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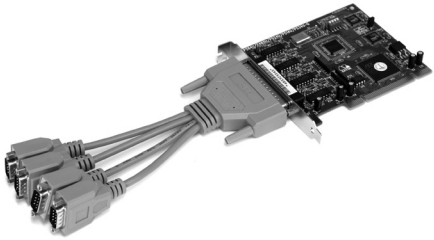
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4 Port PCI RS422 RS485 Serial Adapter Card

PCI4S422DB9



*actual product may vary from photos

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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 RS-422/RS-485 serial card from StarTech.com. Now you can add four independent RS-422/RS-485 serial ports to your system. You can set each port as either RS-422 or RS-485 using dip switches right on the card. This flexible card works in both 3.3 volt and 5 volt PCI slots and uses Automatic Data Direction Control (ADDC) for more straight-forward control of two-wire half-duplex RS-485 communications. The PCI4S422DB9 uses a 32-Byte transmit-receive buffer to help reduce the number of CPU interrupts and improve system performance.

Packaging Contents

- 1x serial card
- 1x serial cable with DB9 connectors
- Driver disks for Windows, Linux, and Unix

System Requirements

- A computer running Windows XP/2000, DOS, Linux, or UNIX
- (SCO Open Server)
- An open 5 or 3.3 volt PCI slot

Installation

Note: In one system, you can install two of these serial cards. You must differentiate between the two cards by using the jumper (located near the end of the card). The card with the jumper ON will be card number 1. The card with the jumper OFF will be card number 2. Install the cards one at a time, starting with the card you want to be designated number 1.

Installing the Card

1. Make sure that your system is unplugged and you are grounded.
2. Configure each port (labeled A to D on the cable) to be either an RS-422 or an RS-485 port using the dip switches located on the card. When the dip switch is in the upper or On position, that port will operate in RS-422 mode. When in the lower or Off position, the port will operate in RS-485 mode.
3. Remove the cover of your system (see your computer's user manual for details, if necessary) and gently turn your computer onto its side.
4. Locate an empty PCI slot (usually white in colour) and remove the metal plate that covers the rear bracket. You may need a Phillips screwdriver to perform this step. Hang on to the screw! You will need it to secure the card later.
5. Gently insert the card into the empty slot, making sure it is firmly seated. Secure the card in place using the screw you removed in Step 3 and put your computer case back on.
6. Plug the 37-pin end of the serial cable into the port on the card.
7. Turn the computer on.

Driver Installation

Note: Depending on your operating system and the configuration of your system, the instructions below may not be identical to what you see on your screen.

Windows

Windows XP/2000

Once you turn your computer on after installing the card, Windows will automatically detect the new hardware. Follow the onscreen prompts and direct Windows to the Win2000 folder on the driver disk (Windows 2000 and Windows XP use the same driver).

Notes:

- To change the COM port number: Windows will automatically assign the card a COM port number. If you need to specify another port number, you can use the setup utility included with the driver. Go to: Control Panel/System/Hardware/Device
- Manager/Multi-Port Serial Adapter/Setup. From here you will be able to set the target value.
- Each serial card needs an open IRQ for Plug and Play function.
- In Window XP, the driver for each port will be installed and confirmed. In Windows 2000, the driver will be installed automatically.

Windows NT

Before you begin the installation, make sure you are logged in as a user with administrative privileges.

1. Start the Control Panel applet by double-clicking on its icon in the Program Managers main group.
2. Double-click the Network icon to bring up the Network Control Panel applet.
3. Select Add Adapter. A list of possible adapters will be displayed. Select "Other: Requires disk from manufacturer."
4. When prompted for the path, specify the location of the driver for the card you installed. Depending on your version of the driver disk, the drivers may be found in the P584/NT4 folder.
5. Follow the onscreen prompts to complete installation. Make sure that the COM port number does not conflict with any other devices in your system.
6. Use the "Binding" function to make more serial ports available. If you do not perform a binding function, you may not have an extra COM port available in your next boot procedure.

Notes:

- When installing two cards in the same system, the card with the jumper ON will be assigned the lower COM port number. The card with the jumper OFF will have the higher COM port number.

DOS

When installing multiple cards in DOS, it is important to install the card designated card Number 1 (with the jumper ON) first.

1. Change your active directory to the target directory:

   ex: c:\RAYON

2. Insert the driver disk into the disk drive and copy the DOS files from the driver diskette:

   ex: xcopy /s/e/v a:\DOS*.*

3. Run the driver installation command:

   ex. c:\rayon\pciport

4. The cards will now be installed in your system. Each card will show the card number in the system (for the application to specify the target card and target port), the card model, the card jumper setting (for card number 1 or 2), the IRQ assigned, and the COM port number for the card.

You may see the following error messages:

- PCIPORT already installed. This means the driver has already been installed.
- Please check the "JP1". Both cards in the system may have their jumpers set to ON or
- OFF.
- PCIPORT not in system. There is no card in the PCI slot.

Notes:

- The driver function call description can be found on the DOS driver diskette. There is also a DEMO program for the user to modify to meet their target application program.

LINUX

1. Login as super-user (SU) or root.

2. Change your directory to root and copy the driver diskette to the system:

   # cd /
   # tar xvf /dev/fd0

3. Change the directory to /etc/pciport and run the Install command:

   # cd /etc/rayon
   # ./Install

4. Follow the prompts to perform the following:

- Choose your card type
- Choose your Linux kernel version
- Rebuild your system
- Exit and reboot with new settings

The device name will be /dev/tty8[1--2] [a--h]

Card Definitions

Note: Card 1 is the card with the jumper ON.

Card Number	Device Name
1	tty81?
2	tty82?

I/O Port Number Definitions

Port Number	Device Name
A	tty8?a
B	tty8?b
C	tty8?c
D	tty8?d

For example, the device named /dev/tty82b is the device plugged into port B on card Number 2.

Notes:

- The above installation procedure installs a module type driver. If you can not install the driver successfully, you may need to use a kernel type driver. With kernel type drivers, you may need to have the full source file for the Linux system and the source file must be located in the /usr/src/linux directory. If your source file is in a different location, you must move it or link it to the "usr/src/linux" directory.
- Each serial card needs an open IRQ for Plug and Play function.

SCO OpenServer

1. Log in as a super-user (SU) or root.
2. Extract all the files on the diskette using the tar command

   # cd /

   # tar xvf /dev/fd0135ds18
3. Change the directory to /etc/pciport and run the Build command:

   # cd /etc/pciport

   # ./build
4. Reboot your system.

The device name will be /dev/tty8[1--2] [a--h]

Card Definitions

Note: Card 1 is the card with the jumper ON.

Card Number	Device Name
1	tty81?
2	tty82?

I/O Port Number Definitions

Port Number	Device Name
A	tty8?a
B	tty8?b
C	tty8?c
D	tty8?d

For example, the device named /dev/tty82b is the device plugged into port B on card Number 2.

Notes:

- The resources for the card are assigned by the PCI BIOS. If your environment has changed, you may need to run the Build command again to remove the old driver and reinstall it again.
- Each serial card needs an open IRQ in order to function properly.

Specifications

Number of Serial Ports	4
Connector Type	4 x 9-pin DB Male
Max Data Transfer Rate	921 Kbits/sec
Bus Interface	PCI
Serial Interface	RS-422 & RS-485
Bus Transceivers	Full-Duplex and Half-Duplex
Max Cable Length	4000 ft (1220m)
FIFO Length	32 FIFOs
I/O Address	Plug & Play
Standards	PCI 2.2
System Requirements	Windows 2000/NT/XP, SCO Unix, Linux, DOS
System	3.3 or 5 volt slot with 32-bit PCI Bus

Technical Support

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For the latest drivers/software, please visit www.startech.com/downloads

Warranty Information

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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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