

SocketSerial™ I/O Card

CompactFlash and PC Cards for adding RS-232 serial communications ports to

Windows Mobile 2003/2003SE/5.0 handheld computers

Windows XP/Vista/7 notebook or desktop PCs

User's Guide



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The SocketSerial I/O Card includes technology licensed under United States Patent Nos. 4,543,450, 4,603,320, 4,686,506, and 4,972,470.

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

Please refrain from any applications of the B&B Electronics product that are not described in this manual. B&B Electronics also requests that you refrain from disassembling the card. Disassembly of this device will void the product warranty.

You can track new product releases, software updates and technical bulletins by visiting www.quatech.com.

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1 | Introduction

Would you like to connect a serial device to a Pocket PC, laptop or tablet computer that doesn't have a serial port? The Serial I/O Card makes it easy to add a high-speed RS-232 port to a variety of Windows-based systems. Windows recognizes the card as a standard COM port, so installation is a snap.

Connect to a wide range of serial devices, such as GPS receivers, bar code scanners, monitoring and control systems, diagnostic tools, satellite phones, writers for court reporting, printers, lab equipment, field data collection devices, and more.

The Serial I/O Card features plug-and-play and hot swapping with most Windows-based mobile computers. Hot swapping is the ability to add and remove devices while a computer is running and have the system automatically recognize the change.

The Serial I/O Card is the world's lowest power plug-in card due to its exclusive *Battery Friendly* design. Using only 2.4 mA (8 mW) in standby mode, the Serial I/O Card is the best choice for adding an RS-232 port to a battery-powered PDA, laptop or tablet PC.



About the Software

Want to transmit data at speeds up to 921 kbps, but have a serial application that only lists speeds up to 115 kbps? Hi-Speed COM Tools and drivers let you use your application at high COM port speeds, even custom baud rates like 230.4 or 921.6 kbps.



The utility's user-friendly interface reports your COM port number, and Windows 2000/XP users can also change the COM port assignment. Advanced users can also change the flow control properties.

As a service for our customers, we provide FREE software updates online at: www.quatech.com.

System Requirements

Your computer should meet these minimum requirements:

Any of the following operating systems:

Windows Mobile 5.0, 2003SE or 2003

Windows XP, Vista, or 7

CompactFlash or PC Card slot

(Operation in a PC Card slot requires a PC Card adapter)

Windows Mobile or CE devices require ActiveSync 4.0 or greater



Note: We do not recommend using the Serial I/O Card with a mouse. If you have a mouse with a serial connector, plug your mouse into your notebook's built-in serial port.

Card Versions

The Serial I/O Cards are available in either the CompactFlash (CF) or PC Card (PCMCIA) form factor and with either of two cable builds. To operate a CompactFlash card in a PC Card slot, use a Type II PC Card adapter. All cables have an industry-standard male DB-9 connector.



The standard Serial I/O Card features a detachable cable. (CompactFlash card shown.)



The Ruggedized Serial I/O Card features a permanent cable and molded strain relief, better suited for harsher industrial applications. (PC Card shown.)

Package Contents

The Serial I/O Card package includes these items:

- Serial I/O Card

- Serial cable with DB-9 connector (permanently attached for Ruggedized cards, detachable for standard cards)

- Installation Disc* containing software and user documentation

2 | Setup for Windows Mobile

This chapter describes how to set up the Serial I/O Card on Pocket PCs or other devices running Windows Mobile 5.0, 2003SE or 2003.

Setup Summary

STEP 1: Intall the software.

STEP 2: Insert the Serial I/O Card.

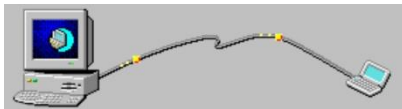


STEP 1: Install the Software

ADVANCED USERS: See Appendix B for CAB installation instructions.

Makes sure you have ActiveSync 4.0 or later. You can download it free from www.quatech.com.

Use ActiveSync and a serial/Ethernet/USB cable or cradle to make an active connection between the mobile computer and a host PC.



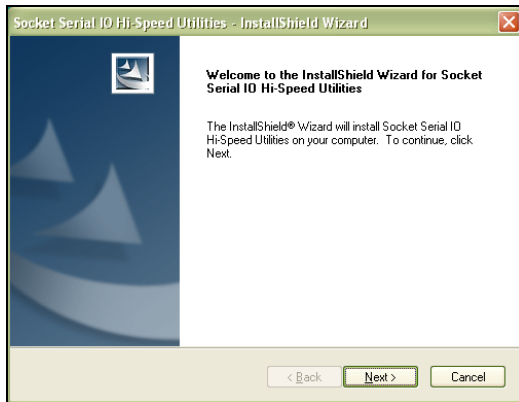
ActiveSync should report that you have connected, and the ActiveSync icon should turn green.

Insert the installation CD into your host PC.

Use My Computer or Windows Explorer to access the CD-ROM drive. In the CD, click on **setup**.



The Setup Center will begin. Follow the wizard to install the software.



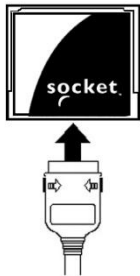
When software installation is complete, disconnect the device from the host PC. Soft reset the device by pressing the reset button.



IMPORTANT! If you do not soft reset the device, the Hi-Speed COM Tools icon will not appear!

STEP 2: Insert the Serial I/O Card

If using a detachable cable, attach it to the card. Press the side latches of the cable connector, insert the connector into the bottom of the card, and release.



Note: The card and cable should join snugly and remain attached after you release the latches. To remove the cable, press the side latches and pull gently.



IMPORTANT! When removing the cable, press on the side latches before pulling the cable! Otherwise, you can damage the connector and card!

Insert the card into your device's expansion card slot. Insert the card right-side up, with the blue label on top.

If using a detachable cable, do not shove on the cable during card insertion.

If using a CF card in a PC Card slot, use a PC Card adapter.



WARNING! DO NOT insert the card upside down or shove the card in too hard. Damage may occur! When properly inserted, the card will be fully contained within the slot, with only the connector and cable protruding.

Note: To remove the card, press your device's card eject button, if available, then remove slowly.

Hi-Speed COM Tools

Hi-Speed COM Tools is a powerful utility that allows you to use higher baud rates with serial applications designed for lower speeds. Advanced users can also configure custom baud rates and modify flow control properties. The handy utility also reports your COM port number.

This section explains how to do the following:

Start Hi-Speed COM Tools

View COM port assignment

Determine the maximum baud rate of your card

Map baud rates

Use advanced options

Start Hi-Speed COM Tools

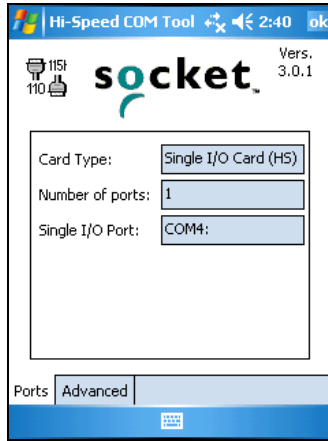
Tap Start | Settings | Connections tab | Hi-Speed COM Tools.



Note: If the Hi-Speed COM Tools icon does not appear, soft reset your device by pressing the reset button.

View COM Port Assignment

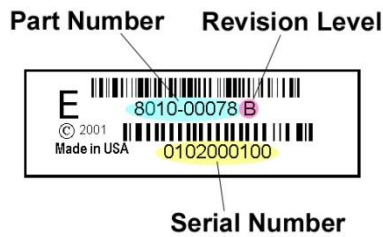
After you start Hi-Speed COM Tools, the **Ports** screen appears, reporting your type of Serial I/O Card, number of ports, and the COM port assignment.



Determine the Maximum Baud Rate of Your Card

If you plan to use Hi-Speed COM Tools to map baud rates, you should know the maximum baud rate that your Serial I/O Card can handle. The most recent revisions of the card can handle higher baud rates, up to 921 kbps. Check the Revision Level (Rev) of your card and refer to the chart below to determine the maximum baud rate of your card.

Note: The maximum baud rate varies with your device’s operating system, processor speed, and other variables. Higher baud rates may not work correctly on some older devices.



| Card Type | Part Number | Not Compatible with Hi-Speed COM Tools | Maximum Baud Rate | |
|--------------------------|--------------------------|--|-------------------|----------------|
| | | | 230 kbps | 921 kbps |
| CF with Removable cable | 8510-00094 8010-00075 | Rev A | Rev B | Rev C or later |
| CF with Ruggedized cable | 8510-00115 8010-00087 | Rev A | Rev B | Rev C or later |
| Custom CF Card | 8510-00155 | N/A | Rev A | N/A |

| | | | | |
|---|--|---------|---------|----------------|
| Single-port PC Card with Removable cable | 8510-00012 8010-00012 | Rev A-J | Rev K-L | Rev M or later |
| Single-port PC Card with Ruggedized cable | 8510-00073 8010-00065 | Rev A-D | Rev E-F | Rev G or later |
| Dual-port PC Card with Removable cables | 8510-00054 8010-00057 | N/A | Rev A-J | Rev K or later |
| Dual-port PC Card with Ruggedized cables | 8510-00092 8010-00077 | N/A | Rev A-E | Rev F or later |
| Quad-port PC Card with Ruggedized cables | 8510-00158 | N/A | N/A | ALL |
| Custom PC Card | 8010-00074 8510-00088 | Rev A | Rev B | N/A |
| | 8010-00095 8010-00096 8510-00119 8510-00121 | N/A | Rev A | N/A |

Map Baud Rates (ADVANCED USERS ONLY!)



What is baud rate mapping?

Most Windows applications offer baud rate settings only up to 115 kbps, because this is the maximum speed of typical serial ports. What if you want to transfer data faster than 115 kbps? The latest hardware and software of the Serial I/O Card were designed to handle much higher speeds, up to 921 kbps. Many Windows applications can handle speeds higher than 115 kbps, even though the highest baud rate they allow you to configure is 115 kbps.

Hi-Speed COM Tools enables you to use higher baud rates in applications that list a maximum baud rate of 115 kbps. The program takes one of the available baud rate values and uses it as a placeholder for a new baud rate of your choice. This is known as “mapping” a new baud rate to an available baud rate option.

For example, if you need your device to work at a baud rate of 230,400 bps, most Windows applications will not list 230,400 bps as a baud rate option. Hi-Speed COM Tools cannot change which options are listed, but it does let you program one of the options to work at 230,400 bps (e.g., you can change the “300” bps option to actually work at 230,400 bps).

Note:

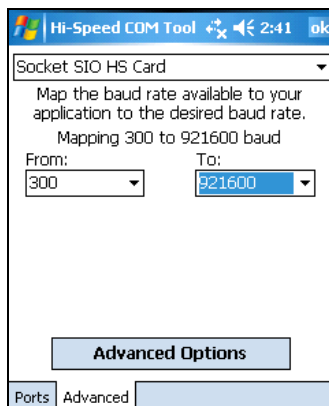
Some applications may have timing issues when you set them to baud rates that are higher than they were designed for. After mapping a baud rate to a new speed, you can re-map it back to its original speed.

Follow these steps to map baud rates:

Make sure the serial port is not open on your device.

In Hi-Speed COM Tools, tap on the **Advanced** tab.

At the top of the screen, select the desired card.



Example: Select “300” in the **From:** field and “921600” in the **To:** field and tap **ok**. Now, whenever you select a baud rate of 300 bps in a Windows application, your COM port will instead operate at 921,600 bps.

Use the **From:** and **To:** drop-down menus to map baud rates.

From: Select the baud rate option in your application that you want to use as a placeholder for a different baud rate.

To: Select the actual speed you would like the placeholder to function at. The drop-down menu includes baud rates that most Windows applications do not allow you to select (e.g., 921,600 bps).

After mapping baud rates, tap **ok** to have the changes take effect. Alternatively, tap **Advanced Options** to modify flow control properties or set a custom baud rate.

Notes:

The **To:** field lists one custom baud rate, signified by an asterisk (*). The number changes when you create a new custom baud rate.

After mapping a baud rate, the placeholder's original speed will no longer be available unless you re-map it to the original value.

Most serial applications use standard baud rates. If you are not sure which baud rate to choose, do not use a custom baud rate.

Make sure the new baud rate does not exceed the maximum baud rate for your card (see chart on page 12)



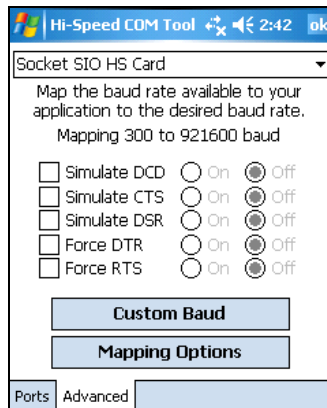
WARNING! DO NOT set the baud rate higher than the maximum baud rate for your Serial I/O Card, or you may experience functionality problems!
Use Advanced Options



WARNING! In most communication settings, these options need no modification. Do not alter these options if you do not understand their function, or you may cause functionality problems with existing communication settings.

Modify Flow Control Properties

In the Advanced screen, tap **Advanced Options**. The next screen will let you modify flow control options.



Use the check boxes and bullets to modify flow control properties.

If your application expects certain signals not supported by your Data Communication Equipment (DCE) hardware, you may want to use a “simulate” option. Examples of DCE include modems, printers, etc.

Simulate DCD (Data Carrier Detect) — DCE receives a carrier signal from the other end of the telephone circuit.

Simulate CTS (Clear to Send) — DCE is clear to send.

Simulate DSR (Data Set Ready) — DCE is ready to send data from the terminal.

If your DCE expects certain signals not supported by your application, you may want to use a “force” option.

Force DTR (Data Terminal Ready) — Can be used for hardware control. Control signal sent from the DTE to the DCE indicates that the DTE is powered on and ready to communicate.

Force RTS (Request to Send) — One of the control signals on a standard RS-232 connector. The modem is placed in originate mode and can begin to send.

After modifying your flow control settings, tap **ok** to apply the changes and exit Hi-Speed COM Tools.

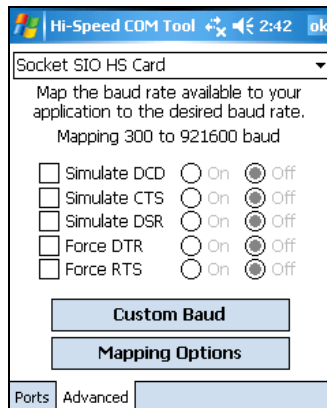
Alternatively, to return to the previous screen, tap **Show Baud Rates**.

To create a new baud rate, tap **Set Custom Baud Rate**.

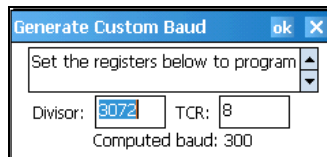
IMPORTANT! Your changes will not take effect until you tap ok and exit the Hi-Speed COM Tools!

Set a Custom Baud Rate

In the initial Advanced screen, tap **Advanced Options**. Tap **Custom Baud**.



Use the **Generate Custom Baud** screen to create a new baud rate. Enter the **Divisor** and **TCR** and tap **ok**.



The formula is: $\text{Baud Rate} = 7372800 / (\text{TCR} * \text{Divisor})$ where
TCR = (4) for 4, (8) for 8, or (0-3) for 16.

In the next screen, if you are done modifying your COM port settings, tap **ok** to exit the Hi-Speed COM Tools.

To return to the initial baud mapping screen, tap **Show Baud Rates**.

IMPORTANT! Your changes will not take effect until you tap ok and exit the Hi-Speed COM Tools!

3 | Setup for Windows 7, Vista or XP

This chapter describes how to set up the hardware and software on a notebook, tablet or desktop computer Windows XP, Windows Vista or Windows 7.

We occasionally publish device driver updates for this product on Windows Update. If your computer is connected to the internet and is able to reach the Microsoft Windows Update server, the device drivers will be automatically installed.



If the device drivers are not automatically installed by Windows Update, please follow the installation steps below.

Setup Summary

STEP 1: Insert the CD.

STEP 2: Insert the Serial I/O Card.

STEP 3: Complete the new hardware wizard.

STEP 1: Insert the Installation CD

Insert the *Installation Disc* into the CD ROM drive of your computer.

If you don't have the CD, download the current device driver release from the support area of www.socketserial.com or www.quatech.com. Unzip the driver package into a directory on your hard drive.

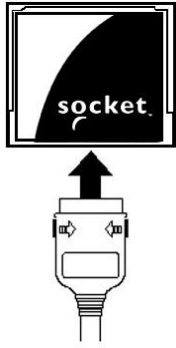


STEP 2: Insert the Card



IMPORTANT!
Insert the card BEFORE installing the software!

If using a detachable cable, attach it to the Serial I/O Card. Press the side latches of the cable connector, insert the connector into the bottom of the card, and release.



Note: The card and cable should join snugly and remain attached after you release the side latches. To remove the cable, press the side latches and pull gently.



IMPORTANT! When removing the cable, press the latches before pulling it from the card! Otherwise, you can damage the connector and card!

Insert the Serial I/O Card into the PC Card slot of your computer. Insert the card right-side up, with the blue label on top.

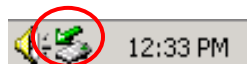
If using detachable cable, do not shove on the cable while inserting the card.

If you have a CF card, first insert into a PC Card adapter (shown below right).



WARNING! Do NOT insert the card upside down or shove the card in too hard. Damage may occur! When properly inserted, the Serial I/O Card will be fully contained within the slot, with only the connector and cable protruding.

A PC Card icon should appear in the task tray at the bottom of your screen, indicating that your PC has detected the Serial I/O Card.



Note: To remove the card, double-click on the PC Card icon. Select the Serial I/O Card and click **Stop**. After your computer reports that it is safe to remove the card, press your computer's card eject button to remove the card. **DO NOT** pull on the cable or cable connector to remove the card, especially if using a detachable cable!

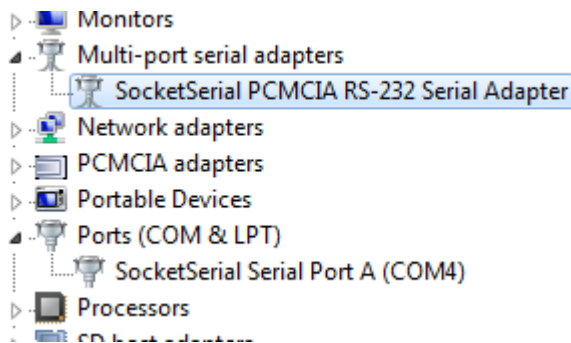
STEP 3: Complete the Installation

The first time you insert the card into your computer, what occurs depends on the version of Windows you are running.

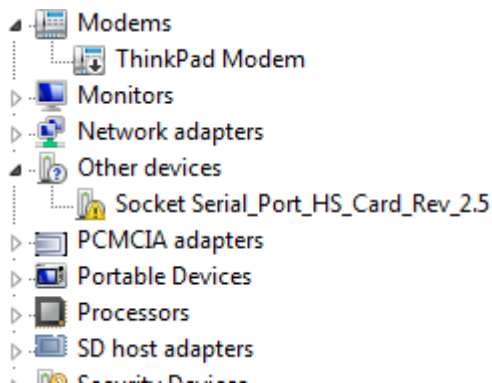
Windows 7

If your computer is connected to the internet and your Windows Update settings are the defaults, Windows will automatically download and install the correct device drivers for the card. To verify that the card is installed correctly, open Device Manager.

- Click the “Start” button at the left end of the Windows Taskbar.
- In the “Search programs and files” box, type “Device Manager” (without the quotes).
- Click on “Device Manager” in the search results.
- Expand the “Multi-port serial adapters” and “Ports” categories as shown below. You should see an item for the card itself and another entry for the serial port (the COMx number may be different on your computer, depending on any other COMx ports you have installed).



If your computer is NOT connected to the internet or your Windows Update settings have been changed, you may see a “bubble” message in the system tray that indicates that “Device driver software was not successfully installed.” Start Device Manager as above. You should see the SocketSerial card listed under “Other devices” and marked with an exclamation point as shown below.



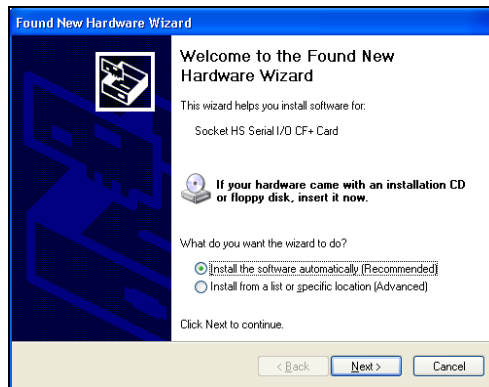
Select the SocketSerial device and right-click on it. Select “Update Driver Software...” and then select “Browse my computer for driver software.” Use the “Browse” button to navigate to the CDROM drive or the directory where you unzipped a downloaded driver package. Finally, click “Next” to allow the install wizard to finish installing the device drivers. You should then see the card and the serial port listed in Device Manager as shown in the first figure above.

Windows XP or Windows Vista

The new hardware or device driver wizard will appear. Follow the wizard to install the Serial I/O Card drivers. Make the appropriate selections below for your Windows version as prompted:

If you have the CD in your CDROM drive, select the option **“Install the software automatically (Recommended)”** and click **“Next.”**

If you have downloaded drivers, select the option **“Install from a list or specific location (Advanced)”** and click **“Next.”**



If a screen warns you that the software has not passed Windows Logo testing, click **Continue Anyway**.



Follow the remaining instructions until installation is complete. You should see the card and the serial port listed in Device Manager as described in the section for Windows 7 installation above.

Hi-Speed COM Tools

Hi-Speed COM Tools has two main components:

Card Status — allows you to identify and/or modify the COM port assigned to any Serial I/O card installed on your computer.

Baud Rate Mapping — allows you to program your computer to work at a baud rate (up to 921 kbps, depending on your card version) not normally available in Windows.

This section covers the following:

Start the program

View/modify COM port assignments

Determine the maximum baud rate of your card

Map baud rates

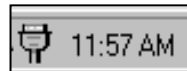
Access help information

Exit the program

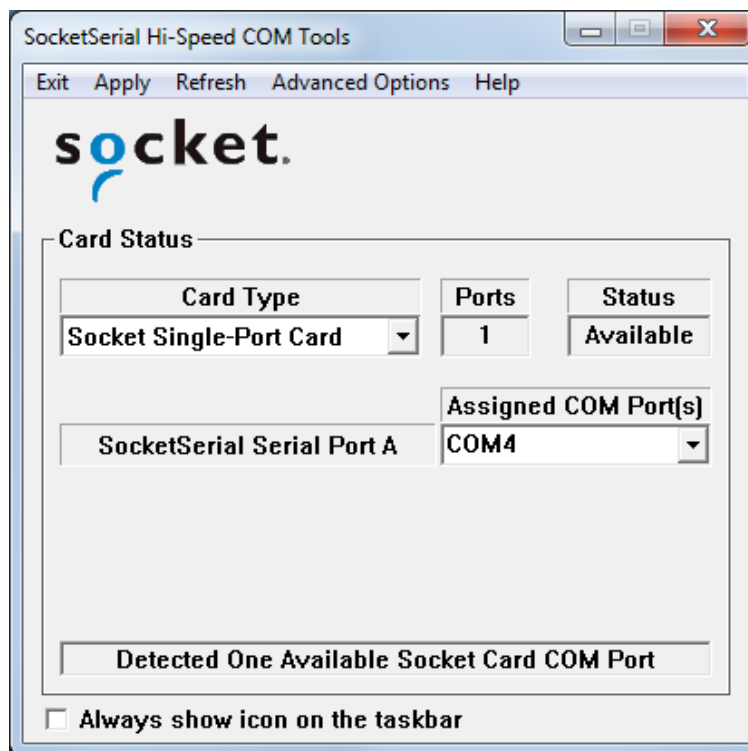
Start the Program

Start | Control Panel | Hi-Speed COM Tools.

Alternatively, you can access the tools via a task tray icon:



The Hi-Speed COM Tools screen will appear.



3. If desired, check **Always show icon on the taskbar** at the bottom of the screen. This will place an icon on the task tray so the program can be accessed later.

View/Modify COM Port Assignments

The **Card Status** section provides COM port information.

Card Type: Make sure the correct card is selected. Any high-speed cards previously installed on your computer will appear in the drop-down menu.

The screenshot shows a dialog box titled "Card Status". It contains a table with three columns: "Card Type", "Ports", and "Status". The "Card Type" is "Socket Single-Port Card", "Ports" is "1", and "Status" is "Available". Below the table is a section for "Assigned COM Port(s)" with a dropdown menu showing "COM4". At the bottom of the dialog, a message box states "Detected One Available Socket Card COM Port".

| Card Type | Ports | Status |
|-------------------------|-------|-----------|
| Socket Single-Port Card | 1 | Available |

Assigned COM Port(s): COM4

Detected One Available Socket Card COM Port

Ports: Reports the number of ports detected for the selected card.

Status: Reports the availability status of the port(s)

Assigned COM Port(s): Shows the COM port(s) assigned to the selected card. To change the port assignment, use the drop-down menu to select another port. Ports already in use will be labeled as **{in use}**.

Card detection status: The field at the bottom reports how many available COM ports your computer detects. If no card is inserted, a **No Socket Card Detected** message will appear.

The screenshot shows a dialog box titled "Card Status". It contains a table with three columns: "Card Type", "Ports", and "Status". The "Card Type" is "Socket Single-Port Card", "Ports" is "1", and "Status" is empty. Below the table is a section for "Assigned COM Port(s)" with a dropdown menu showing "COM4". At the bottom of the dialog, a message box states "No Socket Card Detected".

| Card Type | Ports | Status |
|-------------------------|-------|--------|
| Socket Single-Port Card | 1 | |

Assigned COM Port(s): COM4

No Socket Card Detected

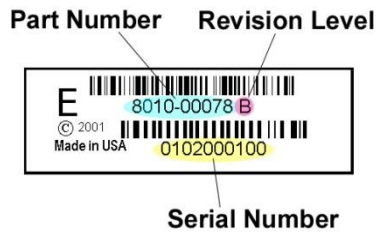
To update the Status report, click **REFRESH**. After making changes, click **APPLY**.

Note: If you modify any settings, the changes will only take effect after you click **APPLY**. If you modify settings when you have a connection with a serial I/O port open, then the settings will not take effect until you disconnect and reconnect the port.

Determine the Maximum Baud Rate of Your Card

If you plan to use the Hi-Speed COM Tools to map baud rates, it is useful to know the maximum baud rate that your Serial I/O Card can handle. Later revisions of the card can handle higher baud rates, up to 921 kbps. Check the Revision Level (Rev) of your card and refer to the chart below to determine the maximum baud rate of your card.

Note: The maximum baud rate varies with your device’s operating system, processor speed, and other variables. Higher baud rates may not work correctly on some older computers.



| Card Type | Part Number | Not Compatible with Hi-Speed COM Tools | Maximum Baud Rate | |
|---|--------------------------|--|-------------------|----------------|
| | | | 230 kbps | 921 kbps |
| CF with Removable cable | 8510-00094 8010-00075 | Rev A | Rev B | Rev C or later |
| CF with Ruggedized cable | 8510-00115 8010-00087 | Rev A | Rev B | Rev C or later |
| Custom CF Card | 8510-00155 | N/A | Rev A | N/A |
| Single-port PC Card with Removable cable | 8510-00012 8010-00012 | Rev A-J | Rev K-L | Rev M or later |
| Single-port PC Card with Ruggedized cable | 8510-00073 8010-00065 | Rev A-D | Rev E-F | Rev G or later |
| Dual-port PC Card with Removable cables | 8510-00054 8010-00057 | N/A | Rev A-J | Rev K or later |
| Dual-port PC Card with Ruggedized cables | 8510-00092 8010-00077 | N/A | Rev A-E | Rev F or later |

| | | | | |
|--|--|-------|-------|-----|
| Quad-port PC Card with Ruggedized cables | 8510-00158 | N/A | N/A | ALL |
| Custom PC Card | 8010-00074 8510-00088 | Rev A | Rev B | N/A |
| | 8010-00095 8010-00096 8510-00119 8510-00121 | N/A | Rev A | N/A |

Map Baud Rates



What is baud rate mapping?

Most Windows applications offer baud rate settings only up to 115 kbps, because this is the maximum speed of typical serial ports. What if you need or want to transfer data faster than 115 kbps? The latest hardware and software of the Serial I/O Cards were designed to handle much higher speeds, up to 921 kbps. Many Windows applications can handle speeds higher than 115 kbps, although they do not list any values higher than 115 kbps in their options for baud rate configuration.

Hi-Speed COM Tools enables you to use your COM port at higher baud rates in applications that only let you choose a baud rate up to 115 kbps. The program essentially lets you use one of the available baud rate values as a placeholder for a new baud rate of your choice. This is known as “mapping” a new baud rate to an available baud rate option.

For example, if you need your device to work at a baud rate of 230,400 bps, most Windows applications will not list 230,400 bps as a baud rate option. Hi-Speed COM Tools cannot change which options are listed, but it does let you program one of the options to work at 230,400 bps (e.g., you can change the “300” bps option to actually work at 230,400 bps).

Note:

Some older applications may have timing issues when you set them to baud rates that are higher than they were designed for. After mapping a baud rate to a new speed, you can re-map it back to its original speed.

Follow these steps to map baud rates:

Make sure the serial port is not already open on your computer.

In the Card Status section, make sure the correct **Card Type** is chosen and the correct card is listed.

The Baud Rate Mapping section has a **FROM** field and a **TO** field.

The **FROM** field lists baud rate options available in typical applications. The number that you select in the **FROM** field will be the baud rate option that you change to function at a new speed.

The **TO** field lists the baud rates you can choose from for your new speed. Included in the **TO** list are baud rates (e.g., 921,600 bps) that are not available as options in typical applications.

Use the **FROM** and **TO** fields to scroll and select the appropriate baud rates. Select **Enable** and click **APPLY**.

Baud Rate Mapping

Enable baud rate mapping

FROM **TO**

110 75

Baud Rate Selections

| | |
|------|------|
| 110 | 75 |
| 300 | 110 |
| 600 | 134 |
| 1200 | 150 |
| 2400 | 300 |
| 4800 | 600 |
| 9600 | 1200 |

Enable max baud rate select

75

Example: Select “110” in the **FROM** field and “921600” in the **TO** field. Select **Enable** and click **APPLY**. Now, whenever you select a baud rate of 110 bps in a Windows application, your COM port will communicate at 921,600 bps instead.

Notes:

After mapping a baud rate option to communicate at a new speed, the original speed will no longer be available unless you map baud rates again.

Make sure the new baud rate does not exceed the maximum baud rate for your card (see previous chart)

The new baud rate will not apply until you click **Enable** tap **APPLY**.

If you modify settings when a connection with a serial I/O port is open, then the settings will not take effect until you disconnect and reconnect from the port.

WARNING!

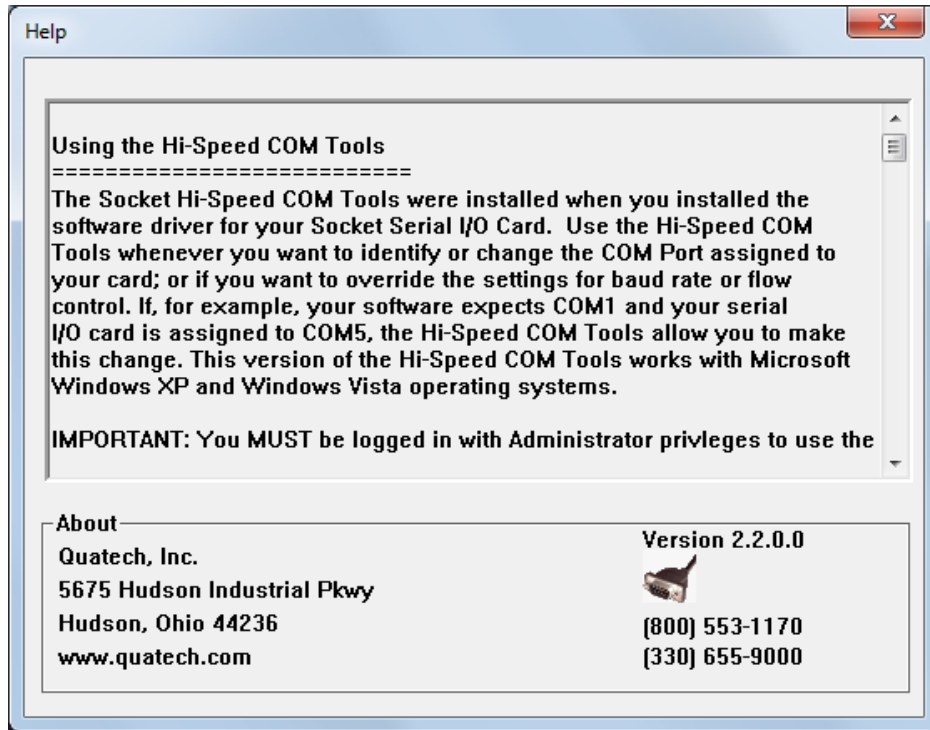
DO NOT set the baud rate higher than the maximum baud rate for your card, or you may experience functionality problems! Refer to the previous chart to determine the maximum baud rate for your card.

To revert a Windows baud rate that you mapped back to the original speed, select **Disable**, then click **APPLY**.

Alternatively, you can select the original baud rate in both the **FROM** and **TO** fields, select **Enable**, then click **APPLY**.

Access Help Information

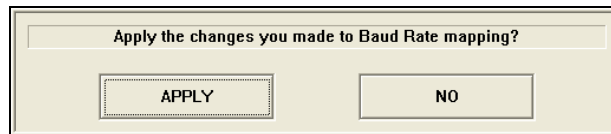
For help with the Hi-Speed COM Tools or information about the software, click on **Help**.



Exit the Program

When done with the tools, click **EXIT**.

Note: If you forgot to click **APPLY** after changing settings in the Hi-Speed COM Tools, then when you click **EXIT**, a screen will appear asking if you want to apply the changes. Click **APPLY** to have the changes take effect.



Appendix A

Specifications

Physical Characteristics:

PC Cards:

- Dimensions:** 3.37 x 2.13 x 0.197 in (85.6 x 54.0 x 5.0 mm)
Weight: 1 oz (28.4 g) with no cable
2.5 oz (70.9 g) with permanent cable (single-port)
3.2 oz (90.9 g) with permanent cables (dual-port)
6.4 oz (181.4 g) with permanent cable (quad-port)

CompactFlash Cards:

- Dimensions:** 1.433 x 1.685 x 0.130 in (36.4 x 42.8 x 3.3mm)
Weight: 0.32 oz (9 g) with no cable
1.82 oz (51.5 g) with permanent cable

Interconnect Cables

- Standard Cards:** 12 in (305 mm) long removable
Ruggedized Cards: 16 in (406 mm) long fixed (single-port)
17 in (432 mm) long fixed (dual-port)
24 in (610 mm) long fixed (quad-port)
Serial Connectors: 9-Pin D Shell Male
Removable Cable Weight: 1.1 oz (31.2 g)

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 (power supplied by host):

PC Card:

Single-port cards:

- Inactive:** 5 mA (25 mW)
Active: 13 mA (65 mW)

Dual-port cards:

- Inactive:** 5 mA (25 mW)
Active: 13 mA (65 mW) one port
21 mA (105 mW) two ports

Quad-port cards:

- Inactive:** 6 mA (30 mW)
Active: 20 (100 mW) one port
32 mA (166 mW) two ports
45 mA (225 mW) three ports
56 mA (280 mW) four ports

CompactFlash Card:

With 3.3V Supply:

- Inactive:** 2.4 mA (8 mW)

Active:8 mA (26 mW)
With 5V Supply:
Inactive: 4.3 mA (22 mW)
Active:13 mA (65 mW)

Operating System Support:
 Windows Mobile 5.0
 Windows Mobile 2003SE, 2003
 Windows XP
 Windows Vista
 Windows 7

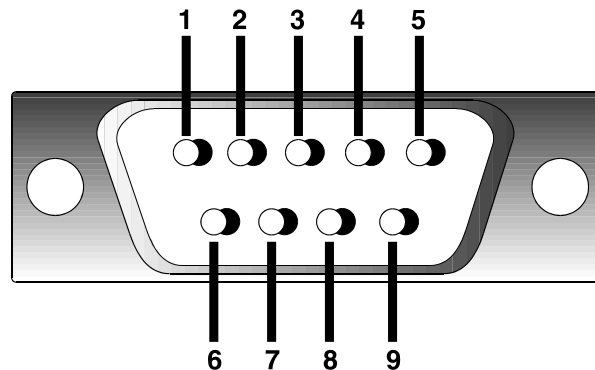
For Windows Mobile, support for square screens and landscape mode is included.

Interface Standards:
PC Card Interface: PCMCIA Release 8.0, Type II
 JEIDA 4.1 Compliant
 CompactFlash Interface: CompactFlash I/O Type I
 Serial Communications: Asynchronous RS-232;
 16550 type UART

Programmable Characteristics:
Character length:5-, 6-, 7- or 8-bit
Parity: Even, odd or none
 Baud rate generation: 921K baud maximum

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 |



Appendix B

Advanced Software Installation for Windows Mobile

Advanced Users Only!

If you do not want to use the application installer to install modem software for Windows Mobile, you can install the software from a CAB (cabinet) file. The CAB file contains all the software and drivers for your product to be installed on a specific Pocket PC platform. CAB files are available both on the installation CD (in the *CABs* folder) and online at www.quatech.com.

In order to install the CAB file, you need a way to transfer the CAB file to your Pocket PC, such as:

Use Microsoft ActiveSync to transfer the CAB file to your Pocket PC. Windows Mobile 5.0 devices require ActiveSync 4.0 or greater.

Use a memory card reader to save the CAB file from your desktop PC to a memory card, then insert the memory card into your Pocket PC.

If your Pocket PC has Internet access, download the CAB file directly from our website to your Pocket PC.

Transfer the correct CAB file to your Pocket PC. Refer to the chart below to determine the correct CAB file for your Pocket PC. If transferring the CAB file with ActiveSync or downloading the CAB file directly to your Pocket PC, remember where you save the file.

| Pocket PC Version | CAB File |
|---------------------------|----------------------|
| 2005 (Windows Mobile 5.0) | Output.PPC2005ARMV4I |
| 2003/2003SE | Output.PPC2203ARMV4 |

Tap Start | Programs | File Explorer.

Use File Explorer to browse to the CAB file. Tap on the CAB file.

The CAB file will start installing on your Pocket PC. Follow the instructions on your device screen to install the software.

Your device may warn that the CAB file comes from an unknown publisher. Tap **Yes** to continue installation.

After software installation, soft reset your device by pressing the reset button.

Limited Warranty

B&B Electronics warrants this product against defects in material and workmanship, under normal use and service, for the following period from the date of purchase:

Plug-in card: One Year

Removable cable, if included: 90 days

Incompatibility is not a defect covered by B&B Electronics's warranty. During the warranty period, B&B Electronics 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 B&B Electronics or to an authorized B&B Electronics Service Center.

The returned product must be accompanied by a return material authorization (RMA) number issued by B&B Electronics or by B&B Electronics'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 B&B Electronics. B&B Electronics 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.

B&B Electronics may, at its option, replace or repair the product with new or reconditioned parts and the returned product becomes B&B Electronics's property. B&B Electronics 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 B&B Electronics.

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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.

Limited Software Warranty

LIMITED WARRANTY. B&B ELECTRONICS warrants that the original disk or CD ROM is free from defects for 90 days from the date of delivery of the SOFTWARE.

CUSTOMER REMEDIES. B&B ELECTRONICS'S entire liability and your exclusive remedy shall be, at B&B ELECTRONICS'S option, either (a) return of the price paid or (b) replacement of the SOFTWARE which does not meet B&B ELECTRONICS'S Limited Warranty and which is returned to B&B ELECTRONICS with a copy of your receipt. Any replacement SOFTWARE will be warranted for the remainder of the original warranty period or 30 days, whichever is longer. THESE REMEDIES ARE NOT AVAILABLE OUTSIDE OF THE UNITED STATES OF AMERICA.

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CONTROLLING LAW AND SEVERABILITY. This License shall be governed by the laws of the United States and the State of California. If for any reason a court of competent jurisdiction finds any provision, or portion thereof, to be unenforceable, the remainder of this License shall continue in full force and effect.

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 EN55024:1998 and C-TICK 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.

Product Disposal

Your device should not be placed in municipal waste. Please check local regulations for disposal of electronic products.

