

PCI Serial Card

2 Port RS-422/RS-485 PCI Serial Card with Terminal Block Connectors

PCI2S422TB

Instruction Manual



Actual product may vary from photo

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The Professionals' Source for Hard-to-Find Computer Parts

FCC Compliance Statement

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. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. 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 is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Introduction

Thank you for purchasing a StarTech.com PCI serial card. This high performance peripheral card adds 2 serial ports to your system. You can connect your RS-422 or RS-485 serial devices at distances of up to 4000 feet (1200 meters) at high speeds with excellent reliability.

Features

- Transfers data at speeds of up to 960 Kbits/sec.
- Plug and Play Compatible
- Eliminates IRQ conflict by sharing IRQ lines
- Backed by StarTech.com's lifetime warranty and technical support

Before You Begin

To ensure a quick and easy card installation, please read through this section carefully before attempting to install the card.

System Requirements

- An IBM compatible computer with a 486 or faster processor (Pentium or higher recommended)
- Operating systems: Windows 95/98/ME/2000/XP, NT 4.0, Linux, DOS
- An available PCI slot

WARNING! PCI cards, like all computer equipment, can be severely damaged by static electricity. Be sure that you are properly grounded before opening your computer case or touching your PCI card. StarTech.com recommends that you wear an anti-static strap when installing any computer component. If an anti-static strap is unavailable, discharge yourself of any static electricity build-up by touching a large grounded metal surface (such as the computer case) for several seconds. Also be careful to handle the PCI card by its edges and not the gold connectors.

Contents

This package should contain:

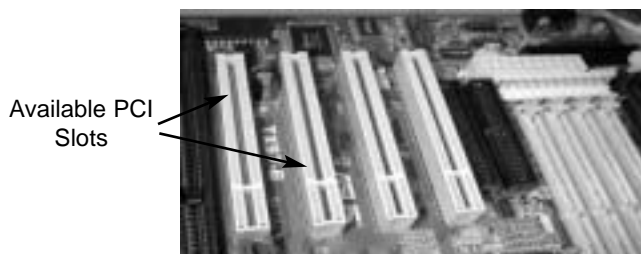
- 1 x PCI serial card
- 1 x Driver CD
- 1 x Instruction Manual

Installation

This section will guide you through the installation of your PCI card and the related software. Please read through the instructions carefully and complete each step in the order listed.

Installing the Card

1. Make sure that your system is unplugged and you are grounded.
2. Remove the cover of your system (see your computer's user manual for details, if necessary) and gently turn your computer onto its side.
3. Locate an empty PCI slot (usually white in color) and remove the metal plate that covers the rear bracket. You may need a Phillips screwdriver to perform this step. **Retain this screw!** You will need it to secure the card later.



4. Gently insert the card into the empty slot, making sure it is firmly seated.
5. Secure the card in place using the screw you removed in Step 3.

Installing the Drivers

Depending on the version of Windows you use and the configuration of your computer, the instructions below may not be identical to what you see on your screen.

Windows 95/98/ME

1. Windows will automatically detect the new hardware. At the **Add New Hardware Wizard** window, click **Next**.
2. Select **Search for the best driver for your device (Recommended)** and click **Next**.
3. Select **Specify location** and type `x:\RS422&485 Serial\PCI\Win9x` (where "x:" is the letter of your CD-ROM drive) and click **Next**.
4. Click **Finish** to complete the installation.
5. Click **Yes** when asked to restart your computer.

To Verify Installation

1. Go to your **Control Panel** and double-click the **System** icon.
2. Click the **Device Manager** tab.

3. Click the plus (+) symbol next to **Ports (COM & LPT)**. Two new serial ports (numbered COMxx) should appear without exclamation marks or other errors.

Windows 2000/XP

1. Windows will detect new hardware on startup and the **Add New Hardware Wizard** will appear.
2. Insert the CD that came with the serial card. Choose **Install the software automatically**. Click **Next**.
3. It may take several moments for Windows to search your drives for the driver files. The wizard will open a dialog box that says **Please select the best match for your hardware from the list below**. Choose the option with a location of x:\RS422&485 Serial\win2k and xp (where "x:" is the letter assigned to your CD-ROM drive) and click **Next**.
4. You may receive a warning that the driver file has not been digitally signed. When prompted, choose **Continue Anyway** to continue the driver installation.
5. Windows may detect another device ("Serial Port 1" or similar) immediately following the completion of the card software installation. If the **Add New Hardware Wizard** appears again, repeat steps 2 through 4 from above.
6. Click **Yes** when asked to restart your computer.

To Verify Installation

1. Go to your **Control Panel** and double-click the **System** icon.
3. Click the **Hardware** tab.
4. Click the **Device Manager** button.
5. Click the plus (+) symbol next to **Ports (COM & LPT)**. Two new serial ports (numbered COMxx) should appear without exclamation marks or other errors.

For Other Operating Systems (DOS, Linux)

Software and/or instructions for installing the serial card under other operating systems are included on the installation CD. To access these instructions, go to the "\RS422&485 Serial" folder on the CD that came with the serial card and look in the subfolder for the operating system you wish to use.

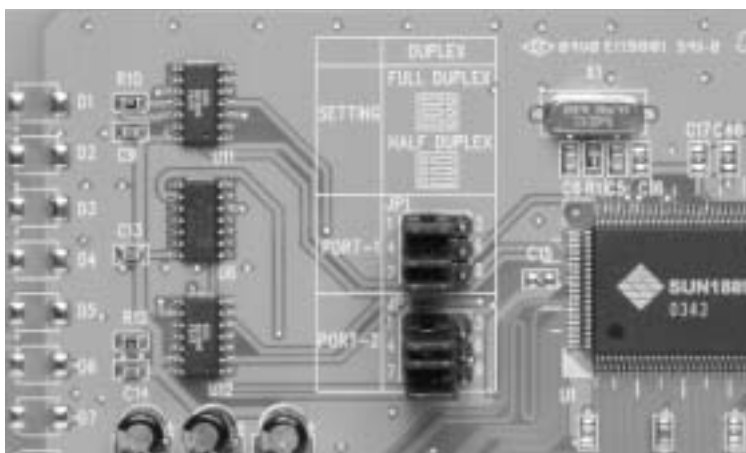
Configuring Your Serial Card

The PCI2S422TB allows you to configure each port based on your needs and the requirements of the serial devices you are connecting to each port. Consult the documentation for the device(s) you wish to connect to the card to determine the correct setting.

Full Duplex: Allows the port to simultaneously send and receive data between itself and a serial device (default).

Half Duplex: The port will only send or receive data between itself and a serial device at any one time.

NOTE: The settings for one port do not affect the settings of the other, and both ports must be configured separately.



Example: Both ports configured for Full Duplex (default)

To Configure for Full Duplex

Jumper Configuration

CLOSED	OPEN
1, 2	3
4, 5	6
7, 8	9

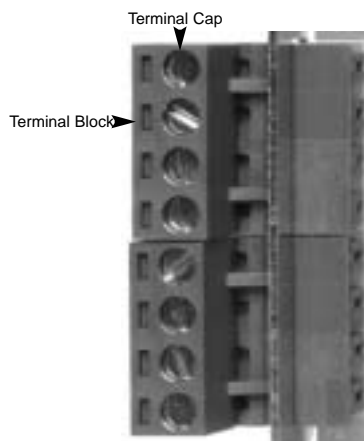
To Configure for Half Duplex

Jumper Configuration

CLOSED	OPEN
2, 3	1
5, 6	4
8, 9	7

Connecting Your Serial Devices

WARNING: Power off the computer in which the card is installed **and** any serial devices before attempting any connection. Failure to do so could result in electric shock and/or damage to the card and other peripheral equipment.



The PCI2S422TB supports both the RS-422 and RS-485 serial communications standards. To connect your serial devices to the card:

1. Remove the protective outer sheath from the serial cable at a distance of (preferably) no more than 1" (25 mm) from the terminal block on the back of the card, leaving the individual wires inside exposed. There should be sufficient slack to avoid damaging or breaking the wires.
2. Using a wire cutter, cable crimping tool, or other suitable device, carefully strip the protective plastic cover from each individual wire so that approximately 0.5" (12 mm) of metal is exposed.
3. Using a small flat-head screwdriver, rotate the terminal cap counter-clockwise until there is sufficient room to insert the end of the wire into the terminal block on the back of the card.
4. Insert the end of the wire into the terminal block. Holding the wire in place, **gently** rotate the terminal cap clockwise with the screwdriver until the wire is firmly in place inside the terminal block. **Do not over-torque the terminal cap; the wire could be damaged by excessive pressure.**
5. Repeat steps 1-4 for every wire required, in each port.

NOTE: The minimal amount of exposed metal possible is preferable when attaching wires to the terminal block. Excessive amounts of bare metal can cause interference and may reduce performance.

NOTE: If the cable you are using to connect the PCI2S422TB to your serial device is being run inside in ceilings, walls, or other enclosed spaces, be sure to observe local building codes with respect to communications cabling. **Ensure that total cable length between the card and each device is no more than 4000 feet (1200 meters).**

Pin Assignments

RS-485 Half Duplex (2 wire)

Port 1

Port 2

TX0+	Used: RX/TX+	TX1+	Used: RX/TX+
TX0-	Used: RX/TX-	TX1-	Used: RX/TX-
RX0+	Not Used	RX1+	Not Used
RX0-	Not Used	RX1-	Not Used

RS-422/485 Full Duplex (4 wire)

Port 1

Port 2

TX0+	Used	TX1+	Used
TX0-	Used	TX1-	Used
RX0+	Used	RX1+	Used
RX0-	Used	RX1-	Used

Specifications

Chipset	SUN1889
Connectors	2 x 4-pin Terminator Block
Mode of Operation	Differential
Bus Transceivers	Full Duplex and Half Duplex Selectable
Maximum Data Rate	10 Mbits/sec. (250K baud on networks >= 64 nodes)
Maximum Cable Length	4000 feet (1200 meters)
Max. Receivers/Drivers per Line	RS-422: 1 driver, 10 Receivers RS-485: 10 drivers, 32 Receivers
Bi-directional Surge Protection	1500 VDC or 600 Watts Peak Pulse Power
Fault Protection	+/- 60V for Receiver Input or Driver Output
No Damage or Latchup to ESD	Level 4: +/- 15KV Air Discharge Level 2: +/- 4KV Contact Discharge
Bus Interface	PCI, 32-bit
Regulatory Certifications	FCC Class B, CSA, CE, TUV, UL, CB

Technical Support

StarTech.com's lifetime technical support is an integral part of our commitment to provide industry-leading solutions. If you ever need help with your product, visit www.startech.com/support and access our comprehensive selection of online tools, documentation, and downloads.

Warranty Information

This product is backed by a lifetime warranty. In addition, StarTech.com warrants its products against defects in materials and workmanship for the periods noted, following the initial date of purchase. During this period, the products may be returned for repair, or replacement with equivalent products at our discretion. The warranty covers parts and labor costs only. StarTech.com does not warrant its products from defects or damages arising from misuse, abuse, alteration, or normal wear and tear.

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