STARTCOM program to display the error: "`Wrong Host or HostBase`."

If STARTCOM reported the error "Card Not Found In Socket, " you can either put the I/O Card in the other slot or change the line "Socket = 0" to:

`Socket = 1`

Here is an example of an edited SOCKETIO.INI file (with edits in **bold**):

```
[SOCKETIO]
  Host = PCIC
  Socket = 1
  Com = 3
  Ireq = 10
  HostBase = 0xFCFC
  MemBase=0xD4000
  MemSize=0x1000
```

Make sure that STARTCOM runs without reporting an error
Save your new SOCKETIO.INI file and exit the MS-DOS EDIT program. At the `C:\SOCKETIO>` prompt, type:

`startcom` <ENTER>

You should see a message that ends with: "`Socket IO enabled.`"

If STARTCOM reports "`COM port conflict with existing ComX device`" even though the I/O Card COM number you recorded from Windows matches "X" then try the following remedy:

1. While in Windows, remove the I/O Card from its PCMCIA slot
2. Reboot MS-DOS as described in Step 3 under *Basic Setup Procedure*
3. Insert the I/O Card back into its PCMCIA slot
4. Run STARTCOM and verify that there is no error message

If You Give Up

If you are unable to make your I/O Card work properly, refer to the last section of Appendix B, "Troubleshooting."

32 - Appendix C: Court Reporting

Appendix D **Products**

Socket's Plug-in Cards

Socket offers a growing family of *Battery Friendly*™ plug-in cards in the PC Card and CompactFlash CF+ form factors for Windows CE-based Handheld PCs and Palm-size PCs and Windows 9x/NT notebooks.

Low Power Ethernet PC Cards
Get the speed and location independence of Ethernet when you synchronize, backup, web browse, or access email. Available with removable or ruggedized non-removable cable, 10BaseT or 10BaseT/10Base2. For Handheld PCs and Windows 9x/NT notebooks.

Low Power Ethernet CF+ Cards
These CompactFlash CF+ cards offer speed and location independence when you synchronize, backup, web browse, access email or load software. 10BaseT only. Available with removable or ruggedized non-removable cable. For Palm-size PCs.

Serial I/O PC Cards
Add a fast COM port for attaching modems, bar code scanners, GPS receivers or other serial device. Available with removable or ruggedized non-removable DB-9 cable. For Handheld PCs and Windows 9x/NT notebooks.

Serial I/O CF+ Cards
These CompactFlash CF+ cards add a fast COM port for attaching external modems, bar code scanners, GPS receivers or other serial device. Available with removable or ruggedized non-removable DB-9 cable. For Palm-size PCs.

Dual Serial PC Cards
Add two fast COM ports for attaching modems, bar code scanners, GPS receivers or other serial devices. Available with removable or ruggedized non-removable DB-9 cable. For Handheld PCs and Windows 9x/NT notebooks.

Ethernet/Serial Combo PC Card
Combines an Ethernet port and a serial COM port on one card. Includes a removable RJ-45 10BaseT Ethernet cable and a removable DB-9 serial cable. For Handheld PCs and Windows 9x/NT notebooks.

Laser Scanner PC Card LS2104
Integrates Socket's CIO plug-in card with Symbol Technologies' LS2104 handheld laser scanner. Includes Socket's ScanWizard software to read bar codes into any Windows program. For Handheld PCs and Windows 9x/NT notebooks.

Laser Scanner PC Card LS4004
Integrates Socket's CIO plug-in card with Symbol Technologies' LS4004 handheld laser scanner. Includes Socket's ScanWizard software to read bar codes into any Windows program. For Handheld PCs and Windows 9x/NT notebooks.

Bar Code Wand PC Card
Integrates Socket's plug-in card with Welch Allyn's bar code scanner wand. Includes Socket's virtual keyboard software to read bar codes into any Windows program. For Handheld PCs and Windows 9x/NT notebooks.

Bar Code Wand CF+ Card
Integrates Socket's CompactFlash CF+ card with Welch Allyn's bar code scanner wand. Includes Socket's virtual keyboard software to read bar codes into any Windows program. For Palm-size PCs.

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